



12 AICHE

Annual Meeting, Pittsburgh, PA

▼ The Institute honored some of chemical engineering's leading lights at the Honors Ceremony on Oct. 28. Among the awards was a newly inaugurated Industrial Progress Award, presented to Narayan Ramesh (below) for his leadership on Dow's Powerhouse Solar Shingle, a roofing material with an integrated photovoltaic system.



▲ MIT's George Stephanopoulos (left) received the Board of Directors' Founders Award from AICHE president David Rosenthal.



▲ Jacob Israelachvili (left) of the Univ. of California, Santa Barbara, received the Institute's Walker Award for Chemical Engineering Literature, sponsored by John Wiley & Sons. Golda Thomas (right) represented Wiley at the Honors Ceremony.



▲ W. S. Winston Ho of Ohio State Univ. (left) received the Lawrence B. Evans Award in Chemical Engineering Practice, sponsored by CACHE Corp. CACHE was represented by Tom Edgar (right) of the Univ. of Texas at Austin.

Hurricane Sandy rained on some peoples' travel plans, but it did little to dampen the enthusiasm at AICHE's 2012 Annual Meeting, held Oct. 28–Nov. 2 at the David L. Lawrence Convention Center in Pittsburgh, PA. Organized around the theme "Cleaner Energy, Stronger Economy, Better Living," the meeting offered nearly 800 sessions — with major highlights including the 2nd World Congress on Sustainable Engineering, the 3rd International Congress on Energy (ICE 2012), and topical conferences devoted to sustaining water, accelerating fossil energy technology development, biomedical applications, comprehensive quality by design in the pharmaceuticals industry, sensors, systems biology, and the annual meeting of the American Electrophoresis Society. In addition, AICHE and the Air and Waste Management Association collaborated on a joint workshop: "Shale Oil and Gas Exploration and Production: Water Challenges and Opportunities." Scores of receptions, meetings, exhibits, and social events rounded out the busy week. Nearly 5,000 professionals registered for the meeting, and despite a few hundred attendee cancellations due to extreme weather in the Northeastern U.S., the meeting was a memorable success.

Co-hosted by the AICHE student chapters at the Univ. of Akron, Bucknell Univ., Carnegie Mellon Univ., and the Univ. of Pittsburgh, the Annual Student Conference (Oct. 26–29) attracted more than 1,300 undergraduates, who took part in professional development workshops, scholastic and intercollegiate competitions, networking events, and more. The Student Conference included 35 sessions, conducted by students and professionals alike. Over 220 students presented research papers at the undergraduate poster session on Oct. 29, record participation for that event.



Photo: Douglas Clark

▲ Bragging rights in this year's ChE Jeopardy-style competition belong to a team from the Univ. of Cincinnati. Nine teams, winners of the Spring 2012 regional events, competed in the finals.



▲ A Halloween-themed Student Bash on Saturday, Oct. 27, tapped into ChE students' boundless energy.



▲ Hundreds of undergraduates attended a recruitment fair on Oct. 28, where they met representatives from 50 graduate schools and 10 companies.

▼ Thirty-five teams — the top qualifiers in Spring 2012 regional competitions — participated in AICHE's 14th Annual Chem-E-Car Competition. Students calibrate their chemically powered miniature vehicles to carry a variable load over a variable distance. Students must attend AICHE-sponsored safety training sessions, and vehicles and their student "drivers" must pass onsite safety inspections. Below left, students from Univ. of Maryland (top) and Carnegie Mellon Univ. (bottom) prepare their cars.



Photo: Douglas Clark

▲ The Chem-E-Car team from Cornell Univ. (above) won the 2012 competition with its zinc-battery-powered "Zapdos" car. Zapdos was the only car to carry its load of 300 mL of water and stop exactly on the target mark of 21 meters. This was the third national victory for Cornell, which edged out the 2011 champion, the Univ. of Puerto Rico, whose best score was 0.12 m from the target. Close behind was the team from Oklahoma State Univ., who missed the mark by 0.13 m. The Univ. of Akron won first prize in the Chem-E-Car Poster Competition, and the Univ. of Tennessee, Chattanooga, won an award from CACHE (Safety and Chemical Engineering Education) for inherent safety in design.





