#### Volume 24, Issue 1

#### Spring 2012

# Flashpoint



**Colin Bowen** 

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# **The Chair's Corner**

#### Dear Colleagues,

I am very excited about the upcoming Spring Meeting taking place again in Houston, April 1-5 at the George R. Brown Convention Center and the Hilton-Americas. The Fuels & Petrochemicals Division (F&PD) will host 31 sessions within Topicals 6 & 7 and Group 16 accounting for 161 presentations. In addition, F&PD will have a Welcome Session on Monday morning along with the Spring



Meeting Keynote Address, and the Gas Utilization Luncheon Keynote on Wednesday.

- Keynote Address Michael J. Dolan, Senior Vice President, ExxonMobil
- F&PD Welcome Session Joseph Powell, Chief Scientist at Shell
- Gas Utilization Luncheon Keynote Yoshitsugi Kikkawa, LNG Project Technical Advisor, Chiyoda Corporation

I hope you join us for this meeting. You will find collaboration between academia and industry as they present their solutions to today's toughest challenges like energy efficiency, optimization, regulations, alternative fuels, and transition to younger engineers. We are proud to be involved with the Young Professionals group assisting as chairs and co-chairs for some of the F&PD sessions and look forward to future collaboration.

I would like to thank the F&PD members who have supported me during my term as chair. Their support and understanding made this year a success for me. Once again, thank you for giving me the privilege of serving as your chair of the Division. I look forward to seeing you in Houston at the Spring Meeting this April.

# Calendar of Events



Spring Meeting and 8<sup>th</sup> Global Congress on Process Safety Hilton-Americas and George Brown Convention Center Houston, TX \* April 1-5, 2012



Process Development Symposium HYATT house King of Prussia, PA June 5-7, 2012 <u>4th Latin American Conference on Process Safety</u> Hotel Sofitel Rio de Janeiro Copacabana Rio de Janeiro, Brasil \* July 3-5, 2012

2012 Annual Safety in Ammonia Plants And Related Facilities Symposium

Hyatt Regency Chicago \* Chicago, IL September 9–13, 2012

AIChE Regional Process Technology Conference South Shore Harbor Resort \* League City, TX October 4-5, 2012

2012 Annual Meeting—Call for Papers is now open Pittsburgh Convention Center \* Pittsburgh, PA October 28 - November 2, 2012



Dale Keairns, Executive Advisor, Booz Allen Hamilton



James Turner, Executive Process Director, Fluor

# F&PD Award of Excellence Dale L. Keairns, Booz Allen Hamilton

The F&PD Award of Excellence recognizes individuals who have made substantial technological contributions to the advancement of the fuels and petrochemicals industries. This year's award recipient is Dale L. Keairns, Executive Advisor, Booz Allen Hamilton. He received his PhD in chemical engineering from Carnegie Mellon University and his B.S. in chemical engineering from Oklahoma State University. Dr. Keairns served as the 2008 AIChE President and chairs the AIChE Center for Energy Initiatives. He led research, development and the commercialization of energy and environmental technologies at the Westinghouse Science & Technology Center from 1967 to 1999. He also served as President of Particulate Solids Research Inc, an international industrial research consortium. At SAIC, he served as a consultant to the Department of Energy National Energy Technology Laboratory, supporting energy systems analysis and planning activities that guide technology research, development and demonstration programs. Dr. Keairns will give the presentation, "Beyond Current Boundaries," at the F&PD Awards Dinner on Monday, April 2, at the AIChE Spring Meeting in Houston, TX (see p. 3 for abstract).

## **F&PD Distinguished Service Award James Turner, Fluor Corp.**

The F&PD Distinguished Service Award, sponsored by Tyco Thermal Controls, recognizes an individual's outstanding service to the Division. This year's award recipient is James Turner, Executive Process Director for Fluor, the world's largest publicly held engineering, construction, and diversified services company. He has over 25 years industry experience, including 23 years at Fluor. His technical expertise lies in hydrotreater and hydrocracker design and operation, refinery configuration, hydrogen management, clean fuels designs, distillation, and hydroprocessing ammonium bisulfide corrosion. He is currently the Department Manager for the Fluor Houston Process Technology and Engineering Department.

He received his chemical engineering degree from Texas A&M University in 1983 and has been active in the chemical engineering community since his graduation. He has served in the following positions in the AIChE Fuels and Petrochemicals Division: Director, Newsletter Editor, Treasurer, 2<sup>nd</sup> Vice Chair, 1<sup>st</sup> Vice Chair, Chair and Past Chair. He is currently on the AIChE Executive Board Programming Committee, and Chair of the South Texas Section. He has also been the co-chair and chair of the refining sessions for the AIChE Regional Process Technology Conference held in Galveston, TX.

