Ammonia Safety Symposium: A Half Century of Progress

September 25–29 • Toronto • The Fairmont Royal York

A half-century ago, frequent explosions in oxygen plants compelled a dedicated group of engineers to meet and share research on how plants could be run more safely. Shortly thereafter, ammonia and hydrogen production became the focal points of discussion.

The group was eventually adopted as a committee of AIChE. The very first symposium to discuss safety in air and ammonia plants, "Safe Design and Operation of Low Temperature Air Separation Plants" was held at the 1955 AIChE Boston Annual Meeting, moderated by ARCO's Norton Walton.

"More than 1,000 papers have been presented at AIChE Ammonia Safety Symposia over the years, and untold lives have been saved, injuries prevented and property saved as a result of the sharing that takes place at these symposia," says Halliburton's Rick Strait, a member of the AIChE Ammonia Safety Committee. "Maybe this is why today the AIChE Ammonia Safety Symposium is attended by up to 500 people from 30 countries with most every company in the industry represented, making this the preeminent ammonia symposium in the world."

This September, ammonia producers from around the world will gather in Toronto to celebrate this legacy — and learn the latest safety innovations — at the 50th Ammonia Plants and Related Facilities Symposium, Sept. 25–29 at the Fairmont Royal York in Toronto, Canada.

Whether your area of interest is ammonia, urea, nitric acid, ammonia nitrate, or methanol, this symposium will offer you practical real-world learnings and invaluable networks. As always, attendees will benefit from over 25 papers with concrete examples of how to avoid or manage a potential plant accident and an overview of the latest products to ensure safety.

A Roundtable Workshop will focus on unexpected corrosion and plant safety issues and offer participants an informal opportunity to discuss challenges with international experts in a confidential setting.

A special keynote address will be given by Dr. Haldor Topsoe, founder and chairman of Haldor Topsøe A/S. For more than 50 years, Topsoe has been one of the main suppliers of catalysts and technology for the ammonia industry. Today, Topsoe is the leading process licensor having designed more than 50% of the new ammonia capacity built since 1990 — including the two largest plants in the world, Kaltim Pasifik Amoniak in Indonesia and Profertil in Argentina, which produce in excess of 2,000 t/d.

A special 50th Anniversary celebration is planned for Sunday evening, featuring a retrospective video presentation reflecting on the successes and leadership of the Ammonia Plant Safety Symposium.

"Through the years, the symposium has produced nearly 50 technical manuals that provide an excellent historical record and, more importantly, a service to the industry," reflects Gerald Williams, a member of the committee for 18 years, and president of Plant Surveys International. "Individuals can rely on these manuals to reference safety issues and find solutions to their problems. The industry is as safe as it is today, in part due to the work of the AIChE and its Ammonia Plant Safety Committee."

REGISTER TODAY and SAVE $90!

The 2005 symposium promises to attract the world's leaders and founders in Ammonia Plant Safety. Register before July 29 and save $90 on registration fees. Visit www.aiche.org/ammonia for details and registration or call AIChE Customer Service at 800-243-4363 (212-591-8100 outside the U.S.

PROCEEDINGS AVAILABLE

For the first time, a comprehensive CD-ROM of the 2005 presentations, plus all proceedings from its 50-yr history will be available for purchase onsite or by contacting AIChE Customer Service (see above).

Ammonia Timeline: The Early Years

The fundamentals of ammonia synthesis continues to be based on on the Haber-Bosch process, in which a hydrogen-nitrogen mixture (synthesis gas) reacts on an iron catalyst at elevated temperatures in the range of 400–500°C and operating pressures above 100 bar. The ammonia produced is then removed and the unconverted part of the synthesis gas is recirculated and supplemented with fresh synthesis gas. Below are some key dates from the discovery of ammonia to its full-scale production.

