Institute News

Meet Some of the New AIChE Fellows

Steven Cramer is the William Weightman Walker Professor of Polymer Engineering at Rensselaer Polytechnic Institute (Troy, NY). His research involves protein-surface interactions, including multiscale modeling of complex chromatographic behavior, molecular modeling of selectivity and affinity in multimodal chromatographic systems, spectroscopic investigations of protein-surface interactions, chromatography on a chip, and smart biopolymer affinity separation systems. He is editor of *Separation Science and Technology*. A Fellow of the American Institute for Medical and Biological Engineering, he has published 150 papers, holds nine patents, and has advised 35 PhD students.

Dilap K. Das, P.E., is a principal engineer at Bayer CropScience (Kansas City, MO), with over 20 years of experience in emergency relief system design. He is chair of the SuperChems Technical Steering Committee of AIChE's Design Institute for Emergency Relief Systems (DIERS). He holds one U.S. patent and is the co-author of three books in chemical engineering, including the upcoming second edition of the Center for Chemical Process Safety's (CCPS) *Guidelines for Pressure Relief and Effluent Handling Systems*. He is a licensed professional engineer in New York, New Jersey, Louisiana, and Missouri, and teaches AIChE-sponsored P.E. licensing courses.

Norman Loney, P.E., is a professor and chair of the Otto H. York Dept. of Chemical, Biological and Pharmaceutical Engineering at New Jersey Institute of Technology (Newark, NJ). His research interests include mathematical modeling of chemical and biological processes, and he has served as associate editor of *Chemical Product and Process Modeling*. He has authored some 65 publications, and is known for his textbook *Applied Mathematical Methods for Chemical Engineers*. A licensed professional engineer in Texas, he worked at Foster Wheeler, M. W. Kellogg, Oxirane Chemical, and Exxon Chemical prior to joining NJIT in 1991.

Ramesh Rameswaran is the Process Technology Manager at the SABIC Technology Center (Houston, TX). Prior to joining SABIC, he held R&D, engineering, and management positions in ARCO/Lyondell Chemical Co., where his contributions earned the company's Manufacturing Excellence Award. He is one of the founders of AIChE's Process Development Div., where he has held several leadership positions. He was appointed to AIChE's Chemical Technology Operating Council (CTOC), and served as its chair from 2009–2010. He earned his PhD in chemical engineering at Brigham Young Univ.

John R. Richards, P.E., is a research fellow at DuPont Experimental Station (Wilmington, DE), where he has developed polymerization models and control systems for such products as polymers, monomers, and biological systems that had significant impacts on process yield, product quality, and productivity. As a faculty member at the Univ. of Delaware, he has taught the Fundamentals of Engineering and Professional Engineering Review in Chemical Engineering courses. A registered P.E. in Delaware, he has been an AIChE member since 1976 and has organized sessions on modeling and control of polymer processes at AIChE meetings.

Edmund G. Seebauer is the James W. Westwater Professor and Head of Chemical and Biomolecular Engineering at the Univ. of Illinois at Urbana-Champaign. His research focuses on defect engineering with applications in nanoscale systems and devices. A Fellow of the American Association for the Advancement of Science, the American Physical Society, and the American Vacuum Society, he has authored 160 publications, co-authored a book on charged defects in semiconductors, and organized conference sessions for AIChE's Materials Engineering and Sciences Div. He is co-author of the textbook *Fundamentals of Ethics for Scientists and Engineers*.

Christine Seymour is Associate Research Fellow in Global Chemistry Manufacturing and Controls at Pfizer Inc. (Groton, CT). Her technical knowledge includes fermentations, chemical synthesis, immediate- and controlled-release tablets, inhaled medications, and transdermal patches. She has guided numerous drug applications to market at Pfizer, leading teams that included chemists, engineers, formulators, and analysts in research and manufacturing to move medications through the commercial regulatory approval process. She is currently a director of AIChE, a board member in AIChE's Society for Biological Engineering, and active in AIChE conference programming.

