AIChExtra

Ready and Raring to Go

Students gear up for the 2004 Chem-E-Car Competition

Cheering crowds. Nervous pit crews. High tech cars. Sound like NASCAR? Think again. It's the AIChE 6th Annual National Chem-E-Car Competition — one of chemical engineering's toughest races. This high-tech derby will take place at the AIChE Annual Meeting (Nov. 7–11) and the Annual Student Conference (Nov. 6–8) in Austin, TX.

Over 30 student teams from across the country will race small chemically powered cars run solely on a chemical reaction — including fuel cells, homemade batteries, peroxide decomposition reactions, and even baking soda and vinegar.

This nail-biting 2-hour event draws capacity crowds of enthusiastic student and professional member fans, with winners bringing home prizes of $2,000, $1,000 and $500, trophies, and bragging rights.

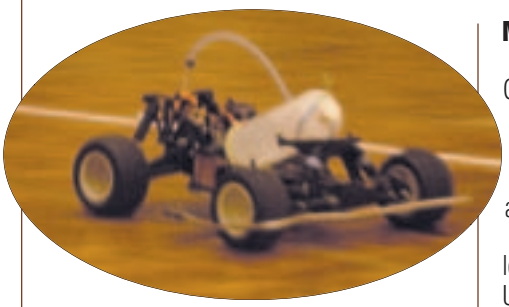
Stiff competition

Each shoebox-sized car is run on a chemical reaction. If that wasn't a big enough challenge, the car must carry a specified cargo a given distance and stop. The car closest to the set distance after two heats wins. The catch — student teams learn the cargo and distance a mere 60 minutes before the competition and then work quickly to adjust the reaction accordingly. Last year, the distance was set at 62 ft, with a cargo of 330 mL of water. The University of Dayton took first place with a winning distance of 61 ft, 8 in.

All teams first face off at regional student conferences, and 31 finalist teams are invited to compete at the national competition. Teams present posters at the Chem-E-Car poster competition prior to the race, showing their process and depth of understanding. Judges ask students to explain what the car does, safety, testing, and how the reaction works.

Student teams work independently to brainstorm, design, build and test with little input on ideas from advisors. "From a faculty standpoint, we can see they're learning," said David Dixon, Chem-E-Car Committee chair and professor of chemical engineering, South Dakota School of Mines and Technology. "Reactions are very important for chemical engineers to understand and also know how to control them."

"Students display how well they work as a team, how well they've learned chemical engineering principles, and how well they can safely and economically apply those principles to build a chemical process," added Dixon.



Indeed, students from Michigan Technological University's Chem-E-Car team started their own company, the Alternative Fuels Group Enterprise, two years ago, which has been contracted by corporations and the U.S. Army Tank Automotive and Armaments Command to design and build prototype cars powered by fuel cells. "We're getting hands on experience working with fuel cells" said Kevin Lamkin, a student at Michigan Tech. "It's very good teamwork building. The competitions also give us a chance to compete with students from all over the place."

The Chem-E-Car competition was started in the late 1990s with the support of General Mills. Knowing they wanted to start a new competition, but weren't sure what to do or what to call it, the Student Chapters Committee held a "Competition to Name the Competition." For the 1998 Annual Meeting in Miami, students were asked to create a small-scale chemical reaction. Washington State University entered a small chemically powered car that ran on a homemade battery.

The next year, at the 1999 Annual Meeting in Dallas, the committee ran six cars in a trial competition. "There was a rocket powered car, a fuel-cell car, and a sodium bicarbonate and acetic acid car, which won," recalled Dixon. It was thrilling and interesting. You could see the excitement from the students and the audience. We knew we had found the right idea."

"Over the years, the designs have become much more sophisticated," said Dixon. "In the first years, the students used pop bottles where the reaction took place. The designs have become more intricate and the propulsion systems much more sophisticated. We also see students forming teams across disciplines, with electrical, mechanical and computer science engineers."

