

Welcome to the 2008 AIChE Annual Meeting & Centennial Celebration



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Philadelphia's ultimate ambassador, and perhaps one of the first ChEs in the U.S., "Benjamin Franklin," greets Meeting Program Chair Carol Hall at the Centennial Convocation.



Robert Brown, president of Boston Univ., delivered the Centennial Convocation keynote address on the expanding impact of chemical engineering.

"Poor Richard" leads Eduardo Glandt, Convocation Co-chair (right), and meeting attendees (below) in a mighty "hazzah" to launch the AIChE Annual Meeting and



Philadelphia Mayor Michael Nutter welcomed AIChE members to the Convocation.



AIChE members George Liebermann and Dan Marginean discuss the week's sessions during the Annual Meeting Welcome Ceremony.



Would you like a little pretzel with that mustard? A Philly delicacy.



Tattoo You: Keena Patel, a junior ChE student at New Jersey Institute of Technology (NJIT), displays her AIChE pride.



Mummers's the word: Philadelphia's famous Mummers (above and left) brought their signature spirit of fun to the Annual Meeting Welcome Ceremony.



AIChE¹⁰⁰ 100 Years of AIChE at the 2008 Annual Meeting



Students from the NJIT Student Chapter prepare for their duties as National Student Conference co-hosts. The chapters from Drexel, Rowan, and Bucknell co-hosted the student weekend – including competitions, chapter management and career workshops, city tours, social events, and the Chem-E-Car Competition.



Student Chapters Committee leader and Oregon State Chapter Advisor Skip Rochefort samples cheesesteaks with his students.



Students play a mixer game at the Student Welcome Reception.



At the costume contest, Pradnya Bhawalkar of Rice Univ. was in fine feather.



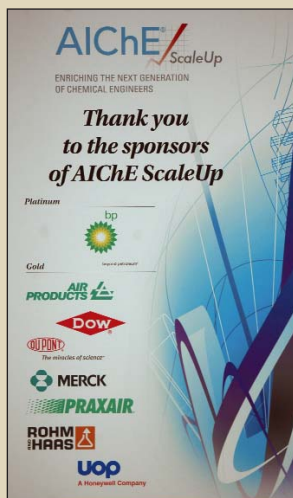
Univ. of Nevada, Reno, students, looked sharp at the Student Bash and Costume Contest.

“I see a lucrative future in nanomaterials ...” Fortunes were told at the Saturday Night Student Conference Bash, which featured a 1908 theme, carnival games and olde tyme costume contest.

A student enters a prize raffle. “Perry’s Handbook” was a hot item.



Let’s face it... ChE students rock.



AIChE Chem-E-Car Competition

The suspense: Students from Manhattan College breathlessly watch their Chem-E-Car team.

Just over the line: The Univ. of Akron’s James Bond-inspired Chem-E-Car.

Chem-E-Car boosters from Oregon State Univ.

November 16–21, 2008 — Philadelphia, Pennsylvania



David Wishnick of the Young Professionals Advisory Board chats with AICHE Director Wendy Young at the Student Bash and Costume Party.



That's the spirit: The Univ. of Puerto Rico's Chem-E-Car team, winners of the "Spirit of the Centennial Award," celebrate with 2009 AICHE President H. Scott Fogler (center).



Student Conference coordinator Nina Scatton (left) discusses the student program with Drexel Univ. grad student and volunteer Julianne Holloway. Holloway presented a paper on hydrogels during a session on biomedical composites.



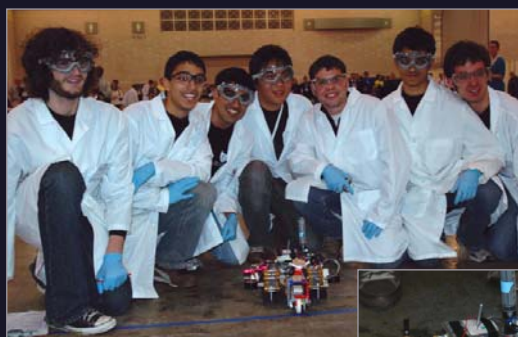
Elizabeth Jones, a chemical engineering professor at McGill Univ., is immortalized by a caricaturist. McGill is helping to organize the 2009 World Congress of Chemical Engineering, which will feature an international Chem-E-Car Competition.