▲ Phillip Westmoreland (left), AIChE's 2013 president, presented the Institute's Corporate Innovation Award to Corning representative Marc Giroux (right). On Nov. 1, Giroux delivered his lecture, "Corning — A Long Tradition of Innovation that Matters."



▲ At a reception of the AIChE Foundation's Board of Trustees, Luke Achenie (left) and Glenn Taylor (center), a past executive director of AIChE, share a thumbs-up with Otis Shelton, AIChE's 2013 president-elect.

AIChE Thanks the Meeting's Corporate Sponsors

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► On Oct. 29, Charles McConnell, Assistant Secretary for Fossil Energy at the U.S. Dept. of Energy, kicked off the Annual Meeting Plenary, with a talk entitled "CO₂ Capture, Utilization, and Storage, and Natural Gas/Oil Recovery: Harnessing Scientific Development and Business Principles to Achieve Fossil Energy Sustainability." Other talks at the plenary were presented by: David Porges (EQT), "North American Manufacturing and the Shale Gas Century;" Greg Babe (Orbital Engineering), "Chemistry and Energy: Fortifying our Historic Links;" and Aris Candris (Westinghouse Electric), "Nuclear Engineering: Is There a Future After Fukushima."



◀ Frank Bates of the Univ. of Minnesota was AIChE's 64th Institute Lecturer. Bates presented his lecture, "A Multiblock Copolymer: Panacea or Pandora's Box," on Oct. 31.

► In 2012, AIChE and its Society for Biological Engineers (SBE) instituted the D.I.C. Wang Award Lecture, in honor of MIT professor Daniel I. C. Wang's contributions to education and research in biochemical engineering. The inaugural lecturer was James Swartz of Stanford Univ., whose Oct. 29 talk was entitled, "From Cancer to Hydrogen: Cell-Free Biomolecular and Bioprocess Engineering."



► Guy B. Marin of Ghent Univ.'s Laboratory for Chemical Technology presented this year's Danckwerts Lecture, "Chemical Engineering and Kinetics: a *Pas de Deux* of Theory and Experiment." The lecture is sponsored by AIChE, the European Federation of Chemical Engineers (EFCE), and Elsevier.

◀ SBE presented its James E. Bailey Award to Eleftherios "Terry" Papoutsakis of the Univ. of Delaware. His Oct. 30 award lecture was entitled, "Generating Complex Biological Traits through Combinatorial and Multigenome Expansion of the Sampling Space."



► The Pittsburgh meeting saw the first face-to-face meeting of the Institute's new Public Affairs and Information Committee. Chair Mary Ellen Ternes (front row, center) and the group are working to expand AIChE's interaction with government, prioritize issues that impact chemical engineers, and develop tools for members conducting outreach at the grassroots level.





Institute News

President's Corner

The Year of the Member

With my term as AIChE president drawing to a close, I am reflecting on the past year and AIChE's accomplishments as an organization. I am confident that my agenda as your elected candidate has helped to advance AIChE's mission, and improved the Institute's ability to serve you, our members and constituents.

My platform as president was composed of five planks: add new member "homes;" build membership value; create a stronger leadership team; guard the budget; and, competently manage the relocation of AIChE's New York headquarters office. Let's evaluate our progress on each one.

Over the past year, AIChE added several new communities to its portfolio of subsidiary organizations: the Upstream Engineering and Flow Assurance Forum; the Pharmaceutical Discovery, Development and Manufacturing Forum (PD2M); the International Society for Water Solutions (ISWS); and the International Metabolic Engineering Society (IMES). Each of these new communities helps AIChE to expand its membership reach and engage chemical engineers — but more importantly, the activities of these organizations provide solutions to engineering's grand challenges, while fulfilling AIChE's mission as the foremost catalyst in applying chemical engineering expertise in meeting societal needs.