More than just winning the race

Special awards are also given for Most Creative Drive System, Most Consistent Performance, and Golden Tire Award, a peer-elected award for the most creative vehicle, and Spirit of the Competition award for school spirit.

"There is more interaction with upper and lower classmen, said Bob Wilkens, advisor at University of Dayton, winner of the 2003 Chem-E-Car Competition. "The biggest benefit I see is that we are more active at the conferences. We bring at least 20 students to the conferences, but not everyone can present a paper or poster. We can have 12 or more students be a part of the car team."

"It's a team event that crosses multiple years within the school, and gives students an opportunity to get together and design and build something creative and compete," said Dixon. "It's a lot of fun."

All Annual attendees are invited to the 2004 Chem-E-Car Poster Competition (Sunday, Nov. 7, 8:30–10:30 am), and the Chem-E-Car Competition (Sunday, Nov. 7, 1:00–3:00 pm). For more information on the Chem-E-Car competition, see: http://students.aiche.org/events/chemecar.asp.

Past Winners

2003
First: University of Dayton
Second: Michigan Technological University
Third: Mississipi State University

2002
First: University of Kentucky, Paducah
Second: Colorado State University
Third: Mississippi State University

2001
First: Colorado State University
Second: New Mexico Institute of Technology
Third: University of Akron

2000
First: University of Akron
Second: Colorado State University
Third: University at Buffalo

1999
First: University of Michigan
Second: University of Nevada-Reno
Third: University of Iowa

Chem-E-Car Competition Sponsor General Mills

Pioneering New Frontiers: 2004 AIChE Annual Meeting

Are you committed to staying on the cutting-edge and excelling in your field? Join over 4,000 chemical engineering professionals at the 2004 Annual Meeting, November 7–12 in Austin, TX, and gain the technological knowledge and professional networks you need to advance your career and your organization.

The premiere conference for chemical engineering professionals, the 2004 Annual Meeting will focus on the diverse growth areas of biological engineering and nanotechnology — with links to many related fields of technology.

The 2004 conference will offer 15 concentrated conferences-within-a-conference and over 540 technical sessions covering new research in bioengineering, nanotechnology and other hot growth areas, as well as core chemical engineering areas. You'll also find practical solutions to real-life job challenges, and countless opportunities to meet and build professional ties with colleagues in industry, academia and government agencies.

So if tomorrow's ideas are critical to your success, don't miss the 2004 AIChE Annual Meeting. The following are a few highlights you'll discover at the upcoming conference.

4th World Congress on Microwave and Radio Frequency Applications

For the first time, AIChE will host this special meeting that focuses on industrial and institutional applications of microwave and radio frequency (RF) technologies. Attendees at the AIChE Annual Meeting who visit these sessions will deepen their understanding of systems architecture and design, and zero in on the economics, productivity and benefits of microwave and radio frequency processing. For more details, see http://www.microwave-rf.org/.

Short Courses

Explore a new area or stay current on recent developments in your field with AIChE short courses. Held on Sunday, November 7, prior to the AIChE Annual Meeting, short courses go in-depth in areas like distillation, management, biorefining, microwave and RF applications, electrophoresis and sensors. For more details, see http://www.aiche.org/conferences/annual/shorts/index.htm.

2004 Institute Lecture

The keynote address will be given by 2004 Institute Lecturer Adam Heller, professor of chemical engineering, University of Texas at Austin and co-founder of TheraSense, Inc., developer of the FreeStyle continuous blood glucose-monitoring system. A recognized leader in the application of technology to real world problems, Heller will discuss diabetes treatment technology in the 2004 Institute Lecture entitled, "Lessening the Pain and the Worry of Diabetic People." Heller will explore how to work at the interface between disciplines and apply fundamentals to achieve profound technological changes that significantly impact society and the quality of life.

