

Market Research Study for Rocky Mountain AIChE

by George Taniwaki

September 17, 1991

Introduction

This research project consisted of two parts. First, I analyzed the demographics (age, sex and zip code distributions) of chemical engineers living in the Rocky Mountain region. This part of the study included: the 137 attendees of recent local meetings, the 425 local paid members, the 557 National-only paid members, and 136 engineers who are not AIChE members (CSM graduates with CPR or PRE degrees).

Second, I mailed questionnaires to 254 chemical engineers (both AIChE members and non-members) in the Rocky Mountain region asking questions about local AIChE membership. Sample of questionnaire is in Appendix. The survey responses are tabulated and analyzed in this report.

Conclusions

Conclusions based on demographic data

- 1) *Membership level:* For every member of the local AIChE section, there is one National AIChE member who is not a local paid member. For every local section member there are nine chemical engineers who are not members of AIChE.
- 2) *Age:* Young engineers are underrepresented in local membership. Below age 35 local membership falls rapidly and almost no local members are below the age of 25.
- 3) *Sex:* Female engineers as a group are younger than male engineers. Thus, they are underrepresented in local membership.
- 3) *Zip code:* National members living close to Denver are more likely to be local paid members than those living farther away. Northern New Mexico has a high enough population density of ChemEs to support a subsection. Wyoming and South Dakota probably do not.
- 4) *Meeting attendance:* Fewer than half the people who attend our meetings are local paid members. Most of these non-members attend our meetings as guests of a member.

Conclusions based on survey responses

- 1) *Awareness of membership:* Almost half of the National-only AIChE members think they are also local paid members. About 10 percent of local paid members think they are National-only members.
- 2) *Meeting attendance:* Among people who attend a local meeting within the last 12 months, about half have also attended a national meeting within the past 3 years. People who do not attend a local meeting are unlikely to have attended a national meeting.
- 3) *Awareness of benefits:* Local paid members are more likely to be aware of the benefits of local membership than National-only members. Local members who attend meetings are much more likely to value these benefits than local members who do not attend meetings.

- 4) *Dues*: Most local paid members want to keep dues at their present level.
- 5) *Newsletter*: Most local paid members read the newsletter and like the current format.
- 6) *Meetings*: The most important criteria in decision to attend a meeting is the topic, followed closely by the location. Date and time fall in the middle, while menu and price are least important.
- 7) *Other activities*: Nearly all engineers, whether members or not, are interested in plant tours. About one third are interested in seminars. Interest in social events is lower.

Recommendations

Increase awareness of benefits of local section membership: Too many AIChE members are confused as to whether they are National-only or local paid members. We need to publicize the difference between national and local dues and market the benefits of joining the local section. Further, we need to recruit people who attend our meetings but don't pay dues. Some long-term suggestions:

- 1) *Create a recruitment brochure* and actively encourage all ChemEs to join. Have brochure on display at meetings. Mail it once a year to all National-only paid members. Distribute brochure to all local paid members to hand out to colleagues. Survey results warrant active recruiting of young National members and college students

Estimated cost: \$1,000 for 5,000 copies plus \$350 postage. plus 50 hours of my time for design and supervision of production. Estimated net revenue: \$200 if we convert 50 National-only members to local paid members.

- 2) *Collect dues directly* rather than through National. Survey results indicate most National-only members are unaware that local membership is not automatic. By collecting our local dues separately, we could impress upon local members that we are a separate organization from National. This may encourage some National-only paid members to join the local organization.

Collecting dues ourselves allows us to create a membership category for ChemEs who want to join the local section but not pay National dues. Our section charter allows people to be local-only members for two years.

Estimated cost: \$350 postage plus 50 hours time for membership committee & treasurer committee. Estimated revenue: \$400, if we gain 100 new local-only members.

Increase attendance at local meetings: One of the main factors in meeting attendance is location. We should use our mailing list to target an audience of engineers who live or work near the meeting site and would be potentially interested in the topic. To compensate, non-local paid members may pay a higher meeting fee (waived if they join and pay their dues before meal).

- 3) *Mail meeting notices* to all ChemEs (not just local members) within 50 miles of meeting site using a postcard rather than newsletter. Mail notice to our National list plus engineers in other related organizations. In exchange, share our mailing list with these other organizations,

Estimated cost: \$600 for printing and postage. Estimated revenue: \$600 if we raise meeting price to cover these expenses.

If we send a postcard each month for meeting notices, then newsletter need not be sent each month. Estimated savings: \$500 printing and postage if newsletter is bimonthly.

4) *Mail posters* announcing meetings to corporate liaisons (volunteers at companies with lots of ChemEs) each month.

Estimated cost: \$100 for printing and postage plus 50 hours time for membership committee (to find volunteers.) . Estimated revenue: None, but liaisons would be a source of future volunteers for other committees.

Part 1: Demographics of membership

Membership level

In the Rocky Mountain region there are 425 local paid AIChE members and 557 National-only paid members. All local paid members are also members of National AIChE for a total of 982 National AIChE members. About 43 percent of National AIChE members are also local paid members.

Searching through the Colorado School of Mines alumni directory for graduates with CPR (chemical and petroleum refining) or PRE (petroleum refining engineering) degrees, reveals 136 with last names from A to E living in the Rocky Mountain region. Of these, 16 are local paid AIChE members and 11 are National-only paid members. Assuming AIChE membership is constant among graduates of all universities and is independent of where the graduate lives, then we can estimate that about 20 percent of all chemical engineers are members of National AIChE.

Age

ChemEs above age 35 are more likely to be members of National AIChE than younger ChemEs. Table 1 shows a comparison of the age distribution for National-paid AIChE members against non-AIChE members. Results are shown graphically in Figures 1 and 2.