Building membership value is vital to AIChE's ability to both attract and retain members. During the past year, AIChE focused on several new and growing activities that further this objective, including niche meetings (such as our Regional Process Development symposia), undergraduate safety education (the SACHE certificate program), and a "Center of Excellence" on water, which led to the formation of the ISWS. Another example is AIChE's collaboration with IdeaConnection, a company that employs subject matter experts (SMEs) to solve client problems. As an AIChE member, you can enroll as a SME and earn income (with AIChE receiving a small slice of revenue from IdeaConnection).

Strategic alignment and teamwork are vital to the successful deployment of our mission. This year, AIChE's Board of Directors strengthened its relationship with the three operating councils (Career and Education, Chemical Engineering Technology, and Societal Impact) that facilitate all the Institute's activities — which has led to better information exchange and collaboration in strategic planning. Third-party evaluation of the Board's meetings and training sessions, as well as more free and open discussion between the Board and AIChE's other leadership groups, has helped Board members to better understand their roles and responsibilities.

A key recent achievement has been the superb performance of AIChE's operations. This performance can be

attributed to both enhanced membership value and competent management of our operations. For the third consecutive year, AIChE will report an operational surplus of more than \$500,000. We have grown our revenue 18% since 2009 and, based on budget projections, we are poised to grow our revenues by 33% between 2009 and 2013. Overall, AIChE has increased its net assets to \$11 million — an important safety net. I am also pleased to report that, for the first time in a decade, AIChE has reversed the trend of declining professional membership. This growth and improved performance should serve to inspire and boost the confidence of AIChE's members, leaders, and collaborators.

Other recent accomplishments include enhanced training and education through online and instructor-led courses, and our launching of a new website to better facilitate member communication and involvement. Indeed, with stakeholder involvement crucial to AIChE's mission, the Institute will continue to create new services and opportunities to include a wide spectrum of engineers and practitioners, addressing the full breadth of chemical engineering, and benefiting from the diversity of those who contribute to the field and its advances.

Finally, AIChE is close to selecting a new headquarters location in advance of our lease expiration in August 2013. The new office location will achieve cost savings, enabling the Institute to better serve its members, and will provide improved facilities for our staff. AIChE will continue to keep members informed through the relocation process and respond to your inquiries on our progress.

AIChE's Executive Committee and Board of Directors continue to benefit from the talented and dedicated candidates that have occupied those positions. This year, the membership elected Otis Shelton as our 2014 president. Otis will be the first African-American president of AIChE. He will bring to his role as president many years of AIChE leadership experience — as a past director and secretary of the Institute, and as a leader in AIChE government relations and minority affairs — and will surely keep the Institute vital and productive.

In closing, it has been an honor to serve as your president. The growth of membership value, strategic alignment, and teamwork that I've seen develop over the past year will serve AIChE well along the path to its future destinations. I pledge my support for our incoming president, Phil Westmoreland, as I know you will also.

Thank you for your support. I enjoyed and will forever appreciate my opportunity to serve as AIChE president. I will continue to contribute to its mission.

— David Rosenthal, AIChE 2012 President

DIVISIONS AND FORUMS PRESENT HONORS

Each year, AIChE's technical divisions and forums present awards that honor contributions across a spectrum of chemical engineering specializations (www.aiche.org/awards/division-and-forum). These honors are presented at events held during AIChE's Spring and Annual meetings. The following awards were presented during the 2012 Annual Meeting in Pittsburgh, PA (Oct. 28–Nov. 2). Other groups will present their awards at the 2013 Spring Meeting and Global Congress on Process Safety in San Antonio, TX (Apr. 28–May 2).

CATALYSIS AND REACTION ENGINEERING DIV.

Division Practice Award

David H. West, Dow Chemical Co.

COMPUTING AND SYSTEMS TECHNOLOGY (CAST) DIV.