Fall ShowCase/Expo

See the technologies and resources shaping industry today at the AIChE/Microwave World Congress Fall ShowCase/Expo, November 7–10. The ShowCase will feature resources from leading chemical, metal and material manufacturers, research facilities, instrumentation/application companies, publishers, and software companies, along with microwave and RF products and services For more information, visit http://www.aiche.org/showcase.

Annual Proceedings CD-ROM

The 2004 Annual Meeting Proceedings CD-ROM is available for purchase now and on site. This popular CD-ROM contains all Topical Conference and unaligned session papers received in an easy-to-use, keyworded and searchable format. Order for $80 through the online registration process (http://www.aiche.org/annual) or by calling AIChE's Customer Service Department at 1-800-242-4363 (212-591-8100).

Free Itinerary Planner

New in 2004! Create your own schedule with AIChE's free online itinerary planner. See http://www.aiche.org/annual.

Vibrant Austin

Blessed with a temperate year-round climate and 300 days of sunshine a year, Austin offers visitors just about everything in the way of entertainment and excitement. There is shopping, famous sights, dining and live music at more than 100 venues on any given evening. And plenty of culture — Austin is one of only a few U.S. cities with professional ballet, symphony, opera and theater companies. No wonder the world loves the "playground of Texas."

NOW IS THE TIME TO REGISTER!

For conference details or to register visit: http://www.aiche.org/annual or call 1-800-242-4363 or 212-591-8100 (outside US). AIChE members save $250 on conference registration

Call for Papers: 2005 Spring National Meeting

The 2005 AIChE Spring Meeting and First Global Congress on Process Safety, April 10-14, Atlanta, GA will span the latest chemical engineering R&D and, for the first time, the 20th Annual CCPS Conference, 39th Annual Loss Prevention Symposium, and the Process Plant Safety Symposium. For more details and call for papers on-line submission process, visit www.aiche.org/spring/.

50-Year Anniversaries: Central Savannah River Section and Dallas Section

Central Savannah River Local Section

The development of the Savannah River Plant to meet the nation's defense needs prompted the founding of the Savannah River Section by chemical engineers who served the plant as engineers, scientists and managers.

Officially accredited in 1954, the Section includes eleven counties in South Carolina and four in Georgia. The principal cities in the territory are Augusta, Georgia, and Aiken, Columbia and Orangeburg, South Carolina.

In 1989, Westinghouse became the primary contractor at the Savannah River Plant, succeeding DuPont. This change was preceded by massive AIChE member and officer departure from the local area. In April 1992, the section was rejuvenated and grew financially.

The name of the section was changed in 1994 from the Savannah River Section to the Central Savannah River Section to represent its membership over the central Savannah River area in both South Carolina and Georgia.

In recognition of its excellent newsletter, AIChE awarded the Central Savannah River Section the Marx Isaacs Award for Outstanding Newsletters for a Small Local Section Newsletters in 2000.

Dallas Local Section

Created in 1954, the Dallas Section spans the city of Dallas and surrounding counties. Peak membership for the local chapter approached 650 in the early 1980s. With the consolidation of the oil-and-gas industries, the pharmaceutical, food manufacturing and electronics industries began to contribute a larger share of the employment opportunities in the area. With current membership now about 400, the chemical engineering industries in North Texas are typically service-oriented companies with a focus on environmental and consulting to the process industries.

The section was instrumental in the passing of a resolution of the Harris Bill in Texas (1955), which, for the first time, gave the government jurisdiction over natural gas production and sales.

During the 1980s, the Dallas Section initiated the formation of the Association of Texas Sections of the AIChE. Among the group's objectives was to provide Texas universities offering chemical engineering degrees with curriculum assistance and other support.

The section has an active government relations program. While the section offers meetings with technical topics, the Dallas Section is mainly a networking/social section, with between 7-10 meetings per year and an average attendance of 10-20 people. The section considers career guidance their most important mission. They have recently established a new committee to assist all chemical engineers, not just local members, with information on career and employment opportunities.

