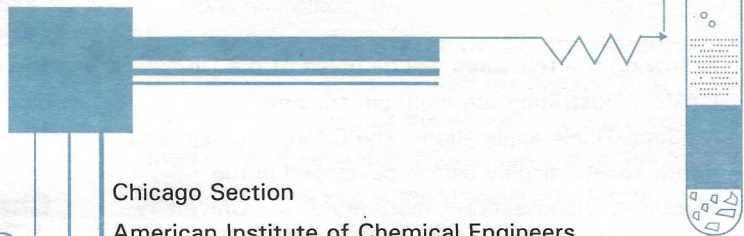


AIChESM

section

Chicago Columns



Chicago Section
American Institute of Chemical Engineers
www.aiche-chicago.org

May Meeting Notice

Thursday May 15, 2003
The Cardinal Room
Chicago Circle Center
University of Illinois at Chicago
750 South Halsted Street
Chicago, IL 60607

Agenda

Informal Networking.....6:00 pm
Buffet Dinner.....6:30 pm
Speaker.....7:00 pm
Coffee & Dessert.....8:00 pm
CAVE Tours.....8:00 pm

Cost

\$35 for members
\$37 for non-members
Free for students

Menu

Choice of Carved Top Round of Beef, Lemon Dill Baked Salmon, or Vegetarian Lasagna.
Meal comes with Baked Potato, Green Beans with Toasted Pinenuts, Salad, Dinner Rolls, Coffee, Iced Tea, and Chocolate Layer Cake.

Reservations

Make your reservations by calling the AIChE Reservation Hotline at 847-588-3323 or emailing evalopez@teianalytical.com. Or register online at www.aiche-chicago.org. Deadline is noon May 12, 2003.

Virtual Reality in Chemical Engineering

Virtual Reality, VR, is an emerging computer technology designed to create interactive immersive three-dimensional computer simulations so realistic that users cannot distinguish them from reality. While that lofty goal has not quite been achieved, some high-end systems can produce simulations realistic enough to fool some of the people some of the time. Less expensive (e.g. personal computer) VR systems are not quite as realistic as their more powerful counterparts, but their capabilities are increasing rapidly with the exponential improvements in personal computer graphics power. So how can this emerging technology be applied to the world of chemical engineering?

This talk will present applications of virtual reality to chemical engineering that have been developed at the University of Illinois Chicago and at the University of Michigan in Ann Arbor. The majority of the applications to be presented are educational in nature, including several virtual chemical plants that students can explore to reinforce core concepts, and a number of virtual laboratory accidents designed to illustrate and emphasize the consequences of not following safe laboratory practices. On a more practical level, work is being done to extend traditional graphical calculation techniques into higher dimensional space. Examples shown will include an eight dimensional version of the McCabe-Thiele diagram, and the exploration of higher dimensional attainable regions for reactor design.

Continued on page 2.

Continued from page 1.

Following the talk tours will be given of the UIC CAVE®, illustrating the multi-dimensional McCabe-Thiele application. The CAVE is a high-end virtual reality display device developed in the Electronic Visualization Laboratory at the University of Illinois Chicago. Basically the CAVE is a special room in which one is completely surrounded by three-dimensional interactive computer graphics, dynamically adjusted for the user's specific viewing location. Or, as one researcher put it, "The CAVE is the closest thing that really exists to the StarTrek Holodeck."

Speaker

Dr. John T. Bell is a faculty member in the Department of Computer Science at the University of Illinois Chicago, and was formerly on the faculty of Chemical Engineering at the University of Michigan Ann Arbor. He holds a Ph.D. in Chemical Engineering and a Masters degree in Computer Science, both from the University of Wisconsin, Madison. For the past ten years he has been applying his joint interest in ChE and CS to determine the optimal applicability of virtual reality to chemical engineering, both for educational purposes and for high-dimensional information visualization.

Directions

The Chicago Circle Center (CCC) is located at 750 S. Halsted street, just north of Taylor street, approximately 300 yards southwest of the intersection of I-90/94 and I-290. To get to the Cardinal Room, take two escalators up to the third floor and turn left.

