



11 AIChE®

Spring Meeting, Chicago, IL

► This is NOT what we have in mind when we speak of “green engineering.” A St. Patrick’s Day tradition in Chicago is the “greening” of the Chicago River — accomplished with 40 lb of vegetable dye. This took place on Mar. 12, just outside the Spring Meeting headquarters in downtown Chicago.



Photo by AIChE staff



▲ Institute leaders celebrated the start of another Spring Meeting at a Mar. 12 Board of Directors Leadership Gathering. From left: AIChE Directors Christine Seymour and Dennis Griffith; Institute Secretary Kimberly Ogden; and Spring Meeting General Arrangements Chair Annette Johnston.



▲▼ At the Leadership Gathering, AIChE president Maria Burka (right), presented “thank you” mementos to the Spring Meeting Program Chair, Dennis O’Brien (above), and Co-Chair, Shannon Brown (below).



Presented by AIChE’s Center for Chemical Process Safety (CCPS) and the Safety and Health Div., the 7th Global Congress on Process Safety, Mar. 13–16, incorporated the 45th Loss Prevention Symposium, the 13th Process Plant Safety Symposium, and the 26th CCPS International Conference.



7TH GLOBAL CONGRESS ON PROCESS SAFETY



▲ At the Mar. 14 Global Congress Luncheon, the Honorable Rafael Moure-Eraso, Chair and CEO of the U.S. Chemical Safety and Hazard Investigation Board (CSB), talked about lessons learned from CSB investigations.



▲ The Global Congress on Process Safety kicked off on Monday morning, Mar. 14, with a keynote address by Gustavo Amaral (right), Upstream Senior Vice President for Petrobras America, Inc., who shared his views on global process safety programs. Helping Amaral prepare for his presentation is Global Congress Conference Chair Cheryl Grounds.

► Larry Moore (left), Assistant Vice President and Principal Engineer at FM Global, presented a Mar. 15 luncheon speech entitled “The Role of Process Safety in Long-Term Sustainability.” The next day, the Honorable Christopher Hart (right), Vice Chairman of the National Transportation Safety Board, discussed “Transferability of Successful Aviation Safety Risk Management Processes.”



◀ The Global Congress was a key factor in making the 2011 Spring Meeting a success — and capacity audiences like this one were typical for many events. The Global Congress alone drew participants from 31 countries, representing 230 organizations. Some 750 people attended the Monday morning Keynote Address.

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▲ On Mar. 14, Mohamed El-Genk, professor of chemical, nuclear and mechanical engineering at the Univ. of New Mexico, presented the Donald Q. Kern Award Lecture: "Nucleate Boiling Enhancements on Porous Graphite and Micro-Porous and Macro-Finned Copper Surfaces."

▶ The Spring Meeting Keynote Address was delivered by F. Emil Jacobs, Vice President, Research and Development, at ExxonMobil Research and Engineering Co. His Mar. 14 presentation was entitled "The Energy Challenge: Providing Sustainable Supplies to Meet Growing Demand."



◀ Samuel Thomas, CEO of Chart Industries, delivered the AIChE Fuels and Petrochemicals Div.'s Energy Leadership presentation on Mar. 14. He discussed the dramatic expansion of natural gas available to the market due to North American shale gas production and LNG liquefaction.



▲ A poster session and mixer provided one of many opportunities to combine learning with networking. Nearly 2,000 people participated at this year's Spring Meeting, a 12% attendance increase over 2010, making it the best-attended Spring Meeting since 2007.



▲▼ Dozens of young AIChE members participated in a Young Professionals Networking Social on Mar. 15. At this "speed networking" event, attendees took part in roundtable discussions led by AIChE volunteer leaders. Above, AIChE Fellow Alan Zagoria (center) talks about AIChE's collaboration with Engineers Without Borders. Below, Syamal Poddar (left), chair of the Fuels and Petrochemicals Div., discusses career opportunities in that field.



▲ On Mar. 16, at the Gas Utilization Topical Conference luncheon, Heinz Bauer, Vice President for Technology of LNG and Gas Processing Plants at Linde, delivered a keynote speech on the history of Linde and liquefied natural gas development in Germany.