Older National AIChE members are more likely to also be members of local AIChE than younger ones. At age 35 and above, slightly over half of National AIChE members are also local members. Below age 35 local membership drops off rapidly and almost no local members are below age 25. I cannot tell if this is a normal occurrence or if there is now a sudden decline in young members electing not to join.

Table 1. Age distribution by group

	Local paid AIChE	Nat'l-only AIChE	Non-AIChE (CSM grads)	Meeting Attendees
19 and under	0	3	0	0
20-29	35	184	69	12
30-39	127	156	51	23
40-49	111	72	19	16
50-59	63	43	4	12
60-69	54	22	7	9
70 and over	30	24	2	2
unknown	5	53	0	63
TOTAL	425	557	152	137

Sex

Membership to National AIChE does not appear to depend on gender. However, women are less likely to be members of local AIChE than males. This is because women ChemEs are as a group younger and young ChemEs are less likely to be local members (see Age section above). Tabulated results are in Table 2.

Until the late 1970s, very few women obtained degrees in chemical engineering. Only in the last ten years has their percentages in graduating classes approached 35 to 40 percent (see Figures 1 and 2).

Table 2. Sex distribution by group

	Local paid AIChE	Nat'l-only AIChE	Non-AIChE (CSM grads)	Meeting Attendees
Male	380	448	110	104
Female	40	91	25	16
Unknown	5	18	1	17
TOTAL	425	557	136	137

Zip code

Slightly more than half the AIChE members living in the Denver area are local paid (see Table 3 and Figure 3). This percentage falls off to 40 percent for Boulder members and a low of 10 percent for South Dakota members.

New Mexico has nearly 150 AIChE members in the Albuquerque, Santa Fe, and Los Alamos area. When combined with the population at the University of New Mexico, they could form the nucleus of a strong subsection. The populations in Wyoming and North Dakota are more dispersed, and probably could not support a subsection. Perhaps adding the population of Northern Colorado and western Nebraska could make area large enough to support a subsection.

Table 3. Zip code distribution by group

	Local paid AIChE	Nat'l-only AIChE	Non-AIChE (CSM grads)	Meeting Attendees
SD 57000-57799	5	44	1	0
NE 69000-69999	0	1	0	0
Denver N 800nn	41	51	18	13
Denver S 801nn	66	50	22	15
Denver 802nn	82	65	30	24
Boulder 803nn	47	72	6	23
Denver W 804nn	41	38	26	12
Fort Collins 805nn	29	59	6	3
CO 80600-81999	32	30	20	0
WY 82000-83999	32	49	4	0
UT 84000-84999	0	1	0	0
NM 87000-88999	50	97	3	0
Unknown	0	0	0	47
TOTAL	425	557	136	137

Meeting attendance

Total attendance at 7 meetings was 240 and ranged from a low of 28 to a high of 46. There were 137 attendees; 92 people attended only 1 meeting, 19 people attended 2 meetings, and 26 people (including the 11 executive council members) attended 3 or more meeting. People often attend meetings in groups consisting of one member and several non-member guests (including spouses). Only 57 attendees (41 percent) were local paid members. Tabulated results are shown in Table 4.

Table 4. Meeting attendance by group

	Local paid AIChE	Nat'l-only AIChE	Non-AIChE (all)	Total
Attended 1 meetings	25	12	55	92
Attended 2 meetings	11	3	5	19
Attended 3 or more	21	2	3	26
TOTAL	57	17	63	137

Part 2: Survey results

On April 16, 1991, 254 questionnaires were mailed. By July 31, 113 were returned usable and 7 returned undeliverable or spoiled. The returned surveys fell roughly into four groups described in Table 5.

Table 5. Survey response rates by group

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Surveys mailed	70	73	49	62
Number returned	38	18	7	50
Percent return	54%	25%	14%	81%

Awareness of membership

A large proportion of National-only paid members (7 responses = 41%) thought they were also local paid. One (18%) also recalls attending a local meeting in the past year. Four local paid members (11%) did not think they were members of the local section.

Meeting attendance

About half the people who we know have attended a local meeting within the past 12 months have also attended a National meeting in the past 3 years.

People who do not attend a local meeting are very unlikely to attend a National meeting. None of the National-only paid respondents (0%) attended a national meeting and seven local paid respondents (18%) claim to have attended a national meeting.

A significant number (5 responses = 14%) of local paid AIChE members who we do not have records of attending a meeting say they have attended one within the past 12 months. (Most likely, they attended a meeting over a year ago.)

Table 6. Awareness of membership by group

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Are you a member of:				
Nat'l AIChE	100%	100%	14%	100%
Local AIChE	89%	41%	0	100%
Have you attended a:				
Nat'l meeting in 3 yrs	18%	0	0	50%
Local meeting in 1 yr	14%	5%	0	96%

Awareness of benefits

As expected, local paid members are more likely to be aware of the section services than non-members. Also, active local members (those who attend meetings) are more likely to find these services useful.

Nearly 100% of meeting attendees are aware of the monthly meetings and the newsletter. They find these to be useful. About 60 percent are aware of continuing education and job placement and most find them to be not useful. Only 50 percent are aware of our student activities and most find them to be not useful.