Computing in Chemical Engineering Award

Sponsor: Dow Chemical Co.

Stratos Pistikopoulos, Imperial College

Computing Practice Award

Sponsors: Aspen Technology; ExxonMobil Chemical Co.

John R. Richards, DuPont; John P. Congalidis, DuPont

David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education

Sponsor: Chemstations, Inc.

David Kofke, Univ. at Buffalo; Andrew Schultz, Univ. at Buffalo

Outstanding Young Researcher Award

Sponsor: Air Products

Christopher Rao, Univ. of Illinois, Urbana-Champaign

W. David Smith, Jr. Graduate Publication Award

Sponsor: Process Systems Enterprise, Inc.

Yoshiaki Kawajiri, Georgia Institute of Technology

ENVIRONMENTAL DIV.

Lawrence K. Cecil Award in

Environmental Chemical Engineering

Gregory Carmichael, Univ. of Iowa

MATERIALS ENGINEERING AND SCIENCES DIV. (MESD)

Charles M. A. Stine Award — Sponsor: DuPont

Nicholas A. Kotov, Univ. of Michigan

Early Career Award — Sponsor: Owens Corning

Yueh-Lin Loo, Princeton Univ.

NANOSCALE SCIENCE AND ENGINEERING FORUM (NSEF)

Nanoscale Science and Engineering Forum Award

Michael Strano, Massachusetts Institute of Technology

Young Investigator Award

Virginia Davis, Auburn Univ.

NORTH AMERICAN MIXING FORUM (NAMF)

Award for Excellence and Sustained Contributions to

Mixing Research and Practice — Sponsor: Dow Chemical Co.

Julian Fasano, Mixer Engineering

NUCLEAR ENGINEERING DIV.

Robert E. Wilson Award — Sponsor: Fluor Foundation
William A. Summers, Savannah River National Laboratory

PARTICLE TECHNOLOGY FORUM (PTF)

George Klinzing Best PhD Award

Sponsor: Pittsburgh Alumni

Mayank Kashyap, Ascend Performance Materials

Award for Lifetime Achievement — Sponsor: DuPont

John R. Grace, Univ. of British Columbia

Lectureship Award in Fluidization

Sponsor: Particle Solid Research, Inc.

Miaotao (Tony) Bi, Univ. of British Columbia

Thomas Baron Award in Fluid Particle Systems

Sponsor: Shell Global Solutions

James D. Litster, Purdue Univ.

Forum Service Award

Ralph Nelson, DuPont (retired)

PROCESS DEVELOPMENT DIV.

Excellence in Research Award — Sponsor: Pfizer

Karen Gleason, Massachusetts Institute of Technology

Division Practice Award — Sponsor: Zeton

Bruce Kreischer, Chevron Phillips Chemical Co.

SEPARATIONS DIV.

Clarence G. Gerhold Award — Sponsor: UOP

Santi Kulprathipanja, UOP, a Honeywell Company

FRI/John G. Kunesh Award

Sponsors: Fractionation Research, Inc.; Shell Global Solutions

Sankar Nair, Georgia Institute of Technology

Division Service Awards

C. Judson King, Univ. of California, Berkeley

Jimmy L. Humphrey, J. L. Humphrey and Associates

Graduate Awards — Sponsors: Chevron; Merck Millipore

R. Anumolu, Univ. of Utah; H. Flodman, Univ. of Nebraska;

C. Fu, Norwegian Univ.; H. Himstead, Colorado State Univ.;

M. Holstein, Rensselaer Polytechnic Institute.; A. Hughes,

Cornell Univ.; Z. Kuvadia, Univ. of California, Santa Barbara;

L.-C. Lin, Univ. of California, Berkeley; M. Singh, Purdue Univ.;

A. Thompson, Northwestern Univ.; J. Thompson, Univ. of

California, Los Angeles; L. Xu, Georgia Institute of Technology

Dibakar Bhattacharyya Graduate Student Research Award

Daniel Wandera, Clemson Univ.

