



The South Texan

VOLUME 100 NUMBER 7

APRIL 2000

APRIL MEETING
THURSDAY • APRIL 6, 2000

SAINT ARNOLD BREWERY TOUR

Come join us for a tour of The Saint Arnold Brewing Company.

The St. Arnold Brewing was founded in October 1993, and is Houston's first Microbrewery. It was founded by Brock Wagner and Kevin Bartol, a pair of Rice University alums who decided that brewing beer was more fun than their day jobs. The brewery's first keg was tapped on June 9th, 1994. St. Arnold offers eight handcrafted, award-winning beers in the greater Houston, Austin and Dallas/Ft. Worth areas. The tour will be conducted by Pete Nordloh, St. Arnold's head brewer.

Barbecue and beer will be served (*soft drinks also available*). The tour will be Thursday, April 6th from 6:00 p.m. to 9:00 p.m. We are limited to 100 people, so please make your reservations early. The price is \$10.00 with reservation, \$12.00 without reservation (*Students and Unemployed 1/2 price.*)

For more information or to make reservations:

Call David Mitchell: 713.295.4847

Or register on-line at our web site:

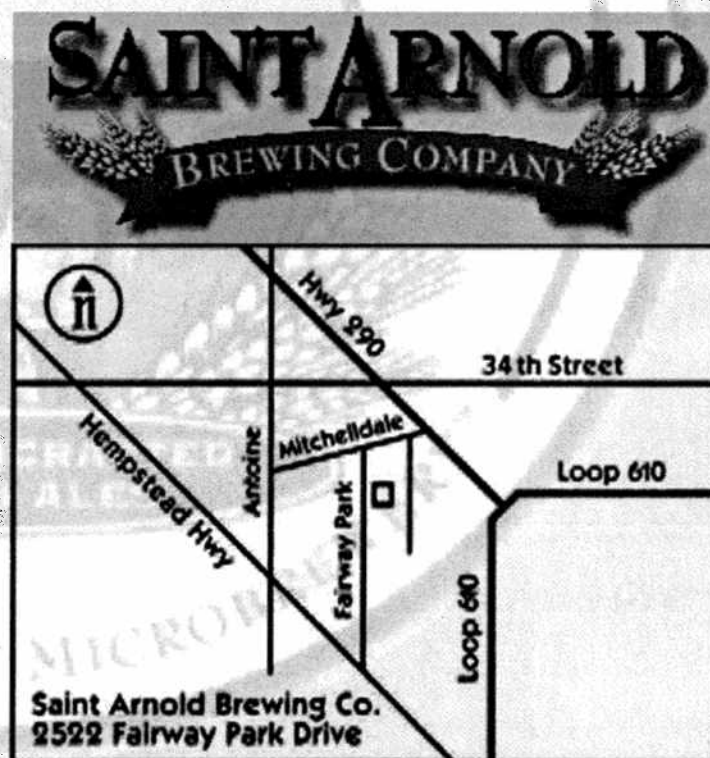
<http://www.sts.aiche.org/reservations/reserventry.htm>

From West 610 Loop:

Exit 290 at Antoine/34th Street. Make a U-turn under the freeway and take the feeder road southeast for 1/4 mile. Then turn right on Mitchelddale. Take the second left onto Fairway Park Drive. The Brewery is 150 yards down Fairway Park Drive on the left.

From 290 coming in toward town:

Exit 290 at Antoine/34th Street. Follow the feeder road past Antoine, past 34th Street and continue on one mile further. Then turn right on Mitchelddale. Take the second left onto Fairway Park Drive. The Brewery is 150 yards down Fairway Park Drive on the left.



WORKSHOPS See page 5

2000 South Texas Section

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The Purpose of the Section, a nonprofit scientific, educational and charitable organization, are the furtherance of the aims and purposes of the American Institute of Chemical Engineers, and the advancement of the science of chemical engineering and of related sciences through (i) the education of members and non-members in the sciences (ii) career guidance and financial assistance to students of the sciences and (iii) encouragement of research in the sciences.

WEBSITE ADDRESS: <http://www.sts-aiche.org>

From the Chair



For this month, we decided to again try something a little different for the monthly meeting. Instead of the typical lecture, we are offering a beer tasting and plant tour. Attendance will tell if we are on the right track in terms of providing different types of programming to attract more of you to our meetings. Our goal is to get us together so we can discuss issues pertinent to advancing the needs of our profession, and more importantly, actively work at resolving those issues.