By Car:

From the north or south, take I-90/94 to the Taylor street exit, turn west, and enter the parking deck that is adjacent to the expressway, (on the corner of Halsted & Taylor). CCC is across Halsted from the parking deck, three buildings north of Taylor street.

From the west, take I-290 to I-90/94 south, exit immediately onto Taylor street, and turn right into the parking deck.

Public Transportation:

Take the blue line el to the Halsted street station, and walk south on Halsted approximately one half block to CCC.

Chair's Corner

Alan Levine
Chair 2002-03
Chicago Section AIChE

With this issue of the newsletter the programming year is drawing to a close. I would like to thank everyone who helped make it a successful year. Attendance at the monthly meetings was up thanks to everyone who came out. Hopefully this trend will continue into next year. Nominations for officers are underway and elections will follow. Please consider volunteering for the next programming year which begins in July. I have said numerous times this past year that it is the volunteers who provide the strength to the section. Without volunteers, our programming, student outreach, and other major efforts would not be what they are today. Please consider volunteering next year. Whether you spend one hour or are an officer of the section, every contribution helps strengthen the section. The benefits of volunteering come in many different forms.

With world events what they are today, hopefully we can all take some extra time to appreciate the positive things in our life. I took a week of vacation in April and enjoyed my two small children. We did not travel anywhere, instead we found small trips and projects nearby to fill our time. It is not often I take a week off at one time, and there is nothing happier than the sound of laughing children. After a week of laughter and fun, I was recharged and ready to take on the new challenges. It was two and half years since I took an entire week off and I am already planning to take a week over the summer. I hope everyone can take some time and enjoy the small things we take for granted. With that said, I wish everyone a happy and healthy summer and look forward to seeing you all at the May meeting and again in the fall.

Nano Bootcamp

Professor Vinayak Dravid, Materials Science & Engineering, Northwestern University

I would like to bring to your attention a unique educational workshop event, organized by Northwestern under the auspices of ASME, called: Nano Bootcamp.

This NU NanoTech and UC Berkeley led ASME Nano Training Bootcamp is specifically organized to offer a detailed and tutorial-based account of advances in fundamentals related to Nanoscience in a wide variety of fields, and prospects for translating these advances into useful Nanotechnologies. The participants will be challenged with open-ended questions and opportunities in engineering nanosystems. This will be culminated by a tour of Northwestern's advanced facilities, poster presentation of NU NanoTech research activities, and opportunities for enhanced interactions with NU NanoTech faculty.

Please visit: <http://www.asme.org/nano/bootcamp/> to learn more. Please share this invitation with your colleagues who would also be interested.

I look forward to meeting you at the bootcamp in July!

2002 Harry McCormack Awards

Clint Butcher, UOP

Presentations for the 2002 Harry McCormack Awards were held last month during the Chicago local section AIChE monthly meeting. The ceremonies were held on the Northwestern campus. The Chicago AIChE Section presents the Harry McCormack Award each year to one Senior from each of the colleges in the immediate Chicago vicinity. The award recipients were nominated by the Chemical Engineering faculties of their respective colleges in consideration of their outstanding scholarship, extra-curricular activities, character and potential contributions to society. This year's award winners are:

Jennifer Anderson, UIC

Jennifer is a senior level student in the Department of Chemical Engineering with the highest GPA (4.92/5.00) among all the seniors. She is also a mother for 4 beautiful children ranging in age from 10 to 17 years and is the president of AIChE Chapter of UIC. Jennifer is also a member of the Tau Beta Pi Illinois-Zeta chapter.

Celeste Gaydos, IIT

"On behalf of the IIT Department of Chemical and Environmental Engineering, it is my honor to announce Celeste Gaydos as our selection for the Harry McCormack Outstanding Senior Award. In addition to stellar academic performance, Ms. Gaydos has shown extraordinary student leadership with a genuine zeal for the chemical engineering profession. During the 2001-02 academic year, she exhibited extraordinary performance in her role as AIChE student chapter treasurer. In her senior year, Celeste volunteered to be the committee chair for the 2nd annual AIChE at IIT Evening with Industry Dinner and Job Fair. I am confident that Ms. Gaydos will enjoy much success in the chemical engineering profession as well as contribute significantly to the goals and objectives of the institute."

