Illinois Sections Cooperative State Fair Project
Annual Report for 2005

The Illinois ACS Sections' tent at the Illinois State Fair was even more successful in 2005 than in 2004! In 2005, our cooperative project promoted the positive aspects of chemistry to 11,843 visitors to our tent in Conservation World at the Illinois State Fair August 12-21. **Our visitor's attendance was up by over 50% from last year!**

Ten Illinois ACS Sections (**Chicago, Decatur-Springfield, East Central Illinois, Heartland, Illinois-Iowa, Joliet, Mark Twain, Rock River, Southern Illinois, and St. Louis**) involving 45 volunteers participated in the activities. **Appendix A** lists the members of the organizational planning committee and the number of tent volunteers from each Illinois section. **Appendix B** gives information on how we obtained volunteers from our various Illinois local sections and the types of volunteer activities performed within the tent. **Appendix C** shows examples of local section newsletter ads we used to inform members of the Illinois sections of our tent and to solicit volunteers.

We conducted the following activities within the tent:

- the "jelly bean test" at the entrance of the tent (this activity shows the relationship of taste and smell and was a good way to draw people to and into the tent);
- ten continuous demonstrations and five hands-on activities (**Appendix D**)
- a new "hands-on" activity this year, a chemistry quiz on a computer (winners received a prize);
- tables with literature for children and adults to take home on fun chemistry-related activities and on commonly-used products (**Appendix E**);
- display boards with a variety of posters on topics such as chemical safety in the home, food science, and biographies of women and minority chemists;
- ACS "Hooray for Chemistry" bags, JCE's pencils, engraved pencils with our website, and UV-sensitive cards we handed out;
- for teachers, specially-prepared bags containing a variety of resource materials (ChemMatters, periodic tables, and other ACS literature, lab safety manuals, and a CD containing over 140 experiments suitable for young students) that were handed out to 402 teachers

that visited the tent and signed-in. Information on the CD is in **Appendix F.**

- a daily raffle of an ACS mole

This project received a Local Section Innovative Grant award of $2,000 that gave us the seed money to secure Fair space, a tent, and some of the necessary tent furnishings. The Decatur-Springfield section submitted the 2005 grant application.

The activities within the tent impacted a large number of visitors ranging from young children to adults representing a wide range of education and occupations. This project allowed Illinois chemists the opportunity to interact with the public to improve its perception of chemistry and chemists by communicating the value and fun of chemistry.

Keys to the success of this project were: the grant; the collaborative work of our Illinois sections; financial support from local Illinois businesses and sections; organizations that donated rain gauges lab supplies, services, and volunteers' time and talents (**Appendix G**); and the positive and enthusiastic attitude we brought to this project that was reflected in the type of activities and literature that we made available, and our personal interactions with the public at the Fair.

Visitors also had the opportunity to complete a survey sheet to give us their opinion of the tent. 385 completed surveys were collected from the visitors. The majority of visitors gave high marks for the tent activities and indicated they would like for us to return in 2006. A summary of the survey and the survey results (with a comparison of 2004 and 2005 results) is given in **Appendix H**, which includes three attachments following the summary.

The website established for the cooperative ACS Illinois Sections 2004 State Fair project was updated and maintained for the 2005 activity. The website is **http://membership.acs.org/C/Chicago/statefair/index.html (Appendix I).** The website includes information regarding planning committee meetings, a listing of all of the Illinois ACS Sections with links to each section's home page, online sign-up for volunteers to work the tent, the chemistry quiz that was quite a hit, and photos taken at the tent.

Appendix J shows an informational email sent by the volunteer coordinator to the volunteers before the State Fair started and a thank-you note to them after the Fair ended.

The Illinois State Fair's Conservation World program guide is **Appendix K** and lists our tent at site 17.

Photos are in **Appendix L**.

ACS Core Strategies supported: #3

Appendix A

Organizational Planning Committee

Chicago Section
Cherlyn Bradley
Fran Kravitz
Milt Levenberg
Avrom Litin
Marsha Phillips

Decatur-Springfield
Harsh Bapat
Harry Elston

Illinois-Iowa Section
Jerod Corbin

Heartland Section
Vicki Finkenstadt
Steve Hughes
Craig McLauchlan

East Central Section
Mary LeFaivre

Mark Twain Section
Frank Salter
Jackie Stewart

Rock River Section

Chong Zheng

Tent Volunteers/Contributors

Chicago Section: 14
Decatur-Springfield Section: 6
East Central Section: 3
Heartland Section: 5
Illinois-Iowa Section: 3
Joliet Section: 2
Mark Twain Section: 5
Rock River Section: 2
Southern Illinois Section: 3
St. Louis Section: 2

Appendix B

Volunteers

Volunteers were the life-blood of this project. The members of the planning committee met five times prior to the opening of the State Fair. The volunteer staff set up tent operations the day prior to the opening of the Fair, manned the tent throughout the 10 days of the Fair, and closed down tent operations on the last day of the Fair.

