



CENTER FOR MIDSTREAM  
MANAGEMENT & SCIENCE  
**LAMAR UNIVERSITY**

The Texas State University System

## NEWSLETTER #2

November 19, 2020

We have been working steadily at the Midstream Center to organize ourselves to fulfill our purpose and promise. To that end, we have recently accomplished:

- The Midstream Center requested, evaluated, and awarded ten internal research grants to LU faculty, as follows:

Faculty	Department	Funded Research Project
Chun-Wei Yao	Mechanical Engineering	Novel Approach to Evaluating Pitting Corrosion
Xingya Liu	Computer Science	BLE IOT System for Pipeline Sensor Networks
Qiang Xu	Chemical Engineering	Study of Sloshing Impacts for FLNG Systems
Sujing Wang	Computer Science	
Sidney Lin	Chemical Engineering	AI Algorithms for Corrosion Prediction
Seokyon Hwang	Construction Management	Drones and AI to Increase Pipeline Resilience
Zhe Fan	Mechanical Engineering	Corrosion Resistant High-Entropy Alloys
Maryam Hamidi	Industrial and Systems Engineering	Deep Learning Defect Prediction - Compressors
Rafael Tadmor	Chemical Engineering	Assessment of Corrosion Development
Yueqing Li	Industrial and Systems Engineering	Hybrid Model to Detect Oil Leak in Pipeline
Xinyu Liu	Industrial and Systems Engineering	
Xianchang Li	Mechanical Engineering	Surge Analysis for LNG Loading Arms
Xinyu Liu	Industrial and Systems Engineering	
Jenny Zhou	Mechanical Engineering	

- **Dr. Helen Lou joined the Midstream Center as Associate Director – Research.** Dr. Lou will, in partnership with the Director of the Midstream Center, work to bridge the Center to faculty, develop Midstream Center sponsored academic initiatives, and oversee research grants awarded by the Center.



Dr. Lou is a Professor of Chemical Engineering and a Fellow of American Institute of Chemical Engineers (AIChE). In addition to her rich experience in research, development and education, Dr. Lou was a Board Member of the Gulf Coast Regional Center of Innovation and Commercialization (2009 – 2015). She is a graduate of Wayne State University where she earned a PhD (Chemical Engineering) and an MA (Computer Science) in 2001.

- **The Midstream Center hosted its first webinar roundtable.** On September 15<sup>th</sup>, three members of the Center’s Industrial Advisory Board (Jeremy Goebel, EVP-Commercial, Plains All American Pipeline; Ajey Chandra, Managing Partner and Director, Muse Stancil & Co.; and Wes Johnson, SVP and Global Manager, CorrPro-Aegion Corporation) joined Thomas Kalb in presenting a very informative “*Major Issues Facing the Midstream Industry.*”

<https://www.lamar.edu/engineering/midstreamcenter/events.html>

- **The Midstream Center hosted its second webinar roundtable.** On November 10<sup>th</sup>, the Center hosted a webinar roundtable “*Corrosion Issues in the Midstream Industry.*” We were honored to have three distinguished corrosion industry professionals discuss their views on system integrity issues facing the Midstream Industry – Dirk van Oostendorp, Director of Engineering & Technical Services, CorrPro-Aegion Corporation; Dr. Christiane Lederer, Business Development Manager & Refining Corrosion Specialist, Emerson Corrosion and Erosion; and Cody Brinson, Corrosion Technician, Nederland Terminal, Energy Transfer.

