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## Letter from the Chair:

Dear members & friends,



It is exciting to lead an organization like the South Texas Section. I am witnessing every month the *impact* we have on the student, academic and industrial community. Some glimpses of this are listed below. In March, we held one more successful dinner, held jointly with the Texas Energy Forum. We had a healthy attendance of 65 people and lots of engagement. We thank our distinguished dinner presenter [Dr. Billy Bardin](#) for delivering a captivating presentation. Our [website](#) contains his slides and recording for those who missed it. We also awarded nine of the total 12 scholarships to distinguished students at the 4 universities in our geographic area: *Prairie View A&M, Rice, Texas A&M, and University of Houston.*

On April 1<sup>st</sup>, our volunteers travelled to College Station to attend the AIChE [Southwest Student Conference](#) organized by the capable students of Texas A&M University. *Vic Edwards* and *Tom Rehm* delivered two impactful keynote presentations and *Matt Kolodney, Sarah Olmedo, and myself* acted as judges for the ChemE Car competition. Our participation allowed us to connect with student leaders, like the AIChE student president from University of Texas at Austin, and the faculty representative from Lamar University. A week before, *Nitish Mittal and Harsh Agarwal* served as judges at the Texas Science Fair competition, also in College Station.

The next two months have an equally exciting agenda. We wish to synergise with the local professional & scientific events. More details are listed in this newsletter:

- May 4<sup>th</sup> will bring us the STS dinner jointly held with [TIEEP Water Forum](#) organized by the University of Houston. It falls in the same week as the [Offshore Technology Conference](#) (OTC) allowing visitors from out of state to network with us. The NAE member **Dr. José Santiesteban** will deliver the dinner presentation. We will also award three more **scholarships** to local University Chemical Engineering students and STS **special prizes** to six high- and middle-school students who participated in the 2023 Science Fair of Houston.
- In the morning of May 4<sup>th</sup> during [OTC](#) we will participate as co-sponsoring organization in the [SPE Energy Professionals Hiring Event](#) (see below).
- On June 10<sup>th</sup>, we will hold our traditional **Houston Ship Channel Tour**.

Our sincere interest to cater to students & Young Professionals is manifested in our 2023 goals. As part of **Goal 1: Mentorship**, we have already formed a committee that has developed a *survey* to solicit STS members that want to serve as career mentors or act as mentees. We will send more information about the survey in the coming weeks.

Finally, I would like to welcome a new member to our Executive Committee. [Emily Jackson](#) has been appointed to serve as Position #4 Officer for the remainder of 2023, filling the vacant position. See her biographical below. Finally, I leave you with an excerpt from the STS History document.

**The History of AIChE STS (an excerpt)**

*“Section membership reached 2,370 in 1977. South Texas was the first AIChE Local Section to have over 2,000 members. There were 3,069 National AIChE members and about 7,500 chemical engineers in the area at that time. The Scholarship Award to each of the four universities was increased to \$600 annually. The Southeastern Texas Section of the American Chemical Society was contacted with the objective of establishing communication with the AIChE South Texas Section.”*

Best Regards,

*[Andreas Matzagos, Ph.D.](#)*

2023 STS AIChE Chair

Email: [sts-chair@aiche.org](mailto:sts-chair@aiche.org))

## List of 2023 Upcoming Events (venues TBD)

Date	Event Name	Speaker
Thursday, May 4	Dinner Meeting: <a href="#">New Directions for Chemical Engineering</a>	<a href="#">Dr. José G. Santiesteban</a> - ExxonMobil retired
Saturday, June 10	Social: <a href="#">2023 STS-AIChE Houston Ship Channel Tour</a>	NA
Thursday, September 7	Dinner Meeting: Remediating Plugged Flow Lines with Nanofluids	<a href="#">Prof. Lisa Biswal</a> - Rice University ChBE Department
Thursday, October 5	Dinner Meeting: Houston Climate Adaptation Plans	<a href="#">Jane Stricker</a> - Greater Houston Partnership
Saturday, October 21	80th Anniversary Celebration BBQ	NA
Thursday, November 2	Dinner Meeting: Title TBD	<a href="#">Nathan Levin</a> – Shell Deer Park
Saturday, December 2	Holiday Social Event	NA

### May 2023 Dinner meeting

Thursday, May 4, 2023, 4-9pm CT

Event format: In-Person / Online

Location: [San Jacinto College Center for Petrochemical, Energy, and Technology](#), 7901

Fairmont Parkway, Pasadena, TX 77507

Please join the South Texas Section for our monthly dinner meeting. We will co-host (with Texas Industrial Energy Efficiency Program) the workshop - 2023 Water Forum. The dinner keynote will be delivered by [Dr. José G Santiesteban, NAE member](#).