Wendy Smades is a senior process engineering manager at Dow Chemical Co. (Freeport, TX), where she has held a variety of engineering and management roles over the past 30-plus years. As a training supervisor, she developed a global training curriculum for process engineering, enhanced the student cooperative education program, facilitated training for management/leadership courses, and recruited new hires. Among her current responsibilities is the development and implementation of project-development best practices. She is active in AIChE's Center for Chemical Process Safety (CCPS) and is chair of the Safety and Chemical Engineering Education (SACHE) committee.

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

Perspectives on the Institute:
International Committee Expands AIChE's Global Influence

The past year has been an eventful and important one in AIChE's ongoing efforts to become a global organization of chemical engineers. Today's economic trends, geopolitical complexities, and technological evolution have only served to confirm the need for both continued and expanded international activity on the part of the AIChE. There is certainly a broad-based acknowledgment of the importance and benefits — both short-term and long-term — of international activities and programs for the organization and the membership at large. The panoply of exciting, globally oriented projects — initiated under the auspices of AIChE as a whole and brought to fruition by the Institute's various committees, operating councils, and other entities — testifies to this gathering consensus.

Over the last twelve months, the AIChE International Committee has taken the productive step of adopting a subcommittee structure. The subcommittees are charged with the follow ongoing duties:

- recruitment of international professional members and nurturing the creation of new international local sections
- recruitment of international student members and creation of new student chapters
- collaboration with other societies
- international accreditation and credentialing
- joint international meetings and educational opportunities
- web-based activities, updates, and international news.

The rationale for adopting such a subcommittee structure is to bring a stronger sense of coherence to the overall efforts of the Institute as it works to develop a program of international activities that is synergistic, flexible, and coordinated. Furthermore, this expanded organizational structure will facilitate the crucial task of collecting and analyzing metrics on the success and impact of AIChE's international activities — to help guide the Institute's global outreach efforts into the future.

Currently, there are five local sections located outside North America: in Saudi Arabia, Netherlands/Belgium, India, Singapore, and Thailand — with the latter three established in the past decade. The number of international student chapters is growing at a rapid rate, with 13 established and with several more in the process of applying. Countries with student chapters include Brazil, Chile, Denmark, Ecuador, India, Kuwait, Mexico, Pakistan, Qatar and Colombia.

AIChE's 2011 Spring Meeting welcomed a delegation from China, and the 2011 Annual Meeting (Oct. 16–21 in Minneapolis, MN) will host a delegation from India, complete with a slate of speakers and a reception. The International Committee is also hard at work on co-sponsorship of the 75th anniversary meeting of the Society of Japanese Chemical Engineers (SCEJ) in March 2012, including a joint conference session.

The International Committee and its various subcommittees anticipate a busy and productive coming year. Among the plans and action items are:

- to continue the promotion of local sections and recruitment of international students from all regions
- to facilitate the creation of student chapters abroad
- to continue analysis of possible collaborations with non-U.S. entities
- to provide support and expertise for personal and institutional accreditation
- to further develop AIChE's web presence and utility
- to move toward a more-active AIChE presence at international conferences and meetings.

This is just a sampling of the work that will be undertaken or continued in the months to come.

In the five years since the establishment of the AIChE International Committee, much has been done to realize the strategic goal of making AIChE a global organization of chemical engineers. The momentum has been building. In light of the specific plans and initiatives, as well as the organizational refinement of adopting and charging subcommittees, it is hoped that the next year will witness an acceleration of that momentum as AIChE's international activities develop and expand further.

The support and involvement of all of AIChE's members will be pivotal in reaching this next level of achievement, and we welcome your input as we move forward. Contact the International Committee at intlteaminput@aiche.org.

This article was prepared by the leaders of AIChE's International Committee: L.-S. Fan, Chair; Marc-Olivier Coppens, Vice Chair; Ignacio Grossmann, Past Chair; Bette Lawler, Director, AIChE International Programs; Maria Burka, 2011 AIChE President.