Professor Donald J. Chmielewski

Faculty Advisor, IIT Student Chapter of the AIChE

Mathew J. Volk, Northwestern University

Matt is a premed senior. He has focused his course work on chemical engineering but also explored history and economics. He has spent considerable time researching surface mediated delivery of DNA to cells with professor Lonnie Shea. Outside of classes, Matt has taken several leadership roles. He was elected the capital improvements and membership chair for his freshman/sophomore year dorm and served as a resident assistant (RA) throughout junior year. In his free time, Matt enjoys music and athletics. He has been involved with university affiliated orchestras since his freshman year. Matt will attend Baylor College of Medicine next year with a full presidential scholarship.

Professor Vassily Hatzimanikatis, Northwestern

Professor Ali Cinar Wins The 2003

Ernest W. Thiele Award

J.J. Simnick, E.W. Thiele Award Chair

Congratulations to Professor Ali Cinar, Associate Vice President for Research and Dean of the Graduate College at Illinois Institute of Technology, for being the recipient of the 2003 Ernest W. Thiele award.

Due to scheduling conflicts, this prestigious award will be presented to Professor Cinar at an Autumn 2003 meeting of the Chicago AIChE section. An announcement with the date and location will appear in this newsletter beforehand.

Dr. Cinar is recognized for his significant research contributions in process modeling, monitoring and control, and for being an outstanding educator. Professor Cinar has championed the use of computers and statistics across the engineering curriculum at IIT.

The Ernest W. Thiele award is presented annually to a midwest region member of AIChE who has made outstanding contributions to advance the practice of Chemical Engineering. The award is sponsored by BP and consists of a plaque and a \$1000 honorarium.

Please join us in congratulating Professor Ali Cinar on his achievement.

AIChE National Financial Update

An important message from Dianne Dorland, 2003 AIChE President, can be found at <http://www.aiche-chicago.org>.

Her message talks about the erosion of AIChE's financial health, and the possibility of insolvency within a year.

Nominations for Officers 2002/2003 Year

The May meeting is the annual meeting of the Chicago Section and includes elections for the next year's Chicago Section Officers. The following nominations have been put forward, and the nominating committee consisting of Alan Levine, Allan Fluharty and Dennis O'Brien has found all nominees to be in good standing:

Succeeding to Chair: Dennis O'Brien

Dennis O'Brien is a technology specialist at UOP LLC. He is responsible for engineering development for detergent complexes and is responsible for engineering support for UOP Adsorbents. He received his BS in Chemical Engineering at the University of Tulsa in Tulsa, Oklahoma and his MBA from Roosevelt University in Chicago. He is a registered professional engineer. He has been active in the Chicago Section for many years. His work here includes co-chairing two symposiums, and Secretary of the section. He is currently Chair-Elect.

Nominated for Chair-Elect: Rebecca Patrick

Becky Patrick has been an officer in both the South Texas and Southeast Texas AIChE sections. She has served as House Chair and Secretary of the Chicago section. She is currently Treasurer of the Chicago Section. Becky is a Regional Account Manager with Cognis Corporation in the Care Chemicals Division. She previously worked in Texas for Chevron Chemical Company and OxyChem in Production and Process Engineering Roles. She received her B.S. in Chemical Engineering from the University of New Mexico and an MBA from Texas A&M University at Corpus Christi.

Nominated for Treasurer: Brian Gahan

Brian C. Gahan is Manager, E&P Technology Development in the Exploration, Production and Gas Processing Center at Gas Technology Institute (GTI) in Des Plaines, Illinois. He is responsible for the planning and management of advanced technology research, and development and commercialization of products and processes. His responsibilities include market assessment, technology evaluation, and

technology transfer and business development. He received a BS in Petroleum Engineering from Marietta College, an MBA from the University of Pittsburgh, and a Masters in Chemical Engineering from Illinois Institute of Technology. He is also an active member of the Society of Petroleum Engineers, American Association of Petroleum Geologists, and the Laser Institute of America. He served as secretary of the Chicago AIChE section this past year.

Nominated for Vice-Chair Programs: Annette Johnston

Annette Johnston has been active with AIChE since 1981, when she was an officer in the student chapter at the University of Illinois at Urbana. She was an officer in the St. Louis section. In the Chicago Section, she was Student Outreach Chairman, and Symposium Chairman. She has been a chemical engineer for 20 years, with experience ranging from process control, drawings and specifications and process development. She is a Licensed Professional Engineer in Illinois. She is currently the leader of the Process Remediation Team in the Specialty Products Division of Abbott Laboratories.