Former astronaut Mae Jemison (with 2008 AICHE President Dale Keairns) was a featured speaker at the Minority Affairs Committee's (MAC) Black Eminent Chemical Engineers Centennial Panel. Jemison received one of MAC's Eminent Black Chemical Engineer Awards.

The Chem-E-Car Competition series encompasses nine spring regional events, with the best in each region qualifying for the national championship at the Fall National Student Conference. Thirty-two teams competed in Philadelphia for a top prize of \$2,000. The Competition was sponsored by Chevron, and relied on dozens of volunteers. Drexel Univ. and Rowan Univ. were instrumental in hosting the Philadelphia event.

Prior to and during each event, teams are required to participate in rigorous safety documentation and training. In addition to lessons in safe engineering, the competition gets students thinking creatively about alternative energy. Chem-E-Cars are often powered by novel methods, employing vinegar and water, fuel cells, biofuels, and bioreactors.



Evidence of perfection: Cornell Univ.'s "Bender" — a hydrogen fuel cell car with an iodine clock stopping mechanism — won the Chem-E-Car Competition, stopping exactly on the target line of 60 ft.



The Univ. of Utah's Chem-E-Car.



Wolfgang Marquardt of RWTH Aachen Univ., Aachen, Germany (right) presented the Danckwerts Lecture on "Incremental Identification of Reaction and Transport Models." Here he discusses his talk with Stuart Churchill.



2008 Annual Meeting • Philadelphia, PA • Nov. 16–21



Women's Initiatives Committee past chair Surita Bhatia, her son Julian Khalifah (attending his first AIChE meeting), Mike Malone, and Kamlesh Bhatia celebrate at the Volunteer Leader Recognition reception.



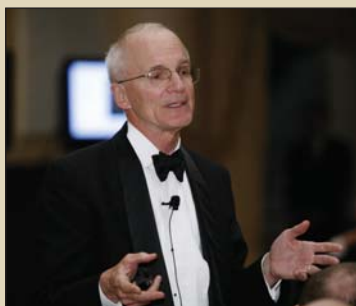
Dr. Kase Lawal, CEO of CAMAC International Corp. (right, with past AIChE Director Thomas Mensah, left) was the keynote speaker at the Minority Affairs Committee's (MAC) Scholarship Forum — commemorating a decade of MAC scholarships. Lawal spoke about the future direction of the oil and gas industries, and opportunities for minorities in those industries.



2008 AIChE President Dale Keairns (left) with 2010 president-elect Henry Kohlbrand at the Centennial Fundraising Gala. The Gala raised \$250,000 for AIChE student initiatives.



"My AIChE," the Institute's new social networking website, debuted at the Meeting. Hundreds of professionals and students set up member homepages on the site.



AIChE past president Edward Cussler — named AIChE Poet Laureat for the Centennial Celebration — delivers at the Gala.



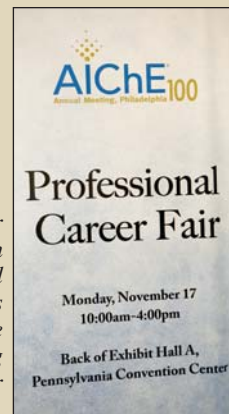
Honorees at the Gala. From left: Willie A. Deese, Merck; John A. Sofranko, AIChE; Hank Kohlbrand; Raj J. Gupta, Rohm & Haas; Charles O. Holliday, Jr., DuPont; Rex W. Tillerson, Exxon Mobil; Dale Keairns.



Thomas Marrero, vice president of the Interamerican Confederation of Chemical Engineers (IACChE), looked dapper at the Centennial Gala.



Exhibits and career fairs for both professionals and undergraduates provided valuable networking opportunity for meeting attendees.





Mark Davis, AIChE's 60th Institute Lecturer, presents his lecture on "The Rise and Realization of 'Molecular' Chemical Engineering."

Professional Progress Award Lecturer Jay Keasling speaks on "Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs."



At the Honors Ceremony, Julian Smith (left) and Peter Harriott were the co-recipients of the Institute's Warren K. Lewis Award for Chemical Engineering Education, in recognition of their classic textbook, "Unit Operations of Chemical Engineering."