WISE Interns Mix Chemical Enginering with Public Policy

Three chemical engineering students spent their summer vacation developing skills and broadening their perspectives as AIChE's 2011 WISE (Washington Internships for Science and Engineering) interns.

Rated one of the top internship programs in the country by *The Princeton Review*, the WISE program selects undergraduate engineering students to conduct research on public policy issues for nine weeks during the summer in Washington, DC. The students have the opportunity to learn about interactions between the engineering community and the government in matters of public policy, and to see how engineers can contribute to decision-making on complex technological matters.

As part of the program, the students prepared and delivered papers on public policy topics based on what they learned in their intern roles. Mikkel VanderBergh, WISE intern from Oregon State Univ., made a pitch for "Creating a Federal Mandate for State Renewable Electricity Standards." Martha Hay, WISE Intern from Virginia Polytechnic Institute, focused on "Elevating Ethanol as a Petroleum Substitute." Anita Luong, WISE intern from Johns Hopkins Univ., reported on "Addressing Regulatory Barriers to Grid-Scale Energy Storage Deployment." These papers, along with those of WISE interns sponsored by other engineering organizations, were presented on Capitol Hill on Aug. 4. The papers will be publised in the *Journal of Engineering and Public Policy.*

The three AIChE-sponsored WISE students also presented their research in an AIChE webinar, which will soon be available through AIChE's ChemE on Demand. Interns Luong and VanderBergh are planning to attend AIChE's 2011 Annual Meeting in Minneapolis, MN, where they are slated to speak at the National Student Conference on Oct. 15 and at the Environmental Div.'s Cecil Award session on Oct. 18.

AIChE relies on volunteers from among its membership to help mentor the interns. Basil "Bill" Doumas, a past president of AIChE; David Thompson, Idaho National Laboratory; David Gushee, AIChE Government Relations Committee; Herb Cabezas, U.S. Environmental Protection Agency; and Jack Hipple, Innovation-TRIZ and AIChE's Management Div., served as AIChE mentors this year. Their contributions were supplemented by Rosemarie Wesson of the National Science Foundation (NSF) and AIChE's Management Div., who coordinates the program on AIChE's behalf. Maria Burka of the NSF, AIChE's 2011 President and a long-time champion of the WISE program, and Robert Burka, an attorney, also assisted in mentoring. Vern Weekman and Sarah Widder were among the paper reviewers.

This marked the 28th year in which AIChE has nominated at least one chemical engineering student for the WISE program. Because AIChE does not maintain a Washington office, the American Chemical Society provided office space and facilities for AIChE's three interns.

The deadline for 2012 WISE program applications is Dec. 31, 2011. For information, visit www.wise-intern.org.

▲ Pictured, from left to right, are AIChE's WISE Interns: Mikkel VanderBergh of Oregon State Univ., Martha Hay from Virginia Polytechnic Institute, and Anita Luong from Johns Hopkins Univ. They spent the summer of 2011 in Washington, DC, where they studied public policy and wrote papers on engineering topics, incorporating what they learned.

Stephanopoulos Receives Eni Award

Gregory Stephanopoulos, the W. H. Dow Professor at the Massachusetts Institute of Technology, has been awarded the 2011 Eni Award for his research on modifying the genetic structure of bacteria with the goal of making them more efficient for transforming renewable raw materials. Presented by the Italian oil company Eni, the Eni Award honors significant achievements in environmental research and better uses of alternative energy. In the photo below, Stephanopoulos (right) accepts the award from (left to right) Paolo Scaroni, Eni CEO, Giuseppe Recchi, Eni President, and the Hon. Giorgio Napolitano, President of the Republic of Italy. The award was presented on June 8 at the Quirinale Palace in Rome.