Mr. Turner is active in supporting the chemical engineering department at Texas A&M University, and has supported the Spring Senior Design project since 2004. In 2011, he was inducted into the Texas A&M Chemical Engineering Academy of Distinguished Alumni, which was established to recognize outstanding graduates of the department who have significantly contributed to the field of chemical engineering while embodying the virtues of Texas A&M University.

# Fuels and Petrochemicals Programming Update By Belma Demirel

# AIChE Spring Meeting, April 1-5, 2012

Hilton-Americas and George Brown Convention Center, Houston, TX

With the AIChE Spring Meeting's heavily industrial focus, we anticipate a large audience, in the order of 1,700 attendees, from Houston and around the globe. This is a great opportunity to learn more about our own industry, as well as other industries and their challenges. The Fuels & Petrochemicals Division (F&PD) continues to have a very rich program (Box, right) with highlights that include:

- Monday, April 2, 7:00am-9:15am, General Assembly B, George R. Brown Convention Center Continental breakfast followed by Keynote speech delivered by Michael J. Dolan, Senior Vice President, ExxonMobil Corporation. Mr. Dolan will be speaking about the critical intersection between process safety and corporate responsibility. Arrive early to get the best seat, as well as enjoy a free breakfast.
- Monday, April 2, 9:45am-11:30am, Room 335B/C, Hilton-Americas
  F&PD will host a Welcome session where F&PD officers will talk about the Division and it's various activities. The session will also feature Joseph Powell, Chief Scientist, Shell, who will give a presentation titled, "Future Fuels and Chemicals: Grand Challenges and Opportunities." The Welcome Session is a great opportunity to learn more about F&PD, network with fellow chemical engineers, and listen to a thought-provoking presentation by a leader in the industry.
- Monday, April 2, 6:00pm-9:00pm, Five Seven Grill @ Minute Maid Park (\$65)
  F&PD's Award Dinner is a great for relaxing after attending the first full day of the Spring Meeting. Happy hour takes place from 6-7pm and is fol-

lowed by a sit-down dinner with a presentation from this year's F&PD Award of Excellence recipient, Dale Keairns (see p. 2 for bio and box below for abstract).

 Wednesday, April 4, 12:00pm-1:30pm, Room 335C, Hilton-Americas (\$35) Yoshitsugi Kikkawa will be giving the Gas Utilization Topical Conference Keynote during lunch. He will talk about the role liquefied natural gas has played as an environmentally friendly energy source in Japan.

Other programming throughout the week includes sessions on hydrogen management; coal, biomass and natural gas to liquids; LNG; gasification technologies and gas clean-up; production of fuels and chemicals from Fisher-Tropsch hydrocarbons; syngas to ammonia; greenhouse gases and sequestration; process control and optimization; hydroprocessing; design and operations of crude, vacuum and delayed coking units; sulfur recovery; energy optimization; biofuels; and more. Click the link below for more information about the Spring Meeting

http://www.aiche.org/Conferen

#### F&PD sponsored programming

24th Ethylene Producers' Conference

\* <u>12th Topical Conference on</u> Gas Utilization

15th Topical Conference on Refinery Processing

\* Advances in Aromatics and Petrochem Processing

# Award presentation—Beyond Current Boundaries Dale L. Keairns, Booz Allen Hamilton

Professional societies offer a collective voice to advocate for a vision of the future, to serve members and to facilitate activities required to sustain and advance the field. Engineering practice and professional organizations have a history of responding to new challenges and opportunities. As a professional organization, how will we respond to national and global challenges (e.g. energy, food, water) and to changing social structures (e.g. social media, relationships, use of time) – to serve members, the profession and society? The Fuels & Petrochemicals Division (originally the Petroleum and Petrochemicals Division) has served and continues to effectively serve chemical engineers and the profession. The 'Fuels' scope includes petroleum, coal, oil shale, tar sands, heavy oils, natural gas, and synthetic substitutes for these materials. Petrochemicals include all chemical products made with any of these materials as a starting point. These boundaries can be limitations or opportunities.

#### Note from the Editor—Volunteerism

This is my second newsletter as the Communications Director for F&PD. First, a little about myself. I'm currently the Technical Programming Director at AIChE, where I'm responsible for running the Spring and Annual Meetings, as well as regional conferences and workshops. I hold an M.S. in chemical engineering from The Cooper Union School for the Advancement of Science and Art.