The volunteers were solicited from each Illinois ACS local section via newsletter articles and word-of-mouth. Examples of newsletter ads are given in **Appendix C.**

The e-mail addresses of volunteers were collected and passed along to the volunteer coordinator subcommittee of the planning committee, who e-mailed the people directly to ask them to use the online volunteer sign-up form to schedule their hours for the tent. This online sign-up form is on the group web page **http://membership.acs.org/C/Chicago/statefair/index.html.** Each online entry was sent to the webmaster and the volunteer coordinator. The coordinator then sent an e-mail to the person confirming their signing up and confirming the dates and times.

On arrival at the tent, volunteers were given on-the-spot training and provided with an "Illinois Local Sections of

the American Chemical Society" T-shirt and nametag to wear while volunteering.
Volunteers worked one of three 4-hour shifts in the tent (9am-1pm, 12:30pm-4:30pm, 3:30pm-7pm). The shifts were arranged to have at least one half hour of overlap between shifts to allow sufficient time to watch the previous person in action and learn the spiel. The shift overlaps also prevented a late arrival from forcing a finishing worker from leaving. The overlaps worked out well. In an ideal case, we had more than six people per shift, which allowed breaks and rotation around the different duties. In some shifts, we had few volunteers and breaks were not possible.

In the tent, volunteers were given one of 6 jobs. One person was responsible for greeting people as they came into the tent and directing them to the hands-on experiments, demonstrations, the chemistry quiz, posters, and literature. This person also kept a tally of the number of visitors using a tally counter device. A second person did, pretty much, continuous chemistry demonstrations for their shift. Another person was responsible for helping kids do the hands-on experiments. The demonstrations performed and hands-on activities are given in Appendix D. A fourth person pointed out to the people various literature available on the tables. This person also offered visitors the opportunity to fill out an opinion survey and enter the mole raffle. A fifth person helped out in a variety of ways. This person often was in front of the tent conducting a "jelly bean test" and acting as a midway carnival showperson and having people "step right in" and witness the wonders and fun of chemistry. A sixth shift member assisted the greeter in having teachers sign in and receive their teacher's bag. This shift member was also available to allow breaks and rotation for the entire shift team.

Appendix C

Volunteer Solicitation Ads

The following appeared in the Peoria Local Section Newsletter:

Illinois Sections Cooperative State Fair Project

Several Local Sections of the ACS, including our own, have teamed together to again host a tent at the 2005 Illinois State Fair. The tent is a way to share our enthusiasm for chemistry with the public through demonstrations, literature, and audio-visual presentations. The Fair runs from August 12-21 in Springfield and we would love your help! A few ways you or your organization might consider helping:

1. Volunteer to work in the tent – or bring a vanload of folks down as a group outing! The current schedule calls for 4-hour shifts.
2. Volunteer to help with planning or preparation – lots of preliminary work must be done in setting up displays and coordinating leaflets, etc.
3. Donate material goods – display boards, demo materials, leaflets will all be needed. Exactly what? Perhaps a future newsletter will say.
4. Donate a place to stay – live near Springfield? Have an extra room? A tired volunteer working the evening shift would love the opportunity to crash in that room rather than making the long drive back to their part of Illinois or grabbing a hotel room (if they can find one!)
5. Donate some funds to make it all happen – we are a low-budget operation and will rely on donations to make this a reality. In exchange, all donors will be honored on a very visible display in the tent.

A variety of committees exist for these tasks and perhaps you would be willing to work with them. Please contact Craig McLauchlan (ccmclau@ilstu.edu) or Vicki Finkenstadt (finkenvl@ncaur.usda.gov) if you'd like to help! Also, the next planning meeting is April 9th in Normal if you would like to attend. Thank you in advance for helping to make this project a success!

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The following appeared in the Chicago Section's *The Chemical Bulletin*:

ILLINOIS STATE FAIR
Volunteers Needed

The Chicago Section, along with the other Illinois Sections of the ACS, is planning to again have a cooperative tent at the Illinois State Fair this summer. The Illinois State Fair is from August 12-21 in Springfield. Our joint-sections tent activities provide information to the public on chemistry by way of demos, hand-on activities, literature, and give-aways and give us a chance to touch the lives of many Illinois citizens and governmental leaders. Last year, over 7,700 people visited our tent.

Our Section is currently looking for volunteers to help during the fair and also people interested in planning this project. Our planning meeting was held in Normal in February. Future meetings will also be held most likely in Normal because of its central location to other Sections in Illinois. These meetings are generally held on Saturdays.

If you are interested in helping during the State Fair in August, helping on the planning committee for the tent, or if you think your company may be able to give a donation

(monetary or in supplies) -- just e-mail Cherlyn Bradley at **CBRAD1027@aol.com** or call the Section office at (847) 647-8405.

Also, "want ads" sent to the Illinois local sections for their newsletters and other forms of advertisements. Full-page versions of these two ads are attached as part of this report (**Appendices C1 and C2**).

Appendix D

2005 Illinois State Fair Demonstrations

The 2005 Illinois Sections'ACS tent at the Illinois State Fair had many demonstrations and hands-on activities for fair goers again this year. For 2005 there were a few changes.

A four-foot wide by two-foot tall plastic shield was placed in front of the chemical demonstrations involving liquid chemicals other that water. This allowed the audience to have a closer, yet safe look at the demonstrations.

The demonstrations were more closely tied to the hands on activities. For example, the paper chromatography was done as a demonstration so people could do it as a hands-on activity with more confidence of the procedure. The hands on activities were designed to be more quickly repeatable so people did not have to wait for set up. Also, several people could be doing the same activity at once.

New demonstrations this year included the iodine-starch-vitamin C demonstration and the air pressure in the inverted flask demonstration.

A new "hands-on" activity this year was a computerized chemistry quiz generated by the planning committee. The quiz was quite a success.

The demonstrations and hands-on activities ran continuously throughout the day.

Demonstrations

Fluorescent Slime

Four hundred mL of a 4% polyvinyl alcohol solution containing a fluorescein/bromophenol blue indicator is mixed with sixty mL of a 4% sodium borate solution to form a cross-linked polymer, a kind of slime. The top of a cut-off 2-L soda bottle is then supported in an iron ring/ring stand apparatus; the slime is placed inside the bottle and allowed to flow through its mouth into a (preferably small) beaker below. The flow is slow, but steady, and the slime soon coils in a large heap, spilling out of the beaker. The slime may then be placed back into the half 2-L bottle for the cycle to start again. In addition to a discussion of polymers, some interesting optic characteristics can be shown. When backlit, the fluorescein slime transmits orange. When front-lit, the fluorescein slime fluoresces bright green.

Liquid Density Demonstration

Using pipettes, dense liquid, such as the product Carbo-Sol (Trichloroethylene) from Sunnyside is placed into a test tube. Then a layer of mineral spirits is gently added so they would not mix. Then a drop of blue food coloring and a drop of yellow food coloring are added. They will float as droplets between the two layers. After discussions and predictions, water is gently added above the upper surface. The water will sink through the mineral spirits and stay between the first two layers and separate them as more water is added. Also the water will cause the blue and yellow food coloring droplets to combine to make a green layer. The result will be three layers of clear, then green, the clear. After more discussion and predicting the test tube is capped and shaken. The Carbo-Sol and mineral spirits will combine and the water will remain intact but would be either the top or bottom layer depending on the original ratios. The green colored water layer's position could then be reversed by added more of the mineral spirits or Carbo-Sol depending if the green water was on the top or bottom.

The Wicked Witch

Acetone is placed in a small container such as a small weigh boat or test tube cap. Small carvings of Styrofoam

are placed in the acetone. The Styrofoam will dissolve. Reference is made to the wicked witch in the Wizard of Oz. Several more carvings of the Styrofoam can be added showing that Styrofoam is mostly air. The Styrofoam is dissolving, not melting.

Cartesian Divers

Ketchup packets from various fast food restaurants are placed in a two-liter plastic soda bottle filled with water. As the plastic bottle was squeezed, the ketchup packets will sink and then rise again as the plastic bottle is released. Squeezing the container will increase the density of the ketchup container more than the water. The ketchup container would change from less dense to more dense as the plastic soda container is squeezed. The ketchup container will then sink. When the squeezing is stopped, the ketchup container will rise again because the small packets expand reducing it density to less that water's density.

Iodine, Starch and Vitamin C

Using a cotton swab, wipe some tincture of iodine on your arm. Gently spray starch over the same area and it will turn black. This is the classic iodine and starch reaction. Using a vitamin (ascorbic acid) tablet wipe designs into the black area and the color disappears. When done wipe the area with a paper towel and all will be well. Vitamin C is an antioxidant. Iodine will react with vitamin C before the starch so iodine starch reaction stops.

Chromatography

Place about one inch of water in a small clear plastic cup. Using water solvent pens of various colors, draw a design on a piece of filter paper or coffee filter. Bend the paper so that it will fit in to the cup so that the paper is in the water. As the water rises in the paper it will carry the water-soluble colors with it. Depending on the color, you may see the single color separate into two or more colors. Let this continue for about five minutes or until the desired effect is reached.

White Vinegar, Ammonia and Indicator

Using a pipette, add about ten drops of white vinegar to a container. Using a different pipette, add one drop of the indicator, phenolphthalein, to the same container. Using a third pipette, add ammonia one drop at a time. Gently shake the container after each drop of ammonia is added. After a few drops the mixture will turn magenta in color. Add a few drops of white vinegar and the color will go away.

Air Pressure in Inverted Flask

Using some sort of flask or glass soda bottle, fill the container completely full of water and place a small filter paper or paper towel over the top. Turn the bottle over. The water stays inside and the paper stays attached because air pressure pushes in all directions, not just down. The air pressure exerts a greater force than the water inside does trying to escape.

Golden-Rod Paper

Four sheets of golden-rod paper are taped together to form a banner (tape is on back of banner). On the front of the banner, a message (such as SCIENCE IS FUN) is spelled out using clear scotch tape. The banner is then fastened above the heads of the audience, generally to the back of the demonstrator. When Windex W/ Ammonia is sprayed on the banner, the background turns blood red, leaving the message spelled out in gold. This demonstration may be used to introduce acid and base chemistry, providing a dramatic example of an acid/base indicator sold in copy stores.

Dry Ice

A block a dry ice is placed in a ten-gallon aquarium. A lid is on the aquarium to keep the carbon dioxide from blowing out. The lid is raised and bubbles are blown in to the aquarium. The bubbles will float in the aquarium on the carbon dioxide. This will give the appearance of the bubbles floating in “air”. This will lead to an

explanation of the sublimation of the dry ice and the relative densities of the gases. Sometimes the bubbles will freeze on the dry ice and even when broken a partial sphere will remain visible.

Hands-On Activities

-- Invisible message

-- Chemistry quiz (is found at **http://membership.acs.org/C/Chicago/statefair/CD-2005/Quiz/index.html**)

-- Paper chromatography

-- Hook the loop (a Cartesian Diver activity)

-- Balance the bottle

Appendix E

Table Literature Handouts

"What's That Stuff?" articles from C&EN

ChemMatters

NCW's *Celebrating Chemistry*

JCE journals
Project SEED brochures

Safety brochures

Periodic tables

Avogadro's number - the mole posters

Appendix F

CD for Teachers

We updated the CD generated last year and handed out to teachers that visited the tent. This CD contains materials of interest to science and elementary school teachers. A series of articles for young children to help increase their science literacy serves as a splendid nucleus for the CD. The author of these 140 articles, Dr. Kathleen Carrado, gave us permission to reproduce this series on a CD for distribution to educators at the State Fair. The articles describe simple experiments, usually performed with household ingredients, illustrating some point of chemistry or general science for generally grade school aged children.

The experiments performed in the ACS tent, and some similar experiments, are also described on the CD with sufficient information to allow the reader to perform them at home.

We also included on the CD a list of Illinois local sections of the ACS with contact information, so that the teachers can contact the closest section to them for further interaction. We gave credit to our sponsors on the CD and on the CD label. We included a list of links of other resources available to educators in the sciences and to the State Fair web page itself.

Code was added to the CD so that it will auto-start when inserted in the CD reader of a PC. Each page of the CD is provided as a web page so that they can be viewed on any modern computer. The CD materials were compiled, designed, and burned by Milt Levenberg and Avrom Litin from the master files. All the CDs were handed out at the Fair in the teacher's bags.

Appendix G

Donors/Sponsors*

The Abbott Laboratories Fund
ACS Innovative Grant Program
Avrom Litin (banner frame)
BP

Chicago Section
Continental Cement
Cookson Electronics
East Central Section
Ethone
Flinn Scientific
Illinois State University, Department of Chemistry
Northern IL University, Department of Chemistry
Richard Cornell (computers)
Rock River Section
TMI Analytical Services LLC
Unilever Home & Personal Care
University of Illinois-Springfield, Department of Chemistry

*in cash, goods, or services

Appendix H

2005 ILLINOIS STATE FAIR SURVEY SUMMARY

A survey for the Illinois Sections of the American Chemical Society tent was conducted at the 2005 Illinois State Fair (August 12-21). The surveys were used to collect data on geographical location, sex, age, education and occupation of attendees going through the tent, along with attendee's satisfaction of the content of the tent.

A daily raffle was held using the surveys in order to entice people into taking the survey. This year's raffle was a stuffed toy mole. It received several comments from, "I don't want to win a mole when I have so many in my yard already" to "How cute; how many times can I enter".

Three hundred and eighty five surveys were recorded from this ten-day period. The total of surveys recorded for 2004 was 412. On average, the total responders for 2005 were similar. Several 2005 surveys were discarded because they contained only the name and address of the attendee. This appeared to happen as younger children filled it out in order to win a mole. This occurred less last year because the t-shirts used in the raffle did not interest the younger children.

The structure of the surveys remained constant between the surveys from 2004 in order to correlate trends of

individuals going through the tent. Changes in 2005 survey were: an addition of two new education categories of elementary (K-8) and M.S or M.A., occupation of the attendee, favorite activity, comments, and an additional line for city and zip code. Even after these refinements, additional changes will be made in future years to help clarify some of the questions. A copy of the 2005 survey can be found in attachment I at the end of this report. A numerical summary of the data can be found in attachment II for 2005 and attachment III contains a comparison between 2004 and 2005.

Most of the attendees came from Central Illinois, which is similar to last year's findings, but there was a significant increase as compared to 2004. There was an increase in individuals this year from Chicago and a decrease from those living in Northern Illinois and Southern Illinois. Also the number of out of state visitors dropped. The survey showed that more females than males took the survey, which is seen in both years. This year, the female percentage increased as compared with 2004. The age of people entering the tent remained consistent between the two years. The only change was a slight decrease in people responding between 60 or older and an increase in those 40-59. There was a change in the highest level of education portion of the survey in order to obtain better data in 2005. In 2005, the survey included an elementary (K-8) response and a M.A. or M.S. selection. The 2005 survey showed most individuals were very young and were in elementary school. This was probably influenced by the raffle. The next greater percentage was B.A. or B.S. followed closely by high school education. This was a change from 2004 in which we saw more graduates of high school than B.A. or B.S. Again this may be an anomaly of how individuals perceive their highest degree of education. The result of M.A. or M.S. when combined with the higher category matches the results of the 2004 survey of higher category with a slight increase.

This year we were interested in the occupations of those visiting our tent. The majority were students, again possibly influenced by the raffle. Based on observation, the tent in both years draws children but last year adults were more interested in taking the survey to win the t-shirt. The next highest population was teachers, which is expected since we give them a packet of material to take back to their schools. Most individuals entering the tent

and taking the survey had professional careers in business, medicine, science, computer, legal, and media fields. This was followed the blue-collar workforce, homemakers, farmers and a pocket of other careers explained in the key of attachment II. It is interesting to note that even though this is a state fair, most visiting our tent and taking the survey had employment other than in the farming industry. This information may be useful in designing display boards on where chemistry is used in these fields.

Both years showed similar results in the questions asked on the survey. There was a slight decrease in those individuals enjoying the demos in 2005 but not significant. This was also seen in the hands-on area and take-home material. In 2005, we included a question on what was your favorite activity. In some cases, this caused confusion because individuals assumed this meant in their lives and not just the tent. Next year this question will be refined. This information gives us a better insight of what people liked. The highest percentages were for the demos followed by the hands-on invisible message and, of course, the slime. It also appears a lot of people enjoyed the hands-on chromatography and Cartesian diver, but also the computer chemistry quiz. The computer chemistry quiz was a new item this year put together by Milt Levenberg with input on quiz questions from other members of the planning committee.

Based on the information collected, it would best to design the exhibits to interest both children and adults. The audience is both well educated and professional and it is best to take those into account for next year's content. Based on this survey, it would be recommended to keep the slime, invisible message, chromatography, computer quiz and the Cartesian divers. While the Jelly Bean test brought people in, maybe, based on the survey there might be a better activity to try next year outside of the tent. As with last year, attendees indicate we could still do a better job on the exhibit boards, maybe make them interactive like the computer chemistry quiz. All in all, the survey results suggest that we are meeting the needs of the public by presenting this tent as seen in the individual comments.

ATTACHMENT I (of Appendix H)

2005
ILLINOIS SECTIONS OF THE AMERICAN CHEMICAL SOCIETY

STATE FAIR SURVEY

ILLINOIS SECTIONS OF THE AMERICAN CHEMICAL SOCIETY QUESTIONAIRE

1. Where do you live? (Check only one box)

□ Chicago □ Northern IL □ Central IL □ Southern IL

2. Are you?

□ Male □ Female

3. Your age: (Check only one box)

□ Younger than 19 □ 19-39 □ 40-59 □ 60 or older

4. Highest Level of Education: (check only one box)

□ Elementary (K-8) □ High School □ Junior College □ B.A. or B.S.
□ M.A. or M.S. □ Higher

5. Occupation: _____

	Disagree		Neutral		Agree
6. I enjoyed the Chemistry Demos	1	2	3	4	5
7. I enjoyed the Hands on exhibit	1	2	3	4	5
8. The exhibit boards were interesting	1	2	3	4	5
9. The take home material will be useful	1	2	3	4	5
10. I would come back next year	1	2	3	4	5

11. What was your favorite activity:_____

12. Comments:_____

_____

PLEASE PRINT CLEARLY – For the drawing only

Name:_____

Address: _____

City: _____ Zip Code:_____

Phone: (with area code) _____

ATTACHMENT II (of Appendix H)

2005

ILLINOIS SECTIONS OF THE AMERICAN CHEMICAL SOCIETY
STATE FAIR SUVEY RESULTS

Total Number of Surveys: 385

Geographic Location of Attendees:

Total Number of Responding: 381

Chicago:	9.2%
Northern Illinois:	7.2%
Central Illinois:	72.4%
Southern Illinois:	8.1%
Out of State:	3.1%

Sex of Attendees:

Total Number Responding: 385

Male:	29.1%
Female:	70.9%

Age of Attendees:

Total Number of Responding: 385

Younger Than 19:	32.7%
19-39:	24.7%
40-59:	36.9%
60 or Older:	5.7%

Highest Level of Education:

Total Number of Responding: 376

Elementary (K-8):	27.7%
High School:	17.0%
Junior College:	14.6%
B.A. or B.S.:	22.6%
M.A. or M.S.:	12.8%
Higher:	5.3%

Occupation of Attendee:

Total Number Responding: 362

Student:	37.6%
Teacher:	21.5%
Business:	6.9%
Medical Professional:	6.6%
Blue Collar:	6.1%
Homemaker:	4.1%
Science Professional:	3.9%
Computer Science:	2.8%
Retired:	1.9%

Media Professional:	1.7%
Farmer:	1.1%
Legal Professional:	0.3%
Other:	5.5%

Key: Student: K-12 and college
Teacher: Pre-K – 12 and college, activity director
Business: Accounting, Secretary, Bookkeeper, Sales, Marketing
Blue Collar: Factory, Restaurant personnel, Hair Stylist, Repairperson, etc.
Science Professional: Any science position
Computer Science: Programmer, Design, Information Systems
Media Professional: Publisher, Writer, Photographer, Reporter
Other: Military, Ranger, Park Interpreter, Self-employed, Social Worker, Highway Commissioner

Questions on Survey:

Chemistry Demos:	4.56
Hands-on Exhibits:	4.54
Exhibit Boards:	4.40
Take Home Materials:	4.43
Back Next Year:	4.65

Key:

Strongly Disagree = 1
Disagree = 2
Neutral = 3
Agree = 4
Strongly Agree = 5

Favorite Activity in Tent:

Total Number Responding: 258

Demos:	27.9%
Invisible message:	12.0%
Slime:	10.9%
Chromatography:	7.0%
Computer Quiz:	6.6%
Cartesian Divers:	5.4%
All:	5.4%
Acid Base:	3.9%
Chemistry:	3.1%
Hands on:	2.7%
Jelly Beans:	2.3%
Superabsorbent:	1.9%
Density Activity:	1.6%
Bottle Balance:	1.2%
Other:	8.1%

Key: Other: moles, handouts, none, polymers, water activities, etc.

Summary of Comments from Attendees:

This is a good idea
Very nice tent
Neat
Love this
Very interesting
It was fun
Very nice
I liked it
Great activities
Very friendly
Great Idea
I really like it & can't wait till next year
Very nice staff
It was all interesting & worth my time
The slime is cool
All great
Nice Goo
Very friendly & hands on staff. My kids loved it
This is so cool & I'd come back next year
I liked how you let us go in the tent today
Have more exhibits
I love science & I haven't done chemistry but I hope I am good
Fun
Nice
Very kid friendly
Yay for science
Learned so much Thank you
Watching the kids have a blast learning
It was very fun
Everyone was very friendly
Very educational
Frank was awesome
Mole is cute, Nice table of crystals
Great
Fun
Great Magic Show
Nice worker
Fun
Fun for kids & adults
Thanks for the periodic table
Great
I really liked all the experiments
Good
It was a very interesting exhibit
Nice and interesting
It was very cool
Ok
The people were great
Thanks
It was fun
Pretty fun
Interesting
Interesting hands on activities for kids
Always looking for simple science experiments to do in my Pre-K class

Been here since 11 now 6:30 I think I would get more if started here first People very friendly
Great hands on to spark interest in kids
Great Idea
It is fun and the people are nice
I never knew chemistry was so fun
Jerod and Milt were great. The kids loved it
Kids really loved it
Ok
Liked
Good work
Everyone is so positive
It was really interesting
Watching the great & enthusiastic demonstrators interacting w the audience
This is great for the kids and adults
Heckling the demonstrators
Cool
The kids on the computer
All interesting
The crafts are great
I had fun here
Informative for kids Thanks
Interesting
Ok
It was weird but fun
Great Job
Very good
Someone said kids were mesmerized I was too
Great resources
Great fun
Great for kids to get them interested
Very fun
Thanks
Do it next year
I liked it
Enjoyable & educational
Watching 5 year old son participating in the chemistry experiments
The people helping were very informative
Great for kids
Wonderful
Keep up the good work
Very nice exhibit
Really Neat
Excellent
Wonderful for all ages
Great
Great program. Kids loved it

ATTACHMENT III (of Appendix H)

