Institute News

President's Corner
Strengthening AIChE for Growth

As 2014 draws to a close and we approach the end of an exciting year at AIChE, I would like to share my perspectives on our recent accomplishments.

During my tenure as AIChE president, I chose to focus on strengthening AIChE for continued growth into the future. This year, we directed our energies toward developing a stronger foundation in several key areas. This included a reevaluation and updating of our strategic plan; reinvigoration of local sections; an increase in the Institute's global presence; development of closer partnerships with industry; implementation of a new business development process; and concentration on greater social responsibility.

Strategic planning. In 2008, AIChE's Board of Directors commissioned, developed, and approved a long-range strategy for the Institute. In 2013, the Board created a Strategic Planning Committee to review that plan and recommend changes to help AIChE best fulfill its global vision. That committee, led by former AIChE President Dave Rosenthal, presented its recommendations to our Board of Directors in August 2014, and the Board subsequently approved the following primary strategic goals:

- become a global organization of chemical engineering practitioners that addresses global challenges
- strengthen the Institute's industry and technology groups, and create new groups, as needed, to support the diverse interests of members
- aggressively use information technologies to deliver advanced products and services to members
- engage with others to enhance the undergraduate chemical engineering curriculum and promote lifelong learning
- impact societal issues by partnering globally, with a focus on significant and relevant challenges.

These strategic goals will help us achieve our vision of being a global leader in advancing the chemical engineering profession, maintaining a lifelong career home for our members, and applying the knowledge of chemical engineering principles for the betterment of society.

Local sections. A Presidential Blue Ribbon Task Force completed its work to help strengthen local sections. With Freeman Self (a past AIChE director) as chair and Brian Daly (Local Sections Committee chair) as vice chair, the task force developed recommendations that were endorsed by the Board and are now being reviewed by AIChE's Career and Education Operating Council (CEOC) for prioritization and implementation. The recommendations include improved alignment between local sections' activities and operating councils' goals, establishment of a comprehensive volunteer recognition system, consideration of a regional local section structure, documentation of section best practices, and creation of an Institute-wide leadership development process.

Global reach. AIChE continued its global expansion this year in Africa, the Middle East, Europe, South America, and Asia by adding new conferences, education and training sessions, and international members. We have added new international student chapters, and international student membership has nearly tripled since 2013. We have promoted AIChE and chemical engineering in many countries, including South Africa, where I gave the keynote address on process safety at the South African Conference of Chemical Engineers in Durban.

Industry collaborations. One of AIChE's strengths is its close partnering with industry, and this year we have stepped up our game through the training we provide to companies on process safety, as well as through our workshop on process intensification, our development of sustainability metrics for smart manufacturing, a new conference on synthetic biology, and our regional process safety conferences. These efforts are made possible by AIChE's technological communities and alliances, including our Center for Chemical Process Safety (CCPS), Institute for Sustainability (IfS), and Society for Biological Engineering (SBE), to name a few.

New programs. This summer, we developed and implemented a process for evaluating new programs, which has enabled us to maximize our resources and direct them toward strategic programs that will increase value to members, enhance the profession, and build a stronger Institute. Since the process's implementation, we have examined more than two dozen new programs. I am also pleased to report that the Societal Impact Operating Council (SIOC), under Zenaida Gephardt's leadership, has been reenergized to have a greater impact on our global society and its challenges.

Soon, the AIChE Foundation will implement a major fundraising campaign. It will benefit the profession and society by creating programs to attract and retain the best and brightest to the chemical engineering profession. AIChE also seeks to lead global efforts to educate and train chemical engineers, catalyze research and innovation, practice safely and ethically, and shape a positive perception of chemical engineers and their contributions. I encourage each of you to support this initiative and to help AIChE address the significant technical and societal challenges we face in the future.

I would like to close by adding that I have thoroughly enjoyed serving as your 2014 President. I would like to thank the AIChE Board of Directors, our executive director June Wispelwey, her staff, and AIChE's network of volunteers who, through their dedication and hard work, helped our profession grow and prosper this year.

— Otis Shelton, AIChE 2014 President

Meet Some of the Institute's New Fellows

At the Annual Meeting in Atlanta, GA, AIChE recognized some of its recently elected AIChE Fellows at a special breakfast on Nov. 18. Fellow candidates are nominated by their peers, and must have significant chemical engineering practice (generally 25 years) and have been a member of AIChE for at least 10 years, with at least three years as a senior member. Here are some of the Fellows elected in 2014. More will be introduced in future issues of *CEP*.

Tai Shung (Neal) Chung is Provost's Chair and Professor in the Dept. of Chemical and Biomolecular Engineering at the National Univ. of Singapore. He had previous industrial experience at Hoechst Celanese, and led membrane research at Hyflux. He has written 550 papers, and is Editor of the *Journal of Chemical Engineering Research and Design*. He also serves on the editorial boards of the *Journal of Membrane Science*, *AIChE Journal, Chemical Engineering Journal*, *Journal of Applied Polymer Science*, and others. He is a Fellow of Singapore's Academy of Engineering, and received his PhD at the Univ. of Buffalo.