Table 7. Awareness of benefits by group*

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Contacts at mtgs	+ - 0	0 - -	- - -	+++
Meeting lecture	+ - 0	+ - -	- - -	+++
Newsletter	+ 0 +	0 - -	- - -	+++
Cont. ed.	+ - 0	- - -	- - -	+ - 0
Job placement	+ - 0	- - -	- - -	+ - 0
Student activities	0 - -	- - -	- - -	+ - 0

*For each benefit, the respondents were asked to state (1) if they were aware of the benefit (2) whether they had used it in past 12 months and (3) if they thought it was useful. The following symbols are used to summarize the responses: + = over 65% responded yes, 0 = 34% to 65% responded yes, - = under 34% responded yes. (For instance, the meeting attendees opinion of continuing education, + - 0, means over 65% were aware of it, under 34% used it, and between 34 to 65% thought it was a useful activity.)

Dues

Most people surveyed are happy with the level of dues. In general meeting attendees are more willing to pay higher dues while non-members (who aren't paying anything now) would prefer lower dues.

Table 8. Desired level of dues by group

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Keep same	23	8	3	41
Lower	7	3	0	0
Higher	5	1	1	7
No response	3	6	3	2

Newsletter

Most local paid members read the newsletter. Most are happy with the current format and frequency, although many are willing to allow a change in the format. No surprise, ChemEs who do not receive the newsletter do not read it and have no comment on the format or frequency.

Table 9. Newsletter readership by group

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Newsletter readership:				
Read all	18	3	1	32
Read some	13	5	0	14
Only read mtg notice	5	2	0	4
Don't read/No response	2/0	0/8	0/6	0/0
Newsletter format:				
Keep same	19	6	1	27
No pref./No response	18/1	5/7	0/6	20/1

Meetings

The most important criteria for choosing to attend a meeting is the topic, followed closely by location. Date and time fall in the middle, while menu and price are least important.

Topic: 10 percent will only attend a meeting if the topic is work related, 18 percent will attend only chemical engineering topics, 40 percent said other scientific/technical topics would be okay, and 34 percent would be willing to attend a non-technical talk.

Date and time: Most respondents are happy with the current schedule. For those expressing a wish for change, most felt a Monday or Wednesday meeting date would be better. Some indicated a preference for lunch meetings. (Unfortunately, a question I did not ask was if people would like to attend meetings in the summer.)

Meal: Most respondents would prefer a meal but would be willing to attend a meeting where no meal was served. More non-AIChE members would prefer to have meetings without meals.

Price: If a meal is served, the price should be in the \$10-20 range.

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Table 10. Meeting criteria by group

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Meeting location				
Avg. rank	2.6	2.0	1.6	2.2
Avg. distance	20-50 mi	10-20 mi	5-10 mi	0-50 mi
Meeting topic				
Avg. rank	1.6	1.8	1.6	1.5
Pref. topic	general	any eng.	any eng.	general
Meeting date				
Avg. rank	2.7	3.3	3.1	3.1
Pref. date	any	any	any	keep same
Menu				
Avg. rank	4.1	4.5	4.4	4.1
Pref. meal	pref. meal	pref. meal	pref. meal	pref. meal
Price				
Avg. rank	4.1	3.4	4.3	4.0
Avg. price	\$10-20	\$10-20	\$0-10*	\$10-20

* Average is lower because two respondents would prefer no meal at meeting.

Other activities

Plant tours are very popular, with 80 percent of respondents interested. A weekend seminar also has a high response at 30 percent. Recreational activities such as golf or a picnic received lower interest. Responses are shown in Table 11.

Table 11. Activity interest by group

	Did not attend meeting			Attendees
	Local paid AIChE	Nat'l only AIChE	Non-AIChE (CSM grads)	Local paid AIChE
Plant tours	63%	61%	100%	86%
Weekend seminars	29%	39%	29%	36%
Golf outing	11%	11%	0	12%
Family picnic	5%	0	29%	26%

Figure 1. Age distribution of AIChE members

(National-only AIChE members living in Rocky Mountain region n=557, Local paid AIChE members n=425)

