

State of AIChE & Vision for the Future

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16 March 2023

AIChE South Texas Local Section

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Challenges to Address

SUSTAINABLE DEVELOPMENT GOALS



By 2030:

- 35% more food
- 40% more water
- 50% more energy
- 5.2B Middle Class Growth

Urbanization

- 60% of population in cities
- 70% of GHG from urban areas

AIChE Aspiration

To inspire a safe, connected, and inclusive community Doing a World of Good as:

- *The Global Leader of the chemical engineering profession*
- *The Center for lifelong professional and personal growth*
- *The Foremost Catalyst in applying our expertise to sustainably meet societal needs*



AIChE Strategic Objectives

- Enable the success of all members and stakeholders as the **leader** in advancing the chemical and related engineering professions
- Strengthen existing and create new, relevant **communities**
- Enhance the academic curriculum and promote lifelong learning across the profession by developing trusted **content**
- Expand the equity, diversity and inclusion of the profession through **IDEAL** (*Inclusion, Diversity, Equity, Anti-racism, and Learning*)
- Address important **societal** issues by utilizing the expertise of the profession

About AIChE

 **60K+**
TOTAL MEMBERS

Technical Divisions and Forums
11,000+

 **136**
COUNTRIES

Local Sections
7,100+

 **40K+**
MEMBER PROFESSIONALS

 **26,000+**
STUDENT MEMBERS

 MORE THAN
380
STUDENT CHAPTERS

 ACROSS
107
COUNTRIES

 ACROSS
50
COUNTRIES

OPERATIONS REVENUE
\$42MM

PROGRAM IMPACT

SAFETY & ETHICAL PRACTICE

226,148
SAFETY CERTIFICATES
AWARDED TO STUDENTS
WORLDWIDE

62,008
STUDENTS COMPLETED
SACHE MODULES
WORLDWIDE

789
NEW FACULTY MEMBERS
EDUCATED IN PROCESS SAFETY
AT INDUSTRY WORKSHOPS

734
UNIVERSITIES
PARTICIPATED IN
UPSLI CURRICULUM

979
UNDERGRADUATES
PARTICIPATED IN
PROCESS SAFETY
BOOT CAMPS

ATTRACTING THE BEST AND THE BRIGHTEST

151
FUTURE OF
STEM SCHOLARS
INITIATIVE (FOSSI)
SCHOLARSHIPS
AWARDED

426
PARTICIPANTS IN
THE LEADERSHIP
WORKSHOP FOR
RISING STAR WOMEN
ENGINEERS SINCE 2018

70
LEADERSHIP EQUITY
IN ENGINEERING
PARTICIPANTS SINCE
2019

RESEARCH & INNOVATION

\$225K
AWARDED TO EARLY-
CAREER RESEARCHERS
THROUGH THE LANGER
PRIZE FELLOWSHIP

3,147
INDIVIDUALS
TRAINED IN
PROCESS
INTENSIFICATION

102
UNDERGRADUATES
PARTICIPATED IN
RAPID'S INTERNSHIP
PROGRAM

EDUCATION AND CAREER DEVELOPMENT

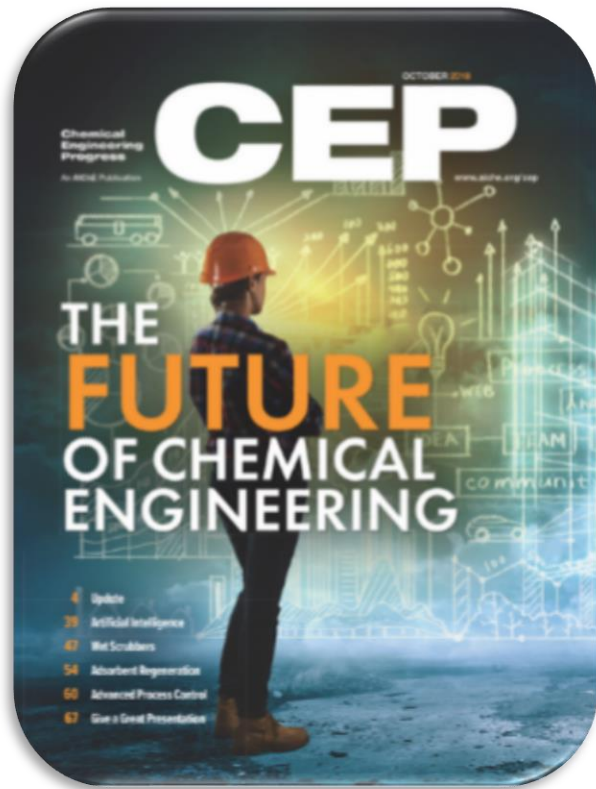
5,000+
K-12 STUDENTS PARTICIPATED
IN AIChE STEM OUTREACH
PROGRAMS

532
MEMBERS JOINED THE
AIChE PROCESS ENGINEERS
COMMUNITY

CHANGING PERCEPTIONS

212,914
VIEWS OF WHAT IN THE
WORLD DO CHEMICAL
ENGINEERS DO? VIDEO

50
ATTENDEES AT THE
INAUGURAL IDEAL
RECEPTION



Chemical engineers have a unique background that allows them to apply fundamental principles and problem solving to many different areas of need. Those areas of need may come and go, and will certainly change more quickly than in the last 25 years, but chemical engineers will be ready.

