New Jersey Section

NJAIChE Newsletter

NJ's oldest section – over 50 years of service

Volume 15 Issue 2 September 2008

Welcome to this issue of the NJ-AIChE local section newsletter. As the long sunny days of Summer come to a close with the spectacular Beijing Olympics and the start of the final phase of the Presidential Campaign, we would like to bring to your attention some of the activities of the AIChE and your local section.

This is the year that AIChE will be celebrating its Centennial year starting with events at the Annual Meeting on November 16 -21, 2008 in Philadelphia. As Chemical Engineers we can look back with pride at the many accomplishments of our profession over the past 100 years. Some of the major events are presented in this newsletter. We can also look forward to many new challenges in the years ahead with major shifts in the various industries we serve and global changes in the way we deal with healthcare, energy, environmental and other matters. As some industries relocate to distant shores, other new opportunities arise in materials, biotechnology, environmental, energy and other technological developments. The AIChE has published their Strategic Plan on their website) and we would encourage you to review it.

http://www.aiche.org/About/WhoWeAre/President/StrategicPlan.aspx

Our Fall session starts on September 9 with a dinner/lecture on the emerging trends of the Pharmaceutical Industry. These meetings are a good opportunity to keep pace with information and events and also an opportunity to network with friends old and new. The October meeting will be the annual College Bowl featuring a quiz competition between some of the local Chemical Engineering students and is sure to be a fun event for student and professional members alike. Other meetings and activities will be detailed on our website (www.njaiche.org). We would like to especially encourage all of you to participate in your AIChE section and to let us know what you want in our programs. We plan to explore having a Young Professionals group if there is interest. There is interest in having more experienced members work with student groups as AIChE mentors and ambassadors. Please feel free to share your ideas and comments to shape the future of our section.
http://www.aiche.org/About/WhoWeAre/President/StrategicPlan.aspx

Geoffrey A. D'Netto
Chair

Student Awards 2008

As usual Rutgers and NJAIChE worked together to give many students awards. 50+ Year members and professors also received awards:

Abelsayed –Most Deserving

Constantinides awarded from students

Glass 50 Year Member

Messina -60 Year Member

Patel Senior High GPA

Paul – 50 Year Member

Royce-Junior High GPA

Shah – Science and Research

Sayed – Student Treasurer

Stevens Pharmaceutical Manufacturing Programs

Master's Degree in Pharmaceutical Manufacturing

- **Master of Engineering Degree**, if the student has a Bachelor's Degree in engineering, and takes engineering electives.

- **Master of Science Degree**, if the student has a Bachelor's Degree in science, engineering, technology, or other discipline.

Graduate Certificate Program

- **Pharmaceutical Manufacturing Practices (PMP)**, an introductory overview of the industry, touching on all basic manufacturing processes, facilities design issues, validation and regulatory affairs concepts which drive the industry.

- **Validation & Regulatory Affairs (VRA)**, for individuals who work or aspire to work in the validation part of the industry, to test and confirm that equipment and processes meet specifications.

- **Design of Pharm. Facilities (DPF)**, for individuals who work in engineering companies, or who deal with facilities issues; covers overall facilities design issues, and the more detailed design of water systems and HVAC systems.

- **Project Engineering in Pharm. Mfg. (PEPM)**, for project engineers and project managers, and those aspiring to these positions in the industry; Includes facilities design, project management concepts, specific implementation concepts for sterile facilities, and the newer PAT concepts.

- **Bioprocess Systems in Pharm. Mfg. (BSPM)**, for individuals interested in biopharm manufacturing technical issues. Includes overall facilities issues, biotechnology processes, specific facilities design concepts, and sterile facilities approaches.

Want more program information?

Contact Dr. Richard Berkof, Program Director, at *rberkof@stevens.edu*.

THE TRANS-SIBERIAN RAILROAD

The Trans-Siberian Railroad traveling, with tourists, from Moscow to Vladivostok makes a large number of brief stops. However, it makes extended stops at a number of major cities along the way. All of these cities have significant chemical, petrochemical or related industries such as:

KAZAN - acetone, latexes, phenol, polyethylene, polysulphides and sealants:

EKATERINBURG - chemical dispensers, cosmetics, ferrous and non-ferrous metallurgy, perfumes and pharmaceuticals:

NOVOSIBIRSK - carbon electrodes, lithium/uranium metals & salts, pharmaceuticals, plastics, polyethylene oxides, tin smelting and zeolites. It is also the major center of the Russian Academy of Science (Academgorodok):

IRKUTSK - agricultural products, aluminum, biomass processing, minerals (potassium carbonate), petrochemicals, pharmaceuticals, and rare metals:

ULAN UDE - alloys, cellulose, limestone, metals mining, natural gas, nylon and wood processing:

VLADIVOSTOK - aquaculture, ferrous & non-ferrous metals, natural gas, ore mining, tall oil rosin.