SUSTAINABLE ENGINEERING FORUM

Research Excellence in Sustainable Engineering Award

Bhavik Bakshi, Ohio State Univ.

Student Paper Awards

P. Gangadharan, Lamar Univ.; Z. Liu, Wayne State Univ.;

G. Grubb (honorable mention), Ohio State Univ.

2013 AIChE Election Results

AIChE's Tellers Committee has examined the votes for candidates for Officers and Directors of the Institute, and have declared the following to be the results of the 2013 election.

The newly elected AIChE officers were formally announced at the Institute's annual business meeting, held on Oct. 29, 2012, at the AIChE Annual Meeting in Pittsburgh, PA.

President (by automatic succession)

Phillip R. Westmoreland, North Carolina State Univ.

PRESIDENT-ELECT

Otis Shelton, Praxair

Secretary (2013–2015)

Christine Seymour, Pfizer

DIRECTORS (2013–2015)

Tim Anderson, Univ. of Florida

Thomas F. Degnan, ExxonMobil

Paula A. Hammond, Massachusetts Institute of Technology

Annette A. Johnston, Abbott Laboratories



Westmoreland



Shelton



Seymour



Anderson



Degnan



Hammond



Johnston

FRANK A. ANDERSON, AIChE FELLOW

Frank A. Anderson, associate dean emeritus of the Univ. of Mississippi (UM) School of Engineering and professor emeritus of chemical engineering, died on July 23, 2012, at age 98. He was a Fellow of AIChE and a member of the Institute for 71 years.

Anderson joined the UM faculty in 1940, and is credited with establishing UM's chemical engineering department. During his 39-year tenure at UM, he mentored generations of students, serving as chair of the chemistry and chemical engineering departments, and as associate dean of engineering. The Frank A. Anderson Hall, part of the School of Engineering, is named in his honor. He also served as president of the Mississippi Academy of Sciences.

ALFRED SAFFER

Alfred Saffer, retired Vice Chairman of Halcon International, and later the President and Chief Operating Officer of Oxirane Corp., died on Sept. 7, 2012, at age 93. Saffer devoted his career to advancing R&D in the petrochemical industry. His professional honors included being named one of AIChE's 100 Chemical Engineers of the Modern Era in 2008, and his election to the National Academy of Engineering.

In Memoriam

Wilford G. Bair, 88, Glenview, IL*

J. R. Blizzard, 92, Thornton, CO

William L. Childress, 48, Indianapolis, IN

Jerome T. Coe, 91, Yorklyn, DE

Carl R. Culverhouse, 91, Redlands, CA

Timothy A. Kelly, 50, Maineville, OH

Robert M. Koeneman, 69, Oak Brook, IL

Robert T. Milligan, 91, Orinda, CA

James M. Mozley, 89, Camillus, NY

Tamara J. Muhic, 52, Windsor, CO

Otto A. Sandberg, 85, Saint Gabriel, LA

William J. Strack, 83, Midland, MI

Curtis C. Williams, 84, Houston, TX*

*AIChE Fellow



AIChE Meetings 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.)

JAN. 13–16, 2013	SBE's 4th International Conference on Biomolecular Engineering Hyatt Pier 66 • Fort Lauderdale, FL
JAN. 31 – FEB. 1, 2013	2013 Midwest Regional Conference Illinois Institute of Technology • Chicago, IL
FEB. 24–26, 2013	SBE's 3rd International Conference on Accelerating Biopharmaceutical Development Marriott Resort • Coronado Island, CA
FEB. 26–27, 2013	Quality by Design in Biologics (A conference organized by the Society for Biological Engineering) Marriott Resort • Coronado Island, CA
MAR. 29–30, 2013	2013 Center for Chemical Process Safety (CCPS) South Asia Conference (AchemAsia) Mumbai, India
APR. 28 – MAY 2, 2013	AIChE Spring Meeting and 9th Global Congress on Process Safety Grand Hyatt San Antonio • San Antonio, TX
MAY 6–9, 2013	Offshore Technology Conference (OTC) Reliant Park • Houston, TX
JUNE 4–6, 2013	7th Process Development Symposium Chicago, IL
AUG. 25–29, 2013	58th Annual Safety in Ammonia Plants and Related Facilities Symposium Marriott Frankfurt Hotel • Frankfurt, Germany
NOV. 3–8, 2013	2013 AIChE Annual Meeting San Francisco Hilton • San Francisco, CA

