



Institute News

President's Message

Looking to the Future

During the past few years, AIChE has been reexamining its goals and mission to ensure that it stays relevant and functions optimally to serve its members in the 21st century. Hard work by volunteers and AIChE staff has allowed us to launch many successful new initiatives, such as webinars, as well as activities and programs geared toward young professionals. We need to maintain this momentum and explore new directions and opportunities to provide ever-better services that will enable you in your careers as chemical engineers.

The 2008 Long-Range Plan, developed under then-president Larry Evans, set forth a series of strategic goals for the Institute. In 2011, I plan to focus on three of these goals: become a global organization of chemical engineering practitioners; impact societal issues by informing and educating the public and government about complex technical areas; and engage with others to improve the undergraduate curriculum in chemical engineering and promote life-long learning. I hope you will work with me and help the Institute grow and retain its role as the premier professional society for chemical engineers throughout the world.

AIChE as a Global Society. In today's world economy, it is difficult to imagine an effective professional organization that limits its activities to within the borders of the United States. Chemical engineers work in global industries, and the rapid pace of technological advances continues to shrink the world and key markets (oil and gas, biofuels, chemicals, pharmaceuticals, microelectronics, etc.). All major chemical manufacturing and processing companies operate globally. Academic institutions are developing novel international partnerships.

Innovation and research are global in nature, with many U.S.-based firms doing research overseas and many foreign firms hiring U.S. workers.

American chemical engineers cannot afford to ignore these developments. In fact, much can be gained by understanding international issues that can be a source of business and job opportunities.

AIChE's International Committee was established in 2005, and its active and enthusiastic members have since explored numerous avenues for growth in the international arena. Student chapters are being established in South America, Asia, and Europe. These chapters are connected with "sister" chapters at U.S. universities, providing mechanisms for U.S. students to communicate easily with contemporaries around the world. We hope this program will continue to grow, giving our students exposure to other cultures and insights they can later use during their professional careers. New AIChE local sections are being established around the world, and the new Virtual Section (p. 54) could also go a long way toward reaching many more potential members outside the U.S.

Government Relations. AIChE's government relations activities arise (a) from its Constitution, which states that the Institute is to "... serve society, particularly where chemical engineering can contribute to the public interest;" (b) from its Bylaws, which charge the Societal Impact Operating Council (SIOC) to focus on efforts for chemical engineers to address societal needs, including outreach and public policy; and (c) from the 2008 Long-Range Plan.

During the financially challenging times at the beginning of the last decade, AIChE's Washington, DC, office was closed, and there is now no

full-time, permanent staff associated with government relations activities. Volunteers have stepped up and continue some work in this area through the Government Relations Committee (GRC), for example, by participating in congressional briefings and the Washington Internships for Students of Engineering (WISE) program. For many decades, AIChE has been an active member contributing to the WISE program, which teaches students about the public policy process, including how government officials make decisions on complex technological matters. It is time to involve a younger, wider spectrum of our members, such as knowledgeable former WISE interns and other young professionals, in government relations activities.

Safety Education. A critical issue in light of recent disasters in the chemical process industries as well as accidents in university research laboratories is the safety education of chemical engineering students and practicing professionals. AIChE is looking at how it can contribute its members' expertise in this important area.

AIChE's future looks better and brighter. To continue in that positive direction, 2011 should be a building year — a year to explore new opportunities, chart new directions, and possibly shift resources to where they can be best used so that we continue to be an effective and strong professional society serving our members. Change is hard, but necessary. I am honored to be AIChE's president for 2011, and I hope you will join me in this journey by getting more involved in one of the myriad activities offered through the Institute's many volunteer committees, sections, divisions, and more.

Maria K. Burka, 2011 President

AIChE to Help Kick Off International Year of Chemistry

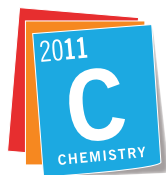
Around the world, chemists and chemical engineers are beginning a year-long celebration aimed at engaging the public in the importance of chemistry.