Nominated for Secretary: Howard Sachs

Howard Sachs is a Senior Process Engineer with Abbott Laboratories, where he has held numerous positions over the last 25 yrs. He has been active in helping establish several Engineering Forums in-house, and has been involved with the Chicago section for some time. Howard coordinated the local section meeting at Abbott's North Chicago facility in the Fall of 1999, which included an extensive tour of the new Chemical Pilot Plant. He received his B.S. in Chem Engr from the University of Michigan, and his MBA from DePaul University.

Nominated for Director-at-Large: Allan Fluharty

Allan Fluharty has a background in manufacturing and the military. Trained as a chemical engineer and chemist, Allan provided over ten years of service to Chicago-area chemical manufacturing firms in areas such as research and development, plant design and construction, and plant management. Allan recently left manufacturing to join

Greeley and Hansen, LLC, an engineering consulting firm, as their human resources director. Greeley and Hansen provides environmental design and construction services for governmental and industrial clients. Allan holds the rank of Commander in the Naval Reserve and was recently selected as the commanding officer of a 50-sailor unit that provides information technology support to Norfolk-area naval vessels. Allan has been a member of the Chicago Section of AIChE since 1991, serving as Chair during the 2001/2002-program year. Allan lives in Oak Park with his wife, Martha, and sons Noah and Joshua.

Absentee Ballot Request Form

Any member in good standing who cannot attend the Annual Meeting may request an absentee ballot. Absentee ballots will be available after the April 9th meeting. For an absentee ballot please return the form below to Becky Patrick.

ABSENTEE BALLOT REQUEST

I cannot attend the annual meeting in May 2003.
Please send me an absentee ballot.

Signature

Name

Address

Return this form to:

Rebecca Patrick, Cognis
1275 Greenbriar Lane
Bourbonnais, IL 60914

Chemical Engineering as a Consultant

George Jarvi, Ambitech Engineering Corporation

In grade school, every year we had to go around the room and each tell what he and she wanted to be. Our classroom was full of nurses, models, doctors and firemen. I always said I wanted to be an engineer. They always taunted me with "Choo! choo!" noises. "No, I want to be a consulting engineer!"

I didn't know what a consulting engineer was, but my father was one, and he did cool designs and calculated stuff that other people couldn't and didn't want to understand. Engineering also involved the biggest and best computers, which at the time was an IBM 1620. My father, being a Civil/Structural, had not studied thermo. His master plan involved me obtaining an understanding of thermodynamics and then the two of us forming a consulting firm. There were two problems with this approach, 1) I wasn't truly part of the planning, and 2) he did not live to see me graduate.

By the time I was a graduate student in Chemical, I was all hot and bothered to invent new catalysts and acquire patents by the bushel. My first seven years in industry were of the research and technical service variety, and I learned the realities of how business is done. Basically, as bright as I was (am?) I was a small player at the bottom of a very large heap. Part of the problem was the contrast between my parent's generation that worshipped (and paid) engineers because of the crying needs for national security through two world wars and the large supply of bright and earnest engineers in the Eighties.

Since 1990, I have been consulting for various firms, large and small, as an entrepreneur, and now for a middle-sized Chicago-area firm. The challenge and assignment of the consultant of today is to identify the need, fill it and then get out quickly and economically. The salaries of older engineers have grown to the point that operating companies might prefer not to hire us full-time. During my tenure at operating companies, there were always slack times when the company had to eat my salary so as to retain me for future need. There was an illusion of

job security, but the illusion vanished in the Eighties when "downsizing" and "re-engineering" became nasty by-words. Having adjusted to the total lack of security in one's employment, one is prepared for the fast-paced and insecure world of consulting. This is truly a rewarding world for those with independently secured self-worth and confidence. It's not such a happy world for those who must be recognized for their efforts and whose goal is to obtain power or position among the captains of industry.

