

Government Safety Investigators Commend CCPS

Federal Board Awards Unprecedented Recognition

The federal government's lead agency on chemical safety investigations applauded AICHE's Center for Chemical Process Safety (CCPS) in June for having gone "far beyond" safety recommendations presented to them two years ago.

Carolyn Merritt, chairman of the U.S. Chemical Safety and Hazard Investigation Board (CSB), told attendees at CCPS's 19th International Conference in Orlando, FL, on June 30 that the Board had conferred this unprecedented recognition on CCPS.

In 2002, the CSB completed a two-year reactive hazard investigation covering 167 chemical accidents over a 20-year period that caused 108 deaths. The Board provided its report to CCPS, recommending that CCPS should produce safety information materials and programs, and promote increased awareness of chemical reactivity hazards.

"CCPS not only accomplished the actions we recommended to them, but went far beyond, leading the Board to vote to designate the status of our recommendations as 'Closed-Exceeds Recommended Action,'" said Merritt. CCPS is the first organization to ever receive this rating, which is the highest awarded by the Board.

Merritt said CCPS had developed comprehensive good-practice guidelines on how to effectively manage reactive hazards throughout the life cycle of a chemical manufacturing process. Going further, CCPS formed a partnership with government and industry to assemble and publish the guide *Essential Practices for Managing Chemical Reactivity Hazards*.

In addition, CCPS held meetings and conferences among its members to discuss

the CSB's two-year report, inviting the Board to participate. AICHE published a paper by Board investigators in *CEP* (August 2003, pp. 50-58), reaching the Institute's 46,000 members worldwide. And today,

Merritt said, CCPS is "working toward the creation of a government-industry roundtable, to bring experts together to help resolve safety issues."

"We're flattered to be complimented by an agency that represents the highest standards of safety professionalism," said Scott Berger, CCPS director. "This reinforces that our members are taking the right steps to meet our goal to protect employees, the public and the environment from catastrophic accidents and security incidents."

The CCPS conference, "Emergency Planning: Preparedness, Prevention and Response," attracted over 200 process safety professionals. The program included leaders from the Department of Homeland Security, EPA, the U.S. Coast Guard, and industry.

Today, CCPS is working to advance the practice of chemical reactivity management through a new initiative called the Reactivity Management Roundtable (RMR), which encourages manufacturers, government, labor, academia, and other experts to con-

tinue the collaboration (For more information about RMR, contact Scott Berger at 212-591-7237 or scotb@aiche.org).

For additional information on the CCPS,



CSB presents commendation to CCPS. (from l to r) Pete Lodal, technical fellow, Eastman Chemical Company; Scott Berger, director, CCPS; Carolyn Merritt, chairman and CEO, US Chemical Safety Board; Charles Jeffress, COO, US Chemical Safety Board.

see www.aiche.org/ccps. The hardcover book of *Essential Practices for Managing Chemical Reactivity Hazards* can be purchased by calling AICHE Customer Service at 1-800-242-4363 or at www.aiche.org/pubcat. The book may be browsed for free from the websites of the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA), the American Chemistry Council (ACC) and the Synthetic Organic Chemical Manufacturers' Association (SOCMA), in addition to the CCPS website, www.aiche.org/ccps/resources.htm.

AICHE Board Elections: Voting Underway

Over the last two months, *AICHEExtra* has featured position statements and bios for president-elect, treasurer and director candidates for the 2005 election. This information is available on the web at <http://www.aiche.org/candidates/>. Paper ballots will be mailed in August to all members, senior members and Fellows. Voting can be done through paper ballots or by electronic proxy.* Only one vote may be cast per person.

AICHE will offer electronic proxy ballots during this year's election. Electronic proxy will be available on August 20 through September

24. To use this electronic submission instead of a paper ballot visit the website www.cssconsult.com/elections/AICHE2005 beginning August 20. The AICHE membership number will serve as the personal identification number for each voter. The same rigorous standards guarding privacy will be applied to both paper ballots and electronic proxies. All paper ballots and electronic proxies must be received by September 24, 2004.

Election results will be announced at the AICHE Annual Meeting in Austin, TX, and

the December issue of *Extra*. Please e-mail election@aiche.org with any questions.



**Electronic Proxy Ballot: Under New York law, a member can now vote a proxy by electronic means. A proxy is a limited power of attorney affirmatively given to another person or persons to act in his or her stead. Voters will authorize President Byers and Secretary Shelton to vote on his/her behalf for the indicated candidates.*

WEIGHING IN ON U.S. SCIENCE EDUCATION TRAINING PROGRAMS AND CLASSROOM PRACTICES

Do Teachers Make the Grade?

By Rita D'Aquino

Is the U.S. losing its worldwide dominance in critical areas of science and technology? According to a recent statement issued by the National Science Foundation—yes. This could have a debilitating impact on jobs, industry, national security and the vigor of the nation's intellectual and cultural life, says the Foundation.

Government officials, including Federal Reserve Chairman, Alan Greenspan, and U.S. Secretary of Education, Rod Paige, concur. Greenspan has testified before Congress about the critical need to strengthen U.S. science education, and Paige recently convened his first-ever summit on science education in March to address this issue.

Ten years after the National Research Council's National Science Education Standards called for U.S. science education reform, many deans at the nation's colleges and universities who are responsible for training the newest generation of elementary schoolteachers lack confidence that today's young students are getting a good science education. Further, substantially fewer new teachers feel "very qualified" to teach science compared to the other core subjects, such as math or read-



ing. These are among the central findings of "The Bayer Facts of Science Education X: Are the Nation's Colleges and Universities Adequately Preparing Elementary Schoolteachers of Tomorrow to Teach Science?,"* a survey commissioned by Bayer Corp. and Bayer Polymers LLC as part of their "Making Science Making Science (MSMS)" program.

The survey, which polls both college and university deans of education and the newest generation of America's K-5 schoolteachers (those with 3-5 years of experience) to provide a progress report on K-5 science education, reveals that "science in our schools is considered less important than reading, writing and math—a message that is seen in college/university elementary education programs and subsequently carried over to teaching in classrooms across the country," says Ian Paterson, head, Bayer Polymers Americas and board member, Bayer MaterialScience.

According to the survey, only one-third of teachers say they teach science every day, one-third say they teach science twice a week or less and one-third lack full confidence in their qualifications to teach science. While two out of three teachers feel very qualified to teach science, 85% of teachers feel very qualified to teach English. The good news is that inquiry-

based science teaching methods like conducting hands-on experiments, forming opinions and discussing and defending their conclusions with others—which teachers and deans agree is the most effective way for them to learn science—is reportedly the method used by about 83% of institutions surveyed to train K-5 teacher candidates to teach science. In addition, 78% of new teachers say they use inquiry-based science teaching most often in their classrooms versus only 63% ten years ago.

"Nevertheless, the survey indicates that K-5 science education needs a stronger emphasis at the pre-service college/university training level for science to gain the recognition as one of the educational cornerstones," counters Rebecca Lucore, executive director, Bayer Foundation. A handful of colleges and universities have already developed innovative pre-service training programs that provide hands-on training in science, so teachers are skilled in this methodology upon graduation and classroom practice (see case studies in the complete report, available at www.BayerUS.com/MSMS).

**"Bayer Facts X" is based on telephone interviews conducted by Market Research Institute Inc. between March 10, 2004, and April 2, 2004, with 1,000 K-5 new teachers and 250 college/university education school deans. Combined, the surveys have a confidence level of 95%, with a margin of error of ±3%.*

RENEWABLE ENERGY INCUBATOR LAUNCHES IN ROCHESTER

A new business incubator in Western New York will help renewable energy companies harness available business resources and raise their visibility.

Leaders of the New York State Energy Research and Development Authority (NYSERDA), High Tech Rochester (HTR), Greater Rochester Enterprise (GRE), and Rochester Institute of Technology (RIT) formed the Renewable Energy Network of Entrepreneurs in Western New York (RENEW NY), a collaborative effort focused on identifying, incubating and creating renewable energy companies and resources, including wind, hydro, solar, biomass and

geothermal power in Western New York (defined as the geographic region west of Interstate 81, including the areas of Syracuse, Binghamton, Ithaca, Corning, Rochester, and Buffalo).

One of RENEW NY's primary goals is to market these firms to other companies throughout New York State, both for potential partnership opportunities and for business transactions. It will also assist firms in reaching out to a broader audience out of state; match entrepreneurs with seed capital; assist with grants; provide coaching, mentoring, education and training; offer networking opportunities; and raise

overall awareness of renewable energy companies in Western New York.

Funding for RENEW NY is provided by NYSERDA, which is contributing \$150,000 toward the effort. Additional contributions come from HTR, GRE, RIT, and the Ennvasion Group, a Rochester-based consulting firm that will provide incubation and other services to RENEW NY client companies.

For more information, contact Zoe A. Piliro, director, marketing and public relations of Greater Rochester Enterprise at 585-530-6205; Zoe@GreaterRochesterEnterprise.com.