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▲ The inaugural Sustainable Packaging Symposium, organized by AIChE's Institute for Sustainability, explored the role of sustainable packaging in the supply chain. In the opening keynote speech, Andrew Speck (right photo) of Marks & Spencer, a U.K.-based retailer, discussed his company's program to reduce packaging by 25% by 2012. The Mar. 16-18 symposium drew another large and attentive audience (right).



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Institute News

Meet Some of the New AIChE Fellows



Daina Briedis is a faculty member in the Dept. of Chemical Engineering and Materials Science at Michigan State Univ. Over her career, she has been involved in many areas of education research, including student retention, curriculum redesign, and the use of technology in the classroom. A Fellow

of the Accreditation Board for Engineering and Technology (ABET), she has authored training materials for the accreditation process, and has been instrumental in shaping and implementing the ABET volunteer training program. She received her PhD in chemical engineering at Iowa State Univ.



David G. Clark, P.E., has 38 years of engineering experience in process safety, and has taught and consulted on all aspects of process safety management. While employed at DuPont, he received numerous awards for service and contributed to the company's Inherently Safer Practices (ISP) initiative.

He has contributed to AIChE-CCPS books and has published articles in *Process Safety Progress*. He served as chair of AIChE's 2008 Loss Prevention Symposium (LPS), and chaired the LPS committee in 2010. He received his BS and MS in chemical engineering from Rensselaer Polytechnic Institute, and is a licensed professional engineer in Delaware.



Bruce E. Dale is a professor of chemical engineering and former chair of the Dept. of Chemical Engineering at Michigan State Univ., and a leader of the DOE's Great Lakes Bioenergy Research Center. He also serves as Editor-in-Chief of the new Wiley journal *Biofuels, Bioproducts and Biorefining*. He is a

pioneer in the development of integrated cellulosic biofuel systems, and in the application of lifecycle analysis to understand and improve the environmental performance of biofuels and bioproducts. His interests involve the environmentally sustainable conversion of plant matter to fuels, chemicals and materials while still meeting human and animal needs for food and feed.



Richard L. Davis, P.E., has more than 35 years of experience in the sulfuric acid industry, including employment with three engineering contractors and ten years of sulfuric acid plant production experience. In 1981, he established Davis & Associates Consulting (Lakeland, FL), which provides a range

of engineering services to the sulfuric acid industry, including design services, troubleshooting, project management, expert testimony, and commissioning. He earned a BE in chemical engineering from New York Univ., and is active in AIChE's Central Florida Section. He is a licensed professional engineer in Florida.



John T. Ellington, Jr., P.E., is Process Manager at Penn Pro, Inc. (Mulberry, FL). He has 43 years of engineering and management experience at companies such as DuPont, Mallinckrodt, Mobil, and P&G. He is a member of the Society of Mining, Metallurgy and Exploration, the American Society of

Metals, and the Florida Institute of Phosphate Research Beneficiation Technology Advisory Committee. He received BS degrees in chemical engineering and metallurgical engineering, and an MS in engineering administration, all at the Univ. of Tennessee, Knoxville. He is a licensed professional engineer in Tennessee, Florida, and Idaho.



Neil R. Greenwood, P.E., is Vice President of Engineering at KEMWorks (Lakeland, FL), which specializes in phosphate mining, beneficiation, and phosphate fertilizer technology. He worked at Allied Chemical in Syracuse, NY, and Baton Rouge, LA, before moving to Florida to work at Borden Chemical's

phosphate mine and beneficiation plant. He later did engineering and construction projects for Jacobs Engineering's phosphoric acid, specialty chemicals, fertilizer, and pharmaceuticals plants. He earned his BS in chemical engineering from Cornell Univ., and is active in AIChE's Central Florida Section. He is a licensed professional engineer in Florida.