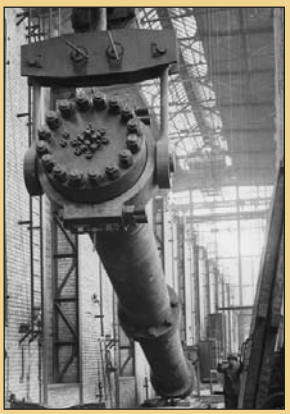


Photo. Installation of an ammonia synthesis converter in the 1920s at a BASF site in Ludwigshafen, Germany. Courtesy of Max Appl.

13th century — Alchemist Albertus Magnus makes mention of ammonia in the form of *sal-ammoniac*
15th century — Basil Valentine shows that ammonia could be obtained by the action of alkalies on *sal-ammoniac*.
1774 — Joseph Priestley isolates gaseous ammonia, termed "alkaline air"
1777 — Karl Wilhelm Scheele shows that ammonia contains nitrogen
1785 — Claude Louis Berthollet determines its composition is NH_3
1909 — Fritz Haber and Carl Bosch produce ammonia from nitrogen contained in air using osmium as the catalyst
1910 — the Haber-Bosch process is patented
1911 — Although osmium was an excellent catalyst, it was difficult to handle and not readily available. Alwin Mittasch solves this problem by determining that iron with a few percent of alumina and a pinch of potassium could replace osmium
1913 — First production in 30 t/d facility in Ludwigshafen
1914 — Used on industrial scale by Germans in WWI to produce explosives
1920 — Luigi Casale builds the first ammonia plant in Italy
1922 — M.G. Claude builds the first ammonia plant in France
1925 — Uhde constructs plant based on a coke oven gas, operating under extreme low pressure (Mont Cenis process)

To enable members to make informed selections for the upcoming AIChE election, the candidates have provided overviews of their experience, as well as their plans for future programs and directions for the Institute. These messages are in each candidate's own words. Director candidate statements will appear in the July issue of *AIChExtra*. Following publication in Extra, statements will be posted at http://www.aiche.org/candidates.

Voting dates and deadlines: Ballots will be mailed on August 10. Electronic proxy will also be available on this date. Directions on electronic proxy will be included with the ballot and emailed to members with email addresses on file. All ballots must be received by September 14. The Teller's Committee will meet to verify the results of the election on September 24. Election results will be announced in November at AIChE's Annual Meeting in Cincinnati, OH and in the December issue of *AIChExtra*.

2006 Election: President-Elect

Lawrence B. Evans

AIChE has made tremendous strides in the past two years to return the organization to sound financial health. If given the opportunity to serve as your future President, I will focus my leadership skills and broad experience in both academia and industry to continue this revitalization while improving benefits to each of our members.

New technologies, ranging from biotechnology and nanotechnology to new energy systems and sustainable development, create opportunities and challenges for practicing chemical engineers as well as researchers. AIChE must become the premier professional society in these emerging fields, ensuring that our members are at the forefront of new areas of technology.

If elected, my goals will be to:

- Position AIChE as the leader in emerging areas of technology.
- Revitalize AIChE nationally by strengthening the local AIChE sections and providing more services that members really want.
- Dramatically improve communications between AIChE leadership, local sections and individual members, insuring that Institute goals align with members' needs.
- Support local sections by providing resources such as an improved membership database and speakers bureau.
- Expand career services to help members manage and build successful careers.
- Achieve closer cooperation between academia and industry so that tomorrow's graduates have good career opportunities and meet the needs of industry.
- Build the financial strength of the Institute by continuing a policy of fiscal responsibility and reverse the decline in membership, emphasizing recruitment of young members.

For more information or to share ideas with Evans, go to www.larryevans.net.