Waste-to-Energy Meeting Set for New York City, Nov. 9

AIChE's Institute for Sustainability (IfS), in collaboration with Greener Package, a consortium that promotes sustainability across the packaging value chain, will co-sponsor Waste-to-Energy Exchange on Wednesday, Nov. 9, at New York Institute of Technology in New York, NY. This one-day conference — an offshoot of the upcoming Sustainable Packaging Symposium (Apr. 3–5, 2012, Houston, TX) — will explore solid waste as a potential renewable source of energy. Experts from industry and academia will discuss the importance of waste-to-energy (WTE) as a sustainable source, and how the WTE approach can be implemented as an eco-friendly system.

Presentations will address how WTE can be applied to packaging operations, with sessions covering sources of waste for WTE and opportunities for packagers, obstacles to WTE implementation, and lifecycle and total-cost assessments for WTE. Another session will present statistics about recycling in the U.S. and where opportunities for WTE may exist. The meeting will conclude with a panel discussion on the challenges and opportunities for WTE in the future.

Information about Waste-to-Energy Exchange can be found on the Sustainable Packaging Symposium website: www.sustainablepackagingsymposium.com. For information about other activities of the Institute for Sustainability, visit www.aiche.org/ifs.

Khosla to Present Bailey Lecture

Chaitan Khosla, chair and professor of chemical engineering, chemistry, and biochemistry at Stanford Univ., has been named the recipient of AIChE's Society for Biological Engineering's (SBE) James E. Bailey Award. The award will be presented at AIChE's 2011 Annual Meeting in Minneapolis, MN, where Khosla will present the Bailey Award Lecture on Tuesday, Oct. 18, 6:00 pm–7:00 pm. In his lecture, entitled "Natural Products and the Chemical Engineer," Khosla will discuss the potential — and engineering challenges — of natural products in applications ranging from new drugs to coatings to consumer electronics.

A member of the American Academy of Arts and Science and the National Academy of Engineering, Khosla has spent the past two decades studying polyketide synthases as paradigms for modular catalysis, and has used their properties to engineer novel antibiotics. More recently, he has investigated celiac sprue pathogenesis with the goal of developing therapies for this widespread but overlooked disease. He has co-authored over 250 publications and holds 50 U.S. patents.

The Bailey Award is presented for outstanding contributions to the field of biological engineering, and is presented in memory of biotechnology pioneer Jay Bailey.

AIChE Blog Will Keep Annual Meeting Attendees "ChEnected"

Chemical engineers who are unable to attend AIChE's 2011 Annual Meeting in Minneapolis, MN, (Oct. 16–21) can stay on top of the major events online, thanks to real-time updates at ChEnected, the AIChE blog (www.chenected.com).

Beginning with the National Student Conference on Saturday, Oct. 15, and continuing through Thursday, Oct. 20, ChEnected's "Reactor" bloggers will provide updates throughout each day, with details about special events, conference news, key technical sessions from the topical conferences, and more.

ChEnected bloggers will also be posting:

- video interviews of keynote speakers, award recipients, and poster presenters
- photo slideshows from the Welcome Reception, the Chem-E-Car Competition, and award ceremonies
- summaries of the keynote lectures and presentations — including the Professional Progress Lecture, the Society for Biological Engineering's Bailey Award Lecture (see the related article above), the Institute Lecture, and the Corporate Innovation Award Lecture
- coverage of events for young professionals
- field reports from the International Congress on Energy; the Annual Meeting Plenary on Chemical Science Innovation: The Future of the U.S. Chemical Enterprise; and the International Year of Chemistry Plenary.

In addition, ChEnected blogger Alessandra Carreon will blog about technical sessions related to sustainability.

To participate, visit www.ChEnected.com/Annual for hourly meeting updates. Readers can also stay updated via Facebook, Twitter, YouTube, and Flickr by visiting any of these sites and adding "/ChEnected" to go directly to AIChE's pages. ChEnected encourages readers to comment on blog posts that resonate with them, and to share them with their own networks. The official Twitter hashcode for the Annual Meeting is #AIChEAnnual.