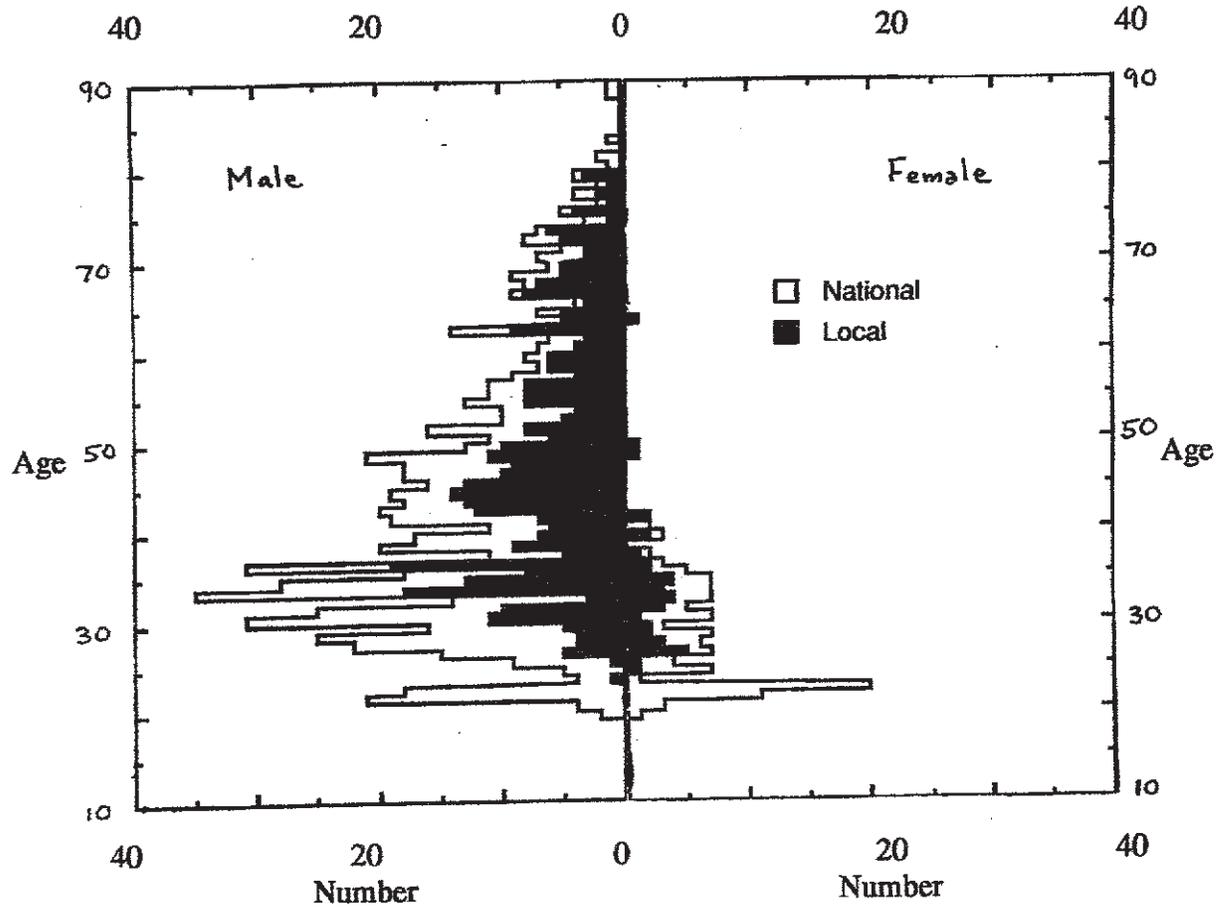
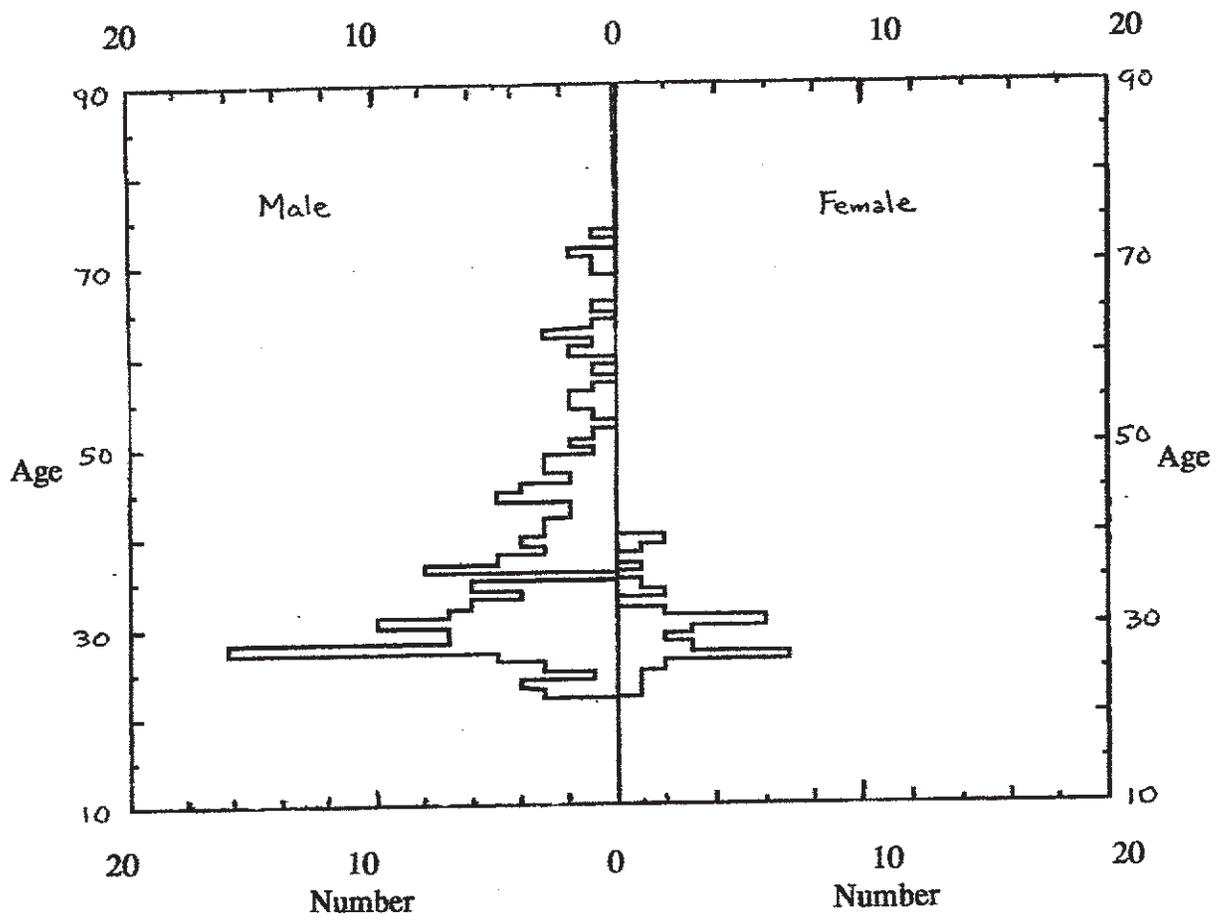


Figure 2. Age distribution of non-AIChE members
(CSM graduates with CPR or PRE degree living in Rocky Mountain region, n = 184)



Technical writing and editing, electronic publishing, Macintosh training.

Marketing Survey for the Rocky Mountain Section AIChE

April 10, 1991

Dear chemical engineering colleague:

I hope you can take a few minutes out of your busy day to answer a market research questionnaire. Please don't throw it away, only a few were mailed out and your responses are important to us.