Evans founded Aspen Technology in 1981 and served as Chairman until 2005 when he retired. Under his leadership the company grew from start-up to become the leading provider of software for the chemical process industries. He was professor of chemical engineering at MIT from 1962–1990. Evans pioneered the use of computers in chemical engineering education and was co-founder of CACHE (Computer Aids for Chemical Engineering Education). He received the CAST Division Computing in Chemical Engineering Award in 1980, the Fuels & Petrochemicals Division Award in 2002, and the Chemical Engineering Practice Award in 1999. He holds a BS in chemical engineering from the University of Oklahoma and MSE and PhD in chemical engineering from the University of Michigan.

A 43-year member and Fellow of AIChE, Evans has served in a number of roles, including:

- AIChE Board of Directors from 1981–1983
- Trustee AIChE Foundation
- AIChE Awards Committee 2000–2005
- Active member of Boston Local Section (the Ichthyologists)
- National Academy of Engineering 2001
- CACHE Executive Officer 1974–1980

Sandra K. Dudley

Chemical engineers are well poised to address today's rapidly changing technology, world issues, and professional demands. We have long been known for our unique preparation for a wide variety of industries and job functions; we continue to lead managerial, technical, operational, and support organizations in both industrial and academe. However, the versatility that allows us to contribute so broadly results in an even wider variety of professional needs among chemical engineers. AIChE's challenge is to serve effectively as the career home for both traditional and non-traditional chemical engineers.

During the past few years, AIChE has faced and met head-on unprecedented financial challenges. It is clear that we have emerged a stronger Institute, both financially and in the dedication of its members. However, as we begin a new era of growth in AIChE, we must address opportunities presented by increasing professional demands on chemical engineers, declining membership, and rapid evolution of markets and technology.

I enjoyed serving as a Director of AIChE during one of the most challenging periods of our Institute, and I would be honored if chosen as President-Elect to focus during my term on:

- Identification and implementation of programs and services that ease the professional demands of both traditional and non-traditional chemical engineers and foster their professional growth.
- Local section emphasis, which strengthens the critical grassroots camaraderie and value to chemical engineers, especially those who do not have the opportunity to participate in national activities
- Further growth and development of inter-society alliances and partnerships to leverage the inter-disciplinary, cutting edge approach that chemical engineers use so effectively in their various professional functions.

Dudley is a senior project manager in the Nashville office of AMEC Earth and Environmental, and she teaches Chemistry for Engineers at Lipscomb University. A previous employee of CH2M HILL, Eastman Chemical Company, and Martin Marietta Energy Systems, she holds a BSChE and PhD from Tennessee Technological University.

A recent member of the AIChE Board of Directors (2002–2004), Dudley led the BOD Communication Task Force and served on the Constitution and By-Laws Committee, the Societal Impact Operating Council, and the CCPS Managing Board. She was the 2002 Spring Meeting Program Chair and 2000 Process Development Topical leader. Dudley is a member of the Government Relations Committee and Career Ambassadors, and previously led the Local Section Committee and the GRC Task Force on Retirement Income. She held several East Tennessee local section offices, including chair, as well as director of the Environmental Division.

Honored by her alma mater as the first female chosen for Engineer of Distinction, Dudley is also active with the NCEES Chemical Engineering Committee, the local church, community choir, and the American Cancer Society Relay for Life.

Jack Jubin Receives AIChE's 2004 Process Development Practice Award

John (Jack) C. Jubin, Jr. was bestowed the AIChE Process Development Practice Award at the 2005 Spring Meeting in Atlanta. The award celebrates Jubin's 65+ years of innovation in the petrochemical industry. During his career, he contributed to the start-up of the first FCC unit at the Atlantic Refining Co. (ARCO) in its Philadelphia refinery in 1942. He also made contributions to the commercialization of two major advances in propylene oxide technologies, which lead to the building of 11 propylene oxide/styrene monomer and propylene oxide/tert-butyl alcohol plants around the world, while he was employed by ARCO and then Arco Chemical Co, and now as a consultant for Lyondell Chemical Co.