Webinars

Register and view live and archived webinars at www.aiche.org/resources/webinars.

DEC. 12, 2012 2:00–3:00 PM ET	Safety in the LNG Value Chain Presented by Georges Melhem and Henry Ozog
FEB. 6, 2013 2:00–3:00 PM ET	Strategies for Addressing ABET Safety Curriculum Requirements Presented by Tom Spicer and Kim Ogden
FEB. 20, 2013 2:00–3:00 PM ET	Leadership is Everyone's Responsibility Presented by Greg Shaffer
MAR. 6, 2013 2:00–3:00 PM ET	New Materials for Membrane Separations Presented by Richard Noble

AIChE Education Calendar

Instructor-Led Training

For more information, and to register for AIChE Instructor-Led Training courses, visit www.aiche.org/education.

FEB. 25–27, 2013 NEW ORLEANS, LA	Essentials of ChE for Non-Chemical Engineers Course # CH710 • Instructor: Jack Hipple
MAR. 4–6, 2013 LAS VEGAS, NV	CCPS's The OSHA Regulatory Approach to Process Safety Management Course # CH501 • Instructor: Adrian Sepeda
MAR. 4–6, 2013 NEW ORLEANS, LA	CCPS's HAZOP Studies and other PHA Techniques for Process Safety and Risk Management Course # CH157 • Instructor: Robert Johnson
MAR. 7–8, 2013 NEW ORLEANS, LA	CCPS's Advanced Concepts for Process Hazard Analysis Course # CH754 • Instructor: Robert Johnson
MAR. 11–12, 2013 HOUSTON, TX	Heat Exchanger Design and Operations Course # CH294 • Instructor: Thomas G. Lestina
MAR. 11–13, 2013 LAS VEGAS, NV	CCPS's Emergency Relief Systems Design using DIERS Technology Course # CH173 • Instructors: Two of the following: Robert D'Alessandro, Harold Fisher, John Hauser, James Huff, Arthur Shaw
APR. 9–10, 2013 SAN FRANCISCO, CA	Flow of Solids in Bins, Hoppers, Chutes, and Feeders Course # CH032 • Instructors: Eric Maynard, Herman Purutyan
APR. 11, 2013 SAN FRANCISCO, CA	Pneumatic Conveying of Bulk Solids Course # CH033 • Instructor: Eric Maynard, Herman Purutyan
APR. 14–16, 2013 LAS VEGAS, NV	Distillation in Practice Course # CH004 • Instructor: John Farone
APR. 15–17, 2013 LAS VEGAS, NV	Essentials of ChE for Non-Chemical Engineers Course # CH710 • Instructor: Jack Hipple
MAY 20–21, 2013 HOUSTON, TX	Conceptual Development and Capital Cost Estimating Course # CH139 • Instructor: John Williams
MAY 20–21, 2013 SAN FRANCISCO, CA	Bioseparations: Principles, Applications, and Scale-up Course # CH401 • Instructor: Roger Harrison
MAY 22–23, 2013 HOUSTON, TX	Project Evaluation: Operating Cost Estimating and Financial Analysis Course # CH140 • Instructor: John Williams
JUNE 3–7, 2013 CALGARY, AB, CANADA	CCPS's HAZOP Studies, Other Hazard Evaluation Procedures and Advanced Concepts for Process Hazard Analysis Combo Course Course # CH759 • Instructor: Robert Johnson