I decided to volunteer for F&PD because first, my friend Syamal Poddar, a past chair of F&PD, asked me to. Second, I wanted to get the experience of what it feels like to be a volunteer. Being a full-time employee for AIChE is quite different from being an AIChE volunteer. I have always been amazed by the passion AIChE members have in doing volunteer activities, such as programming, writing newsletters, serving as an officer of a Division/Forum or whatever activity a member chooses. It's definitely hard work to juggle a full-time job (my husband always tells at me to lose the Blackberry), a growing family (I have three little kids), plus trying to maintain your own sanity with "me" time (I started running 3 years ago and am now preparing to run at least 2 half marathons this year). So, I applaud all of you who have contributed to AIChE; who have given back to the profession. Now that I am a volunteer too, I have an even greater appreciation of all that members do. I continue to be inspired and hope that some day, I can inspire the next generation of chemical engineers to do the same. I hope to see many of you in Houston at the Spring Meeting.

#### Letter from 2011 Scholarship Recipient Christina Ramsey

I am writing to express my sincere gratitude to you for making the F&PD Scholarship possible. I was thrilled to learn of my selection for this honor and I am deeply appreciative of your support. I would like to update you on my progress.

My first semester as a freshman at the University of Houston went great. I completed 15 hours of Honor courses with a 3.4GPA. I am working on the weekends and busy taking an accelerated Calculus course over the Christmas break. I plan to remain in the Honors program and take another 15 hours next semester. My classes are challenging, but I am one step closer because of you.

I hope one day I will be able to help students achieve their goals just as you have helped me. Thank you for your generosity.

#### **Elections and Scholarship Update**

Thanks to all F&PD members for voting earlier this year. The results are in, and with the fantastic slate of candidates, it should come as no surprise that some of the races were won by razor-thin margins. The new Secretary, Treasurer, 2nd Vice Chair, and Directors will be announced at the AIChE Spring Meeting and posted on the F&PD website. If you cannot make it to Houston, visit the <u>F&PD website</u> in April to see the results!

We've received a solid number of F&PD scholarship applications. The review process is underway and the recipients of the scholarship will be decided in mid-March. Stay tuned.

For more information about the scholarship, visit http://www.aiche.org/Students/Awards/F\_PDScholarship.aspx

#### Flashpoint is Now Accepting Advertising

*.Flashpoint*, The Newsletter of the Fuels and Petrochemicals Division, is published three (3) times per year. It is distributed electronically to our membership and other interested parties (nearly 1,500 people, mostly chemical engineering professionals) in March (prior to the Spring AIChE Meeting), July and October (prior to the Fall AIChE Meeting) and it is also posted on F&PD's website. Contact communications@aiche.org if interested.

F&PD is now on the professional networking website, LinkedIn. To connect with other professionals and expand your professional network, please connect with us on LinkedIn at http://www.linkedin.com/in/aichefpd.

Ad Size/# of Issues	Quarter Page	Half Page	Full Page	
1	\$75	\$125	\$200	
3 (full year)	\$200	\$300	\$500	

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## AIChE **Fuels and Petrochemicals Division** 2011-2012 Executive Committee

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**Colin Bowen** 

Consultant

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# **Meeting**Preview



### Spring Meeting and Global Congress on Process Safety Returns to Houston, Apr. 1–5

rocess safety and the latest developments in energy will dominate the proceedings when AIChE's 2012 Spring Meeting and 8th Global Congress on Process Safety convene in Houston, TX, Apr. 1-5. The conference, to be held at the George R. Brown Convention Center and the Hilton Americas-Houston, will feature a variety of longestablished topical conferences, and an impressive selection of new programs — including the 1st International Conference on Upstream Engineering and Flow Assurance. The preliminary technical program grid appears after p. 48 of this issue (U.S., Canada, and Mexico copies only); the complete program, schedule of meeting highlights, and registration information are available at www.aiche.org/spring.

With transformational technologies and innovation rapidly changing the way chemical engineers view — and prepare for — the future, the Spring Meeting and Global Congress on Process Safety (GCPS) remain vital learning and networking opportunities for practicing engineers. Some 1,700 practitioners are expected to participate, representing industry, academia, and government agencies from around the world. In addition to the meeting's highly regarded topical conferences and the Global Congress's symposia on loss prevention, plant safety, and the Center for Chemical Process Safety's (CCPS) International Conference, meeting organizers are addressing the industry's changing needs with new and special events, including a Small Business Innovation Showcase co-sponsored by the



▲ The downtown Houston skyline, with Green Park in the foreground. Photo © Brandon Seidel

National Science Foundation. Attendees can hone their skills at the meeting's short courses, and young professionals will find sessions designed to enhance their competitiveness.