One of those issues is employment security. Most of our members work in mature industries such as refinery and petrochemicals. Mega mergers in this sector, high student graduation numbers, and globalization, are but a few of the pressures on the profession. This has been forced by reduced industry growth rates of 3%-6% in most of the product lines we serve, and competition with high tech industries for investment community dollars.

Consequently, in a given week, I typically receive three or four calls from recently displaced engineers, looking for advice or information on AIChE member services for the unemployed. Most of the individuals who call, incidentally, have never been involved in the activities of the session. Which brings me to the subject of my editorial. How do you cope with these market forces and how can the professional organization help? I suggest;

- Most importantly, provide value in your current assignment. Truly bring creativity, innovation and energy to your current job, each and every day. A bad employee is easier to displace than a good one.
- Maintain your technical skills. Learn to use the latest advances in technology to advance your specialty and your skills.
- Be active in local section activities and pick up some management and planning skills. The benefits of serving in your local section are countless. It provides benefits such as the opportunity for;
- Self development
- Publishing technical articles. CEP is one of the most recognized technical journals for the profession. You can submit articles to CEP or to your local newsletter.
- Developing management and planning skills. If you can manage a group of unpaid volunteers to get things done, think what skills you develop and bring to your current employer.
- Financial services. These services are provided throughout the national organization and include credit card and insurance programs.
- Keeping in touch with the market place and networking opportunities. Most people will still get jobs through leads from friends and acquaintances. If you are not in the market for a new job, develop a network of resources to help you with technical or business problems. These contacts can help you providing value in your current assignment.

CAST

Please note that the location of the April meeting is not our regular meeting place. It will be held at the St. Arnold's Brewery in northwest Houston. See map on cover page for directions.

Our March workshop featured Wayne Fischer who delved into the basics and methodology of using Principal Component Analysis as a tool for analyzing multivariate data and detecting the underlying relationships between the variables. The talk was very interesting, however, the attendance was a little disappointing. I think you missed a good talk. Wayne has a second part of his March presentation that we hope to schedule next season. Our last meeting for this season will be in May, and our speaker is:

May 4 : **Vasant Patel**, Consultant, "Linear Programming for Refining Unit Operations"

Our April speaker, Dr. Cornel Jordache, is a Lead R&D Engineer for Simulation Sciences Inc. and the corporate specialist for the data reconciliation technology. He holds M. S. and Ph.D. degrees both in Chemical Engineering from Northwestern University. Dr. Jordache has extensive experience in the design and development of industrial data reconciliation software and has recently led the development of the gross error detection part of ROMeo™ system, a new online optimization product of SIMSCI, designed for using rigorous models for enhanced optimization. He has co-authored a book on Data Reconciliation and Gross Error Detection, recently published by Gulf Publishing Company.

The CAST division of the AIChE covers all areas of computing and systems technology as applied to chemical process industries. Please feel free to contact either Wayne or myself if you have any suggestions or ideas to improve the workshop or increase its value to the CAST group. We are very interested in hearing from you.

Contact: **Soundar Ramchandran**, Solutia, Inc.
281-228-4248, (FAX) 281-228-4167
sbramc@solutia.com, or

Wayne Fischer, Engineered Business Solutions, Inc.
(713) 522-3480 office
wayne@engbsolutions.com

From the Editor

There appears to be some confusion as to this newsletter that I would like to take a moment to clarify for you and our membership. Let's begin with our problems.

1. **Newsletter is not arriving ontime.** At the moment, I am averaging at least five phone calls per month from our members that say that they are not receiving the newsletter until after the meeting. Unfortunately, there is very little we can do about this. I can personally assure you that your copy is mailed at least a week or more before the meeting, but our U.S. Postal Service tends to deliver it whenever they feel like it.

2. **Copy for the Newsletter is due on the 5th of the preceding month.** After considerable discussion with Holly Pro Graphics, our printing company, we have agreed that all copy should be either faxed or emailed to them by the 12th of the month preceding our meeting date.

3. **Our membership isn't attending meetings.** In Houston, all societies are having difficulties getting members to attend meetings. Given the present layoffs, mergers, and slow hiring trends, this is a natural occurrence. I was a victim of lay-off in February and have been unable to attend our meetings on a regular basis.

