Volume 25 Issue 3

The NJAIChE Newsletter

New Jersey's Oldest Section

FROM THE CHAIR'S DESK

Hello from the NJAIChE officers to all of its members!

The section exists to serve its membership and advance the professions within the field of chemical engineering. This can only be accomplished through collective, collaborative efforts. The New Jersey Section AIChE is several hundred strong and we need to start showing and living our strength! What part can each of us play in advancing our key objective? What are they you may ask? Providing a platform of engineering ethics and friendship and to provide suitable technical meeting content.

Contributions are made in myriad ways and across a spectrum of time frames. All add value – from commitment to an activity to commitment to a project or program.

Is there a presentation topic you think might interest the wider membership? Is there a venue that you think may be more accessible? Do you have any new program ideas or suggestions to improve current programs? Please share with the executive board.

Our executive committee meeting are on the first Tuesday at Paisanos at Watchung Square Mall.

2018 Section Officers

Chairperson:
Howard Stamato

Chair-Elect:
Mike Kolber
Treasurer:
Yasha Zelmanovich

Secretary:
Jacqueline Sibbles

Past Chair:
Jacqueline Sibbles

Directors:
Andrew Soos
Laura Turci
Ken Carlson
David Greene
Chris Dziedziak

Director Emeritus:
Phil Messina

ENGINEERING ETHICS

What are ethics? This has been debated for millennia. It is not a constant or always black and Examples include:

- The present-day materialistic ethic
- An old-fashioned work ethic
- Christian ethics
- Professional ethics
- A theory or system of moral values

Members of the American Institute of Chemical Engineers shall uphold and advance the integrity, honor and dignity of the engineering profession by: being honest and impartial and serving with fidelity their employers, their clients, and the public; striving to increase the competence and prestige of the engineering profession; and using their knowledge and skill for the enhancement of human welfare. To achieve these goals, members shall:

1. Hold paramount the safety, health and welfare of the public and protect the environment in performance of their professional duties.
2. Formally advise their employers or clients (and consider further disclosure, if warranted) if they perceive that a consequence of their duties will adversely affect the present or future health or safety of their colleagues or the public.
3. Accept responsibility for their actions, seek and heed critical review of their work and offer objective criticism of the work of others.
4. Issue statements or present information only in an objective and truthful manner.
5. Act in professional matters for each employer or client as faithful agents or trustees, avoiding conflicts of interest and never breaching confidentiality.
6. Treat all colleagues and co-workers fairly and respectfully, recognizing their unique contributions and capabilities by fostering an environment of equity, diversity and inclusion.
7. Perform professional services only in areas of their competence.
8. Build their professional reputations on the merits of their services.
9. Continue their professional development throughout their careers, and provide opportunities for the professional development of those under their supervision.
10. Never tolerate harassment.
11. Conduct themselves in a fair, honorable and respectful manner.

2018 Annual AIChE Student Conference

October 26-29, 2018
Add to Calendar
David L. Lawrence Convention Center, Pittsburgh, PA

The Annual Student Conference is four days of career information, social events, and competitions. Student engineers celebrate the Chemical Engineering profession, along with young professional members, AIChE leaders, and industry professionals from numerous engineering specialties. Students are able to meet new friends and discover the exciting benefits of AIChE membership.

2018 Eckhardt Northeast Student Regional Conference

April 7-8, 2018
Rochester Institute of Technology & University of Rochester

Photo: courtesy of Tomkins via Creative CommonsConference Highlights include Regional Chem-E-Car Competition, Regional ChemE Jeopardy Competition and Regional Student Paper and Poster Competitions.

5th Conference on Constraint-Based Reconstruction and Analysis (COBRA 2018)

October 14-16, 2018
Add to Calendar
Sheraton, Seattle, Washington

Established and new members of the COBRA community are invited to COBRA 2018 to discuss the latest developments in Constraint-Based Reconstruction and Analysis. The International Metabolic Engineering Society and the Institute for Systems Biology, chaired by Professor Nathan Price

2019 Spring Meeting and 15th Global Congress Process Safety

March 31 - April 4, 2019
Add to Calendar
Hilton New Orleans Riverside

The AIChE Spring Meeting is the year’s key technical conference for practicing chemical engineers. A wide range of subjects relevant to the current needs of industry is covered. Plus, the Global Congress on Process Safety covers the critical needs of process safety practitioners more broadly and deeply than any other conference.

WHAT IS CHEMICAL ENGINEERING?

Engineering is the discipline and profession that applies scientific theories, mathematical methods, and empirical evidence to design, create, and analyze technological solutions cognizant of safety, human factors, physical laws, regulations, practicality, and cost. Chemical engineering is a branch of engineering that uses principles of chemistry, physics, mathematics, and economics to efficiently use, produce, transform, and transport chemicals, materials, and energy. A chemical engineer designs large-scale processes that convert chemicals, raw materials, living cells, microorganisms, and energy into useful forms and products.

Chemical engineers are involved in many aspects of plant design and operation, including safety and hazard assessments, process design and analysis, control engineering, chemical reaction engineering, construction specification, and operating instructions.