This represents only a narrow but very long strip of Russian territory and does not include many other major processing centers. Nonetheless, it gives some indication of the wide diversity of chemical operations and products in Russia.

100 Year Trivia

As AIChE celebrates its 100th birthday, it is interesting to note the following: There are eight 2008 current members of the New Jersey Section that have been members of AIChE for more than half its lifetime. They are John Alker, Frank Dittman, Ned Jaffa, Joseph McGroarty, Philip Messina, George Skarpedas, Benjamin Smith and Leonard Sutker.

Xmas Party

A Christmas party is planned in the first 2 weeks of December! Be ready for fun with your fellow engineers.

Our Web Page Is Moving

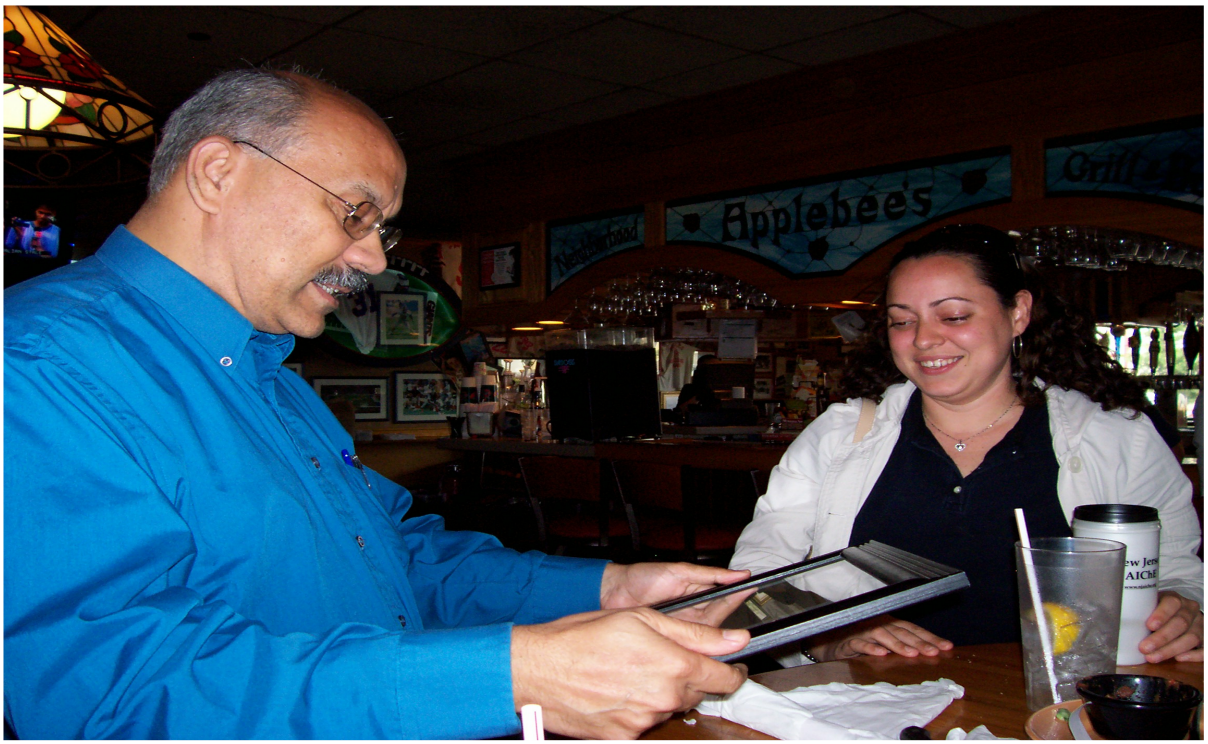
NJAICHE.org is moving to a new server. For those who visit you may find that your bookmark location may not work. Simply retype in the web address and you will be directed to the web location.

June Site Visit to Conoco Phillips

The section toured the oil refinery in Linden in June 2008.

Section Services Award

Laura Olivar served our section well as a webmaster and young engineer services organizer. Circumstances change and Laura is moving due to job commitments. We will miss her. She received the sections services award in June.



Laura Olivar receives her award in June 2008 for her services.

OTC 2009 Distinguished Achievement Awards for Individuals Nominations Now Open

Do you know someone who has made a significant and unique achievement in or contribution to any field of offshore technology? These fields include, but are not limited to, the design, development and construction of tools, equipment, technical services, vessels, instrumentation, and/or outstanding humanitarian and leadership service or contributions to environmental efforts. Nominations are being accepted through September 19, 2008. Access the nomination form at www.otcnet.org/otcnet/archives/OTC%20Award%20Nomination%20F

A 100 Years of AIChE

A100 years is a long time. It is the lifetime of a single long lived person. It can also be expressed as 4 or 5 generations. It spans two world wars, a Moon landing and tremendous achievements in plastics, pharmaceuticals, and chemistry.