I am sure that all of you take great pride in the engineering degree that you have earned and want to keep abreast of the latest technological advances. One way to keep up with the profession is to belong to the American Institute of Chemical Engineers.

The Rocky Mountain Section of the AIChE serves the Colorado, Wyoming, western Nebraska, and northern New Mexico region. It is a big area and it is hard to serve all of the chemical engineers in our section.

This survey serves two purposes. First, we want to gauge how well we are serving our existing members. But perhaps more importantly, we know that for every chemical engineer who is a member of the Rocky Mountain Section, there are ten who are not. So our second goal is to ask non-members what we need to do to convince them to join.

Your responses will help us formulate a plan for change. Your ideas will make a difference in the way we operate. You have my assurance of that.

E. Dendy Sloan
Chairman

P.S. The questionnaire will not take long to complete and we even pay the postage.

The Rocky Mountain Section AIChE

Are you a member of:

- National AIChE, how many years? _____
- Rocky Mountain Section AIChE, how many years? _____

Have you attended:

- a national AIChE meeting in the past 3 years?
- a local section meeting in the past 12 months?

Which of the following benefits and services provided by the Rocky Mountain Section AIChE are you aware of and how valuable are they to you? (Please answer this question even if you are not a member of the Rocky Mountain Section AIChE.)

	Aware of ?		Used in last 12 months ?		Is it useful?	
	Yes	No	Yes	No	Yes	No
Business & social contacts	<input type="checkbox"/>					
Monthly meetings	<input type="checkbox"/>					
Section newsletter	<input type="checkbox"/>					
Contin. educ./seminars	<input type="checkbox"/>					
Job placement services	<input type="checkbox"/>					
Student activities	<input type="checkbox"/>					
Other _____	<input type="checkbox"/>					

What level of dues would you be willing to pay to support these services?

- Everything is fine, keep dues at \$9 per year
- It's not worth it, lower dues to under \$9 per year
- I want better service, raise dues to \$10-15 per year

If you are not a member of the Rocky Mountain Section AIChE, what can we do to encourage you to join?

Monthly newsletter

The Rocky Mountain section currently publishes a newsletter from September to May.

Do you enjoy reading the newsletter?

- yes, I read the whole newsletter
- yes, I read some of it, I especially like _____
- no, I only read the meeting notice
- no, I do not read the newsletter

What format should the newsletter take?

- keep it the same (8.5x11, 4-pages, once a month)
- let the editor decide the format and frequency
- other _____

Local meetings

The Rocky Mountain section holds meetings monthly from September to May. Please rank the importance of the following items (1 being highest, 5 lowest) when deciding whether you would attend a meeting. In the second column, please indicate your preference. (Please answer this question even if you have not attended a local meeting.)

- | | |
|-----------------------------|---|
| Location
Rank _____ | <input type="checkbox"/> within 5 miles of home or work
<input type="checkbox"/> within 20 miles
<input type="checkbox"/> within 50 miles (ie. within Denver/Boulder area)
<input type="checkbox"/> other _____ |
| Topic/Speaker
Rank _____ | <input type="checkbox"/> only directly related to my work
<input type="checkbox"/> any chemical engineering topic
<input type="checkbox"/> any engineering/scientific
<input type="checkbox"/> general interest (including political) |
| Date and time
Rank _____ | <input type="checkbox"/> keep meetings on 3rd Tuesday 6pm-9pm
<input type="checkbox"/> other preference _____
<input type="checkbox"/> no preference |
| Menu
Rank _____ | <input type="checkbox"/> prefer no meal
<input type="checkbox"/> prefer meal, but would attend if no meal served
<input type="checkbox"/> will attend only if meal served |
| Price
Rank _____ | <input type="checkbox"/> Free, no meal
<input type="checkbox"/> under \$10, no meal (students: under \$5)
<input type="checkbox"/> \$10-20, including meal (students: \$5-10)
<input type="checkbox"/> over \$20, including meal (students: over \$10)
<input type="checkbox"/> no preference |

Please explain why you have (have not) attended a Rocky Mountain section meeting in the past 12 months.

Would you be interested in any of the following special events:

- Plant tours (perhaps at Martin Marrietta, Coors, IBM, or Kodak)
- Seminar or continuing education course held on weekend
- Golf outing
- Family picnic or event

Demographic information

Please provide the following information to assure us that we have a statistically relevant sample. All responses will be kept confidential.

Age _____ Sex _____ Degrees and majors _____
Work zip code _____ Home zip code _____

Fold at lines and seal with tape. Do not staple.



Rocky Mountain Section AIChE
c/o 8111 East Yale Avenue, #5-301
Denver, CO 80231-4150

1. What technical activities have/will local sections conduct in 1999?

Technical Speaker at Section meetings Y 39 N 2 # Yr. 5.37 (Avg.)
No answer: 3

TOPICS: General: Academic, Legislative, Environmental, Student Presentations, Research and Development. **Specific:** Statistical Methods for Process Control, Green Economics ISO 14,000, Economic Importance of Chem. & Refining Industry, Neural Networks. Aging of Plastics, Biomedical Polymers, Plant Automation, Biotechnology, Process Engineering, Safety, Vendor Technologies; Hydrogen, Space, Semiconductors; Molecular Modeling, Microtechnology, Legal Forum Featuring Dept. of the Environment Mngt. Staff and Representative from Burr & Forman, a Regional Enviro Defense Firm; Pilot Plant Design, Six Sigma, Mass Integration, Developments in Separations Technology, Risk Management Plan, Biocide Toxicity, Water Treatment, Ground Water Remediation, Internet Resources, Sulfur in Fuel, Molecular Dynamics, Startup of High-Tech Business, Homebrewing, Process Synthesis, Series of Seminars on Sustainability, Pharmaceuticals, Industrial Wastewater, Water Conservation, Process Controls, Centrifuges, Y2K, Process Modeling, Plant Tours, Crystallization, Fuel Cells, Reformulated Motor Oil, Reboilers, Vacuum Systems, Spreadsheets, Windows 2000, Root Cause Analysis, History of Science, Eliminating Plant/Model Mismatch, Solar & Electric Powered Vehicles, Severe Storms Forecasting Detection Monitoring & Warning Systems, Environmental Quality Panel, Hazard ID, Electric Vehicles, Distillation, ISO 9001.

Special Technical Meetings Y 16 N 22 # Yr. .73 (Avg.)
No answer: 5 Undecided: 1

TOPICS: Current: Joint meetings with ACS; Student Competition; Process Safety Symposium (2001); Representative from Westinghouse G.B.S. Anniston Project on Chance Weapons Destructor; Plant Tours (specific- Specialty Products from Veg.oils -Fall '99), Drug Delivery Systems, Teaming up with one or two other local sections; Lab Glass Tour, PET Manufacturing Virtual Tour; The Desktop Computational Design and Modeling Revolution; Plant Tours, Student Night; Technical Program Series (every other month), Biotechnology, Cost Estimates, Membranes; Brewery Tours; Public Outreach Symposium on Incineration; Water Treatment, Explosives;
In future: low gravity process, talk by Space Show astronaut.

Short Courses Y 8 N 32 # Yr. .37 (Avg.)
No answer: 4 Undecided: 0

TOPICS: Current: On-line Optimization & Pinch Analysis, Ethics, Refining short course, P.E. Licensing Preparation; PE Refresher; Spreadsheet Power, Project Economics; Planning Meeting.

SURVEY RESULTS OF TECHNICAL ACTIVITIES OF AIChE LOCAL SECTIONS
Sponsored By
CHEMICAL ENGINEERING TECHNOLOGY OPERATING COUNCIL: total # surveyed 44

Exhibits/Workshops Y 10 N 30 # Yr. .31 (Avg.)
No answer: 4 Undecided: 0

TOPICS: Current: Hot Tap, Lobos Trade Show; AIChE Houston Chem. Expo., Booth/Exhibit at Ohio Chemical Council Day; Student Competition; 3-4 Sessions [Workshops] held @ each monthly meeting (Process Control, Environmental, Prof. Dev., Process Safety); Plant Tours; 18th Annual OEF Engineering Fair; Distillation, Heat Exchanger Design, This year – ISO 9000 Training for Auditors; Internet.

Original Tech. Articles in Newsletter Y 2 N 38 # Yr. .036
No answer: 4

TOPICS: Current; Mostly Environmental in Nature; Internet Engineering, Global Steel Market, Gas Processing, Chemical Engineering – Recruiting & Starting Job, Economic Development. **Note:** Sections do not generally create original technical articles for newsletter

2. Have you collaborated with any other AIChE entities? Y 21 N 21
N/A. = 2

Responses: Dayton; CWRT (Natl.), Vision 2020 talk group (Natl.); Local Orange County Section; Cleveland AIChE, ACS; Chicago local section; Clearwater Convention Lakeland Section; New Orleans Section, National – for Natl. meetings; AIChE Beaumont Texas Section. Houston Spring 1999 Meeting, Houston 10/98 Process Plant Safety Symposium, AIChE Baton Rouge Section; Catalyst effort for possible recruiting of Senator Bill First as speaker at program on key technology issues facing Congress; Bartlesville and Tulsa Sections; Last year we contacted a neighboring section early on the year to plan a joint meeting – but neither section followed through; I don't think that we understand how to contact and work with divisions or committees based on how they may be able to help us with our dinner meeting planning; Earl Beaver; Susquehanna Section of AIChE; Joint meeting with Boston management group; NJIT Uni-Tech. **Future:** hope to for at least one technical speaker from a student section

3. Have you collaborated with non-AIChE entities? Y 32 N 10
N/A. = 2

Responses: Akron Council of Engineers & Scientific Societies, Akron American Chemical Society; ACS local, ISA local Exhibit Workshop, Dow Corning; ASME, Aeronautic Engineers, local colleges; West Virginia Professional Engineers for National Engineers Week; ASCE; American Chemical Society; Alabama Dept. of Environmental Mgmt (ADEM); Engineers and Scientists of Milwaukee; Ohio Chemical Council (CMA); SPE, Cape Canaveral Technical Societies, SWE, Florida Solar Energy Center; American Society of Safety Engineers, Louisiana Engineering Society; AWIS, ACS, SPE, ISA; ASAE – American Society of Solar Energy; A & WMA - Engineer's Society of Western Pennsylvania; Lake Charles Section; Tappi; Western Mass. Section of ASME; Association of Women Engineers; Colorado Engineering Council.

Future: Try to work with Clemson Univ., and the Univ. of South Carolina to bring existing and/or develop new short courses in our area.

4. Are there other entities with which you feel collaboration would benefit the section?

Responses: ACS, DOE, DOT (for Vision 2020), Sustainable World (EPA) and other local sections; ASME, NSPE; SAMPE, local Universities; interactions with schools (K-12 & Colleges), Science Museum; hope to co-sponsor meetings with other technical/engineering societies – ASM, TMS, APMI; Regional Section cooperation; EHCMA (East Harris County Manufacturers Assoc.); Adjacent AIChE sections; Materials Research Society; Certain vendor organizations which can present on technical topics (e.g., mixing systems; simulation) – but members are asking us to be cautious; ISA, ASCE; Mechanical Engineers Society, Society of Plastics Engineering, Plastics Council; National Groundwater Association.