**4:00PM - 6:00PM:** Water Forum

**6:00PM - 6:30PM:** Social/Networking Time

**6:30PM - 7:00PM:** Dinner

**7:00PM - 7:30PM** Announcements & Awards

**7:30PM - 8:30PM** Keynote Presentation by [Dr. José G. Santiesteban](#), *New Directions for Chemical Engineering* (1 PDH)

### **Keynote Presentation**

#### ***New Directions for Chemical Engineering* (1 PDH)**

##### *Abstract:*

Over the past century, the work of chemical engineers has helped transform societies and the lives of individuals, from the synthetic fertilizers that helped feed the world to the development of novel materials used in fuels, electronics, medical devices, and other products. Chemical engineers' ability to apply systems-level thinking from molecular to manufacturing scales uniquely positions them to address today's most pressing problems, including climate change and the overuse of resources by a growing population.

*New Directions for Chemical Engineering* details a vision to guide chemical engineering research, innovation, and education over the next few decades. This report calls for new investments in U.S. chemical engineering and the interdisciplinary, cross-sector collaborations necessary to advance the societal goals of transitioning to a low-carbon energy system, ensuring our production and use of food and water is sustainable, developing medical advances and engineering solutions to health equity, and manufacturing with less waste and pollution. The report also calls for changes in chemical engineering education to ensure the next generation of chemical engineers is more diverse and equipped with the skills necessary to address the challenges ahead.

##### *About the Speaker:*



[Dr. José G. Santiesteban](#) is currently a Council Member and Board of Trustees of the National Academy of Engineering (NAE). He retired from ExxonMobil, where he served for more than 30

years in several technical leadership and management roles. His last assignment was as a strategy manager for ExxonMobil Research and Engineering Company. In this role, he led a team for developing strategic technology direction, providing research guidance, and ensuring the robustness of the research and development portfolio. His expertise in heterogeneous catalysis includes design, synthesis, physical-chemical characterization of novel catalytic materials, and reaction mechanisms and kinetics. Dr. Santiesteban is an inventor or co-inventor on more than 85 U.S. patents and the editor of two special catalysis journals. He has led and made significant technical contributions to the discovery, development, and commercialization of more than 20 novel catalyst technologies deployed worldwide to produce high-performing lubricants, clean fuels, and petrochemicals. Dr. Santiesteban was elected a member of the National Academy of Engineering (NAE) in 2016, and The Academy of Medicine, Engineering and Science of Texas (TAMEST) in 2018. He has received multiple awards, including the Society of Hispanic Professional Engineers 2018 Innovator Award and technical and leadership awards within ExxonMobil Research and Engineering Company and Mobil Research and Development Company. Dr. Santiesteban is a board member of the Board on Energy and Environmental Systems (BEES) of the National Academies of Sciences, Engineering, and Medicine (NASEM) and a senior member of the American Institute of Chemical Engineers and the North American Catalysis Society.

He has served on the advisory board of various academic and research institutions around the world. Dr. Santiesteban served as a member of the committee on “Chemical Engineering: Challenges and Opportunities in the 21st Century”, a study sponsored by the National Academy of Sciences, Engineering, and Medicine (NASEM).

He received a B.S. degree in chemical engineering from the Instituto Tecnológico de Chihuahua (1979, summa cum laude), an M.S. degree in chemical engineering (1981) from the Instituto Tecnológico de Ciudad Madero, and a Ph.D. degree in physical chemistry from Lehigh University (1989), Bethlehem, PA.

## **Pre-Dinner Workshop**

### ***2023 Water Forum: Energy Efficiency and Decarbonization in the Industrial Use of Water (2 PDH)***

Water, energy, and carbon emissions are inextricably linked, and opportunities abound to improve energy efficiency while saving water and decarbonizing. In this hybrid event, industry experts and suppliers present cutting edge tools, strategies, and examples for attaining these integrated objectives, both in existing manufacturing facilities and in new plants with emerging technologies.