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- **Surveyed midstream industry in support of Midstream Center Training Initiatives.** A questionnaire was sent to approximately 2,500 industry recipients seeking insight on capabilities missing from engineering graduates when they start careers. Responses yielded very useful information for developing planned undergraduate engineering course midstream modules, Midstream Certificate, and a joint faculty/industry instructor course series addressing industry identified weaknesses in midstream workforce development.
- **Kicked-off development and integration of midstream modules into the existing engineering curriculum.** Midstream companies hire graduates with different engineering degrees and these new hires usually need to go through initial training before they become productive. The Midstream Center has sponsored an initiative with faculty to better prepare the students for a career in the midstream industry by integrating some of the midstream industry's technical issues into various courses in the existing engineering curriculum. LU professors are now signing up to develop course modules on technical issues pertinent to the midstream industry and include those modules in their courses. This Midstream Center initiative is expected to fund the development and implementation of ten to 16 course modules in academic year 2020-2021.
- **John W. "Wes" Johnson was named *Profiles in Midstream* Honoree**



Wes Johnson is on the Midstream Center's Industry Advisory Board and has assisted us in multiple instances, including being a panelist in our first Midstream Industry Roundtable webinar. He has also introduced several prospective investors to Dr. Chun-Wei Yao and his Superhydrophobic Nano Coating that represents a significant advance in liquid friction reduction and corrosion resistance in pipelines. In developing our Midstream Roundtable focused on corrosion, he introduced us to a highly respected speaker who participated on our corrosion panel. It is people like Wes Johnson who are enabling us to build the Midstream Center into a problem solving cornerstone of midstream industry, as well as a midstream thought leader. We are proud to have him on our team at Lamar University and to have him as the Center for Midstream Management and Science's ***Profiles in Midstream*** honoree.

Wes is a Lamar University College of Engineering alumnus with over 20 years in the energy industry (up-, mid-, and down-stream). He is currently the Senior Vice President & Global General Manager of Aegion's Corpro Division, a leading provider of Cathodic Protection and Integrity Management. He has worked in the midstream services sector for over 10 years both internationally and domestically. Wes has worked and has extensive knowledge in mid-stream focal areas such as inspections, coatings, manufacturing, distribution, field services and engineering. Wes and his family reside in Cypress, Texas. Wes earned BSIE and BSIT degrees in 1997 and 1996, respectively, from Lamar University and was a Alpha-Pi-Mu Graduate.

- **The Midstream Center's Faculty Corrosion Team Met with Emerson.** Six faculty members making up the Center's corrosion focused cadre met with Dr. Christiane Lederer and her corrosion/erosion team from Emerson in an introductory meeting to establish dialogue, exchange ideas, and build a joint bridge to the future. The Center's faculty team included Dr. Maryam Hamidi, Dr. Berna Tokgoz, Dr. Helen Lou, Dr. Chun-Wei Yao, and Dr. Clayton Jeffryes. Dr. Lederer gave our team a presentation on industry corrosion and erosion issues and discussed new corrosion technologies in development at Emerson. LU's midstream faculty team introduced their interests and strengths in the field of corrosion, and Dr. Lou gave a short presentation on corrosion mitigation via big data and AI methods.
- **Sponsored 3-day course on midstream science for faculty.** As part of its ongoing effort to build a dialogue between LU faculty and the midstream industry, the Midstream Center sponsored a 3-day course in midstream science offered by instructors from the GPA Midstream Association. The purpose of this three-day course was to enhance faculty's understanding of midstream engineering, operations, and assets to better enable them to identify and think about industry problems that they can help solve through their research efforts. Polling of the 14 faculty members attending the course reflected a big win by materially enhancing knowledge and understanding of assets, operations, and issues critical to the midstream industry.

- **The Midstream Center arranged and led a tour of the West Yellow Creek oil field in Laurel, MS.**



LU's Midstream Center arranged a tour of Tellus Operating Group's West Yellow Creek (WYC) Field in Laurel, MS. The purpose of the trip was to expose faculty to upstream and midstream operations involving tertiary oil production and CO2 Enhanced Oil Recovery (EOR) operations with a large gas compression facility. Unexpected downtime of these large machines and resultant loss of production and sales regularly costs industry tens of millions of dollars in lost revenue.

**Center for Midstream Management & Science  
Thomas J Kalb, Director  
Lamar University  
PO Box 10002  
Beaumont, Texas 77710  
tkalb@lamar.edu**