I hope that this clarifies some of our problems. We have one of the best sections of AIChE and we want to maintain that status. As your newsletter editor, I pledge you my support and constant vigilance to assure that we achieve a better section. Now, let's all come to the April meeting and enjoy a tour of the brewery.

Gary Congram

CHAIR *continued*

- Employment services
- Finally, explore options for long and short term self-employment. Retirement is inevitable and losing your job before then is a possibility. The time to think of options is when you have the most flexibility, when you are employed.

The local section runs CEO (*Chemical Engineering Opportunities*) in an effort to help place unemployed engineers. In return for that service, we ask that you volunteer some of your time to managing the activities of that group. Within this newsletter is an advertisement from CEO. Simply contact them for more information if you need placement services.

Chris Tagoe
Chair

HEY ALL YOU "SENIOR" CHEMICAL ENGINEERS!!

(Use your own definition for "Senior")

The Greater Houston Section of the American Chemical Society is starting a Senior Chemist Program as an opportunity for fellowship with others at a monthly luncheon including a talk on a subject of general, sometimes technical, interest.

The STS has been invited to join with the GHS-ACS group because of our common interests and the fact that many of us are members of both societies.

It is still in the planning stage, but, if interested - without any commitment - please leave your name and phone number with either:

Bob Schwartz (GHS-ACS) 713.729.7073
Bill Stadig (STS) 281.893.5803

VOLUNTEERS NEEDED

2000 Offshore Technology Conference

May 1, 2, 3, & 4, 2000

The South Texas Section, A.I.Ch.E., again has been selected to staff one of the OTC "Conduct" Committees. We have been asked to provide personnel for the Proceedings Distribution Committee.

For agreeing to serve as a member of the "Conduct" Committee by attending an orientation session on Friday, April 28 (time & location to be announced) and serving as either a Proceedings Distribution or Registration Conduct Committee member for one-half (1/2) day; each volunteer will receive:

1. A complimentary OTC Registration
2. A complimentary Parking Pass for the OTC
3. A Reserved Parking Place the day of your Conduct Committee assignment.

For Additional Information; please contact:

Tom Menn
(713) 321-4497

or

Dave Pay
(713) 321-4792

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WORKSHOPS

PROFESSIONAL DEVELOPMENT

Focus: Feedback from March Panel Discussion on Engineering Ethics

We will investigate Engineering Ethics in greater detail. Feedback from the March Panel Discussion is encouraged. Handouts will be available.

Contact: Larry Lowell
281-470-5842
Inlowell@flash.net

CAST

Topic: A Gross Error Detection and Elimination Strategy for Industrial Data Reconciliation Using Rigorous Models"

Speaker: Dr. Cornel Jordache
Simulation Sciences, Houston, TX.

Focus: Plant measurements are invariably in error, and sometimes in gross error. If left undetected, gross errors can nullify the potential gains obtained from advanced optimization and control technologies. They may even affect the safety of plant operation. Data reconciliation complements the use of data validation and filtering methods by using redundant plant data and a rigorous plant model for generating a consistent data set (measured and unmeasured variables) which approximates plant operation. This reconciled solution then is exploited to generate a list of possible gross errors in plant measurements. This paper presents an overview of both data reconciliation and gross error detection strategies for nonlinear models as well as the results of commercial applications of the techniques using SIMSCI's online optimization product, ROMeO™.

The speaker will discuss Linear Data Reconciliation Theory, Gross Error Detection and Identification Methods for Linear Models, Nonlinear Data Reconciliation, Gross Error Detection Methods for Nonlinear Models, Strategy for Gross Error Detection in ROMeO™, and a case study of a refinery gas process.

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PROCESS SAFETY

Topic: "ISA 8401 Application of Safety Instrumented Systems for the Process Industry

Speaker: Charles Hardin

Focus: This course will present the engineering requirements for: specification, design, implementation, and ongoing maintenance/testing emergency shutdown systems (*also called safety interlock or instrumented systems*) in the process industries. The course focuses on the ISA S84 standard, and will incorporate material from other industry documents as well. Topics range from assessing process risk, matching risk levels to safety system performance requirements, pros and cons of different technologies, estimating overall system performance, documentation requirements, field devices, and maintenance issues.