Many opportunities for networking have been integrated into the program, with receptions, social events, and exhibits rounding out the experience. In the exhibit area, attendees can enjoy inter-session coffee breaks, sponsored by Tracerco.

# Topical conferences – something for everyone

This year's Spring Meeting program has been organized into 150 sessions, across eight topical conference and special tracks. Long-established programs include the 24th Ethylene Producers' Topical Conference, the 15th Topical Conference on Refinery Processing, and the 12th Natural Gas Utilization Topical Conference, as well as topical conferences that address distillation, fossil energy utilization, and advances in sustainability. Another topical conference is devoted to Emerging Technologies in Clean Energy for the 21st Century.

Spring 2012 marks the debut of a new conference: the 1st International Conference on Upstream Engineering and Flow Assurance. Launched in 2011, AIChE's Upstream Engineering and Flow Assurance (UE&FA) Forum promotes the application of chemical engineering principles across the entire spectrum of upstream practice. Sessions will explore new frontiers in drilling and completion fluids; discuss stateof-the-art upstream and subsea processing technology and

equipment; identify flow-assurancerelated risks in the front-end engineering design of upstream production systems, controls, and operability; and expand the knowledge base on shale gas. The UE&FA conference will be rounded out by two poster sessions, including a "Future Wave" session for graduate student research.

#### Featured presentations

Following a Welcome Reception on Sunday evening, Apr. 1, the Spring

Meeting formally begins on Monday morning, with a jointly sponsored Spring Meeting/ Global Congress on Process Safety Keynote Address.



🔺 Dolan 👘

The keynote will be given by Michael J. Dolan, Senior Vice President at ExxonMobil Corp. In his talk Dolan, a chemical engineer himself, will explore the intersection of process safety and corporate responsibility. A continental breakfast will be available prior to Dolan's presentation.

A highlight of the Ethylene

# **Meeting**Preview



Producers' Conference is a Monday morning panel discussion entitled "Ethylene Plant Transformation of the Petrochemical Industry." Company leaders from Chevron-Phillips, Dow, ExxonMobil, Sibur, and Braskem will explore the impact of shale gas on the marketplace.

Also on Monday morning, at the Fuels and Petrochemicals Div.'s

Welcome Session. Joseph Powell, Chief Scientist at Shell, will identify opportunities for chemical engineers to sustainably meet future needs in fuels and chemicals



🔺 Powell

in his presentation, "Future Fuels and Chemicals: Grand Challenges and Opportunities."

Another noteworthy talk will be presented at the Industrial Leadership

Keynote Luncheon on Tuesday, Apr. 3. Frank van Lier, Process Technology and Sourcing Team Leader at Lubrizol, will offer his "Musings on Management" — including



🔺 van Lier

how to hire and motivate good people to work together in successful global teams

On Wednesday, Apr. 4, at the Natural Gas Utilization Topical Conference, a lunchcon keynote address will be delivered by Yoshitsugi Kikkawa,



🔺 Kikkawa

LNG Project Technical Advisor at Chiyoda Corp. Kikkawa will talk about the contributions of liquefied natural gas as an environmentally friendly energy source in Japan, and how that nation's industries have addressed the challenges (and reaped the benefits) inherent in the use of natural gas.

Yet another highlight is a new Small Business Innovation Showcase, to he held on Tuesday, Apr. 3. Sponsored by AIChE and NSF, this special forum and poster session will allow attendees to meet successful smallbusiness leaders and technologists who are redefining the future of a wide range of industries, including bio-based materials, nanotechnologyenabling composites, renewables, and more.

#### 8th Global Congress on **Process Safety**

Now in its eighth year, the Global Congress on Process Safety (GCPS) is the largest gathering of safety professionals in the world. A record number of attendees is expected to participate at the Apr. 1-4 Congress - which will focus on what process safety excellence will look like in 2020, and how industry and engineers can evolve to meet the challenges that lie ahead. Participants will explore new ways to avoid incidents, manage risk, ensure plant safety, and strengthen process safety management programs.

Organized by the Center for Chemical Process Safety (CCPS) and AIChE's Safety and Health Div., the Global Congress on Process Safety integrates the coordinated sessions of three major conferences under one umbrella. At the 27th CCPS International Conference, attendees will examine topics such as hazard identification and risk assessment, human factors in risk management, and case histories and lessons-learned including how to make the transition from "lesson" to "learned." The 46th Loss Prevention Symposium will bring together practitioners from industry, academia, and government agencies, with a focus on fire and explosion hazards, including an exploration of technical advances and best practices in the field. At the 14th Process Plant Safety Symposium, attendees will consider the future of process safety, regulatory impacts, and lessons learned from incidents and near-misses.