James Swartz delivers the James E. Bailey Award Lecture, titled, "Look, Mom. NO CELLS!! — Providing New Freedom for Engineering Efficient Biological Systems." The Bailey Lecture is organized by AIChE's Society for Biological Engineering (SBE).



Photo: Joanna Ziemlewski

Virginia Connolly (upper left), president of the Society of Women Engineers (SWE), joins AIChE members at the Women's Initiatives Committee's Networking Luncheon. In the center, perched on the shoulder of a member, is SWE's travelling teddy bear, who accompanies Connolly on her tours.



Front and center: Incoming AIChE Executive Director — and current SBE Director — June Wispelwey attends the James E. Bailey Lecture.



Just desserts: Meeting attendees enjoy the atmosphere — and the tasty treats — at the Centennial Celebratory Dessert Reception, held at the National Constitution Center.

A captive audience — session attendees at the Annual Meeting.



Attendees plan their busy schedules.



Photos by Mark Stehle and Gordon Ellis.

President's Message Our Search for Meaning

On June 22, 1908 — in his closing remarks at the Philadelphia Engineers Club — AIChE co-founder Charles F. McKenna captured the sense of those who had gathered to launch the new organization. “We begin as brothers,” he said. “We inevitably will close our careers as fathers, passing on to our sons in the profession a heritage of knowledge and light ...”

Those at that first meeting were a closely knit group of men of similar age and experiences, who came together for mutual support, saw a lifelong career in their current work, and were committed to education and knowledge.

Today's chemical engineering community includes members with very diverse backgrounds, wide-ranging technical skills and interests, and different values related to work and rewards. Over the decades, we've seen generations that valued the satisfaction of a job well done. Other generations have valued loyalty. Others count their reward in the money they earn. Recent generations have valued having fun.

Now, we are witnessing a generation that values a quest for meaning. What is relevant changes with time.

During my tenure as president, I've gained valuable insights by participating in many local, national and international meetings. At one local section meeting, a young professional giving a presentation on biofuels began by saying, “I'm 24, and I'm making a difference.”

This young chemical engineer had learned the traditional skills, but his interests extend beyond the linear thinking required to solve a technical or business problem. The added dimension of placing the work in a larger context — and a passion to do more than create a product or service that meets some functional or economic need — are important to him. Meaning is central to his work.

As a profession, and as an Institute,

how will we support the changing and diverse needs of the new generations of chemical engineers? What can we do to help our members create a meaningful legacy as we enter our second century?

AIChE has put forth a new strategic plan that identifies key goals. I believe these goals are an effective framework to respond to these questions and the challenges ahead. There is a common theme in looking to the future — the boundaries have changed. I see four important concepts that are required to achieve the strategic goals:

- **Maintain strong education.** Chemical engineers cross the traditional discipline and scale boundaries — from the molecular level to integrated global challenges that cross technology boundaries.

- **Develop new models for resources.** Membership is important, but a business model based on dues is no longer sustainable.

- **Transition to a new infrastructure.** The way we share knowledge has changed. Tomorrow's challenges will require collaboration with diverse entities. Ours is a borderless profession.

- **Serve all generations.** We now have 12,000 student members, and we will serve the young professional as well as the seasoned engineer.

Many significant achievements over this year support the strategy. Our divisions and programming groups put together yet another quality Annual Meeting. Various new initiatives are expanding collaboration and reaching out to serve members working across the traditional boundaries.

We have established collaborative agreements with seven “sister” chemical engineering societies around the world, and have launched an AIChE Global website in seven languages (www.aiche.org/aicheglobal/).

The Center for Chemical Process Safety (CCPS) grew by 20 members in 2008. More than half of the 119 corpo-

rate members are outside of North America.

The Institute for Sustainability (IfS) has expanded its scope and will hold the first International Congress on Sustainability Science and Technology in August 2009.

Energy represents a global challenge that is significantly different from past challenges. Several projects aimed at developing holistic approaches to evaluating energy systems focus on renewable fuels metrics and carbon management technologies.

Recognizing excellence in the profession is important, and the Board of Directors has approved the creation of five new industry-oriented awards.