The Chemical Heritage Foundation (CHF; Philadelphia, PA; www.chemheritage.org) will host the U.S. opening of the International Year of Chemistry (IYC 2011) Feb 1–5. AIChE, the American Chemical Society (ACS), the American Chemistry Council (ACC), the National Science Foundation (NSF), and numerous international organizations are joining in the festivities to promote the value and relevance of chemistry, and to demonstrate to the public how this science contributes to the well-being of humankind.

During opening week, Philadelphia will be the scene of panel discussions, workshops, and special presentations designed to generate enthusiasm for chemistry, as well as to encourage people to develop IYC activities in their home cities and communities.

AIChE members, local section leaders, and student groups are being encouraged to extend their customary National Engineers Week involvement beyond the traditional February activities, by conducting K-12 and public outreach throughout 2011. Ideas and resources for a range of programs are available at the IYC website, and at websites like the AIChE/CHF-sponsored www.chemicalengineering.org. AIChE members can also participate in IYC-related sessions at AIChE conferences, including the Spring Meeting in Chicago, IL, Mar. 13–17.

“We want people to understand chemistry’s role in leading innovation in America and around the world,” says Thomas R. Tritton, President and CEO of CHF. “Chemistry is at the heart of solving many of our most daunting problems, including develop-



International Year of **CHEMISTRY** 2011

ing new medicines, inventing useful materials and technologies, sustaining food production, and creating new energy sources.”

In promoting IYC 2011, AIChE, ACS, and ACC will focus their activities on the role of chemistry and chemical engineering in meeting global challenges, with the major themes of clean air, safe water, dependable medicines, advanced materials, and sustainable energy. These subjects will be explored through a series of IYC-sponsored educational activities, such as science book clubs and science cafés, that will be held at schools, museums, international trade conferences, and other venues.

In 2008, the 63rd General Assembly of the United Nations adopted a resolution proclaiming 2011 as the International Year of Chemistry. Ethiopia, supported by many other countries, submitted the UN resolution after a bid endorsed by the International Union of Pure and Applied Chemistry (IUPAC), which drew attention to the UN Decade of Education for Sustainable Development, 2005–2014. The resolution underscores that national and international activities carried out during 2011 should emphasize the importance of chemistry for sustainable development in all aspects of human life.

IUPAC and the United Nations Educational, Scientific, and Cultural

Organization (UNESCO) are organizing the global IYC, and are focused on achieving four key goals:

- increasing public appreciation of chemistry in meeting world needs
- encouraging an interest in chemistry among young people
- generating enthusiasm for the creative future of chemistry
- celebrating the achievements of Marie Curie and the contributions of women to chemistry (this year marks the 100th anniversary of Curie’s receiving the Nobel Prize for Chemistry).

The formal International Launching Ceremony for IYC 2011 will take place at UNESCO World Headquarters in Paris, Jan. 27–28, 2011, and will include an international seminar, an exhibition, and other social and cultural events. AIChE’s delegates to the International Launching are Institute Secretary Kimberly Ogden and Treasurer Andre Da Costa.

Opening week of IYC at The Chemical Heritage Foundation (315 Chestnut St., Philadelphia, PA) will feature a variety of opportunities for interactive learning and fun for science professionals and the general public alike. The schedule includes:

• *February 1:* “Global Challenges, Chemistry Solutions.” This panel discussion, led by Daniel Nocera, the Henry Dreyfus Professor of Energy and Professor of Chemistry at the Massachusetts Institute of Technology, will feature Andrew Liveris, Chairman and CEO, The Dow Chemical Co.; Ellen Kullman, Chair and CEO, DuPont; Janet Hering, Director, Swiss Federal Institute of Aquatic Science and Technology; Joshua S. Boger, former Chair and CEO, and current board member, Vertex Pharmaceuticals; and Rita Colwell, Distinguished University Professor, Univ. of Maryland at College Park, and former Director, National Science Foundation.