Jubin was recognized for his contribution to technology development, his abilities to integrate chemistry and engineering, and his invaluable role as mentor to 5 generations of engineers and scientists. Present at the award ceremony was Dr. John A. Sofranko, executive director of AIChE. "I know of no other person who has made such a profound impact on my understanding of practical chemical engineering,"said Sofranko, who worked with Jubin for over twenty years. "Jack always has the patience to work with both chemical engineers and chemists, unselfishly giving them the wisdom of his decades of experience."

AIChE executive director John Sofranko (left) congratulating Jack Jubin (right) for receiving the Process Development Practice Award at the Spring Meeting in Atlanta.

The Process Development Practice Award is sponsored by the Zeton Inc. At the award ceremony, Peter Smith, vice president of Zeton, said, "When I read the letters of recommendations for Jack, I knew I had to meet this person."

South Texas Section Third Annual Distillation Symposium:

A Meeting of the Minds

One of the largest distillation events in the U.S., the South Texas Section's third annual Spring Distillation Symposium, held April 14, attracted over 150 engineering professionals and vendors. The meeting and arrangements were co-chaired by Jim Morris, Shane Tierling, and David Karesh. Six speakers presented technical papers from the Spring National meeting, including Mr. Henry Z. Kister, director of Fractionation Technology and senior fellow, Fluor Corp.

The program also reflected on the recent tragedy at the BP Texas City refinery, where startup of a feedstock splitter column in the isomerization unit led to a major explosion with the loss of fifteen individuals. The need to be eternally vigilant in the design, operation, and location of distillation facilities was stressed. The relevance of Mr. Kister's papers on impurities trapping and trouble-free design of refinery fractionators was noted.

Proceeds from the symposium benefited the South Texas Section Educational Program, which includes eight scholarships at four area university chemical engineering programs. Attendees also received professional development instruction equivalent to three hours to maintain their professional engineering status in Texas.

During the day's events, two prominent chemical engineers were honored for excellence in academia and engineering practice. James R. Fair, the John J. McKetta Centennial Energy Chair in Engineering (Emeritus), College of Engineering at the University of Texas at Austin, was honored in absentia for academic achievement in chemical engineering at the University of Texas (UT) at Austin. He was honored primarily for his work in mass transfer for distillation, absorption and stripping processes, and for the creation of the UT at Austin's Separations Research Program.

Kister received recognition for his achievement in chemical engineering practice for his contributions in distillation equipment design, rating, operations and troubleshooting.

Sharing expertise

Ken Cox started the program with his paper "Thermo Savvy for the Distillation Expert." He compared systems containing ethylene, propylene, and water, noting that the vapor pressure of mixtures could not be predicted by the individual component vapor pressures, and cited deethanizer columns in refinery FCC units and steam cracking olefin units.

Lowell Pless and Simon Xu of QuestTruTec discussed how Scan/Simulation Integrated Diagnostics (SSID), linking theoretical modeling and real-world gamma scans through hydraulic operation-capacity diagrams, were used in a case study showing how to pinpoint the root cause of column fluctuations.

Gail Hausch of Koch-Glitsch presented "Advances in Styrene Fractionation with Flexipac HC Structured Packing." Height of a theoretical plate or stage of approximately 12.5 in was [?] attained in a 33-ft operating column. Minimization of flooding at the structured packing interfaces was verified by independent FRI testing of the mass transfer devices.

Dan Summers of Sulzer presented "Push Valve Experience on Distillation Trays," in which performance of vee-grid trays was significantly improved by locating push valves in stagnant regions of a large-diameter tray's active area and under downcomers. Recent experience showing the successful application of these valves was presented.

A full review of the third annual Spring Distillation Symposium is available in The South Texan Newsletter May 2005 issue at http://sts-aiche.org/newsletter/news_05/news0505.pdf.

AIChE Central Jersey Local Section Meeting:

Enlightening High School Students About Chemical Engineering

On April 11, the AIChE Central Jersey Local Section met to celebrate the graduation of this year's class of chemical engineers from Princeton University. This annual event also gave the senior class a chance to present its thesis work with a poster session and awards dinner.