Most Promising ChE Fields

- Energy/Renewable Energy
- Process automation & control safety/data analytics
- Sustainable engineering
- Pharma/personalized medicine & care
- Data Science/AI
- Biomedical applications
- Decarbonization
- Electrochemistry
- Electrochemistry
- Materials
- Agriculture
- Bioprocessing
- Biotechnology
- Catalysis
- Food processing
- Green Chemistry
- Hydrogen

2023 Priorities

- Expand the Institute's reach, impact, and influence through greater use of partnerships and national infrastructure investments
- Develop and implement strategies and approaches for future AIChE success in a post COVID world with greater disruptions
- Enhance the alignment of AIChE, industry, academia, national laboratories and other stakeholders via ILI to enable skilled workers in digital, sustainability, and other key areas
- Utilize new alternative membership models and communication uplifts to onboard new constituents and expand our reach

Advancing Through Partnerships

- CACHE Corporation partnership: Foundations of Molecular Modeling and Simulation ([FOMMS](#)) 2024 (Snowbird, UT) and Foundations of Computer-Aided Process Design ([FOCAPD](#)) 2024 (Breckenridge, CO) planning underway
- I-HEAT²: completed pre-selection interview (orals, 2 rounds of questions) – Awaiting DOE decision
- Developing relationships with international partners for clean energy initiatives
- Gulf Publishing/Hydrocarbon Processing partnership: ChemE Show tradeshow and tech program for the processing industries – November, 2023 – Galveston

Leaving a Legacy of Learning



AIChE
INSTITUTE FOR
LEARNING & INNOVATION



III Customized Career Discovery Workshops

- Standard workshop explores individual's potential Five Futures; held virtually each month
- Customized workshop explores their Five Futures WITHIN a particular company
- AdvanSix workshop held Feb 2023 w/additional scheduled in April
- Several other companies interested

ADVANSix

ILI Digital Internships

- Data analytics focused internship program that connects companies and potential interns
- Hands-on project with a focus on data analytics, and a technical mentor
- On-demand training to develop their communication and leadership skills, as well as technical expertise in such areas as Python, data visualization, statistical programming, and other technical topics

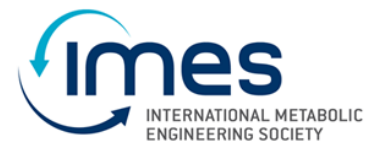


- Engaging students to build shared data platform to enable global communication, education, projects,...
- Fall 2022: AIChE Foundation funded first cohorts with University of Houston & Lamar University
- 2023: \$150K grant awarded by UEF
- NSF grant application; expect update soon



Technology Solutions

AIChE 
The Global Home of Chemical Engineers



LEARN ■ CONNECT ■ LEAD

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RAPID Member SoCalGas and Partners Unveil Innovative Hydrogen Generation System – Jan 2023

Direct Air Capture Announced as 2023 ChemE Cube Competition Theme – Nov 2022

RAPID Roadmap



Diverse Ecosystem Addressing Societal Challenges

Society for Biological Engineering



Institute for Sustainability



Clean Energy Institute



Center for Hydrogen Safety



Food Related



Center Innovation & Entrepreneuring Excell.



Regen. Eng. Soc.



AIChE



Int. Society for Water Solutions



B³ Center



Pharm Discovery, Dev. and Mfg Forum



Communities – Find Your Place



Community of
Process
Engineers

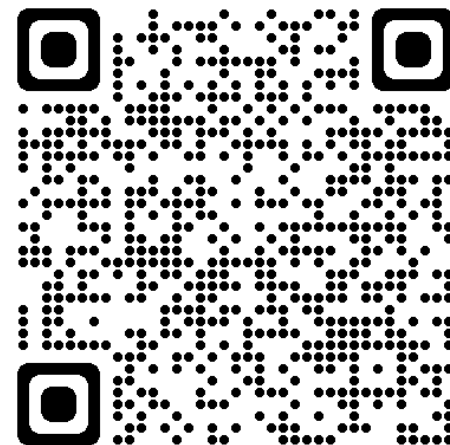
Divisions and Forums



AIChE Foundation

Founded in 1990 as the philanthropic arm of AIChE, the AIChE Foundation supports programs that enable AIChE and its members to be a positive force for change through the safe and responsible practice of chemical engineering.

MAXIMIZE YOUR IMPACT



The Doing a World of Good Journey

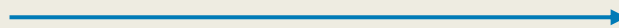
**DOING
A WORLD
OF GOOD**



Our Shared Future **Attracting & Developing** **the Next Generation of** **STEM Talent**

- Help Wanted
- FOSSI (for exceptional students from other underserved groups)

Members, Industry & Academia



General Public

Future of STEM Scholars Initiative

FOSSI Fast Facts



565 Scholarships
Funded

\$40,000
Awarded
over 4 years



~\$30MM+
Funds Raised

3000 Applications
3.70 Average GPA



Scholars
from **30** States



Scholars Attending
38 HBCUs

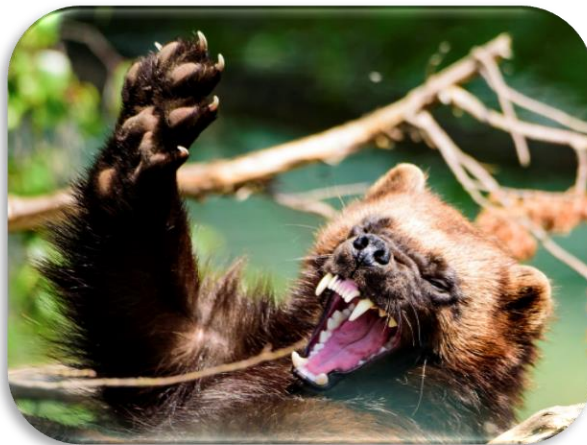


62 Corporate
Sponsors

Final Thoughts – ChEs



Insatiable Curiosity



Relentless Tenacity



Unwavering Resiliency

Thank You – AIChE

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