A two-time recipient of the Project-Connect Grant, the Dallas Section was awarded the Local Section Program Planning Grants twice, in 1997 and 1999.

Philadelphia University Awarded $1.7 Million to Establish Lab for Engineered Human Protection

In today's volatile world, it is critical that military personnel and civilian first responders are outfitted with the most technologically advanced equipment, including state-of-the-art protective apparel.

Realizing this need, Congress has allocated $2.1 million in the Defense Appropriations bill, $1.7 million of which will be directed to establish a Laboratory for Engineered Human Protection (LEHP) at Philadelphia Univ. (Philadelphia, PA; www.phila.edu). LEHP will be a comprehensive research initiative centered on the development of more sophisticated and effective protective-garment systems.

"While the primary focus of LEHP will be to address the nation's critical need to more effectively protect the military, there is no is no doubt that the work conducted there will have applications in the chemical industry, especially for first responders to hazardous situations," says David Brookstein, dean of Philadelphia Univ.'s School of Textiles and Materials Technology and principal investigator for LEHP.

In a larger sense, LEHP will also enhance the high-technology manufacturing base for Pennsylvania. "While most of the commodity-based textile and apparel industry that helped to build Pennsylvania has gone offshore, this new initiative will replace some of that industry with exciting new economic activity," Brookstein notes.

Philadelphia Univ. researchers and LEHP will partner with the Natick Soldier Center in Natick, MA, which has developed and published an extensive knowledge base of comfort and protection research, to revolutionize fabric and apparel systems for the purpose of protecting military and, ultimately, civilian first responders. The plan is to make LEHP a national hub for the development, coordination and integration of these complex systems, and a catalyst for the transfer of technology to apparel-manufacturing companies, says Brookstein.

LEHP will also identify and coordinate collaborative efforts between manufacturing companies to develop more comfortable and appropriate protective gear than what is currently available. In this vein, LEHP will study psychophysical factors and parameters, perceived user-confidence data and factors, and conduct research in textile and garment engineering and material science. This work will involve sample production of apparel systems, evaluate cost structures, and continual analysis of the trade-off among comfort, protection and lifecycle cost.

Activities Update from the Board of Directors

Annual Business Meeting

Are you attending the Annual Meeting? Join AIChE leaders and members for AIChE's Annual Business Meeting. AIChE President Bill Byers will preside and provide a review of 2004. President-Elect Jeff Siirola will share his plans for the year ahead. The results of the election will be announced by Secretary Otis Shelton and Treasurer David Rosenthal will present the Treasurer's Report. All members are encouraged to attend. Held Monday, November 8, 10:45 AM – 11:45 AM, Austin Convention Center, Ballroom C.

Fellows Open Forum — New Event

Fellows are invited to attend a new open forum held at the Annual Meeting (Sunday, November 7, 3:30–4:30 pm, Ballroom D – ACC). The forum will include brief updates by John Sofranko, executive director, Bill Byers, president, Jeff Siirola, president-elect, and Stan Proctor, chair of AIChE's Centennial Committee. Following these presentations, Fellows will be invited to offer their thoughts and ideas during an open discussion. This informal discussion is designed to offer Institute Leadership the benefit of the combined experience of the Fellows. Open to Fellows only.

WANTED: 2006 Board Candidates

The nominating committee is seeking candidates for the 2006 election slate. If you would like to recommend names for the committee's consideration, send all relevant information to President Bill Byers, chair of the nominating committee, via e-mail at president@aiche.org. Candidates will be considered by the Nominating Committee in November.

Institute and Board Awards

Now is the time to nominate members for AIChE's prestigious Board of Directors awards, the F.J. & Dorothy Van Antwerpen Award for Service to the Institute, and the Founders Award for Outstanding Contributions to the Field of Chemical Engineering.