Altogether, there were 18 presentations that demonstrated the future trends in the profession. Many of the posters explained research into biological engineering areas, such as biological precursors for useful nanoparticles and metabolic pathways for cellular systems. There were also posters on more classical areas such as engineering studies for a hydrogen economy.

As a way to share this exciting work with potential future engineers and scientists, the local section invited chemistry students from the local Princeton High School (PHS). Over 40 high schools students attended and participated in the discussions on the senior projects. Many of

the high school students found the event to be quite engaging. "I really enjoyed their excitement for science and their breadth of knowledge — their research was more than just a graduation requirement, but also a passion," said one student from PHS. Another said, "They were not only able to explain their projects in high-level technical terms, but also in words that I could understand and benefit from."

Several high school students also remarked about the high percentage of females at the meeting. Professor Jay Benziger, the Princeton University student advisor noted that about 55% of the undergraduate chemical engineers are woman. "Apparently, the trend towards more biology and sustainable development research is attracting more woman to the field," noted Benziger.

Dr. Carol S. Lee, the PHS chemistry teacher who promoted the local section meeting to her classes, said that most high school students know very little about what a chemical engineer does or anything about the engineering profession. "Based on what I heard tonight from my students, I think that quite a few of them may consider chemical engineering when they look to their college education," said Lee.

"I would hope that other AIChE local sections, in cooperation with student chapters in their area, consider holding similar events. It's a great way to get high school students interested in the profession," noted Dr. John Sofranko, AIChE's executive director, who also attend the event.

Charles Forsberg Earns Prestigious Nuclear Engineering Award

Recognized for his work in nuclear power, hydrogen production and electricity, Charles Forsberg received the 2005 Robert E. Wilson Award, given by AIChE's Nuclear Engineering Division, at the 2005 Spring Meeting held in Atlanta. Forsberg is a principal investigator for the Advanced High-temperature Reactor unit, a new nuclear power reactor concept being developed for production of hydrogen and electricity, at Oak Ridge National Laboratory (ORNL).

He holds 10 patents and has published more than 200 papers on subjects including developments in advanced waste repository, new processes to make radioactive wastes stable forms for disposal, and improved methods for hydrogen production.

Forsberg earned a bachelor's degree in chemical engineering from the University of Minnesota, a master's and a doctorate in nuclear engineering from the Massachusetts Institute of Technology. He is a Fellow of the American Nuclear Society and topical chair for hydrogen production for AIChE.

Save the Date — October 11–13 China/USA/Japan Joint Conference

The China/USA/Japan Joint Chemical Engineering Conference is a combination of the Fourth China/USA Joint Chemical Engineering Conference and the Third China/Japan Joint Chemical Engineering Symposium. It will take place in Beijing, China at the Beijing Friendship Hotel on October 11–13. The conference is sponsored by The Chemical Industry and Engineering Society of China, AIChE, and The Society of Chemical Engineers, Japan.

Some of the key areas to be discussed at the conference include:

- Catalysis and Reaction Engineering
- Nanotechnology and Microelectronics Processing
- Computing and Molecular Simulation Science and Engineering
- Food, Pharmaceutical and Biotechnology
- Hydrogen Production and Economy
- Particle Technology and Multiphase Processing
- Six Sigma and Global Quality Management
- Sustainable Technologies and Green Processing

For more information, go to http://www.che.utoledo.edu/cujche.