Day 1: Introduction; The danger of overconfidence and complacency; Knowledge from recent accidents; The difference between process control and safety control; The separation between process control and safety control' Independent safety layers; Safety design life cycle; Methods for evaluating process risk, Methods for matching process risk to safety system performance requirements, Logic development; Reliability terms and concepts.

Day 2 Pros and cons of different technologies (*relay, solid state, software programmable*); Modeling the performance of different technologies and the impact of failure modes, diagnostics, redundancy, common cause, manual test intervals, field devices, etc.; Security; Power and grounding; Communications; Maintenance and testing issues; Bypasses; Management of change; Putting it all together (*class workshop/process example*) Audience: control system engineers, instrument engineers, process safety specialist.

Author Biography:

Charles Hardin joined Celanese Chemical Company in 1968 and was responsible for an instrumentation and electrical project engineering group. He also was responsible for local plant standards in the instrumentation and control system area. In his position he led the effort in developing company wide instrumentation and control system standards and continues to have responsibility for this effort. He has been active in Instrument Society of America activities including serving as past president of the local section in Corpus Christi. He currently serves as secretary to ISA's SP84 standard committee which developed a standard for application of safety systems for Chemical /petrochemical processes (S84.01). He was named an ISA Fellow in 1996 and retired from Celanese at end of March 1998. Since his retirement Mr. Hardin has been consulting in the area of shutdown system design and risk assessment including conducting training session since that time.

JOIN

AICHe SOUTH TEXAS SECTION

PROGRAMMING FOR IMIQ'S CONVENTION

AIChE has been invited by Instituto Mexicano de Ingenieros Quimicos (IMIQ) to sponsor one or more sessions at its 2000 Convencion Nacional, October 4-6, in Mexico City. IMIQ is an AIChE partner in the now operating North American Alliance of Chemical Engineers (NAACChE), which has "sustainability" for its theme this year.

If you are seriously interested in doing programming either on this theme or on another (*programming is not limited to sustainability*), please contact: **Joe Cramer**, Director, Technical Programming, at AIChE headquarters. His telephone number is 212-591-7950; e-mail, joesc@aiche.org

The meeting will be heavily attended by chemical engineers from Petroleos Mexicanos (PEMEX), so petroleum refining processes and distillation are other areas of programming interest for the meeting.

DON'T GET LOST IN THE SHUFFLE KEEP IN TOUCH WITH OTHERS

To help make your presence known, National AIChE has put the membership database online via their web page. This is a valuable tool for all of us, whether we're trying to find a long lost chemical engineering friend, or we simply want others to be able to reach us at our new address, phone or e-mail. You can even create a link to your webpage. Thanks to National for this long-needed, invaluable service.

Everyone is encouraged to "check it out" to be sure the data is up-to-date, and make changes or additions as necessary. Simply go to <http://aiche.org> and go to the On-Line Community and register. Then, while you're there, why not try to track down one of your old buddies?

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What have you done today as a professional chemical engineer to aid your fellow citizen or yourself? Join us and you'll be working with topflight, dedicated people with an unprecedented opportunity to exchange ideas and information in one of the fastest-growing fields of engineering. **Can you afford not to participate?** Fill out the form below and mail to:

Jerry Gresham • Gresham & Gresham
P.O. Box 820888 • Houston, Texas 77282
Ph.(713) 780-1000

I wish to join the South Texas Section of AIChE.

☐ My \$12.00 is enclosed.

Name: _____

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National Member of AIChE? YES ☐ NO ☐

1999 - 2000 TENTATIVE SCHEDULE

| MONTH | DAY | LOCATION | TOPIC | SCHEDULED WORKSHOPS |
|-------|-----|----------------------------------|---|---------------------|
| APRIL | 6 | SAINT ARNOLDS BREWING COMPANY | | CAST |
| MAY | 4 | ASTRODOME | BRUCE FINLAYSON NATIONAL AICHE PRESIDENT | GIC, CAST, PS, PEPO |
| JUNE | 1 | PORT OF HOUSTON | BOAT TOUR | NONE |

All changes will be posted on www.sts-aiche.org

CAST = Computer Applications; ENV = Enviromental Issues; GIC = Government Interaction;
PD = Professional Development; PS = Process Safety, PEPO = Process Engineering / Plant Operations



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