COMPARISON BETWEEN 2004 AND 2005
ILLINOIS SECTIONS OF THE AMERICAN CHEMICAL SOCIETY
STATE FAIR SURVEY RESULTS

	2004	2005
Total Number of Surveys:	412	385
Geographic Location of Attendees:		
Total Number of Responding:	410	381
Chicago:	7.2%	9.2%
Northern Illinois:	9.5%	7.2%
Central Illinois:	65.8%	72.4%
Southern Illinois:	11.7%	8.1%
Out of State:	5.8%	3.1%
Sex of Attendees:		
Total Number Responding:	411	385
Male:	36.7%	29.1%
Female:	63.3%	70.9%
Age of Attendees:		
Total Number of Responding:	410	385
Younger Than 19:	32.4%	32.7%
19-39:	24.4%	24.7%
40-59:	33.4%	36.9%
60 or Older:	9.8%	5.7%
Highest Level of Education:		
Total Number of Responding:	409	376
Elementary (K-8):	17.4%*	27.7%
High School:	32.8%	17.0%
Junior College:	14.9%	14.6%
B.A. or B.S.:	19.1%	22.6%
M.A. or M.S.:	------	12.8%
Higher:	15.8%	5.3%

* 2004 Category read "Less Than High School"

	2004	2005
Questions on Survey:		
Chemistry Demos:	4.69	4.56
Hands-on Exhibits:	4.64	4.54
Exhibit Boards:	4.45	4.40
Take Home Materials:	4.51	4.43
Back Next Year:	4.69	4.65

Key:

Strongly Disagree = 1
Disagree = 2
Neutral = 3

Agree = 4
Strongly Agree = 5

Appendix I

Website for the Illinois State Fair Project

The separate web site set up in 2004 (the first year of the project) was again utilized in 2005. The website is set up in a subdirectory of the Chicago Section website, which is supported by the ACS National membership server. It is located at:

http://membership.acs.org/C/Chicago/statefair/index.html

The website listed contact information and assignments for each committee member. It also listed the date and location of the next committee meeting along with a map to the meeting. Minutes from several of the meetings were posted on this page as they were generated. This page also provided updates of key events, such as ACS Grant status, our request for booth space from the State Fair Committee, etc.

A second section was created on the website listing all of the ACS Local Sections in Illinois, along with contact information for representatives of those sections serving on the planning committee. Links were provided to each section's home page.

As sponsors signed up to help with the State Fair project, their names were added to a Sponsors Page. As the Fair approached, an "I would like to help" page was added to help communicate to our volunteers on the nature of the help that was needed, from soliciting potential sponsors to manning the booth during the Fair.

An "Information for Volunteers" page was added, to guide volunteers through an on-line sign up process, whereby they could submit their contact information, tell us the booth activities they could cover, and volunteer to cover one or more timeslots at the Fair. They could also log back in at a later date to change the data in their submission. Behind the scenes, some PHP scripts were written to manage these submissions and to enter each volunteer's data in a

MySQL database for retrieval and processing by our committee. Unfortunately, the ACS membership server doesn't support PHP and MySQL, so that part of the website was directed to a separate server on an account owned by the webmaster (Milt Levenberg).

Once the Fair got under way, daily updates of attendance and topics of interest were added to the website. Some photos taken at our booth were posted mid-week, and more after the Fair was over.

CDs were created, burned, and distributed to all teachers that visited our booth at the fair. A copy of the information on this CD was placed on the website for access by any interested parties. More information about the CD is available in the CD write-up in **Appendix F** of this report.

Appendix J

An example of an informational email sent to volunteers by the volunteer coordinator before the State Fair started:

Greetings Volunteers!

My name is Craig McLauchlan and I have been in touch with you in the past about your help at the upcoming Illinois State Fair American Chemical Society Booth. This e-mail serves as an update of what is going on with the Fair, as it is fast approaching!! The committee has been working hard to make your lives as volunteers as simple as possible and I hope that by being successful at that, we will make our tent a success!

Quick version of this e-mail...

1) Thanks for signing up!
2) Our tent is in Conservation World
3) We are working on getting the parking permit and admission tickets. When received by us, they will be sent to address used to register on web site. This will be in a few days, likely. Please e-mail me when received.
4) For directions to Fairgrounds, where to park, etc, please check State Fair website (http://www.agr.state.il.us/isf/index.php or http://www.agr.state.il.us/isf/maps/)

5) Your assistance will be in one of a few areas -- specifics below
6) Please check OUR website for any last minute info (acsillinoisstatefair.org)
7) Questions maybe answered below in detailed e-mail or drop an e-mail to me. I'll try to help!

