Nobel Achievement

John B. Fenn Receives Share of Chemistry Award for ChE Research

John B. Fenn, retired Emeritus Professor/Senior Scientist in the Department of Chemical Engineering at Yale University, and presently affiliated with the Chemistry Department at Virginia Commonwealth University, Richmond, is one of three recipients of the 2002 Nobel Prize in Chemistry. Fenn was honored for the pioneering research on electrospray ionization he conducted while at Yale, making this, perhaps, the first time that work done in a chemical engineering department has been recognized with a Nobel prize.

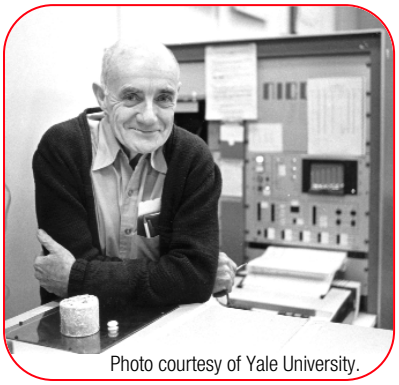

Photo courtesy of Yale University.

The Royal Swedish Academy of Sciences announced the award on October 9. Fenn shares the Chemistry Prize with Koichi Tanaka of Japan, also honored for research in mass spectrometry, and Kurt Wüthrich of Switzerland, for his work in nuclear magnetic resonance. The Academy noted that all three recipients contributed to the development of independent methods to characterize macromolecules of biological importance.

Fenn's efforts in electrospray ionization have brought about a revolution in the field of the mass spectrometry of biological macromolecules. His electrospray "interface" enables the powerful tandem combination of the liquid chromatograph, pioneered at Yale by ChE Professor Csaba Horvath, with the mass spectrometer for biochemical analysis. In 1984-85, when Fenn and a coauthor first published papers demonstrating the technique's ability to bring small ions from solution into the gas phase, and analyze a variety of them by mass spectrometry, the keyword "electrospray" turned up in ISI's Citation Report in only 3 papers. By 2001, the word was used in 1,529 scientific papers compiled by the same service.

The "ignition" of the electrospray revolution may have been in 1988, when Fenn, then 71 and already an Emeritus Professor, published the first mass spectra of multiply charged proteins. Electrospray ionization makes it possible to analyze large and complex molecules of biological interest with precision and ease. A 'soft' ionization technique, it can transform such molecules into intact ions ready for mass analysis. Moreover, such ions carry so many charges that their mass/charge ratios are within the range of modest mass-spectrometer mass filters.

Born in New York City, Fenn received his BA in Chemistry from Berea College in Kentucky in 1937, and a PhD in Chemistry from Yale in 1940. After performing ramjet chemical propellant research at Monsanto, Sharples, and Experiment, Inc., Fenn served for three years as a grant/contract research administrator for the U.S. Office of Naval Research, and then entered academia in 1959 as Professor of Aerospace Engineering at Princeton. In 1967, he was called to Yale to strengthen the Chemical Engineering research group, then within the interdisciplinary Department of Engineering & Applied Science. This he succeeded in doing, culminating in the re-emergence, around 1980, of Chemical Engineering as an independent, research-active Yale department. He served as Professor of Chemical Engineering from 1967 until reaching the (then) mandatory retirement age of 70 in 1987. He continued his electrospray research at Yale as Emeritus Prof. ChE/Sr. Scientist for another seven years.

By 1994, Fenn had begun another phase of his long career, bringing a new mass spectrometer with him to the Chemistry Department at VCU where he continues to work as a senior research scientist at the age of 85. Over the last 18 years, he has co-authored 26 papers, mostly containing novel experimental results. Cumulatively, he has written or co-written about 100 papers, many in collaboration with the 12 Yale PhD graduate students, and a like number of international post-doctoral associates with whom he's worked over the years. He also has written one thermodynamics book, and holds 19 patents (some with co-inventors; one on a new state of matter: highly charged macroions), and has taught at the Universities of Trento (Italy), Tokyo (Japan), Bangalore (India), and at the Chinese Academy of Sciences in Beijing.

Polls Are Still Open...

Voting on the "YES" initiative to approve or reject five distinct amendments to the AIChE Constitution is now underway. Paper ballots were mailed out November 4, the same day that online voting booths opened at the Annual Meeting in Indianapolis.

Drafted by the Institute's Constitution and Bylaws Committee, the proposed amendments were presented to the AIChE Board of Directors last spring following a year of research and benchmarking. The Board agreed that these changes would prepare the Institute for a new era of growth. Now it's up to the members and Fellows to ratify that vision, or call for another direction.