AIChE opened a new online Member Center — a virtual community where members can connect with each other. Free monthly member webinars were offered. An e-Library (a partnership with Knovel) surpassed 10,000 AIChE member registrations.

Although assets have decreased as a result of the recent financial turbulence, the Institute continues to have a very positive operations balance sheet. AIChE will remain vigilant in monitoring its finances during this time of economic uncertainty.

The 2008 Centennial Annual Meeting brought the Institute home to its point of origin — Philadelphia, PA. It provided a golden opportunity for reflection on AIChE's past and future, and energized the more than 7,000 attendees for the good work to come. I have confidence in the people who will drive the profession and the Institute to the next meaningful mileposts.

It has been an honor and privilege to serve as your president. It has been a pleasure to work with many volunteers, the Board of Directors, and the AIChE staff, who perform excellent service.

— Dale Keairns
2008 AIChE President

Wispelwey to Become AIChE Executive Director

June Wispelwey, currently executive director of AIChE's Society for Biological Engineering (SBE), will become executive director of AIChE beginning Jan. 1, 2009. She will succeed John A. Sofranko, who is retiring from the position after eight years.

In making the announcement, Dale L. Keairns, AIChE's 2008 president and an executive with Science Applications International Corp., thanked the search committee, which was chaired by AIChE past president Bill Byers of CH2M Hill. The Committee conducted a 16-month search involving nearly 200 candidates. Keairns added that the selection of a candidate from within AIChE's staff represented a vote of confidence not just for Wispelwey, but also in the Institute's health and direction.

Keairns commended Sofranko's leadership, which helped to dramatically restructure Institute operations, and which established "a solid foundation for future growth and expanded inclusiveness of membership."

Keairns noted that Wispelwey, who has overseen the successful launch and growth of the SBE, will be assuming her new role as AIChE concludes its centennial celebration and begins implementing a new strategic plan designed to guide the Institute into its second century. Wispelwey expressed confidence that "AIChE's strengths in industry and technology, along with an increased global presence and use of the web" assure that "we will succeed in our mission of advanc-

ing technology, sharing knowledge among working professionals, and educating the next generation of engineers."

Wispelwey joined the AIChE staff and the SBE in 2004, where she launched a successful consortium to advance genomic research on cell lines that are important to pharmaceutical and biotechnology companies. She had previously served as vice president of marketing services at Aventis Behring, and as director of performance chemicals business development at Lyondell.

Wispelwey brought an entrepreneurial approach to AIChE initiatives in new technologies and energy. She explained that her four years as leader of the SBE taught her that "the culture of a broad-based nonprofit membership organization requires enrolling grassroots support and devoting even more attention to team and relationship building" than the corporate environment.

Wispelwey earned a BS in chemical engineering at Princeton Univ. and an MS in chemical engineering at the Univ. of Pennsylvania, and later completed an executive education program at The Wharton School.

She will continue overseeing of the SBE until a replacement director is identified.



AIChE Conference Calendar

For information and registration details, visit www.aiche.org/conferences or call Customer Service at 1-800-242-4363 or 1-203-702-7660 (outside the U.S.)

SBE's 2nd International Conference on Biomolecular Engineering
January 18-21, 2009 • Fess Parker Doubletree • Santa Barbara, CA

AIChE/SPE 4th Joint Workshop: Practical Strategies for Managing CO₂ Emissions — Where are We Going?
February 22-24, 2009 • Fairmont Sonoma Mission Inn • Sonoma, CA

SBE's 2nd International Conference on Accelerating Biopharmaceutical Development
March 9-12, 2009 • Marriott Coronado • Coronado Island, CA

2009 Spring National Meeting
April 26-30, 2009 • Tampa Convention Center • Tampa, FL

2009 Offshore Technology Conference
May 4-7, 2009 • Reliant Park • Houston, TX

2009 Ammonia Conference
September 13-19, 2009 • Hyatt Regency Calgary • Calgary, AB, Canada

2009 Annual Meeting
November 8-13, 2009 • Gaylord Opryland Hotel • Nashville, TN

2009 AIChE Election Results

The Tellers have examined the votes for candidates for Officers and Directors of the Institute, and have declared the following to be the results of the election:

President (by automatic succession)

H. Scott Fogler

President-Elect

Henry (Hank) Kohlbrand

Directors (2009-2011)

Thomas Connelly, Jr.
Dennis Griffith
Christine Seymour
Neil Yeoman

Talking Energy at AIChE's Midwest Regional Conference

While the price of oil has significantly dropped over the past few months, U.S. energy security and independence still need to be addressed.