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IYC 2011 (cont'd)

• *February 2:* Meeting of the IYC Book Club. Held in collaboration with Headhouse Books, the Book Club will feature *The Emperor of Scent* by Chandler Burr. Chemist Joseph Rucker of the Monell Chemical Senses Center in Philadelphia will discuss the sense and sensibility of smell.

• *February 3:* A celebration of the life and work of Percy Julian. Actor James Armstead will bring to life the successful African-American chemist and businessman for students at the African-American Museum of Philadelphia and at the College of Physicians. (See p. 64 for a related story.)

• *February 4:* "Elemental Matters." A new exhibit of seven contemporary artists responding to the periodic table of elements opens in the CHF's Hach Gallery. The artists will be in the gallery to discuss their work from 5 p.m. to 8 p.m., and their work will remain on display through Nov. 2011.

• *February 5:* "Chemistry at the Franklin Institute Science Museum." Hosted by the American Chemical Society, this event will be led by dozens of volunteers who will guide visitors of all ages through a variety of chemistry experiments.

In addition to these programs, CHF is launching many other creative activities, including "It's Elemental," a national high school video competition that invites students to submit videos inspired by a single element to create an interactive periodic table.

Following the February launch, major IYC activities will continue through the year. In addition to the Spring Meeting in Chicago, AIChE will continue its IYC focus at its Annual Meeting in Minneapolis, MN, Oct. 16–21. Another key IYC celebration will take place at IUPAC's World Chemistry Congress, July 30–Aug. 2.

To learn more about IYC 2011 and the full slate of international events, visit www.chemistry2011.org.

AAEE Offers Environmental Engineering Certificate

AIChE members working in environmental engineering may qualify to become a Board Certified Environmental Engineer (BCEE, for licensed engineers) or a Board Certified Environmental Engineering Member (BCEEM, for non-PEs) through the American Academy of Environmental Engineers (AAEE).

The AAEE certification program, jointly sponsored by AIChE and 11 other engineering societies, is open to people holding environmental engineering or related engineering degrees acceptable to the AAEE Board of Trustees plus eight years of experience, of which four years must include responsible charge. Applicants apply in one of eight specialty areas: air pollution control, environmental sustainability, general environmental engineering, hazardous waste management, industrial hygiene, radiation protection, solid waste management, or water supply and wastewater management. Eligible applicants sit for a multiple-choice and written exam and a peer review by Academy-certified members. (Those with 16 years of experience plus 12 years of responsible charge may request a waiver of the written examination.) Once suc-

cessfully completed, the Board grants the appropriate certification status.

With fewer than 2,600 current BCEEs and BCEEMs, AAEE represents the top 4% of practicing environmental engineers. These certified members and engineers hold a competitive advantage, and are often sought after by consulting firms and federal, state, and local agencies for project management, design, and consultation, for workshop and seminar presentations, and for volunteer positions in engineering societies. Additionally, certification offers other benefits, including publications, inclusion in the annual *Who's Who in Environmental Engineering* directory, networking opportunities, and more.

Applications for 2011 certification are due by March 31. The application fee is \$75 and includes a one-year subscription to *Environmental Engineer*. The examination fee is \$150, and annual recertification is \$175.

To learn more about eligibility requirements, or for an application form, visit www.aaee.net, and look under Membership. For more details, contact Sammi Olmo at jsolmo@aaee.net; or call (410) 266-3311.

INSTITUTE AND BOARD AWARD NOMINATIONS DUE FEBRUARY 15

Nominations are being accepted for AIChE's 2011 Institute and Board of Directors' Awards. These honors, to be presented at the October 2011 AIChE Annual Meeting in Minneapolis, MN, recognize significant achievement in the chemical engineering profession, and include a series of recently inaugurated awards that celebrate outstanding contributions in industrial practice. Information on each award and the nomination process can be found at www.aiche.org/About/Awards/InstituteandBoard.aspx.