Jan Lerou, Principal of Jan Lerou Consulting, (Hilliard, OH), consults on a variety of catalytic processes with particular emphasis on the conversion of biomass to renewable fuels and chemicals. He recently retired as Chief Technology Officer of Oxford Catalysts and

Velocys, producers of specialty catalysts for the generation of clean fuels. His early career included 16 years in DuPont's nylon intermediates business, where he contributed to the commercialization of new processes. He earned a BS in chemical engineering at Catholic Univ. of Leuven, Belgium, and a PhD from the Univ. of Gent. He is a leader of AIChE's Catalysis and Reaction Engineering Div.



Bala Subramaniam is the Dan F. Survey Distinguished Professor of Chemical Engineering at the Univ. of Kansas, and Founding Director of the Center for Environmentally Beneficial Catalysis. He is co-founder of Critech, a company that develops applications and manufacturing technologies for

fine-particle compounds. He is currently president of the International Symposium of Chemical Reaction Engineering (ISCRE), serves on the editorial boards of several journals, and has organized sessions at numerous AIChE conferences. He earned a BTech degree in India before receiving his PhD in chemical engineering at the Univ. of Notre Dame.

For information on AIChE's Fellow program, visit www.aiche.org/About/OurMembers/fellow.aspx.

AICHE Recognizes Volunteers as “Shining Stars”

Volunteerism is at the heart of AIChE’s achievements and progress. Enthusiastic and dedicated volunteer leaders give the Institute direction and life, from the local section grassroots-level, up.

In March, at AIChE’s Spring Meeting in Chicago, IL, AIChE honored some of the brightest lights in local section leadership when it presented its Shining Star — Local Section Volunteer of the Year awards. The Shining Star honors, presented on Mar. 14 at the Volunteer Recognition Reception, show appreciation to exemplary AIChE local section leaders who embody the spirit of volunteerism and dedication to AIChE’s mission.

This spring, Local Section Volunteer of the Year awards were presented to:

- **John Bobalek**, National Capital Local Section (Washington, DC)
- **Cory Jensen**, Rocky Mountain Local Section (Denver), and active in AIChE’s Young Professionals Advisory Board
- **John Lancaster**, vice chair of the Susquehanna Local Section (Hershey, PA)
- **Amanda Robben**, vice chair of AIChE’s new Virtual Section (<http://virtual.aiche.org>), and past chair of the Texas Gulf Coast Local Section (Freeport, TX).

Other local section leaders cited for honorable mention in the Shining Star program were: Tillus Beverly, Lehigh Valley Section (Bethlehem, PA); Dale Embry, Bartlesville (OK) Section; Zenaida Gephardt, Delaware Valley Section (Philadelphia, PA); Ellen Kloppenborg, Chicago Section; Chandra Nair, New Jersey Section (New Brunswick); and David Wishnik, Puget Sound Section (Seattle, WA).

Shining Star candidates are nominated by other members of their local sections, based on their outstanding efforts in local programming, section leadership, and member outreach. The national Local Sections Committee reviews the nominations and selects the recipients of Shining Star honors, which are presented at AIChE’s Spring and Annual Meetings.

In addition to recognizing outstanding service to local sections and the mentoring of young engineers, Shining Stars awards are presented for significant contributions to other member-oriented projects, such as regional conference, student and young professional events, leadership development conference, and other AIChE programs.

Reflecting on his own commitment to the Institute, Jensen says that he views his AIChE membership as “a representation of my life’s work in organization form. As I grow in my career, I realize that giving back, and being a part of the AIChE community, is critical for the Institute’s sustained evolution. Volunteering allows me to have a stake in this com-



▲ AIChE President Maria Burka (left) presents a Shining Star Award plaque to John Lancaster of the Susquehanna (Hershey, PA) Section, Mar. 14, at AIChE’s Spring Meeting in Chicago.



▲ Jensen



▲ Robben

Left and bottom right photo © 2011 Jim Summaria Photography.

munity that works to teach, mentor, and drive our profession,” says Jensen. “Volunteering and involvement can be fun, too,” he adds.

Lancaster agrees that working for his local section brings many intangible rewards. “Even though our section is small, it conducts important outreach in education, and also in promoting our profession,” he says. “My goal is to increase participation and membership within our section so that we can continue — and even expand upon — the great work that is being done.