Richard Seagrave Elected ABET President

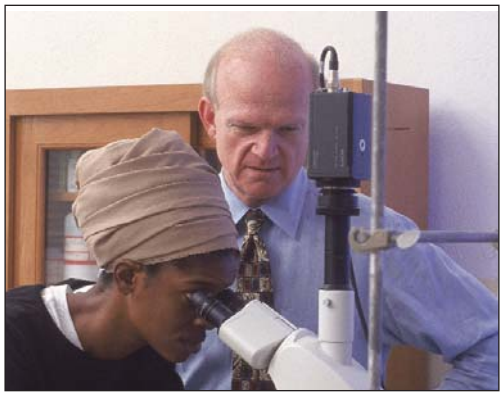
In 2005–2006, Richard C. Seagrave will serve as the ABET president. During his five years on the ABET board of directors, Seagrave served on the International Activities Committee and as board liaison to the Engineering Accreditation Commission (EAC). He was a member of the EAC representing the AIChE from 1992 to 1999, and served as the EAC's chair in 1996–1997. In 1999, he was named an ABET fellow. Seagrave is distinguished professor Emeritus in the Dept. of Chemical Engineering at Iowa State University. He earned his BS in chemical engineering from the University of Rhode Island and his MS and PhD from Iowa State University.

Q&A: Dr. Ronald Rousseau Ponders the Challenges of Academia and the Future of the Profession

David Keyes, ATL AIChE newsletter editor

Q. Dr. Rousseau, the Cecil J. "Pete" Silas Chair at Georgia Tech, your name is recognized around the world as a leader in chemical engineering education. Where did you receive your chemical engineering education and what is one project where you had the most satisfaction in using it?

A. I earned my bachelors, masters and PhD degrees from Louisiana State University. Of the many projects in which I have participated, the one that earned me the most recognition is my co-authoring of the textbook, *Elementary Principles of Chemical Processes*. Taking four to five years of intensive work, the book Rich Felder and I produced focused on teaching fundamentals and problem solving to sophomores in chemical engineering. One of the unique aspects of the book is the use of industrial case studies. These required great effort to produce because they reflected real industrial processes, and yet they had to be structured so as to be appropriate, challenging and instructive to a sophomore chemical engineering student.



Q. Few engineers have much of an idea of the pressures faced by academics. Could you help those of us who work for a for-profit company better understand your pressures and joys?

A. At a research university, a tenure-track faculty member typically begins his/her career as an assistant professor. Within 5–10 years of employment, there is an evaluation of work to determine whether he/she will advance to the position of associate professor with tenure. After another 5–10 years, and based on the significance of accomplishments, an associate professor may be promoted to the rank of professor. Someone who chooses academia as their profession is given a great deal of creative intellectual freedom. However, with intellectual freedom come great expectations. These include meeting the day-to-day challenges associated with classroom teaching, such as maintaining student interest and presenting cohesive and stimulating material that is appropriate for the assigned class. On a broader time scale, professors at a research institution (such as Georgia Tech) are expected to:

- generate (and obtain funding for) research ideas
- attract and develop graduate students
- communicate research results in respected journals.

To be effective in an academic position, one really needs to know their field and be able to work with people, communicate effectively, and manage several projects simultaneously.

Q. Chemical engineering, as a profession, seems to be in a state of flux. What roles and positions do you see graduating Georgia Tech students (especially at the masters and PhD levels) taking that they alone can fill?

A. Chemical engineering students possess a unique perspective and appreciation of the relationships that exist between the molecular and macro scales. The ability to extrapolate (based upon solid engineering fundamentals) from the micro scale to an industrial process is uniquely in the skill set of a chemical engineer.

Q. It seems as if chemical engineering departments across the U.S. are adding the term biotechnology (or in the case of Georgia Tech, biomolecular) to their discipline. As in years gone by, when chemical engineers could uniquely describe the workings of a refinery, will biotechnology soon serve to uniquely separate chemical engineers from all others?

A. In the 1940s up to and including the 1960s, chemical engineers were the acknowledged architects of the energy and petrochemical businesses. These were represented by oil refineries and chemical plants. While chemical engineers still play vital roles in these businesses, their roles have spread to numerous other industries. Georgia Tech's alumni are scattered throughout companies such as ExxonMobil, Intel, Pfizer, Merck and DuPont to name only a few employers of our graduates.