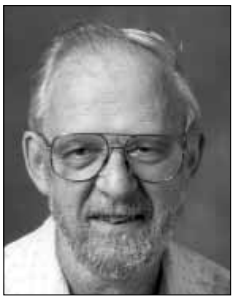
If you are attending the Annual Meeting and would like to contribute news, session reports, or other content describing your experience at the meeting, you can do so at www.ChEnected.com/conference-contributions.

Herbert Toor, AIChE Fellow and Influential Carnegie Mellon Dean

Hebert L. (Herb) Toor, a former dean and professor emeritus at Carnegie Mellon Univ., died of Alzheimer's disease on July 15, 2011, in Middlebury, VT. He was 84. A leading researcher in transport phenomena, Toor also transformed the teaching of engineering at Carnegie Mellon Univ. over the course of his long tenure at the school.

Born in Philadelphia, PA, Toor served in the U.S. Navy during World War II before earning a BS from Drexel Univ. and MS and PhD degrees at Northwestern Univ., all in chemical engineering. He became an assistant professor of chemical engineering at the Carnegie Institute of Technology (now Carnegie Mellon Univ.) in 1953, and was promoted to full professor in 1961. He became head of the Dept. of Chemical Engineering in 1967 and was appointed Dean of Engineering in 1970, a position that he occupied until 1979.

As dean, Toor made revolutionary contributions at Carnegie Mellon, including the establishment in 1976 of the Dept. of Engineering and Public Policy, a multidisciplinary research program that combines engineering analysis and design with policy issues. Another contribution was the creation, also in 1976, of the Design Research Center (now the Institute of Complex Engineered Systems), which aims to develop systematic and computational multidisciplinary approaches to engineering design. Toor also worked to increase enrollment of women and minority students in the engineering school.



A member of the National Academy of Engineering, Toor was a Fellow of AIChE, and received its Allan P. Colburn Award (1964) in recognition of his contributions to chemical engineering publications. In 2008, AIChE named Toor one of the "One Hundred Chemical Engineers of the Modern Era."

Toor was legendary in the classroom. One legend tells of his using a cigarette rather than chalk to write on the board.

Aside from his work, Toor's main interests were his family and his garden — he said that "turning a Pittsburgh clay backyard into great soil for growing vegetables" was perhaps his most useful achievement. He was also interested in history, politics, and energy problems, and enjoyed family camping and backpacking trips in the U.S. and the Canadian Rockies. He is survived by his wife of 60 years, Beth, and his children and their families.

This article is based on an appreciation written by Toor's colleagues, Ignacio E. Grossmann and Arthur W. Westerberg.

John Sinfelt, AIChE Fellow and Unleaded-Gasoline Pioneer

John H. Sinfelt, Senior Scientific Advisor Emeritus at ExxonMobil Research and Engineering, died on May 28, 2011. He was 80 years old and lived in Tewksbury, NJ. While working for Standard Oil Development Co. (now ExxonMobil Research and Engineering) in the 1970s, he invented a catalytic process using a combination of platinum and iridium, which allowed refiners to inexpensively produce high-octane gasoline without adding lead.

Born in Munson, PA, Sinfelt earned his BS in chemical engineering at Pennsylvania State Univ. and his chemical engineering MS and PhD at the Univ. of Illinois. He began his career at Standard Oil in 1954, working on improving platinum catalysts. Much of his research on bimetallic catalysis involved developing the concept of highly dispersed cluster catalysts and the application of this concept in the catalytic reforming of petroleum fractions. His invention of a superior platinum-iridium catalyst was crucial to the development of high-octane lead-free gasoline, an accomplishment that earned him the U.S. National Medal of Science in 1980.

Sinfelt's research provided the foundation for many other industrial advances, including the development and application of multi-metallic catalysts to reduce the emissions of pollutants such as carbon monoxide, unburned hydrocarbons, and nitrogen oxides from vehicle exhaust systems. He held more than 40 U.S. patents.