Winners of the Shining Star honors receive free registration and covered expenses up to \$1,000 for their attendance at an AIChE Spring Meeting, Annual Meeting, or Leadership Development Conference of their choice. More information about AIChE Shining Stars can be found on the ChEnected blog (<http://chenected.aiche.org>), and at www.aiche.org/localsection/resources/ShiningStarAward.aspx.

In Memoriam: Rev. William J. “Bill” Stenger

Rev. William J. “Bill” Stenger died on Feb. 8, 2011, in Wilmington, NC, at age 84. He had been a member of AIChE for 60 years.

After serving in the U.S. Navy during World War II, Stenger earned a PhD in chemical engineering at West Virginia Univ. He began chemical engineering work at DuPont in 1953, later becoming manager of Safety, Health and Environmental Affairs at DuPont’s Cape Fear plant, near Wilmington, NC. He retired from DuPont in 1985.

After the death of his wife, JoAnn, Stenger entered the Pope John 23rd Seminary in Weston, MA, and was ordained in 1994. In 1995, he was assigned as pastor of St. Jude Catholic Church in Glen Dale, WV.

He is survived by eight children and their families.

Arnold Receives Draper Prize from National Academy of Engineering

Frances H. Arnold, the Dick and Barbara Dickinson Professor of Chemical Engineering, Bioengineering and Biochemistry at the California Institute of Technology, has been awarded the National Academy of Engineering's (NAE) 2011 Charles Stark Draper Prize — the U.S.'s top engineering honor. Arnold is being recognized jointly with Willem P. C. Stemmer, CEO of the drug development company Amunex, for their pioneering contributions to “directed evolution,” which enables researchers to guide the creation of desirable properties in proteins and cells. The Draper Prize was awarded Feb. 22, as part of the NAE's National Engineers Week celebration in Washington, DC.



Directed evolution synthetically harnesses the power of natural selection to evolve proteins or RNA, creating properties not found in nature. Most directed-evolution projects seek to evolve properties that are useful for agriculture, medicine, or industry by optimizing characteristics not selected for in the original organism.

Arnold and Stemmer's independent approaches to the development of directed protein evolution have led to practical and cost-effective ways to produce a wide range of new and improved products, including food ingredients, drugs, medical diagnostics, agricultural products, gene delivery systems, alternative energy, and biofuels. In the field of medicine, their work has led to better diagnostics for diseases and more-powerful antibiotics and drugs to treat arthritis. Further, their work in developing design principles for engineering complex biological systems is helping to explain why nature's designs work the way they do.

A Fellow of AIChE and recipient of the Institute's Professional Progress Award (2000), Arnold has been elected to all three membership organizations of the National Academies — the NAE (2000), the Institute of Medicine (2004), and the National Academy of Sciences (2008).

The Draper Prize, which includes a \$500,000 award, is considered the Nobel Prize of the engineering profession, and honors engineers whose accomplishments have significantly benefited society. Named for its founder, Charles Stark Draper, who pioneered inertial navigation, it is intended to honor those who have contributed to the advancement of engineering and to improve public understanding of the importance of engineering and technology.



SBE's James E. Bailey Award for Biological Engineering

Call for Nominations



The award is presented to an individual who embodies the spirit of James Bailey, one that is a pioneer, a mentor, an innovator, an integrator of biology and engineering, a teacher, and whose achievements

have provided a major impact to the field of biological engineering.

Submit your nomination form by **June 15, 2011**.

This award has been endowed by Cytos Biotechnology.

To find out more about the James Bailey Award and to submit a nomination go to <http://www.aiche.org/SBE/index.aspx>.

PAST RECIPIENTS

Harvey Blanch (UC Berkeley)

James C. Liao (UCLA)

James Swartz (Stanford)

George Georgiou (UT Austin)

Robert Langer (MIT)

Nicholas Peppas (UT Austin)

Edwin Lightfoot (Wisconsin)

Michael Shuler (Cornell)

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In Memoriam: Irwin Frankel, 1919–2010

Irwin Frankel of Fairfax, VA — an AIChE Fellow and a long-active member of the National Capital (Washington, DC) Section — died Nov. 2, 2010, at the age of 90.