Cheers,
Craig
(Heartland section)

After the Fair ended, a thank-you e-mail was sent to the volunteers:

Greetings! I just wanted to take a quick moment to thank all of you for helping out at the ACS tent at the Illinois State Fair. The tent would not have been possible without all of the volunteer support. I had the chance to meet many of you, and it was a lot of fun, and I hope to get to meet in the future those with whom I only interacted with electronically. I hope you had as much fun as I did! Just as my preliminary guess, we saw >11,000 people come through the tent during the Fair. Even better than for our first year! So, thank you very much.

If you have any constructive feedback, comments, suggestions, etc., please feel free to share.

Thank you again and I look forward to seeing you in the future!

Cheers,
Craig C. McLauchlan

Appendix K

The Illinois State Fair's Conservation World program guide with our tent listed (#17).

Appendix L

Photos

Milt's write-up and sent in after I put the above together. The following will be included in the final draft of the above for National--

Appendix ??

Interactive Science Quiz for the Illinois State Fair Project

The first year the Illinois Sections of the ACS had a booth at the Illinois State Fair, we brought in a computer and 27-inch monitor and had a continuous display of photos taken at National Chemistry Week and other Local Section activities. Though the photos were interesting, we observed that our State Fair booth visitors gave them hardly a glance.

In an effort to make this part of the ACS exhibit more interesting to our visitors, we designed and implemented an interactive science quiz. The design criteria were:

1. The quiz had to operate totally from the computer in our tent, as we had no Internet access.
2. The questions had to relate easily to the world around us.
3. The questions and answers had to be understandable and appreciated by people from all walks of life, many with no science or chemistry background.
4. An element of humor should be included in the questions and answers.
5. The system had to be simple to maintain, modify, and extend.
6. The system had to be easily transportable to other computers without special software.

The obvious solution to creating an easily transportable system was to write it in HTML, which could be read on any computer with a web browser. JavaScript code was included in the web pages to incorporate an element of interactivity. Cookies were written to the local computer to track the progress of the visitor through the quiz. A running total of correct and incorrect answers was maintained until the quiz was completed and/or the visitor started over, at which point the tally was reset to zero. Sounds were added with code to play a random selection of sounds appropriate to the success or failure of the visitor's answer to the question.

Each question has its own web page, and there are unique pages for the start of the quiz, the finish of the quiz, and for a right answer and for a wrong answer. A template was written for quiz questions, and with cookies keeping track of the progress of the visitor through the quiz, new questions can be easily created and added to the sequence. Ten questions were created for the 2005 quiz, and it is intended that in 2006 more questions will be added and the presentation of question

pages will be randomized so that each visitor will experience ten questions in random order out of a larger pool of questions.

It was observed that this activity was relatively popular, and there was often one or more people sitting at the computer monitor working their way through the quiz.

The quiz can be found at:
http://membership.acs.org/C/Chicago/statefair/CD-2005/Quiz/index.html

The questions and possible answers for 2005 are:

1. What are the two most abundant elements in the earth's atmosphere?
    a. Hydrogen and Helium
    b. Water and Oxygen
    c. Nitrogen and Oxygen
    d. Rain and Snow
    e. Smog and Soot
    f. Mustard & Catsup
2. Which of these items is not made of chemicals?
    a. Steel
    b. Milk
    c. Water
    d. Grass
    e. A Glass
    f. They ALL are
3. How many hydrogen atoms are there in one water molecule?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 1,003
4. What is the most abundant element in the known universe?
    a. Hydrogen
    b. Helium
    c. Water
    d. Time
    e. Pollution
    f. Iron
5. What is an ion?
    a. You keep an ion someone you don't trust
    b. A small image on a computer screen
    c. Steel is made from ion
    d. A charged atomic particle
    e. A rock group from he '60s
    f. A large molecule composed of identical smaller parts
6. Water is…?
    a. A chemical
    b. Made of hydrogen and oxygen
    c. Can be a gas
    d. Can be a solid
    e. Can be a liquid
    f. All of the above
7. An acid…
    a. Will always hurt you if you eat it

b. Will not dissolve in water
c. Has a high pH
d. Is never found in your stomach
e. Has lots of hydrogen ions
f. Is always dangerous

8. If you heat a closed bottle of air…
   a. The molecules of air will slow down
   b. The molecules of air will speed up
   c. The pressure in the bottle will droop
   d. The gas will turn blue
   e. The volume of the gas will increase
   f. All of the above
9. Sugar is a chemical compound of what three elements?
   a. Hydrogen, helium and nitrogen
   b. Water, hydrogen and oxygen
   c. Nutrasweet, Sweet-and-low and saccharine
   d. Carbon, hydrogen and oxygen
   e. Nitrogen, oxygen and carbon
   f. Cookies, doughnuts and jellybeans
10. What is the most abundant element, by weight, in the human body?
   a. Hydrogen
   b. Oxygen
   c. Calcium
   d. Iron
   e. Greed
   f. Blood