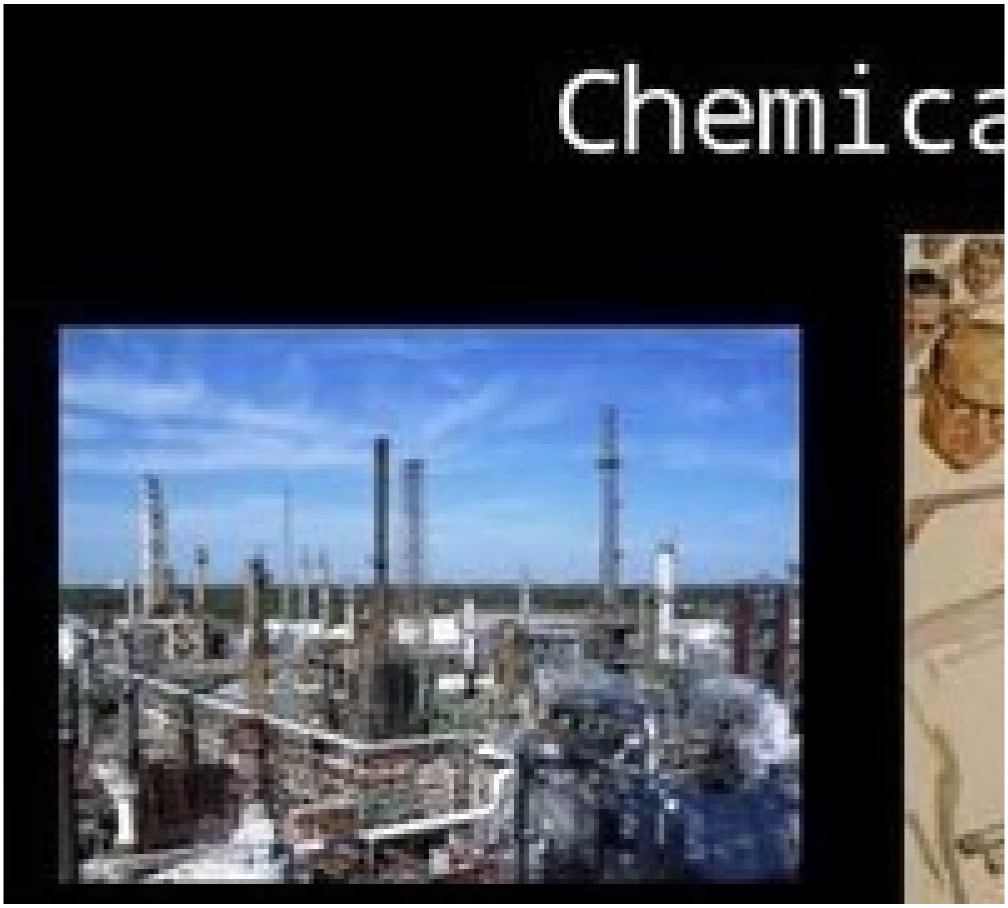
Chemical engineering emerged upon the development of unit operations, a fundamental concept of the discipline of chemical engineering. Most authors agree that Davis invented the concept of unit operations if not substantially developed it. He gave a series of lectures on unit operations at the Manchester Technical School (later part of the University of Manchester) in 1887, considered to be one of the earliest such about chemical engineering. Three years before Davis' lectures, Henry Edward Armstrong taught a degree course in chemical engineering at the City and Guilds of London Institute.

Armstrong's course failed simply because its graduates were not especially attractive to employers. Employers of the time would have rather hired chemists and mechanical engineers. Courses in chemical engineering offered by Massachusetts Institute of Technology (MIT) in the United States, Owens College in Manchester, England, and University College London suffered under similar circumstances.

Starting from 1888, Lewis M. Norton taught at MIT the first chemical engineering course in the United States. Norton's course was contemporaneous and essentially similar with Armstrong's course. Both courses, however, simply merged chemistry and engineering subjects. "Its practitioners had difficulty convincing engineers that they were engineers and chemists that they were not simply chemists." Unit operations was introduced into the course by William Hultz Walker in 1905. By the early 1920s, unit operations became an important aspect of chemical engineering at MIT and other US universities, as well as at Imperial College London.

The American Institute of Chemical Engineers (AIChE), established in 1908, played a key role in making chemical engineering considered an independent science, and unit operations central to chemical engineering. For instance, it defined chemical engineering to be a "science of itself, the basis of which is ... unit operations" in a 1922 report; and with which principle, it had published a list of academic institutions which offered "satisfactory" chemical engineering courses. Meanwhile, promoting chemical engineering as a distinct science in Britain lead to the establishment of the Institution of Chemical Engineers in 1922. It helped make unit operations considered essential to the discipline.

JOKES!!!!?



What can YOU do with forty feet of net positive suction head?

"Cuddling" is an inefficient heat exchange application.

Paul Erdos referred to children as "epsilons," but any decent chemical engineer would know that they're pilot plants.

Q: What's the difference between a chemist and a chemical engineer?
A: At least $10k a year.

Q: What do you call what happens when the pre-meds hit their first thermodynamics class?
A: Mass transfer.

A chemical engineer's mid-life crisis plan is to quit their job and start doing process engineering on beer brewing for a living.