Doug Kriebel, P.E., is Principal at Kriebel Engineered Equipment, Ltd., which he founded in 1989. He has more than 40 years of industrial experience, with expertise in the design and application of pumps and hydraulic systems; heat transfer; mass transfer; industrial water treatment; and air pollution control systems. He is active in AIChE's Delaware Valley Section and the International Society of Pharmaceutical Engineers, and was named the 2011 Delaware Valley Engineer of the Year by the Engineers' Club of Philadelphia. He is a licensed Professional Engineer in Pennsylvania.

Jeffrey D. Lindsay is Head of Intellectual Property (IP) at Asia Pulp & Paper in Shanghai, where he works to advance IP strategy and innovation. Previously, he was a director at Innovationedge; corporate patent strategist at Kimberly-Clark; and a faculty member at Georgia Tech. He has more than 130 U.S. patents and is lead author of *Conquering Innovation Fatigue* (Wiley, 2009). He is a former chair of AIChE's Forest Bioproducts Div. He has lived in China for three years. He earned his PhD in chemical engineering at Brigham Young Univ. and is a registered U.S. patent agent.

Antonios G. Mikos is the Louis Calder Professor of Bioengineering at Rice Univ. His research has led to the development of novel orthopedic, dental, cardiovascular, neurologic, and ophthalmologic biomaterials. He has written more than 530 publications, 27 patents, and the textbook *Biomaterials: The Intersection of Biology and Materials Science*. He is a Fellow of the American Association for the Advancement of Science, the American Institute for Medical and Biological Engineering, and the Biomedical Engineering Society, and a member of the National Academy of Engineering and the Institute of Medicine.

Mark B. Shiflett, P.E., is a Technical Fellow in the Molecular Sciences Div. of DuPont and an adjunct professor of chemical and biomolecular engineering at the Univ. of Delaware, where he earned his PhD in chemical engineering. His technical interests include phase equilibrium thermodynamics, reaction engineering, and separations with an emphasis on ionic liquids technology. He has 40 U.S. patents and more than 65 publications. He received the Univ. of Delaware's presidential citation for his development of hydrofluorocarbon refrigerant mixtures to replace chlorofluorocarbons. He is a licensed Professional Engineer in Delaware.

Nicholas F. Urbanski, P.E., is Senior Engineering Specialist, Heat Transfer and Fractionation, at ExxonMobil Upstream Research Co. His responsibilities include thermal and hydraulic review of heat-transfer equipment (shell-and-tube, air-cooled, plate-frame, plate-fin, and printed circuit exchangers) for ExxonMobil's onshore and offshore applications. He holds 10 patents and is active in AIChE's Separations Div. He received a BS in chemical engineering from Case Western Reserve Univ. and an MBA from Canisius College. He is a licensed Professional Engineer in Texas.

Divisions and Forums Present Awards

Each year, AIChE's technical divisions and forums present awards that recognize 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 2014 Annual Meeting in Atlanta, GA (Nov. 16–21). Other divisions and forums will present their awards at the 2015 Spring Meeting and Global Congress on Process Safety in Austin, TX (Apr. 26–30).

CATALYSIS AND REACTION ENGINEERING DIV.

Division Practice Award
Kurt VandenBussche, UOP LLC, A Honeywell Co.

COMPUTING AND SYSTEMS TECHNOLOGY (CAST) DIV.

Computing in Chemical Engineering Award
Sponsor: Dow Chemical Co.
Richard Braatz, Massachusetts Institute of Technology

Computing Practice Award
Sponsors: Aspen Technology; ExxonMobil Chemical Co.
John Wassick, Dow Chemical Co.

David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education
Sponsor: CACHE Corp.
John Hedengren, Brigham Young Univ.

Outstanding Young Researcher Awards
Sponsor: Air Products
Benoit Chachuat, Imperial College London
Mario Eden, Auburn Univ.

W. David Smith, Jr. Graduate Publication Award
Sponsor: Process Systems Enterprise, Inc.
Ruth Misener, Imperial College London

CAST Directors' Awards
Carsten Trapp, Delft Univ. of Technology
Marina Stavrou, Universität Stuttgart

EDUCATION DIV.

Award for Innovation in Chemical Engineering Education
Matthew Liberatore, Colorado School of Mines

ENVIRONMENTAL DIV.

Lawrence K. Cecil Award in Environmental Chemical Engineering
Panagiotis Smirniotis, Univ. of Cincinnati

FOOD, PHARMACEUTICAL AND BIOENGINEERING DIV.

Food, Pharmaceutical and Bioengineering Div. Award
Kristi Anseth, Univ. of Colorado, Boulder

MATERIALS ENGINEERING AND SCIENCES DIV. (MESD)

Charles M. A. Stine Award
Sponsor: DuPont
Samson Jenekhe, Univ. of Washington

Owens Corning Early Career Award
Sponsor: Owens Corning
Christopher Ellison, Univ. of Texas at Austin

NANOSCALE SCIENCE AND ENGINEERING FORUM (NSEF)

Nanoscale Science and Engineering Forum Award
Lynden Archer, Cornell Univ.