Huntsman Receives 2004 Othmer Medal: Discusses Challenges of Global Chemical Industry

By Neil Gussman

With over 200 chemical engineers and chemists in attendance, the 2004 Othmer Gold Medal was awarded to Jon M. Huntsman at the Chemical Heritage Foundation's third annual Heritage Day in Philadelphia on June 17. The Chemical Heritage Foundation's (CHF) highest award, the Othmer Gold Medal, recognizes an individual's contributions to chemical heritage through exceptional service in research, innovation, legislation, or philanthropy.

Huntsman—chemical engineer, philanthropist, and chairman of a \$9 billion corporation that bears his name—humbly accepted the award saying, "There are so many in this hall who are far more deserving of this award than I am."

Presenting the award were Arnold Thackray, president of CHF, and Harold Sorgenti, chair of the CHF Board of Directors. Huntsman acknowledged Sorgenti as a mentor and friend. "Without Hal's concern for a young entrepreneur many years ago, I don't know that we ever would have been able to launch our business," he said.

Huntsman recalled the beginnings of his container business, including product testing: "My wife, Karen, put our polystyrene containers in the dishwasher to test them for cracks and breakage. Our R&D budget was zero." From early success in packaging, Huntsman built the business through acquisition. "We were in the market at the right time, buying low during down cycles, and repeating the same formula," Huntsman said.

Turning to the theme of his talk, "The Global Chemical Industry: A Realignment of the Stars," Huntsman said, "The chemical industry is in the midst of a great realignment, not unlike the stars at



Award winners at the Heritage Day 2004. (Seated l to r) Alejandro Zaffaroni, Chemists' Club's Winthrop-Sears Award; Jon M. Huntsman, Othmer Gold Medal; (Standing l to r) Carl Djerassi, American Institute of Chemists (AIC) Gold Medal; Madeleine Jacobs, The Commercial Development and Marketing Association (CDMA) Award for Executive Excellence; and George Rosenkranz, The Chemists' Club's Winthrop-Sears Award.

equinox. Not much had changed in the half century preceding the time when we started in the business. But many great changes have happened in just the past few years."

"We must go forward, as part of a great industry, focusing on safety, environmental stewardship, and research and development," he said. "But the industry today faces enormous challenges: regulation, wild energy cycles, terrorism, ruinous currency swings, pressure to move offshore, and Wal-Mart's impact on margins."

Despite the challenges Huntsman enumerated, he also sees hope for the future of the global chemical industry. He said the managers who have survived the downsizing of the last several years are tougher and are ready to meet the challenges of the future. He then defined a battle line between the energy industry and the chemical industry, which has been publicized much in the recent news.

"The chemical industry is very different in every possible aspect from the oil and natural gas producers who are our suppliers," Huntsman said enunciating a significant realignment of the stars. "Let's not confuse the two. One's victory is the other's loss. We dislike saying this because for many years we have been like brother and sister."

"The energy suppliers must take stock of the carnage they have caused in the chemical industry for the past four years while reaping record profits," Huntsman said. Then said both sides must be "wise as Solomon" and come to a place where "everybody wins."

For more information on the Chemical Heritage Foundation and the Othmer Gold Medal see www.chemheritage.org.

SBE GOES GLOBAL WITH SINGAPORE CONFERENCE

In conjunction with the Institute of Bioengineering and Nanotechnology (IBN), AIChE's Society for Biological Engineering (SBE) will present the First International SBE Conference on Bioengineering and Nanotechnology, September 26-29 at the Biopolis in Singapore. A new technological community of AIChE, SBE promotes the integration of biology with engineering and realizes its benefits through bioprocessing, biomedical and biomolecular applications.

Session topics will include drug delivery, protein and gene delivery, cell and tissue engineering, artificial organs and implants, nano imaging tags (quantum dots, magnetic nanoparticles), medical devices and microtools, nanoparticles, nanocomposites and nanoporous materials for bio-applications, and more.

The conference will be hosted and chaired by Professor Jackie Y. Ying, Executive Director of IBN, a national research institute in Singapore under the Agency for Science, Technology and



Research, which is dedicated to research in bioengineering and nanotechnology.

Invited speakers include Nicholas Abbott, Kristi Anseth, David Edwards, James Heath, Adam Heller, Alan Hoffman, Thomas Kenny, Gil Lee, Kam Leong, Daniel Morse, Buddy Ratner, Ryong Ryoo, Edward Sargent, Kenneth Smith, Myron Spector, Galen Stucky, Samuel Stupp, Gregory Stephanopoulos, James Swartz, Matthew Tirrell, Feng-Shou Xiao, Nobuhiko Yui, Shuguang Zhang, and Dongyuan Zhao.

Participants can take advantage of a special conference rate at the Ritz-Carlton, Millenia Singapore for SGD \$210+ (~US\$122). For more information and to register for the conference, visit <http://bio.aiche.org> or log onto www.icbn2004.com.