A native of New Orleans, LA, Frankel earned a BS in chemical engineering from Tulane Univ., an MS from Case Institute of Technology, and a DChE from Rensselaer Polytechnic Institute. During World War II, he served as an aircraft maintenance officer in the U.S. Army Air Corps, and then spent more than 30 years in the Air Force Reserves, retiring as a Lieutenant Colonel in 1979. Frankel worked internationally for several companies before retiring as a senior staff engineer from Science Applications International Corp. (SAIC) in 1995. He held three U.S. patents as a result of his work.

An accomplished musician, Frankel was a member of the City of Fairfax Band, serving as principal clarinetist for much of his 35-plus years with the group. He played clarinet and saxophone for Fairfax's Dixieland Band, leading the band until 2009, and performed with the Niagara Falls Philharmonic Orchestra, the Southside (Chicago) Symphony, and other orchestras.

In Memoriam

Stanley E. Anderson, 74, Simpsonville, SC

George E. Barker, 82, St. Louis, MO

Joseph C. Betteken, 88, St. Louis, MO

Sidney M. Brunson, 83, League City, TX

Lee T. Carleton, 96, Huntington Beach, CA

Malcolm M. Coston, 92, Lake Forest, CA

Charles R. Dutra, 66, Socorro, NM

Gerry N. Gottier, 53, Emmaus, PA

Edward Greenfield, 94, Boca Raton, FL

William J. Maier, 88, Clifton, NJ

Lloyd A. Racicot, 64, Livingston, TX

Carlos A. Valenzuela, 63, Bethlehem, PA

Charles E. "Doc" Wicks, 85, Corvallis, OR

AIChE® Calendar Conferences



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.)

JUNE 5–8, 2011	AIChE-DECHEMA Global Conference on Sustainability in the Process Industries (ESPI) Hong Kong Univ. of Science and Technology • Hong Kong, SAR, China
SEPTEMBER 11–15, 2011	56th Annual Safety in Ammonia Plants and Related Facilities Symposium Sheraton Montreal Hotel • Montreal, QC
SEPTEMBER 26–28, 2011	6th AIChE/SPE Joint Workshop — Challenges in Flow Assurance and Crude Oil Quality Omni-Houston Westside • Houston, TX
OCTOBER 4–6, 2011	Offshore Technology Conference (OTC) Brasil 2011 Riocentro • Rio de Janeiro, Brasil
OCTOBER 6–7, 2011	AIChE Regional Process Technology Conference Moody Gardens Hotel • Galveston, TX
OCTOBER 16–21, 2011	2011 AIChE Annual Meeting Minneapolis Convention Center • Minneapolis, MN
NOVEMBER 1–3, 2011	AIChE Northeast Regional Conference at the ChemShow Jacob Javits Convention Center • New York, NY



Scheduled Webinars

Register and view live and archived webinars at <http://www.aiche.org/webinars/>

MAY 4, 2011 2:00–3:00 PM ET	Working Across Cultures Presented by Dr. John Hooker
MAY 11, 2011 2:00–3:00 PM ET	AIChE Sustainable Engineering Forum Webinar: Embedding Sustainability into GlaxoSmithKline's Operations Presented by Dr. Concepción "Conchita" Jiménez-González
MAY 18, 2011 2:00–3:00 PM ET	AIChE's Leadership Webinars: Chemical Engineering Essentials from Academic Authors — Session Seven: Thermodynamics: Basics and Modeling Presented by Dr. John P. O'Connell
MAY 25, 2011 2:00–3:00 PM ET	Media Training and Public Outreach: How to Communicate Effectively Presented by Sean Connolly
JUNE 1, 2011 2:00–3:00 PM ET	Sustainable Development in the Process Industries: Cases and Impact — An Overview of Real-World Examples Presented by Dr. Joseph B. Powell