Young Investigator Award
Ali Khademhosseini, Harvard-MIT's Div. of Health

NORTH AMERICAN MIXING FORUM (NAMF)

Award for Excellence and Sustained Contributions to Mixing Research and Practice
Sponsor: Dow Chemical Co.
Minye Liu, E. I. du Pont de Nemours & Co.

NUCLEAR ENGINEERING DIV.

Robert E. Wilson Award
T. Bond Calloway, Savannah River National Laboratory

PARTICLE TECHNOLOGY FORUM (PTF)

George Klinzing Best PhD Award
Sponsor: Univ. of Pittsburgh Alumni
Asep Bayu Dani Nandiyanto, Universitas Pendidikan Indonesia

Particle Technology Forum Award
Sponsor: Powder Technology
Karl V. Jacob, Dow Chemical Co.

Particulate Solid Research Inc. Lectureship Award
Sponsor: Particulate Solid Research, Inc.
Christine M. Hrenya, Univ. of Colorado

Shell Global Solutions Thomas Baron Award in Fluid Particle Systems
Sponsor: Shell Global Solutions
Jennifer Sinclair Curtis, Univ. of Florida

Particle Technology Forum Service Award
Christine M. Hrenya, Univ. of Colorado

PROCESS DEVELOPMENT DIV.

Process Development Div. Student Paper Award
Sponsor: Lilly
Mo Jiang, Massachusetts Institute of Technology

Excellence in Process Development Research Award
Bernhardt Trout, Massachusetts Institute of Technology

Divisions and Forums Present Awards

SEPARATIONS DIV.

Clarence G. Gerhold Award
Sponsor: UOP
Timothy Frank, Dow Chemical Co.

FRI/John G. Kunesh Award
Sponsor: Fractionation Research, Inc.
Jeffrey McCutcheon, Univ. of Connecticut

Separations Div. Founders Awards
André Da Costa, Pacific Gas and Electric Co.

Graduate Student Research Awards
Sponsors: Chevron; Merck Millipore
Michael Basden, Univ. of Texas at Austin; Kyle Hart, Pennsylvania State Univ.; Mo Jiang, Massachusetts Institute of Technology; Gautham Ramapriya, Purdue Univ.; Yuexiao Shen, Pennsylvania State Univ.

Professor Dibakar Bhattacharyya Graduate Student Research Award
Li Xiao, University of Kentucky

SUSTAINABLE ENGINEERING FORUM

Research Excellence in Sustainable Engineering Award
Vasilios Manousiouthakis, Univ. of California, Los Angeles; Phillip Savage, Pennsylvania State Univ.

Sustainability Education Award
Helen Lou, Lamar Univ.

Sustainability Engineering Forum Student Paper Award
Sponsor: GlaxoSmithKline
Shweta Singh, Purdue Univ.

2015 AIChE Election Results

AIChE's Tellers Committee has examined the votes for candidates for President-Elect and Directors of the Institute, and has confirmed the results of the 2015 election. The newly elected AIChE officers were formally announced at the Institute's annual business meeting, held on Nov. 17, 2014, at AIChE's Annual Meeting in Atlanta, GA.

President (by automatic succession)
Cheryl I. Teich, *The Dow Chemical Co.*

President-Elect
Gregory Stephanopoulos,
Massachusetts Institute of Technology

Directors (2015–2017)
Alan E. Nelson, *The Dow Chemical Co.*
John O'Connell, *Univ. of Virginia (Emeritus)*
Anne Skaja Robinson, *Tulane Univ.*
Sharon M. Robinson, *Oak Ridge National Laboratory*


Teich


Stephanopoulos


Nelson


O'Connell


A. Robinson


S. Robinson

AIChE Foundation Provides Travel Grants for Overseas ChE Student Leaders

The AIChE Foundation is strengthening the Institute's relationship with its rapidly expanding network of international student members with a new International Student Chapter Leadership Development Travel Grant. The grants allow eight undergraduate leaders of international student chapters to attend the AIChE Annual Student Conference, where they will interact with other AIChE student members, develop an understanding of AIChE and its global objectives, and build a connection with the Institute.

The following student chapter leaders received travel grants to attend the 2014 Annual Student Conference in Atlanta, GA (Nov. 14–17): Sarah Abdel Wahad, Cairo Univ. (Egypt); Meera Abu Soufah, Texas A&M Univ., Qatar; Sanggyu Chong, Korean Advanced Institute of Science and Technology; Enrique Estrada, Technologico de Monterrey (Mexico); Mahmoud Harb, Suez Univ. (Egypt); Nhi Anh Tri Nguyen, National Univ. of Singapore; Sweta Parmar, Indian Institute of Technology, Gandhinagar; and Qi Yan, Soochow Univ. (China). The students wrote essays about their objectives as student chapter leaders, and were selected based on their involvement in AIChE student activities, their academic achievements, and financial need.

AIChE now has 42 undergraduate student chapters at universities outside North America. The international travel grant program is coordinated with assistance from AIChE's Career and Education Operating Council, International Committee, Student Chapters Committee, and International Student Chapters Committee.

For more information about the AIChE Foundation and its activities, visit www.aiche.org/giving.