What do we do? There is a wide variety, depending on the personal skills of each individual consultant, but by and large, a chemical process engineer as myself is expected to play a team role in either the client's Engineering Department, or the consulting firm's Task Force. We answer the questions of "How hot?" "What composition?" "What catalyst?" "What process?" "How large an exchanger?" "Where does the pipe go?" "What kind and how large a pump?" "Hydraulics! Hydraulics! Hydraulics!" "What size control valve?" "How can we build it?" Once those questions are answered, we write the project scope. The projects are estimated and authorized on the basis of process design. One works with a host of other disciplines and business agents. The final product is either the production of, or the oversight of the final design, complete with purchase requisitions, specifications and process guarantees.

Two years is a long time to reside at any one client. The business cycles of companies rise and fall together, but not exactly together, so there is often room to maneuver between one client and another to remain fully employed. Ideally, the reputation of one's work ethic and skill help secure contracts at current and future clients. Hopefully, the sales force of one's consulting firm has lined up work for you. But regardless of the contribution of others, one must find fulfillment independently of work, because of the transient nature of the whole thing.

You get to do a lot of really interesting things for a little while for a great number of clients. It is best for the adventurous spirit who takes joy in new vistas and new horizons and who happen to have a strong skill set of the same ol' same ol' chemical engineering calculations.

Pruitt Award Winner

Dr. Jennifer Holmgren, our speaker last May, was given the Pruitt Award. The Pruitt Award (<http://www.ccrhq.org/about/pruittmain.html>) is given annually in recognition of outstanding contributions to the progress of research in chemistry and chemical engineering achieved through mutually beneficial interactions among universities, government laboratories, and the private sector. Our congratulations to this outstanding local member.

Jennifer Holmgren is Director of Exploratory and Fundamental Research at UOP LLC.

The Exploratory and Fundamentals Center sponsors programs which provide the tools, methods, and skills necessary to support UOP's project portfolio as well as programs which take UOP in new directions. She is directly accountable for three of UOP's core groups including New Materials Synthesis, Advanced Characterization and Combinatorial Chemistry. Jennifer received a BSc in Chemistry from Harvey Mudd College (1981) in Claremont California and a PhD in Inorganic Materials Synthesis from the University of Illinois at Urbana-Champaign (1986).

She currently serves on two external advisory boards at the College of Engineering at the University of Illinois and Institute for Applied Catalysis at Northwestern University. She is the author or co-author of 50 US patents and 16 scientific publications.

Job Postings

The Job Posting service is still available for AIChE Chicago section members. Please submit your resumes or available positions to Jerry Bard at geraldb@genevaonline.com, or contact Jerry at 262-279-6394. Don't miss out on this opportunity to reach your target audience.

You can also submit your resume or position on our website, www.aiche-chicago.org in the Professional Development section. Please also consider the website of AIChE in New York as a resource. The web address is www.aiche.org/careerservices/.

Job Postings

Seeking Positions

S-0032 Chemical Engineer. Experienced ChE with over 5 years of industrial process design and operating skills primarily in the pharmaceutical industry. Managed three people to bring procedures into GMP compliance. Interfaced with product business teams. Performed computer software troubleshooting for document remediation group of 45 people. Created P&ID, design and electrical schematics as well as coordinated installation of granulation machines. For further information: contact Derek Bergquist at 773- 477-8065.

Position Available

A-0045 Process Improvement Engineer in our batch manufacturing operation that provides materials to the inks industry. As a PI engineer you will network with partners in Manufacturing, Business, Research, and Engineering organizations at other sites. Chemical engineers in this job work close to the process in a hands-on environment to improve products and processes as well as help develop new ones. Projects will include efforts to reduce waste, decrease cycle time, improve yield, reduce utility requirements, and improve safety or reliability. You will be expected to generate your own ideas for improvements as well as coordinate your activities with engineers at other sites. The Pleasant Prairie Site is home to an R&D center, business operations as well as the manufacturing unit. The engineer selected will have a drive to identify and solve problems that have direct value to the company.

Minimum Education Requirement:

BS - Chemical Engineering

0 - 3 years experience

Make sure to reference requisition code eco/1463hs.

Submit your CV/Resume two ways; either at www.eastman.com, go to Employment, Positions Available and then click Submit your resume online or email your resume as an attachment to Eastman@hiresystems.com.

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