ENGINEERING ENTREPRENEUR AND INNOVATOR LANDAU

By Mary Ellen Bowden

Ralph Landau (1916-2004) who founded one of the world's most successful engineering and design firms, Scientific Design Incorporated, and its successor corporations, which developed and commercialized nearly a dozen processes for producing petrochemicals, died April 6 at the age of 87.

Landau earned his BS in chemical engineering from the University of Pennsylvania in 1937 and his doctor of science from the Massachusetts Institute of Technology in 1941.

As a new chemical engineer, Landau worked for M. W. Kellogg Company, one of the first engineering firms that specialized in design and development for the oil refining and chemical industries. During World War II, Kellogg was asked to build a large-scale facility at Oak Ridge, Tennessee, to separate uranium 235, which was needed for the atomic bomb, from the predominant isotope, uranium 238.

Landau was given the responsibility of designing the equipment to produce fluorine, a highly reactive substance needed to make the uranium hexafluoride used in the



gaseous diffusion process. He also oversaw the production of the fluorinated compounds used to protect surfaces in contact with the uranium hexafluoride.

After the war, he and Harry Rehnberg, a construction engineer he met at Oak Ridge, started Scientific Design with the objective of improving petrochemical production processes. Much of their business in the early days was abroad, and one of their first successes was an improved method of producing terephthalic acid—the main raw ingredient in polyester fiber—by bromine-assisted oxidation of paraxylene. Another triumph was an improved process for producing propylene oxide, a substance used in polyurethane foams and in rigid polymers.

More recently, as a faculty member of the economics department at Stanford University and a fellow at Harvard's Kennedy School of Government, Landau studied the political and economic environment necessary to encourage technological innovation.

JESSICA SOTO-PEREZ, UNIVERSITY OF MARYLAND, BALTIMORE COUNTY GRADUATE STUDENT

Jessica Soto-Perez, a 26-year-old PhD student in the department of chemical & biochemical engineering, University of Maryland, Baltimore County died tragically on Tuesday, June 29.

A member of AIChE, Soto-Perez earned her BS in chemical engineering from the University of Mayaguez prior to attending UMBC. An active and engaged member of the UMBC community, Soto-Perez was a graduate teaching assistant in the department of chemical & biochemical engineering and served as a peer mentor and counselor to other graduate and undergraduate students. She also served as a senator in the graduate student association.

Soto-Perez was one of the first peer mentors for PROMISE, an alliance of the three public research universities in Maryland, led by UMBC and funded by the National Science Foundation (NSF). PROMISE is dedicated to increasing the number and diversity of PhD graduates in the sciences and engineering who go on to academic careers.

According to a tribute to Soto-Perez on the PROMISE Web site, "Jessica was a light to all who knew her. She always had a smile, a word of encouragement, a wink, or a laugh. She shared her passion for life. She loved her family and her friends. She loved PROMISE, her lab, the people in the TRC building, her department, and her schools (UMBC and the University of Puerto Rico Mayaguez). We will miss her!"

A campus wide memorial service was held July 16, which included an announcement of the Jessica Soto-Perez University of Puerto Rico Mayaguez-UMBC Graduate School Bridge Fund and dedication of a memorial tree on campus.



ALVIN H. LARSEN

By Evan Buck, AIChE Fellow

It is with great sadness that we report the death of Alvin H. Larsen, 65, who passed away in his sleep on June 23, 2004. A Fellow of the AIChE, Larsen was one of the founders of the AIChE's Design Institute for Physical Properties (DIPPR®), which came into being in 1980, and was very active in its subsequent operations.

He served as the first Steering Committee Chairman of the Data Compilation Project (801) and was the prime mover in its organization. The path that he established for it is still being followed today. Larsen also was a member of several other Project Steering Committees, as well as Chairman of the Liaison and Dissemination Committees. In addition, he was a productive member of the strategic planning process which resulted, among other things, in the revision of DIPPR's by-laws, and of the committee which rewrote the Dissemination Agreement. Larsen's facility with words, language, organization of documents, and attention to detail made him an ideal person for this sort of work.

He demonstrated his creativity in writing "DIPPR 2000 – A Vision Statement" and "A New Paradigm for DIPPR."

Larsen was well-versed in chemical engineering and chemistry, and was highly respected for his technical expertise. DIPPR will miss him both as an extremely competent professional colleague and as a real friend.

OBITUARIES

William R. Davis, 55, *Gaffney, SC*
Farrand D. Parker, 89, *Lake Forest, CA*
Frederick Pohland, 73, *Pittsburgh, PA*
Louis G. Ricciardi, 83, *Brooklyn, NY*
Carl Unruh*, 83, *Pasadena, CA*

*Fellow member

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