## **Presentations and Speakers**

**Presentation 1:** *Designing pump systems to reduce energy consumption toward greater sustainability*

### **Abstract**

This presentation will provide an overview of pump curves and how they can be used to identify efficiency improvement opportunities, including the Pump Savings Calculator and the HI Energy

Rating, with examples. It will also review the Pump Industry Fundamental Body of Knowledge and Pump System Fundamentals, Pump System Optimization and Assessment and Pump System Professional Assessment courses.

About the Speaker



**Matthew C. Derner** – Manager, Business Development, Education & Training Resources, Hydraulic Institute

Matthew holds a leading role in promoting pump system related programs that deliver energy efficiency in commercial and industrial settings. Additionally, he is responsible for managing Pump Systems Matter (PSM), HI's training subsidiary, and for the overall promotion and growth of the Hydraulic Institute's portfolio of training and certification programs that focus on pump system optimization, and efficiency. Matthew has a strong background in global sales of pumps, drives and various rotating equipment in both the manufacturing and distribution segments, with an emphasis on energy efficiency and total cost of ownership.

**Presentation 2: *Streamlining the Search for Energy Savings in Utilities***

**Abstract:**

Industrial utilities are the giant, “Frankensteined”, site-spanning monsters that keep the proverbial lights on for the myriad of processes at a refinery or chemical plant. Years of expansion, increasing demands, and tighter budgets have left utility systems strained but abundant with opportunity for energy savings. This presentation will discuss the cultural and technical foundation of a continuous improvement approach, ensuring utility engineers have the right tools, data, and expertise at their fingertips to streamline the search for saving energy and water.

**About the Speaker:**



[Clayton Harris](#), PE - Engineering Manager, Hydrus Works, LLC

Clayton joined Hydrus in 2018 and has overseen and directly worked on over 40 utility improvement, troubleshooting, and operational improvements projects for steam, air, cooling water, firewater, and other utility systems during his time with the company. He is a licensed Professional Engineer for thermal and fluid systems.

**Presentation 3:** *Energy in Transition: Reverse Osmosis and the Economics of Green Hydrogen Production*

Abstract:

Green hydrogen has become a promising alternative energy source as nations seek to address climate concerns through decarbonization as well as ensure flexibility and energy security in the face of geopolitical uncertainty. But without a clear economic advantage, industry stakeholders will be reluctant to invest in the required infrastructure until it is shown how green hydrogen can generate top-line growth and bottom-line efficiency. Both electrolysis and steam methane reformation require large amounts of fresh water, not to mention ethane cracking and other petrochemical refining processes, and this presentation will highlight how reverse osmosis and desalination can play a critical role in the economic efficiency of green hydrogen projects, as well as the transition through the intermediate steps of gray and blue hydrogen.

About the Speaker:

[Jack Highberger](#), Managing Director, Hatlenboer-Water Americas.

Hatlenboer Water has been in the freshwater business since 1906, and Jack took over the US branch in Houston last year after 20 years in the upstream oil & gas and maritime industries. He manages the sales and market growth of Hatlenboer's freshwater production, treatment, and distribution systems in the Americas.





## Registration

*Water Forum Registration (free to attend)*

- In Person Registration - [CLICK HERE!](#)
- Online (via Zoom) - [CLICK HERE!](#)

*AICHE Dinner Registration*

- In Person Registration - [CLICK HERE!](#)
  - Non-members - \$48
  - STS Members -\$43
  - STS YP Members - \$38
  - STS Student Members - \$33
- Online (via Microsoft Teams) - [CLICK HERE!](#)
  - Members - \$5
  - Non-members - \$15

We would also encourage to RSVP for the [LinkedIn event](#) to promote networking.

## Sponsors



## Announcements:

### **STS - AIChE Awards: Time for 2022 Nominations by May 1, 2023**

Nominations are being accepted through May 1, 2023 for the following STS-AIChE Annual Awards:

- 2022 STS Best Applied Paper Award
- 2022 STS Best Fundamental Paper Award
- 2022 STS Best In-Practice Paper Award
- 2022 STS Outstanding Young Professional Award (Under 40)
- 2022 STS Distinguished Service Award (Over 36)
- 2022 STS Special Service Award(s)

Nomination Forms are available on the STS – AIChE website: <https://www.aiche.org/community/sites/local-sections/sts/files/2022-annual-awards-nomination-form> or by contacting:

- Matt Christiansen 281-544-6476 [Matthew.Christiansen@shell.com](mailto:Matthew.Christiansen@shell.com)
- Tom Menn 281-485-3719 [ThomasMenn@SBCGlobal.net](mailto:ThomasMenn@SBCGlobal.net)
- Harsh Agarwal 281-544-9825 [Harsh.H.Agarwal@Shell.com](mailto:Harsh.H.Agarwal@Shell.com)

### **Nominations for 2024-2025 STS AIChE Officers**

Starting in May, STS AIChE welcomes nominations for the upcoming 2024-2025 offices:

STS AIChE Chair-Elect 2024-2026

STS AIChE Secretary 2024-2025

STS AIChE Director Position 2, 2024-2025

STS AIChE Director Position 4, 2024-2025

If you are interested in learning more about the duties and responsibilities or would like to nominate a potential candidate for the October election, please contact Julie D White, STS AIChE Past Chair ([STS-PastChair@aiiche.org](mailto:STS-PastChair@aiiche.org)).

### **SPE Energy Professionals Hiring Event at 2023 OTC on May 4 (9 AM – 4 PM)**

- May 4<sup>th</sup> 2023 at NRG Park, Houston, Texas.
- STS professional members are entitled to participate as job seekers or work as volunteers. This is part of our long-standing collaboration with the [Society of Petroleum Engineers, Gulf Coast Section](#).
- For more information about the event, location, time, registration, and participants, visit our website: <https://www.spegcs.org/hiring-event>

### **2<sup>nd</sup> Climate Solutions Symposium on October 7, 2023**

- October 7, 2023 at the University of Houston Student Theater Center between 1-4 pm.
- Event followed by a Meet-and-Greet in the Student Center Ballroom between 4-5:30 pm.
- Features three important climate solution initiatives, the [Sustainable Energy Corps](#), Let's Make Texas More Reliable and Cleaner, and [Global Solutions and Outreach Programs](#).
- Registration is 10 \$ (in-person or livestreaming). Student registration is free.
- For more details regarding the event, reach out to Symposium Chair, [Dr. Thomas E. Rehm](#).

### **2023 Annual STS-AIChE Houston Ship Channel Tour**

- To be held on **Saturday, June 10**, between 3:30 pm – 5:00 pm.
- Journey down the Houston Ship Channel which has the largest concentration of chemical industry in the United States with more than 50 chemical processing facilities located along either side. Enjoy beverages graciously provided by Port Houston. No food will be provided.
- [Reservations](#) at no cost will be accepted until 2:00 PM, Tuesday, June 6. For additional information and registration, please visit the [Houston Ship Channel Tour](#) event page, or e-mail Dennis Griffith at [dennisgriff@sbcglobal.net](mailto:dennisgriff@sbcglobal.net).

### **[AIChE Southwest Regional Conference 2023](#)**

- Held at Texas A&M University, College Station between March 31 – April 1
- Brought the world's sharpest chemical engineering students together. Several competitions including ChemE Car, Jeopardy, Technical Paper, and Poster Presentations were held.
- Some glimpses of the event below for those who could not attend.







**Congratulations:**

**Young Chemical Engineer Award 2022:** [Ramprasad Kamisetty](#) received the 2023 South Texas Special – AIChE Young Chemical Engineer of the Year Award for his efforts as Chair of the STS – AIChE YPC



AIChE President Billy Bardin (L), Ram Kamisetty and his wife (C) and Andreas Matzakos (R)

**Chair Appreciation Plaque for 2022:** [Julie D. White](#), P.E. was presented with the 2022 South Texas Section -- AIChE Chair Appreciation Plaque for her tireless efforts as 2022 STS Chair.



AIChE President Billy Bardin (L), Julie White (C) and Andreas Matzakos (R)

**Emily Jackson – Position #4 Appointee:**



Emily is a process engineer with over 10 years of industry experience. She graduated from the University of Texas at Austin in 2009 with a B.S. in Chemical Engineering. She obtained her Master's degree (M.S. Eng.) in Chemical Engineering from McNeese State University in 2011. Emily is currently a process engineer for INVISTA out of the Houston Corporate office. She has experience leading process teams in major capital projects as well as smaller site based projects, and she is the company Subject Matter Expert for pressure relief device systems. She has twin boys, now age 18, and a miniature dachshund. She enjoys CrossFit, reading, and crafting in her spare time.

**LinkedIn Page for AIChE STS**

Follow our [LinkedIn page](#) for updates and RSVP for the monthly meeting event created on our LinkedIn page. Don't forget to tag the page in posts related to AIChE STS section.