The addition of the term biomolecular, to me, acknowledges what chemical engineers have always emphasized — applying the knowledge of the molecular level to the process level. Now, there is no doubt that biological processes are playing roles of increasing importance to chemical engineers. For example, some Georgia Tech graduates have used a bio-based manufacturing method to make 3GT, a superior nonwoven fabric made by DuPont. Instead of the traditional petrochemical process, the bio-based method produces a superior product and uses less energy, reduces emissions and employs renewable resources.

The recent name change of our program reflects the long-term evolution of what has been going on in research and graduate education, but it also reflects the step change in our undergraduate curriculum. All of our students are required to take a course in biology, and they can take biologically oriented electives and encounter biobased examples in all their core chemical and biomolecular engineering courses.

OBITUARIES

Kenneth R, Hancock, 88, Bethlehem, PA
David L. Harper, 58, Round Rock, TX
John P. Longwell, 87, Kingston, WA
Blanchard L. Pritchard*, 74, Dallas, TX
Charles A. Stokes*, 90, Naples, FL
Maxwell Patrick Sweeney, 83, Arlington, VA

Are you in the news?

Tell *Extra* about your recent award or latest research. Or share information on innovative new programs you think members would like to hear about. Email us at news@aiche.org.

AIChE Financial Statements, Year ended December 31, 2004

Statement of Activities

Revenue:	
Dues and other membership revenue	$5,432,571
Publication sales and subscriptions	2,177,063
Industry technology alliances	3,394,903
Meetings and technical programming	2,912,060
Education services	43,015
Financial services	284,720
AIChE Foundation contributions	191,984
Other revenue	380,896
Investment return, net	573,591
Total revenue and support	**$15,390,803**
Expenses:	
Program Related:	
Membership	$1,987,573
Publications	2,081,889
Industry technology alliances	2,670,898
Meetings and technical programming	2,465,139
Education services	49,058
Financial services	180,796
AIChE Foundation programs	3,425
Other program support	651,241
Total program related	**$10,090,019**
Support Services:	
General and administration	$3,286,933
Total support services	**$3,286,933**
Total operating expenses	**$13,376,952**
Change in net assets from operations	**$2,013,851**
Nonrecurring expenses:	
Additional pension liability	$(176,661)
Restructuring costs	240,001
Total nonrecurring expenses	63,340
Change in total net assets	2,077,191
Net assets (deficit) at beginning of year	$(3,391,327)
Net assets (deficit) at end of year	**$(1,314,136)**

Statement of Financial Position

Assets:	
Cash & cash equivalents	$3,133,162
Investments, at market	6,670,996
Accounts receivable, net	517,850
Prepaid expenses and other	196,738
Pledges receivable, net	252,753
Property and equipment, net	302,457
Total assets	**$11,073,956**
Liabilities & Net Assets	
Liabilities:	
Accounts payable	$1,314,788
Deferred revenue – dues, subscriptions and other	5,031,398
Accrued expenses:	
Leasehold assignment and restructuring costs	1,105,067
Employee vacation and other benefits	344,702
Pension and other postretirement benefit costs	3,481,044
Other	673,593
Royalty advance	437,500
Total liabilities	**$12,388,092**
Net Assets:	
Unrestricted	$(3,533,674)
Temporarily restricted	1,720,363
Permanently restricted	499,175
Total (deficit) net assets	**$(1,314,136)**
Total liabilities and net assets	**$11,073,956**

This is a condensed version of the 2004 financial statements of the American Institute of Chemical Engineers. The financial statements and the full audited report can be viewed by clicking on **http://www.aiche.org/about/pdf/AIChEfinancial2004.pdf**

For the year ended December 31, 2004, AIChE net assets increased approximately $2.077 million.

AIChE's independent public accountants rendered an unqualified opinion on the 2004 financial statements.