In addition to the National Medal of Science, Sinfelt's accomplishments were recognized with the American Institute of Chemists' Gold Medal (1984); the Society of Chemical Industry's Perkin Medal (1984); and AIChE's Professional Progress Award (1975) and Alpha Chi Sigma Award for Chemical Engineering Research (1971). He was elected to the National Academy of Sciences, the National Academy of Engineering, and the American Academy of Arts and Sciences. He was also named by AIChE as one of the "100 Chemical Engineers of the Modern Era."

He is survived by his wife, Muriel, and a son.

Regional Process Technology Conference (Cont'd from p. 18)

see the special energy supplement in the August issue of *CEP*.)

A Thursday evening social hour and dinner, hosted by the South Texas Section, will feature a presentation by "The First Professor of Chemical Engineering in Space," Dr. Al Sacco, former NASA space shuttle astronaut and dean of the College of Engineering at Texas Tech Univ.

Among the sessions on Friday, Oct. 7, is one designed for young professionals, with presentations on the fundamentals of process safety, process simulation, coking, and catalytic reduction. Young professionals can also take part in a Friday evening mixer.

An exhibition will showcase service and equipment vendors, where providers and users of equipment and services can develop mutually beneficial relationships. Companies can further raise their profiles by becoming a Process Technology Conference sponsor — with a variety of benefits available for different levels of sponsorship.

AIChE members receive a discounted registration rate (for either the full two-day conference or one-day attendance). Professional Development Hour (PDH) credits will be offered for participation in the technical sessions. Registration and program information for the Regional Process Technology Conference, as well opportunities for exhibitors and sponsors, are available at www.aiche.org/Conferences/2011Regional/Galveston.aspx.

In Memoriam

Samuel L. Bean, 85, Wilmington, DE

Thomas J. Dolan, 91, Melrose, MA

Robert E. Fuguitt, 94, Perry, GA

Peter Kohudic, 69, Allentown, PA

William G. Light, 62, San Diego, CA

Theodore E. Mullen, 94, Ladson, SC

Ernest A. Niles, 79, Towaco, NJ

Loyd W. Piester, 95, Bulverde, TX

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.)

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** Riocentro • Rio de Janeiro, Brasil
OCTOBER 6–7, 2011	**Regional Process Technology Conference** Moody Gardens Hotel • Galveston, TX
OCTOBER 16–21, 2011	**2011 AIChE Annual Meeting** Minneapolis Convention Center • Minneapolis, MN
OCTOBER 23–26, 2011	**1st Middle East Process Engineering Conference and Exposition (MEPEC)** Gulf International Convention Centre and Gulf Hotel • Bahrain
NOVEMBER 1–3, 2011	**Northeast Regional Conference at the ChemShow** Jacob Javits Convention Center • New York, NY
NOVEMBER 6–9, 2011	**Society for Biological Engineering Conference on Electrofuels Research** Providence Biltmore • Providence, RI

Scheduled Webinars

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

SEPT. 14, 2011 2:00–3:00 PM ET	**Fukushima Daiichi — An Update on the Current Status, Lessons Learned, and Path Forward** Presented by Dr. Mary Lou Dunzik-Gougar and Kenny Anderson
SEPT. 21, 2011 2:00–3:00 PM ET	**AIChE Sustainable Engineering Forum (SEF) Webinar: Resilience and Sustainable Development** Presented by Dr. Joseph Fiksel *Free for SEF Members*
OCT. 5, 2011 2:00–3:00 PM ET	**Job Search Strategies** Presented by Dr. Ranil Wickramasinghe
OCT. 12, 2011 2:00–3:00 PM ET	**Pay Attention to Mixing for Successful Process Development and Scale-up** Presented by Dr. Victor Atiemo-Obeng
OCT. 26, 2011 2:00–3:00 PM ET	**Molecular Gastronomy: The Science of Flavor** Presented by Dr. Peter Barham