Several new sessions have been added to the Global Congress, including a day devoted to process safety challenges for small-scale production, including pilot plants and laboratory facilities. At the International Perspectives session, papers will be presented by Latin American authors (in Spanish and Portuguese) and by Chinese authors (in English). Also new this year is a Process Safety Management Mentoring (PSM2) Conference, designed to bring young engineers up to speed on process safety management culture and tools.

Laura Turci, Manager of the Global Congress, says that one of the

#### Bring a Young Colleague to the Meeting — AT A BIG DISCOUNT

IChE members and employees of CCPS member companies have an opportunity to introduce young co-workers and industry newcorners to their first Spring Meeting and Global Congress on Process Safety for a significantly reduced fee. Attendees who register for the meeting can also register a colleague under the age of 35 who has not attended the meeting before at 50% off the regular registration rate. For details, visit www.aiche.org/Conferences/ SpringMeeting/byc.aspx.







main objectives of GCPS organizers is to reach the broadest and most diverse audience possible. "We are excited about growing the next generation of process safety experts, as we work to change the mentality surrounding process safety culture" says Turci. "As we receive new people, and open sessions to new languages, we hope to reach the widest possible audience and have the kind of impact that will improve process safety in plants around the world."

Several guest speakers are among the Global Congress's highlights. On Monday, Apr. 2, the GCPS Luncheon speaker is Patrick F. Loughlin, Vice President of Environmental Health and Safety at Air Products and Chemicals. On Apr. 3, the luncheon features a presentation by The Honorable

Ms. Jessie Hill Roberson, Vice Chair

process safety at U.S. defense nuclear

Apr. 4 is Dr. T. J. Larkin, President of

of the Defense Nuclear Facilities

Safety Board, who will talk about

facilities. The luncheon speaker on

Larkin Consulting, who will reveal

"Safety Communication's Three Big

Mistakes: Too Much, Too Complex,

on how to fix those problems.

Not Useable" - and offer suggestions

attendees with interests in manufactur-

ference, incorporating manufacturing-

themed sessions from the Congress's

various process safety programs.

ing, the organizers are assembling a "virtual" manufacturing topical con-

For the benefit of Global Congress





🔺 Roberson



🔺 Larkin

#### Follow the action online

AIChE will be posting updates from the meeting site on its social media channels throughout the Spring Meeting. News, photos, videos, and coverage of special events and keynote speakers will be available at ChEnected, AIChE's online community blog: www.chenected.com/ spring; on Facebook: www.facebook. com/chenected; and via Twitter feeds: @chenected. The hashtags are #AIChESpring and #GCPS.

#### **Register now**

Register online for the Spring Meeting and Global Congress at www.aiche. org/spring.

## Sustainable Packaging Symposium, Apr. 3-5, in Houston

F or the second year, AIChE's Institute for Sustainability will collaborate with Green Package, a knowledge exchange for sustainable packaging initiatives, to co-host the 2012 Sustainable Packaging Symposium. The symposium will be held Apr. 3–5 at the Hilton Americas-Houston, and will run concurrently with the AIChE Spring Meeting.

Organized around the theme of "Advancing Sustainable Supply Chains with Optimized Packaging," the event will bring scientists and engineers with cross-industry expertise in sustainability together with packaging professionals, to consider the role of optimized packaging as an essential component of a more sustainable supply chain. Presentations will cover the value proposition for the optimized package; data measurement and analysis tools, including total cost assessment; reducing retailer food waste; the key attributes that define a sustainable package; the technical underpinnings essential to sustainable package designs; and other topics. Darlene Schuster, Executive Director of the Institute for Sustainability, says that the symposium will be valuable to sustainability and packaging professionals employed by raw materials manufacturers, brand owners, converters, suppliers, and retail professionals, as well as to the engineers and scientists who implement sustainable solutions.

"There is a real need to apply technically sound, robust best practices to develop functional, sustainable supply chains for products and their packaging," says Schuster. "Packaging is a critical value for the product supply chain, and the knowledge shared at this conference should lead to better decision-making."

In addition to technical sessions, the Sustainable Packaging Symposium will include keynote presentations, panel discussions, tabletop exhibits, and networking opportunities.

Information about the symposium, including registration and sponsorships, is available at www.sustainablepackagingsymposium.com.