The Midwest region of the U.S. is filled with energy-related firms, including Archer Daniels Midland (ADM), BP, CITGO, ExxonMobil, UOP, and many more. With this in mind, AIChE and its Chicago Local Section — which for many years had hosted a successful annual symposium — launched its first regional conference in the heart of the Midwest, Chicago, IL, this past Sept. 22–23. Energy was a key topic of discussion.

Two keynote speeches focused on the role that chemical engineers can play in solving the world's energy problems.

Carlos Cabrera, president and chief executive officer of UOP, a Honeywell Co. (www.uop.com), focused on the current and upcoming challenges within the energy industry. "Challenges are not new in the refining industry," Cabrera told the audience. In the 1960s, hydrocracking was developed to process heavier feedstocks and increase the yield of high-quality fuels from a barrel of oil. The 1970s saw technology to remove lead from gasoline. Today, environmental regulation is increasing around the world and there is a focus on renewable energy. But regardless of the challenge, chemical engineers have found the answers. And chemical engineers will continue to find solutions.

Cabrera noted that the energy industry will continue to provide great opportunities for chemical engineering, identifying several areas where chemical engineers can make impacts, including methane conversion, residue

upgrading, coal gasification, and renewable fuels.

The second keynote speaker, James Foster, research director at ADM, continued on the energy theme. "The U.S. is presently very dependent on oil for transportation and chemical feedstocks," said Foster. And while "petroleum discoveries are declining, they will still be used for a long time," he continued. Foster predicts that petroleum will remain a primary component of the U.S. energy portfolio, but that alternative fuels can play a critical role in sustainability.

Waving a large stick of wood at the audience, Foster declared that the first biofuel discovered by mankind was wood. While society has come a long way from using wood as a biofuel, many challenges still lie ahead. Today, we have biodiesel and bioethanol, but these make up only a fraction of today's transportation fuels. And while they may solve some energy problems, they create new problems in other areas. For instance, the demand for bioethanol has dramatically increased food prices.

So what's the next step? Foster offered one promising renewable resource that does not compete with the production of food crops: lignocellulosics. But, using lignocellulosics is not without its own problems. Lignin is a difficult structure to deal with and break down. Much research is still needed before lignocellulosics becomes an economically viable resource and this is where chemical engineers can play a vital role.

Foster closed his speech with a quote from author Eric Hoffer, "In times of change, learners inherit the Earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists."

In Memorium: Dana Knox — 1955–2008

Dana E. Knox, Professor of Chemical Engineering and Associate Provost for Undergraduate Programs at the New Jersey Institute of Technology (NJIT), died suddenly on Sept. 24, 2008. An active AIChE member, he was currently serving as co-advisor of the NJIT Student Chapter, and often organized and chaired sessions at national meetings.

Born in upstate New York, Knox earned BS (1977), MS (1978) and PhD (1982) degrees from Rensselaer Polytechnic Institute. He began his career on the faculty at NJIT in 1983, and joined the Provost's Office in 2004.

Knox was an expert in thermo-

dynamics of fluids and fluid mixtures, and a widely published researcher. In 2002, he received the Franzosini Award from the International Union of Pure and Applied Chemistry (IUPAC), in appreciation of his contributions to the Solubility Data Project. At the time of his death, he was serving as the Chairman of the Subcommittee on Solubility and Equilibrium Data for IUPAC.

Knox was beloved as a colleague across the NJIT campus, and as a dedicated advisor to his many students. In 1994 he received NJIT's university-wide Robert W. Van Houten Award, bestowed by the school's alumni to recognize teaching excellence. In 2002, he was appointed to

the rank of Master Teacher at NJIT.

Knox is survived by his wife, Petra Knox, of Edison, NJ, and his sister, Laura Matthews.