Information on the proposed amendments, the rationale behind them, and what they could mean for the average member can be found online at http://www.aiche.org/constitution/. If you have specific questions the Web site can't answer, send an e-mail to constitution@aiche.org. **Deadline to receive ballots is January 7, 2003.**

THE INDY BEAT: SCENES FROM AIChE '02 ANNUAL MEETING

Heritage Environmental Services brought an Indy 500 Race Car from the Treadway Racing Team to the Sunday Night Reception.

Fall SHOWcase brought together more than 50 vendors of products, services, and information tailored to today's chemical engineer.

Dr. David A. Prentice (l) of Indiana State University and Dr. Lawrence S.B. Goldstein (r) of the University of California-San Diego School of Medicine discuss cloning and genetic engineering at Critical Issues session.

The Indiana Convention Center was the main hub for this year's conference. The facility is connected by walkways to three hotels making it easier for members to get from one facility to another—without stepping into the colder than usual temperatures outside.

Richard Felder (l) of North Carolina State University and Ronald Rousseau (r) of Georgia Institute of Technology were co-winners of the 2002 Warren K. Lewis Award for Excellence in Chemical Engineering Education.

Incoming President Dianne Dorland (r) of Rowan University shares breakfast and conversation with a couple of student attendees on Saturday morning.

"Go East:" Annual Management Conference Returns to the "Other Coast"

Returning to the east coast for the first time in almost six years, the AIChE Management Conference touches down May 4 to 7, 2003, at the lovely Amelia Island Plantation resort, located near Jacksonville, Florida. The meeting continues the conference series theme of innovation in the development and successful implementation of new technologies.

The program will once again combine tone-setting plenary speakers with in-depth symposia sessions and "hands-on" breakout workshops designed to drive home key lessons learned. Past conference attendees have been unanimous in their praise of the quality of conference speakers and 2003 attendees will not be disappointed as Rick Gross, chief technology officer for Dow Chemical, will be the Plenary Speaker.

Specifically, this year's conference, which, for the first time, will be cosponsored by the American Chemical Society, will look at "Innovation Across Boundaries." The boundaries in question include: countries and cultures, different industries, and the size and nature of companies—from very large multinationals to small flexible start-ups. In addition to ACS, the conference, for the first time, also has a Gold Sponsor (sponsor donating $20,000) in Cap Gemini Ernst & Young.

For more information on the program, site amenities, registration, and sponsorship opportunities, keep an eye on http://www.aiche.org/conferences/management/.

2002-2003 Program Planning Grant Recipients

The Local Sections Committee has announced its 2002-2003 Program Planning Grant recipients.

Central Carolinas
Delaware Valley
East Central Florida
East Tennessee
Great Salt Lake
National Capital
New Jersey
Northern Alabama
Northern California
Southwest Louisiana
St. Louis
Triad

Programs supported by these grants include: "Regional Student Conference Interaction and Support," "Practicing Engineer-ChemE Student Mentorship," "College Bowl with Special Invite to 50-Year Section Members," and an "Annual Symposium on Biotechnology."

For more information, see http://www.aiche.org/mag/sections/progrant.htm.

Institute Honors Its Finest at Indianapolis Luncheon

One of the highlights of every annual meeting is the Honors Luncheon at which AIChE recognizes some of that year's most distinguished members. Here is a quick round-up of "who won what" for Institute and Board of Directors awards. Check the "News Room" on the AIChE Web site at http://www.aiche.org/newsroom/ for photos and additional details. A list of Division, Committee, and Student award winners will appear in the January issue of *Extra*.

2002 Founders Award
Eli Ruckenstein
State University of New York-Buffalo

2002 Award in Chemical Engineering Practice
Sponsored by the Bechtel Foundation
James A. Trainham
DuPont Company

2002 F.J. and Dorothy Van Antwerpen Award
Sponsored by the Dow Chemical Company Foundation
Alfred E. Wechsler
Arthur D. Little

2002 Institute Award for Excellence in Industrial Gases Technology
Sponsored by Praxair, Inc.
Amyn S. Teja
Georgia Institute of Technology

2002 Allan P. Colburn Award for Excellence in Publications by a Young Member of the Institute
Sponsored by E.I. du Pont de Nemours & Company
Costas D. Maranas
The Pennsylvania State University

2002 Award for Service to Society
Sponsored by Fluor Daniel, Inc.
William S. Hammack
University of Illinois

2002 Alpha Chi Sigma Award for Chemical Engineering Research
Sponsored by Alpha Chi Sigma Educational Foundation
Charles F. Zukoski
University of Illinois

2002 Professional Progress Award for Outstanding Progress in Chemical Engineering
Sponsored by Air Products and Chemicals, Inc.
David A. Edwards
Harvard University

2002 R.H. Wilhelm Award in Chemical Reaction Engineering
Sponsored by ExxonMobil Research and Engineering Company
Bruce C. Gates
University of California, Davis

2002 Warren K. Lewis Award for Chemical Engineering Education
Sponsored by ExxonMobil Research and Engineering Company
Richard Felder, North Carolina State University
Ronald Rousseau, Georgia Institute of Technology

2002 William H. Walker Award for Excellence in Contributions to Chemical Engineering Literature
Douglas Lauffenburger
Massachusetts Institute of Technology

A REPORT CARD FOR AIChE 2002

by Sid Sapakie, 2002 AIChE President

Passing of the Gavel: 2002 President Sapakie (r) shares a moment with incoming President Dianne Dorland.

One year ago I told AIChE members that the twin themes of my presidency would be relevance and inclusivity. As the year draws to a close, I'd like to comment on how we've done on those and other important issues.

Early this year we introduced Project Genesis, our plan to renew the Institute and make it relevant not only to all chemical engineers, but to the allied professionals working in concert with our members. We identified three areas to receive equal focus with our traditional CPI-related technologies. These areas are: bioengineering/biotechnology, sustainable development, and materials. By year's end, we've begun an Institute for Sustainability, and are organizing a similar effort in the bio area (which was labeled by one of our award recipients in Indianapolis as "that bio thing").

Also in 2002, we proposed a change to our constitution that, with the approval of our membership, will broaden AIChE's base to include people whose skills and background fall outside traditional chemical engineering, but definitely within the widening circles of what we do. This reflects the way we work today and it is important that we include these professionals within the operation and life of the Institute.

Another development that cuts right to the Institute's relevance was the launch of our Industrial Advisory Board (IAB). Composed of chief technology officers from many of our most important stakeholder companies, this board has, and will continue to, offer opinions and advice on our strategies, and the changes we must implement to be relevant and inclusive. We've also begun a Young Professionals Advisory Board to attract and channel input from those who are an important constituency today, and an even more important one in the future.

Together with our Women's Initiatives and Minority Affairs committees, these boards give us active voices representing the breadth of our constituency. This year we also added the volunteer position of International Ambassador to improve our efforts on behalf of our members with interests outside the U.S., as well as to coordinate initiatives with chemical engineering societies in other countries.

One of the more interesting initiatives of 2002 was our quick response to the potential chemical plant safety risks of terrorism. Because we already had the Center for Chemical Process Safety (CCPS), which has been helping companies improve process safety at their facilities since 1985, AIChE was able to lead efforts in this area following the tragedy of September 11. Recognizing this new challenge, CCPS developed a method to analyze chemical plant security risks, and published a book entitled *Guidelines for Analyzing and Managing the Security Vulnerabilities at Fixed Chemical Sites.* Donations from organizations, corporations, and individuals have allowed CCPS to make the electronic version of this book available at no cost. Moreover, AIChE has begun a continuing education course on Security Vulnerability Analysis [SVA].

As you know, AIChE, its sister societies, and many companies face significant financial challenges in today's economy. Although we are not out of the woods, we've taken numerous steps to improve our financial future. We increased dues this year, but also took many steps to decrease the expense side of the ledger. We've been proactive in reducing costs and identifying ways to work more efficiently, including outsourcing some services and working to minimize our real estate commitment.

We've moved quickly on many of these changes. Perhaps not as quickly as some would like, but it's important to do your homework before you make major changes.

There is no question 2002 has been a challenging year. But I believe we've made many important decisions for AIChE's future. The Board of Directors has worked hard on these issues and I've been proud and honored to lead them. What grade would I give us this year? How about B+?

Soon Dianne Dorland will take over as 2003 president. I look forward to working with her and the rest of AIChE's leadership, and helping in any way I can to ensure that our future will be great.

Founders Award & Van Antwerpen Award Nominees Sought

The Board of Directors Awards Committee is soliciting nominees for the 2003 Founders and Van Antwerpen Awards. **Deadline for submissions is February 15, 2003.**

The F.J. & Dorothy Van Antwerpen Award for Service to the Institute recognizes a chemical engineer for outstanding contributions and service to the Institute, and is presented to a member of AIChE who has made outstanding contributions to the chemical engineering profession through that service. These contributions can include achievements in both the professional and technical areas of Institute activities. The recipient will have contributed to innovative approaches to meet both perceived and unperceived membership needs. Sponsored by The Dow Chemical Company, the award consists of a plaque and $5,000, plus a $500 travel allowance.

The Founders Award for Outstanding Contributions to Chemical Engineering is presented to a member of AIChE who has had an important impact on chemical engineering. His or her achievements, either specific or general, have advanced the profession in any of its aspects. The recipient should have a long and distinguished record of service to the profession, including both technical and professional activities. The award consists of a gold medal, a plaque and $3,000 per award recipient.

If you would like to nominate a member for either of these awards, please contact Fiona Brennan, assistant secretary, at fiob@aiche.org.