5. Which technical activities do you believe best meet the needs of your section members and why?

Responses: Tours – people want to see, as well as hear, what others are doing; Beer sampling, Industrial Executive Presentation; Employment/Career Services; Statistical Process Control (SPC) – because plant operators (engineers) use this skill and Charleston CPI are non-growth sites; Have meetings at breweries or wineries for tours; Tours of mfg facilities of all types. Universal topics like safety & environmental and general interest, technical topics like space travel and biomedical. Good speakers, good speakers, good speakers. Don't always make it technical. Examine legal, political, financial aspects of engineering & science, teach communication and information technology (Internet Web); Money is the issue; Space technology meetings are the primary mission of our section and have a good general audience; Speakers have the greatest member support, but some of us believe a conference or short course would (a) raise our profile with employers (b) attract non-members (c) generate publicity; Activities that are 1) the least technical 2) those involving alcohol (wine making, etc.) 3) Current events (environment, etc.); Technical talks off the mainstream traditional ChE; Our section is not technically oriented. Most technical issues have lower attendance than our normal sessions; Technical Activities that offer professional development needed to maintain a professional engineering license; Hands on Demonstrations are good meetings. In the past, we had a demonstration on fire retardants, PLC and DCS Systems and a meeting entitled "Valves 101" done by a local company – all very good presentations; Support is minimal **Topics** specific to what people do at work seems to have attracted bigger turnouts; Pharmaceuticals, Process Safety, Process Controls, Serve PE's for PDH requirements .

6. Which chemical engineering or other technology areas are of most interest to your section members? Please list min. of 5 max. of 10. (Numbers refer to number of specific appearances on list.)

- | | |
|--|---|
| 28 Environmental - general | 3 Materials Processing |
| 4 Legal/Enviro/Regulation | 2 Cutting Edge Technology |
| 2 Environmental Remediation | 2 Instruments |
| 2 Waste Reduction Technology | 2 Equipment |
| 1 Plastic Processing | 1 General Engineer Application |
| 1 Ambient Air Monitoring and Stack Monitoring | 1 Brewery Tours |
| 1 Water Treatment Technology | 1 General Science Application |
| 3 Sustainable Development | 1 Pulp & Paper |
| 2 Emissions Controls | 1 Mixing |
|
 | 1 Chemical Process |
| 24 Plant Operations | 1 Polymers |
|
 | 1 Precision Mngt/Engineering |
| 18 Safety | 1 Energy Conversion (Explosive and Fire) |
| 3 Petrol & and Fire chemicals | 1 Space Technology |
| 1 Safety/Accident Investigation | 1 Rubber Processing |
| 4 Process Safety Management | 1 Household (coffee, alcohol, etc.) |
| 1 Risk Management | 1 Compressed Gas Industry |
|
 | 1 New Materials |
| 22 Computer/Internet Technology | 1 Phosphates |
| 4 Computer Simulation | 1 Process Data Management |
|
 | 1 Ethics |
| 20 Biotechnology | 1 Gas Processing |
| 8 Pharmaceuticals | 1 Distillation |
|
 | 1 Nuclear Industry |
| 15 Process Design | 1 Hydraulics |
|
 | 1 Heat Exchanger Design |
| 6 Reaction Engineering | 1 Economic Development |
|
 | 1 Career Development |
| 5 Electronic Materials | 1 Consulting Engineering |
| 2 Semiconductor Manufacturing | |

7. Share any specific ideas that you believe would improve AIChE's program of developing and disseminating technology information and knowledge for the benefit of its stakeholders?

Distribute topic list to officers of local sections to aid planning. Also, putting articles in "Extra" about special workshops or exhibits various sections do.

Maybe a broad effort for National Engineer's week – coordinating 10-15 sections doing same things, same demo kits or all have a booth at regional science museums or using a local college science lab.

Posting on the Web Site in a downloadable format.

The AIChE web site, though easy to read, is hard to navigate. A list of upcoming AIChE meetings for several years to come would be nice to see once in a while

*Conferencing and videoconferencing on the Web (though a planetall site?)
Use E-mail more widely and more frequently.*

*Collect E-mail/database and "ALERTS" on technology topics
Start/Continue download capabilities & articles of general interests*

Greater flexibility & innovation in Continuing Education.

The Design Institutes (DIPPR, DIERS) were very successful, but seemed cumbersome and drawn-out in execution. Can we redesign the process of a Design Institute the way we are AIChE? If so, we should look at Design Institutes to bring out the new technology in, for example, non-traditional separations technology.

*Get as many good ideas for programming out as you can
Ways to help members solve problems in their jobs
A program for mentoring would provide a service to section members.*

Eco-Sustainability should be a national thrust with local sections, applying science to sustainable issues. It's working in Mid-Michigan as a combined ACS, AIChE,...

Continued education currently too expensive. Most companies not covering those expenses. Need to find innovative way to reduce seminar and continuing education costs.

Focus on non-traditional career paths.

Discuss cost of technical courses and easier access for small A/B firms.

Make the website more friendly and more "free" info to members. If member have to pay for services (twice) it is not good. E.g. Salary Survey Synopsis that appeared in CEP or CE news.

Fundamental technical leaders in priority areas of AIChE to travel to local sections to disseminate technology information at section meetings. We try to invite as many national leaders to our meetings as we can, but it is difficult to pay for them to visit us.