As a tribute to his commitment to education and to the NJIT community, donations to the Dr. Dana E. Knox Memorial Scholarship Fund at NJIT are suggested. For more information, contact Jacquelynn Rhodes, rhodes@njit.edu (973-596-3407). Friends can share memories of Dana at <http://rememberingdanaknox.blogspot.com>.



Two AIChE Members are Among the “Brilliant 10”

Popular Science magazine has named two young chemical engineers among its “Brilliant 10” for 2008 — an honor that recognizes the nation’s top young scientists.

Kristi Anseth, a professor of chemical and biological engineering at the Univ. of Colorado, Boulder, and an associate professor of surgery at the Univ. of Colorado, Denver School of Medicine, was cited for her innovative materials science research, including the creation of new biomaterials for medical applications.



She leads a team that is developing degradable polymers that act as scaffolds to stimulate the growth of new human tissues. These technologies can be used to help regenerate human cartilage and defective heart valves, mend broken bones, produce insulin for dia-

betes, and grow healthy neurons to replace diseased brain tissue.

Anseth received her doctorate in chemical engineering from the Univ. of Colorado, Boulder, in 1994, and was a postdoctoral fellow at the Massachusetts Institute of Technology before joining the CU-Boulder faculty in 1996. She is the 2004 recipient of the Alan T. Waterman Award — the National Science Foundation’s highest honor for a young researcher. In 2003, she received AIChE’s Allan P. Colburn Award for Excellence in Publications by a Young Member of the Institute.

John T. Santini, Jr., is the co-founder and CEO of MicroCHIPS, Inc., a Bedford, MA-based drug delivery and biosensing company that is building under-the-skin electronic devices that deliver drugs straight to the blood. These chips sense changes in body chemistry and can deliver medications when needed. Small reservoirs in the devices open to release a

drug or invite body fluid in to be analyzed and monitored. In the coming year, Santini and his company will begin human clinical trials on a glucose-monitoring chip for diabetes patients, as well as trials for a chip that releases daily doses of an osteoporosis drug.

Santini began developing the core microreservoir technologies as a doctoral student at the Massachusetts Institute of Technology, under the supervision of Robert Langer and Michael Cima — with whom he co-founded MicroCHIPS in 1999.

Now in its seventh year, *Popular Science*’s “Brilliant 10” recognizes young scientists who are pushing their field to the next level. To choose the recipients, the editors contact the heads of departments at universities and professional associations.



Kim to Lead Wisconsin’s Morgridge Institute

Sangtae (Sang) Kim, professor of mechanical and chemical engineering at Purdue Univ., has been named executive director of the Univ. of Wisconsin’s new Morgridge Institute of Research.

Set to open in 2010, the Morgridge Institute is part of the \$150-million Wisconsin Institutes for Discovery — a public-private partnership designed to facilitate breakthrough discoveries across the fields of biology, computer science and bioengineering to improve human health. The twin institutes — one public and one private — will leverage the best of the public sector with the best of the private sector.

Kim’s initial work is expected to focus on the establishment of a center of excellence for scientific informa-

tional technology.

Kim’s new role marks his return to the Univ. of Wisconsin, Madison, which he first joined in 1983, and where he served as chemical engineering department chair from 1995–1997. Kim has also directed the National Science Foundation’s division of shared cyberinfrastructure (2004–2005), and has executive experience at Lilly Research Laboratories, Pfizer Global Research and Development, and Parke-Davis Pharmaceutical Research. In 2001, he was elected to the National Academy of Engineering.



OBITUARIES

Walter F. Abath, 78, Wilmington, DE

Jett C. Arthur, 90, Metairie, LA*

Charles A. Grimm, 58, Hilliard, OH

Walter J. Hansen, 89, Orlando, FL

Samuel J. Hensel, 89, Springfield, VT

Walter C. Kliesch, 68, Nipomo, CA

Robert J. O’Donnell, 84, San Rafael, CA

James P. Pregler, 38, Salisbury, NC

John W. Schaubach, 74, Irvine, CA*

John A. Tallmadge, 80, Media, PA*

Harold D. Unland, 72, Henderson, NV

Robert G. Wright, 85, Houston, TX

*Fellow