The Van Antwerpen Award is presented to a member of AIChE who has made outstanding contributions to the chemical engineering profession in professional and technical areas via service to the Institute. Recipients of this award have contributed innovative approaches to meet both perceived and unperceived membership needs.

The Founders Award for Outstanding Contributions to the Field of Chemical Engineering is presented to a member of AIChE who has had an important impact on chemical engineering and whose achievements, either specific or general, have advanced this profession in any of its aspects. The recipient should have a long and distinguished record of service to the profession, including both technical and professional activities.

Deadline for nominations is Feb.15. To learn more, visit http://www.aiche.org/awards.

OBITUARIES

Everett H. Almond, 94, *Wilmington, DE*
Bernard S. Baker, 68, *Hawleyville, CT*
Jerald A. Cavataio, 89, *St Louis, MO*
Donald W. Collier*, 84, *Chicago, IL*
Robert T. Colston, 72, *Richardson, TX*
Frank J. Connelly, 82, *Valdese, NC*
Donald A. Dahlstrom*, 84, *Salt Lake City, UT*
John R. Durland, 90, *Westlake Village, CA*
Frederic A. Eidsness, 91, *Willow Creek, CA*
Elmer P. Foster*, 85, *Lancaster, PA*
Hollis T. Galley, 91, *Bokeelia, FL*
Stanley J. Green, 84, *Palo Alto, CA*
Lawrence Gussman, 89, *Syosset, NY*
Walter F. Hanzl, 79, *Pompton Plains, NJ*
Glenn E. Handwerk, 80, *Lakewood, CO*
Csaba Horvath*, 74, *New Haven, CT*
Charles K. Hersh, 80, *Sarasota, FL*
Frederick M. Jacobsen, 79, *Rochester, NY*
Robert H. Johns, 84, *Savannah, GA*
George E. Jones, 78, *Monroeville, PA*
Ray Judson, 78, *Pasadena, CA*
Robert M. Kelly, 78, *Moreland Hills, OH*
Thomas J. Kelly, 73, *Northbrook, IL*
Emily F. Kerbleski, 26, *Midland, MI*
David P. Kessler, 66, *W Lafayette, IN*
Bernard P. Leber, 80, *Cherry Hill, NJ*
Hubert H. Marty, 85, *Amherst, OH*
Donald C. Miller, 90, *Tucson, AZ*
Edward W. Nicholson, 91, *Winnetka, IL*
Walter L. Prehn, 84, *Austin, TX*
Joseph Pominski, 90, *New Orleans, LA*
Charles L. Raymond, 93, *Stuart, FL*
Edwin E. Rice, 86, *Memphis, TN*
John V. Roach, 81, *Riverwoods, IL*
Robert W. Scher, 73, *Chagrin Falls, OH*
Frank R. Shuman, 83, *Hilton Head Isl, SC*
Lewis B. Smith, 86, *Bradenton, FL*
Richard D. Teale, 82, *Dawsonville, GA*
Robert D. Toomey, 79, *Salt Lake City, UT*
James F. Utley, 79, *Stamford, CT*
Dennis E. Wade, 81, *Cincinnati, OH*
James H. Wright, 79, *San Angelo, TX*

*Fellow member

Ephraim Scheier Passes Away

AIChE regrets to report the death of member Ephraim Scheier. Ephraim received his BS in chemical engineering from Rutgers University and his MS in Fire Protection Engineering from Worcester Polytechnic Institute. Ephraim was very active in the safety program of the Southeast Texas Section, the Safety and Health Division, and the Center for Chemical Process Safety (CCPS). Despite is long battle with cancer, Ephraim participated actively in the planning and execution of CCPS conferences, Loss Prevention Symposia, and Process Plant Safety symposia, and chaired the CCPS Facility Siting and Layout project. Ephraim is survived by his wife Lorna and their two children.

Are you in the news?

Tell *Extra* about your recent award or latest research. Or share information on innovative new programs you think members would like to hear about. Email us at news@aiche.org.