SURVEY RESULTS OF TECHNICAL ACTIVITIES OF AICHE LOCAL SECTIONS
Sponsored By
CHEMICAL ENGINEERING TECHNOLOGY OPERATING COUNCIL: total # surveyed 44

The real problem is that interest as an attendee or local section officer is at an all time low.

Our Annual Awards Banquet has attracted executives from industry and higher academe. Pittsburgh Section would benefit from other program suggestions that would increase participation by these and others who have built on Chemical Engineering roots into careers in medicine, management and law.

Offer a set of professional development courses that the local sections can host for their members. Many of our members are concerned about continuing education, but the local section doesn't have the resources to put this together and host the training.

Develop awareness among AIChE members of the benefits from attending section meetings.

Develop good networking data base and use e-mails for soliciting inputs.

Since I am chairperson, I also attended the officers conference (along with three previous officers conferences) and I am unaware with how you can help us in the Local Section improve our technical presentations. I would suggest communications with the Local Section as a good starting point.

It might be useful if AIChE had some means of helping to either provide or identify speakers on topics such as ISO or the voluntary protection program or other such industrial bodies (including the new chemical industry oversight body similar to the NTSB).

Rocky Mountain Section American Institute of Chemical Engineers Sep-04

Reservations

RSVPs	33
No Shows	4
No Reservations	2
Net Attendance	31

80
10

Income

	<u>Count</u>	<u>Price</u>	<u>Amount</u>
Students/Unemployed	10	\$ 10.00	\$ 100.00
Members	17	\$ 20.00	\$ 340.00
Guests	3	\$ 25.00	\$ 75.00
Complimentary	1	\$ -	\$ -
Section dues	0	\$ 9.00	\$ -
Totals	31		\$ 515.00

Expenses

Hotel/Restaurant Deposit	\$ 1,069.53
Additional Hotel/Rest Cost	\$ -
	\$ -
	\$ -
Totals	\$ 1,069.53

Cost Per Paying Attendee

35.651

Subsidy Per Paying Attendee

\$18.48

Cash Accounting

Beginning Cash on Hand	\$ 100.00
Checks Received	\$ 405.00
Cash Received	\$ 160.00
Moes "IOU's"	\$ 20.00
Cash Retained	\$ 100.00
Net Deposit plus IOU	\$ 585.00

Total Subsidy

\$554.53

-90

Rocky Mountain Section American Institute of Chemical Engineers Oct-04

Reservations

RSVPs	0	
No Shows	9	
No Reservations	43	
Net Attendance	34	

150

Income

	<u>Count</u>	<u>Price</u>	<u>Amount</u>
Students/Unemployed	21	\$ 5.00	\$ 105.00
Members	11	\$ 15.00	\$ 165.00
Guests	2	\$ 25.00	\$ 50.00
Complimentary	0	\$ -	\$ -
Section dues	0	\$ 9.00	\$ -
Totals	34		\$ 320.00

Expenses

Hotel/Restaurant Deposit	\$ 878.64	
	\$ -	
	\$ -	
	\$ -	
Totals	\$ 878.64	

Cost Per Paying Attendee

25.84

Subsidy Per Paying Attendee

\$16.43

Cash Accounting

Beginning Cash on Hand	\$ -	
Checks Received	\$ 115.00	
Cash Received	\$ 230.00	
IOU's	\$ -	
Cash Retained (By Welbourne)	\$ 20.00	
Net Deposit plus IOU	\$ 345.00	

Total Subsidy

\$558.64

150

Rocky Mountain Section American Institute of Chemical Engineers Nov-04

Reservations

RSVPs	33
No Shows	9
No Reservations	5
<hr/>	
Net Attendance	29

Income

	<u>Count</u>	<u>Price</u>	<u>Amount</u>
Students/Unemployed	3	\$ 10.00	\$ 30.00
Members	21	\$ 20.00	\$ 420.00
Guests	3	\$ 25.00	\$ 75.00
Complimentary	2	\$ -	\$ -
Section dues	0	\$ 10.00	\$ -
<hr/>			
Totals	29		\$ 525.00

Expenses

Hotel/Restaurant Deposit	\$ 985.00
Additional Hotel/Rest Cost	\$ -
	\$ -
	\$ -
<hr/>	
Totals	\$ 985.00

Cost Per Paying Attendee

36.48

Subsidy Per Paying Attendee

\$17.04

Cash Accounting

Beginning Cash on Hand	\$ 100.00
Checks Received	\$ 190.00
Cash Received	\$ 335.00
IOU's	\$ -
Cash Retained	\$ 100.00
<hr/>	
Net Deposit plus IOU	\$ 525.00

Total Subsidy

\$460.00

Rocky Mountain Section American Institute of Chemical Engineers Jan-05

Reservations

RSVPs	37
No Shows	6
No Reservations	6
Net Attendance	37

Income

	<u>Count</u>	<u>Price</u>	<u>Amount</u>
Students/Unemployed	7	\$ 10.00	\$ 70.00
Members	18	\$ 20.00	\$ 360.00
Guests	11	\$ 25.00	\$ 275.00
Complimentary	1	\$ -	\$ -
Section dues	0	\$ 10.00	\$ -
Totals	37		\$ 705.00

Expenses

Hotel/Restaurant Deposit	
Additional Hotel/Rest Cost	\$ 1,362.70
	\$ -
	\$ -
Totals	\$ 1,362.70

Cost Per Paying Attendee

37.85

Subsidy Per Paying Attendee

\$18.27

Cash Accounting

Beginning Cash on Hand	\$ 100.00
Checks Received	\$ 380.00
Cash Received	\$ 325.00
IOU's	
Cash Retained	\$ 100.00
Net Deposit plus IOU	\$ 705.00

Total Subsidy

\$657.70