Nomination forms, supporting letters, and supplemental materials should be saved as electronic documents (PDF format is preferred) and submitted to AIChE on a single CD. The postmark deadline for Institute and Board award nominations is Feb. 15, 2011. Questions about the nomination process may be addressed to awards@aiiche.org.

VIRTUAL SECTION STARTS UP AT JANUARY 27 MEETING

January 2011 marks the grand opening of AIChE's newest meeting venue, allowing members everywhere to discover a new opportunity to learn, network, and enjoy the benefits of AIChE participation — from the convenience of their desks or laptops.

On Jan. 27, AIChE's Virtual Local Section (<http://virtual.aiche.org>) goes online with its first public meeting. Members who cannot fit local section meetings into their work schedules, or who live too far from their assigned section's center of activity to conveniently attend events, will be able to log in to monthly Virtual Section meetings using WebEx software.

The Virtual Section will function much like in-person sections — with technical presentations, guest speakers, and even virtual plant tours. Organizers are also planning to offer career support for unemployed and underemployed engineers, as well as other forms of mentoring. Providing opportunities for give-and-take and camaraderie among participants — vital components of AIChE's live meetings — are also a key objective of the Virtual Section organizers.

The inaugural meeting, scheduled for Thursday, Jan. 27, 2011, at 7:00 p.m. EST, will feature a presentation on "Research and Innovation," by Dr. Maria K. Burka, AIChE's 2011 President and Director of the National Science Foundation's Process and Reaction Engineering Program in the Division of Chemical, Bioengineering, Environmental and Transport Systems.

Virtual Section membership is free to AIChE members through 2011. To learn how to be a part of the inaugural meeting, visit the Virtual Section website at <http://virtual.aiche.org/>. For more information, contact Dan Lambert, the Virtual Section Chair, at virtualchair@aiche.org.



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.)

JANUARY 9–13, 2011	2nd International Congress on Sustainability Science and Engineering (ICOSSE '11) JW Marriott Starr Pass Resort • Tucson, AZ
JANUARY 16–19, 2011	SBE's 3rd International Conference on Biomolecular Engineering Grand Hyatt San Francisco • San Francisco, CA
MARCH 13–17, 2011	2011 AIChE Spring Meeting Hyatt Regency Chicago • Chicago, IL
MAY 2–5, 2011	Offshore Technology Conference (OTC) 2011 Reliant Park • Houston, TX
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
OCTOBER 16–21, 2011	2011 AIChE Annual Meeting Minneapolis Convention Center • Minneapolis, MN



Scheduled Webinars

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

JANUARY 5, 2011 2:00–3:00 PM ET	Mentoring: What You Need to Know and Do Presented by Dr. Lois J. Zachary
JANUARY 12, 2011 2:00–3:00 PM ET	AIChE's Leadership Webinars: Chemical Engineering Essentials from Academic Authors — Session Three: Process Dynamics and Control Presented by Dr. Thomas F. Edgar
JANUARY 19, 2011 2:00–3:00 PM ET	An Introduction to Solid/Gas Separation: Fundamentals and Applications Presented by Dr. Karl V. Jacob
JANUARY 26, 2011 2:00–3:00 PM ET	Deflagration Venting for Combustible Dusts — What You Need to Know Presented by Molly R. Myers and Michelle Murphy
FEBRUARY 2, 2011 2:00–3:00 PM ET	Guiding Organizational Change Presented by Dr. Ron Elsdon
FEBRUARY 9, 2011 2:00–3:00 PM ET	AIChE's Leadership Webinars: Chemical Engineering Essentials from Academic Authors — Session Four: Fluid Mechanics for Chemical Engineers — Old and New Presented by Dr. James O. Wilkes