Of the so-called "big 4" engineering disciplines (chemical, civil, electrical, and mechanical), chemical engineering is the youngest and the smallest. (Of no small consolation is the fact that chemical engineers currently have the highest average salary.)

Where It All Began

"*It is very difficult to find a manager who has a knowledge of engineering combined with a knowledge of chemistry. Such men must be educated, and it is only now ... that we are beginning to follow in [this] path.*" - E. K. Muspratt in 1886

The foundation for chemical engineering was laid during the Industrial Revolution. The nineteenth century saw a dramatic increase in demand for large quantities of inexpensive, high quality chemical products. For example, among the first giant chemical industries were alkali salts and dyestuffs, and both are produced with sulfuric acid. Similarly, a key component in the production of glass, soap, textiles, and paper is sodium carbonate or "soda ash" (Na_2CO_3). The stage was set for the development of an engineer who could control the inexpensive production of large quantities of these and other chemicals.

In 1887 an alkali inspector named George E. Davis gave a series of twelve lectures at Manchester Technical School that centered on a series of industrial chemical operations. The Davis lectures were the first course in chemical engineering. Soon after the first four-year collegiate program in chemical engineering was founded by Lewis M. Norton at the Massachusetts Institute of Technology (MIT). The first formally-trained chemical engineer, William P. Bryant, graduated from MIT in 1891.

Before the First Meeting

In 1881, the Society of Chemical Industry was inaugurated in London, with 360 members and with chemist Henry E. Roscoe as its first president (the American section, originally called the "New York Section," was born in 1894). Among the founders of the new society was George E. Davis, an Alkali inspector from the Midland region of England (a highly industrialized area immortalized a few decades later by D.H. Lawrence). Davis, who had witnessed first-hand the effect of engineering principles on chemical manufacture, lobbied vigorously to call the new organization the "Society of Chemical Engineers." Although his bid was defeated, Davis took an active hand in ensuring that the group, from its inception, supported chemical engineering.

In 1905, a familiar question arose: "Why not the American Society of Chemical Engineers?" This time, it came in the form of an editorial by Richard K. Meade, founder of the periodical The Chemical Engineer. He argued that the body of U.S. chemical engineers - who, in his estimation, numbered about 500 at the time - needed a professional society to help them gain legitimacy. Process design, such as it was, had up until then, been the domain of the chemist or the mechanical engineer. The American Chemical Society established in 1876, was already a considerable force in the industry and many of its members opposed the formation of a new society, arguing that pure chemists could simply learn the business of industry.

Meade reprinted the editorial in 1907, and called a preliminary meeting in June of that year. A committee of six was formed, which conducted a series of queries to chemists about the advisability of establishing the new society, and finally decided to put the question to the vote of 50 prominent chemists and chemical engineers. Of the respondents, 22 favored the idea of starting a society, 7 opposed, and 7 were neutral with the remainder (14) abstaining. The first AIChE meeting finally took place at the Philadelphia Engineers' Club on June 22, 1908. Nineteen were present.

1908: The First Meeting and ACS Issues

"*...the noblest aim before us, gentlemen, the one which most amply justifies us before all the world, is our ambition for the enlightenment and ample equipment of our successors: that is for the improvement of the training of the chemical engineer of the future.*"
Charles McKenna

In 1908 a small group of chemical engineers formed a professional society to promote and improve chemical engineering as a discipline. At first this group, called the American Institute of Chemical Engineers (AIChE) met with strong resistance, especially from the American Chemical Society (ACS), which claimed control over all pure and applied chemistry in the United States. In response AIChE adopted a number of conservative measures, including strict membership criteria to keep membership low and avoid competition with ACS. An active member had to be at least 30 years old, proficient in chemistry as well as some engineering discipline, and have 10 years of practical manufacturing experience (or 5 years of experience plus an academic degree)

AIChE established in 1925 academic standards to ensure the quality of chemical engineering courses. Peace was made between ACS and AIChE around 1930. The membership criteria were lifted and chemical engineers joined in droves.

Afterwards

When its permanent headquarters opened in Philadelphia in 1930, AIChE boasted a strong, eminently qualified membership of 872.

While the organization relaxed its rigorous restrictions in later years its charter remained the same as its membership expanded - to provide an inclusive, comprehensive educational and career infrastructure for chemical engineers throughout the country.

Presently AIChE has its main office in New York City.

Other Information

Please go to the following web links for further information on what chemical engineers do as well as a list of prominent engineer biographies. AIChE is also planning to celebrate its 100 year anniversary with some formal activities at the meeting in Philadelphia in November 2008

http://www.chemicalengineering.org/

http://www.aiche.org/About/Centennial/Index.aspx

Director Candidate Profiles Posted

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 Institute programs and directions in their own words. Profiles of the candidates for Director have now been posted and join the profiles of the candidates for President-Elect at http://www.aiche.org/About/WhoWeAre/Leadership/Candidates/2009Candidate

OOPS!

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TO: