Nagu Daraboina, Ph.D
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Degrees

2012 **Ph.D. – Chemical & Biological Engineering**
University of British Columbia (UBC), Vancouver, BC, Canada

2019 **MBA-Collins College of Business**
The University of Tulsa, OK, USA

2008 **Master of Engineering (M.E.) - Chemical Engineering**
Indian Institute of Science (IISc), Bangalore, India

Career Work Experience

2022-Present	Associate Professor- Russell School of Chemical Engineering, TU, USA
2016-Present	Associate Director of TUPDP- JIP, TU, USA
2023-Present	Director- American Society of Engineering Education, Chem DIV, USA
2018-2022	Assistant Professor- Russell School of Chemical Engineering, TU, USA
2019	Visiting Faculty Scholar, Chevron Energy Technology Company, TX, USA
2016-2018	Research Assistant Professor Petroleum Engineering, TU, USA
2014-2015	Research Associate–TUPDP, TU, USA
2012-2014	Postdoctoral Research Fellow–CERE, DTU, Denmark
2012	Research Fellow –Chemical & Biological Engineering, UBC, Canada
2009-2010	Visiting Scholar- SIMS-National Research Council Canada

Awards and Honors

2024 **Distinguished Faculty Mentor Award**, presented to a faculty member who has substantially impacted students' academic life and career.

2023 **The Zelimir Schmidt Outstanding Researcher Award** recognizes faculty who are critical to the ongoing success of the college's research mission, shaping their fields and advancing TU's effort to achieve Carnegie R1 research designation.

2023 **Donald W. Davidson Award Outstanding Research**, International organization of gas hydrates Research,
Named for the late Donald W. Davidson of the National Research Council of Canada, who made outstanding contributions to scientific research, this award is presented every three years at the ICGH in recognition of the accomplished outstanding progress in establishing the independent research career in the field of gas hydrates or clathrate hydrates and in the anticipation of a promising future career.

2022 **Top 2% most cited scientist** (research field), Stanford/Elsevier, Research, International
Stanford's Top 2% Scientists list is an emerging ranking that identifies scholars who are top cited in their respective fields. It is based on an analysis of citation impact across multiple scientific fields and subfields using data from the Scopus database.

2021 **Class of Influential Researchers**, Industrial Engineering and Chemistry Research, Research, Americas
Talented researchers who are in the first 10 years or so of their independent careers.

2021 **Energy and Fuels Rising star**, Research, International
To celebrate contributions of highly influential Early- and mid-career researchers in various areas of energy research, the American Chemical Society Journal *Energy & Fuels* has established Energy and Fuels Rising Stars, identified by their global team of editors and members of the editorial advisory board.

2015, 2017, 2020 **Most cited papers,** Chemical Engineering Science, Energy &Fuel
Top-cited articles can provide insights into how research fields have evolved over time and identify those researchers who have made high impact in a research field.

2014 **Otto Monsted award**, Otto Mønsted Foundation, Denmark
The Otto Mønsted Foundation primarily supports research and educational activities within the technical sciences and business fields of study.

2012 **John R. Grace award**, The University of British Columbia, Mentoring
The award is offered to a graduate student or post-doctoral fellow, who has been highly effective in mentoring undergraduate students in the Department of Chemical and Biological Engineering.

2012 **Carbon Management Canada Award**, Research, Canada
Carbon Management Canada awarded this on the basis of technical details, visual layout and the presentation of the poster by the authors. Visual impact was also a factor.

2011 **West Coast Energy Inc Jack Davis award,** The University of British Columbia, Research, Canada

2009 It was established to commemorate the many contributions of the late Honorable Jack Davis, P.C., to Canada and British Columbia.

2008 **Kumar Gandhi Award**, Indian Institute of Science (IISc), Research, India
The Kumar-Gandhi award is given to the best speaker at the Chemical Engineering Symposium at the Indian Institute of Science (IISc)

2006 **Gold medal**, GVPCOE, Academics, India
awarded gold medal by JNTU for being the topper with an highest aggregate in four years of bachelor degree in chemical engineering.

Teaching

Course Title	Course	Credit Hours	Instruction Mode	Enrollment	Semester
Heat Transfer	ES 3073	3	In-person	9	2018 SP
Heat Transfer	ES 3073	3	In-person	25	2018 SP
Thermodynamics	ES 3053	3	In-person	34	2018 F
Heat Transfer	ES 3073	3	In-person	16	2019 SP
Equilibrium Thermodynamics	CHE 3063	3	In-person	34	2019 F
Heat and Mass Transfer	CHE 7043	3	In-person	6	2020 SP
Heat Transfer	ES 3073	3	In-person	24	2020 F
Heat Transfer	ES 3073	3	In-person	21	2020 F
Adv Thermodynamics	CHE 7023	3	In-person	8	2021 SP
Equilibrium Thermodynamics	CHE 3063	3	In-person	26	2021 F
Senior Lab	CHE 4010	3	In-person	23	2022 SP
Senior Lab	CHE 4013	3	In-person	9	2022 SP
Equilibrium Thermodynamics	CHE 3063	3	In-person	18	2022 F
Adv Thermodynamics	CHE 7023	3	In-person	6	2023 SP
Analytics- Energy Business	MEB 7033	3	online	13	2024 S
Sustainable Hydrogen	CHE 7863	3	In-person	4	2024 F
Adv Thermodynamics	CHE 7023	3	In-person	11	2025 SP

Undergraduate Advising

August 2024-Present	Advisor for Omega Chi Epsilon chapter
August 2024 - Present	Research, Harish Vaithianathan, Wax formation at high pressures, Award: Manning grant,
August 2023 – May 2024	Research, Tristan Parrington, Hydrate rheology of natural gas systems, Award: TURC and Manning,
August 2022 – May 2023	Research, Donovan Daubert, Transportation of hydrogen, Award: TURC and Manning grant, Student Mentee Placement: Graduate school @TU
August 2022- May 2023	Research, Jayden Howard, Tuning PVT properties of hydrocarbons, Award: TURC and Manning grant,
May 2021- December 2021	Research, Alkalbani Mohammed, Application of thermodynamics in flow assurance,
May 2021- August 2021	Research, Joshua Harrison, Economic analysis of produced water desalination, Award: NSF-REU
May 2020 – August 2020	Research, Sam Limon, Determining Hydrate Equilibrium Conditions using DSC, Award: NSF-REU
August 2019 – December 2020	Research, Patrick Kampmeyer, TUWAX Models Testing and Validation, Student Mentee Award: TUCoRE
August 2019 – May 2020	Research, Julia Moon, Fundamental Investigation of the Wettability of Oil-Rock-Brine Systems, TUCoRE
August 2019-May 2020	Advising, Undergraduate Junior Class Advisor. Class size 26
August 2018-May 2019	Advising, Undergraduate Junior Class Advisor. Class size 23

Graduate Advising

1. Fall 2025- Active: **Edward Osei,** Ph.D., Chemical Engineering [Role: Chair]
2. Spring 2025- Active: **Yima Tor**, M.SC., Chemical Engineering [Role: Chair]
3. Fall 2024- Active: **Anuj Kumar,** Ph.D., Chemical Engineering [Role: Chair]
4. Fall 2023- Active, **Raghav**, Ph.D., Chemical Engineering [Role: Chair]
5. Fall 2023- Active, **Manas**, Ph.D., Chemical Engineering [Role: Chair]
6. Fall 2021- Active, **Ala Bala**, Ph.D., Chemical Engineering [Role: Chair]
7. Fall 2024- Active, **Muhammad Usamn**, Ph.D., Mechanical Engineering [Role: Co-Chair]
8. Fall 2024- Active, **Areeba Ali**, Ph.D., Mechanical Engineering [Role: Co-Chair]
9. Spring 2021- Fall 2024**: Dr.Aziz Alhejaili**, PhD, Chemical Engineering, December 2024, Dissertation: Paraffin deposition in multiphase flow [Role: Chair]
10. Spring 2021- Summer 2024: **Dr.Elijah Bell,** PhD, Chemical Engineering, May 2024, Dissertation: Electric heating application for removal of Paraffin in production facilities [Role: Chair]

11. Spring 2020- Fall 2023: **Dr.Gabriel Nemesis,** Ph.D., Petroleum Engineering, December 2023, Dissertation: Mechanistic Understanding of Paraffin deposition behavior [Role: Co-Chair]
12. Fall 2018- Fall 2022: **Dr.Chandradeep Bollineni,** Ph.D., Chemical Engineering, December 2022, Dissertation: Multiscale experimental and economic analysis of produced water desalination using hydrate technology [Role: Chair]
13. Fall 2018 -Fall 2021: **Dr.Ahmed Alhosani,** Ph.D., Chemical Engineering, May 2021, Dissertation: Development Of Asphaltene Deposition Simulator for Single and Multiphase Flow [Role: Chair]
14. Fall 207-Fall 2019: **Dr. Yuandao Chi**, Ph.D., Petroleum Engineering, December 2019, Thesis: Wax Deposition under Two-Phase Gas-Oil Stratified Flow [Role: Co-Chair]
15. Fall 2017- Fall 2019: **Dr.Sriram Ravichandran**, Ph.D., Petroleum Engineering, December 2018, Thesis: Mechanistic Study of Wax Deposition-Effect of Super Saturation [Role: Co-Chair]
16. Fall 2018- Fall 2020: Aziz Alhejaili, M.Sc, Chemical Engineering, November 2020, Thesis: Experimental Investigation of the Effect of Salts on TBAB Semiclathrate Phase Equilibrium: Application to Produced Water Desalination [Role: chair]
17. Fall 2018-Fall 2020: Elijah Bell, M.Sc, Chemical Engineering, December 2020, Thesis: Thermal removal of Paraffin deposition in oil gas production lines [Role: Chair]
18. Spering 2018-Sprring 2020: Daler Dzuver, M.Sc, Petroleum Engineering, May 2020, Thesis: Investigation of Hydrate Deposition Behavior in a Gas-Dominant System under Pseudo-One-Pass Conditions [Role: Co-Chair]
19. Fall 2017-Fall 2019: Jinhao Yang, M.Sc, Chemical Engineering, December 2019, Thesis: Paraffin Deposition Mechanism-Influence of Thermal Driving Force [Role: Chair]
20. Fall 2017-Fall 2019: Arjun janamatti,M.Sc, Chemical Engineering, December 2019, Thesis: Influence of Thermal and Hydrodynamic conditions on long-duration wax deposition[Role: Chair]
21. Fall 2019-Fall 2023: Hanxiao, M.E, Petroleum Engineering, December 2023, Report: Predicting Phase Equilibria of Associating Fluids Using E-CPA Equation of State. [Role: Chair]
22. Fall 2017- Fall 2019: Mina Daneshvar, M.E, Petroleum Engineering, December 2019, Report: Investigating the effect of droplet size and water cut on wax deposition phenomenon [Role: Chair]

Member

1. Fall 2022- Active: Musayev Kudrat, Ph.D., Petroleum Engineering [Role: Memeber]
2. Fall 2021: Jairo Cendales, M.Sc., Chemical Engineering, University of British Columbia, Vancouver, Canada"Thermodynamics and kinetics of CO2 hydrate formation in the presence of cellulose nanocrystals" [Role: Memeber]
3. Fall 2022: Dr.Ahmed Aql, Ph.D., Petroleum Engineering, "Intermittent structure characteristics and evolution in a slightly upward inclined pipe at a high pressure" [Role: Memeber]
4. Fall 2021: Dr.Elio R. Triago, Ph.D., Chemical Engineering"The effect of confinement on observed rheology of complex fluid flow in microcapillaries" [Role: Memeber]

5. Fall 2018: Maziad Alsanea, M.Sc., Petroleum Engineering " Effect of water cut on the onset of liquid loading and foam lift" [Role: Memeber]
6. 2017:Jean-Sebastian Renault Crispo, Ph.D., Chemical Engineering, Mcgill University, Montreal, Canada "The effects of mixed promoters on gas hydrate formation" [Role: Memeber]
7. 2017: Hongfei Xu, M.Sc., Petroleum Engineering "Study on ice formation and its effect in pipelines" [Role: Memeber]

Faculty Mentoring (nonstudents)

2022 - Present	Dr. Valavan Babu, Chemical Engineering, Post-Doc
2024 - Present	Dr. Carina Sondermann, TUPDP, Research Assistant Professor
2021 - 2022	Dr.Vijay Gupta, Chemical Engineering, Teaching assistant professor
2018 – 2021	Dr. Yingda Lu, TUPDP, Post-Doc
2017 - 2018	Dr. Sy do, TUPDP, Post-Doc

Publications, Conference Proceedings, Patents, and Creative Products/Innovations

Book Chapter

1. Duo Sun; Daraboina, N; Ripmeester, J., and Englezos, P., "Gas Injection for Disposal and Enhanced Recovery". Chapter 17; 2014; ISBN: 978-1-118-93857-7.

Conference Proceedings

1. Daraboina, N, Chi, Y; Eduardo, P: Scott, S: and Sarica, C.,(2018) "Effect of High Pressure on the Performance of Existing Two-phase Models in Wellbores," SPE Annual Technical Conference and Exhibition, 24-26 September, Dallas, Texas, USA.
2. Chi, Y; Daraboina, N, and Sarica, C., (2018) "Experimental Study of Wax Deposition under Two-phase Gas-Oil Stratified Flow" 11th North American Conference on Multiphase Production Technology, 6-8 June, Banff, Canada.
3. A Dubey, Y Chi, Daraboina, N (2017)., Investigating the Performance of Paraffin Inhibitors under Different Operating Conditions" SPE Annual Technical Conference and Exhibition, 9-11 October, San Antonio, Texas, USA.
4. Kumar A, Daraboina, N, Kumar, R and Linga, P (2017)., "Studies of THF –CH4 MixeHydrates Using High-Pressure DSC" Proceedings of the 9th Int'l Conference on Gas Hydrates Colorado, USA.

5. J Agarwal, S Ravichandran, Daraboina, N., C Sarica (2017) "Effect of Hydrodynamic Parameters on the Wax Mass Density: Scale-Up from Laboratory Flow Loop to Crude Production Pipelines" Offshore Technology Conference, Houston, May 2017.
6. Daraboina, N, Soedarmao, A and Sarica, C. (2016) "Microscopic study of Wax inhibition Mechanism" Offshore Technology Conference, Houston, May 2016.
7. Daraboina, N., Linga, P., Ripmeester, J.A., Walker, V. K. and Englezos, P. (2014) "The Unusual Growth Behavior of Methane/Ethane/Propane Hydrate Crystals in the Presence of Inhibitor at low pressure" Proceedings of the 8th Int'l Conference on Gas Hydrates, Beijing, China.
8. Hersuland, P. H., Daraboina N., von Solms, N., (2014) "Modeling and Measuring Hydrate Promotion for CO2 capture" Proceedings of the 8th Int'l Conference on Gas Hydrates, Beijing, China.
9. Daraboina, N., von Solms, N (2014). "Evaluation of Kinetic Inhibitors for Gas Hydrate Formation in the presence of n-heptane." Proceedings of the 8th Int'l Conference on Gas Hydrates, Beijing, China.
10. Perfeldt, C. M.; Chua, P. C.; Daraboina, N.; Friis, D.; Kristiansen, E.; Ramlov, H.; Woodley, J. M.; Kelland, M. A.; von Solms, N.,(2014) Inhibition of Gas Hydrate Formation With a Hyperactive AFP". Proceedings of the 8th Int'l Conference on Gas Hydrates, Beijing, China.
11. Daraboina, N., Linga, P., Ripmeester, J.A. and Englezos, P. (2011) Experimental investigation of the effect of poly-N-vinyl pyrrolidone on methane/propane clathrate in the presence of silica sand. Proceedings of the 7th Int'l Conference on Gas Hydrates, Edinburgh Scotland.
12. Daraboina, N., Ripmeester, J.A., Walker, V.K. and Englezos, P. (2011) Multiscale assessment of the performance of kinetic hydrate inhibitors. Proceedings of the 7th Int'l Conference on Gas Hydrates, Edinburgh, Scotland.

Journal Articles

In Press

1. Dakkumalla, M. R.; Babu, P.; Daraboina, N. Impact of Salt Concentration on the Hydrate Formation of HFC-152a: A Thermodynamic Investigation. Journal of Thermal Analysis and Calorimetry, Under review.
2. Dakkumalla, M. R.; Babu, P.; Daraboina, N. State-of-the-art knowledge on Clathrate hydrate desalination. Desalination, Under review.

Published

(73) Babu, P.; Daraboina, N. Hydrate-Based Water Treatment: Energy Perspectives on Cyclopentane, R134a, and TBAB. Energy & Fuels,2025, 39, 3993-4001.

(72)Alhejaili, A.; Daraboina, N. Experimental Analysis of Paraffin Deposition in Multiphase Flow Conditions: Slug Flow Energy & Fuels, 2025, https://pubs.acs.org/action/showCitFormats?doi=10.1021/acs.energyfuels.4c05343&ref=pdf

(71) Alhejaili, A.; Daraboina, N. Experimental Analysis of Paraffin Deposition in Multiphase Flow Conditions: Stratified Flow. Geoenergy Science and Engineering, vol247, 2025, https://doi.org/10.1016/j.geoen.2025.213700

(70) Dadhich, R.; Babu, P.; Daraboina, N. Kinetic and Performance Assessment of Hydrate-Based Precombustion CO_2 Capture Using Dry Water. Energy & Fuels 2024. DOI: 10.1021/acs.energyfuels.4c04807.

(69) Babu, P.; Daraboina, N. A systematic review of recent advances in hydrate technology for precombustion carbon capture. Journal of Environmental Chemical Engineering 2024, 12 (5), 113439. DOI: https://doi.org/10.1016/j.jece.2024.113439.
(68) Babu, P.; Alhejaili, A.; Bollineni, C.; Daraboina, N. Phase Equilibrium of Carbon Dioxide/Tetra-n-butyl Ammonium Bromide Mixed Hydrate in the Presence of Produced Water. Journal of Chemical & Engineering Data 2024, 69 (3), 1307-1313. DOI: 10.1021/acs.jced.3c00599.
(67) Alhejaili, A.; Babu, P.; Daraboina, N. Impact of chloride salts on TBAB/Methane and TBAB/Carbon dioxide semiclathrate hydrates: Application to desalination. Fluid Phase Equilibria 2024, 583, 114128. DOI: https://doi.org/10.1016/j.fluid.2024.114128.
(66) Ala, B. S. K.; Daraboina, N. Chemical Management for Wax Deposition: Recent Developments and Future Prospects. Energy & Fuels 2024, 38 (13), 11437-11454. DOI: 10.1021/acs.energyfuels.4c01371.
(65) Santos, G.; Daraboina, N.; Sarica, C. Modeling wax deposition in pipes: Developing a closure relationship for improving the prediction accuracy. Geoenergy Science and Engineering 2024, 236, 212751. DOI: https://doi.org/10.1016/j.geoen.2024.212751.
(64) Santos, G.; Bell, E.; Daraboina, N.; Sarica, C. Thermal removal mechanism of paraffin deposits: Impact of flowrate on removal efficiency. Geoenergy Science and Engineering 2024, 238, 212867. DOI: https://doi.org/10.1016/j.geoen.2024.212867.
(63) Bell, E.; Santos, G.; Daraboina, N.; Sarica, C. Visualization of thermal removal mechanism of paraffin deposits: Providing guidelines for minimum temperature requirements. Fuel 2024, 356, 129577. DOI: https://doi.org/10.1016/j.fuel.2023.129577.
(62) Bell, E.; Daubert, D.; Daraboina, N. A Rheological Study of Natural Gas Hydrates. Energy & Fuels 2024, 38 (13), 11582-11589. DOI: 10.1021/acs.energyfuels.4c00265.
(61) Alhejaili, A.; Goes, M. R. R. T.; Howerton, J.; Daraboina, N. Thermophysical properties of n-alkanes from C17 to C50 and validation of available correlations. Fluid Phase Equilibria 2024, 583, 114106. DOI: https://doi.org/10.1016/j.fluid.2024.114106.
(60) Daraboina, N*.; Kumar, R*.; Linga, P*. Recent Advances in Gas hydrate Technologies: An update from ICGH10. Energy & Fuels 2024. DOI: /10.1021/acs.energyfuels.4c06144
(59) Bollineni, C.; Daraboina, N. Phase equilibria of methane/TBAC mixed hydrates in the presence of produced water. The Canadian Journal of Chemical Engineering 2023, 101 (2), 726-734. DOI: https://doi.org/10.1002/cjce.24579.
(58) Alhejaili, A.; Bell, E.; Daraboina, N. Paraffin Deposition in Production Lines: Effect of Operating Parameters on Deposition Characteristics. Energy & Fuels 2023, 37 (23), 18642-18651. DOI: 10.1021/acs.energyfuels.3c03282.
(57) Alhejaili, A.; Babu, P.; Daraboina, N. Effect of Chloride Salts on TBAC Semiclathrate Hydrates: Application to Produced Water Desalination. Industrial & Engineering Chemistry Research 2023, 62 (47), 20404-20411. DOI: 10.1021/acs.iecr.3c03402.
(56) Santos, G.; Daraboina, N.; Sarica, C. Investigation of influence of wall temperature on particulate deposition using novel dynamic microscopic setup. Fuel 2022, 329, 125326. DOI: https://doi.org/10.1016/j.fuel.2022.125326.
(55) Kumar, A.; Daraboina, N.; Linga, P.; Kumar, R.; Ripmeester, J. A. Experimental Study on Hydrate Structure Transition Using an In Situ High-Pressure Powder X-ray Diffractometer: Application in CO2 Capture. ACS Sustainable Chemistry & Engineering 2022, 10 (35), 11473-11482. DOI: 10.1021/acssuschemeng.2c02581.
(54) Santos, G.; Daraboina, N.; Sarica, C. Dynamic Microscopic Study of Wax Deposition: Particulate Deposition. Energy & Fuels 2021, 35 (15), 12065-12074. DOI: 10.1021/acs.energyfuels.1c01684.

(53) Daraboina, N.; Alhosani, A. Particulate Deposition Modeling for Predicting Paraffin Thickness in Flowlines: Application of Data Analytics for Model Parameters. Industrial & Engineering Chemistry Research 2021, 60 (43), 15793-15804. DOI: 10.1021/acs.iecr.1c02740.
(52) Bell, E.; Lu, Y.; Daraboina, N.; Sarica, C. Experimental Investigation of active heating in removal of wax deposits. Journal of Petroleum Science and Engineering 2021, 200, 108346. DOI: https://doi.org/10.1016/j.petrol.2021.108346.
(51) Bell, E.; Lu, Y.; Daraboina, N.; Sarica, C. Thermal methods in flow assurance: A review. Journal of Natural Gas Science and Engineering 2021, 88, 103798. DOI: https://doi.org/10.1016/j.jngse.2021.103798.
(50) Babu, P.; Bollineni, C.; Daraboina, N. Energy Analysis of Methane-Hydrate-Based Produced Water Desalination. Energy & Fuels 2021, 35 (3), 2514-2519. DOI: 10.1021/acs.energyfuels.0c03550.
(49) Al-Hosani, A.; Ravichandran, S.; Daraboina, N. Review of Asphaltene Deposition Modeling in Oil and Gas Production. Energy & Fuels 2021, 35 (2), 965-986. DOI: 10.1021/acs.energyfuels.0c02981.
(48) Alhosani, A.; Daraboina, N. Effect of multi-phase flow on asphaltene deposition: Field case application of integrated simulator. Journal of Petroleum Science and Engineering 2021, 206, 108972. DOI: https://doi.org/10.1016/j.petrol.2021.108972.
(47) Alhejaili, A.; Daraboina, N. Response to Comments on Effect of Salts on TBAB Semi Clathrate Hydrate Formation: Application to Produced Water Desalination. Energy & Fuels 2021, 35 (7), 6336-6340. DOI: 10.1021/acs.energyfuels.1c00255.
(46) Yang, J.; Lu, Y.; Daraboina, N.; Sarica, C. Wax deposition mechanisms: Is the current description sufficient? Fuel 2020, 275, 117937. DOI: https://doi.org/10.1016/j.fuel.2020.117937.
(45) Babu, P.; Nambiar, A.; Chong, Z. R.; Daraboina, N.; Albeirutty, M.; Bamaga, O. A.; Linga, P. Hydrate-based desalination (HyDesal) process employing a novel prototype design. Chemical Engineering Science 2020, 218, 115563. DOI: https://doi.org/10.1016/j.ces.2020.115563.
(44) Alhosani, A.; Daraboina, N. Modeling of asphaltene deposition during oil/gas flow in wellbore. Fuel 2020, 280, 118617. DOI: https://doi.org/10.1016/j.fuel.2020.118617.
(43) Alhosani, A.; Daraboina, N. Unified Model to Predict Asphaltene Deposition in Production Pipelines. Energy & Fuels 2020, 34 (2), 1720-1727. DOI: 10.1021/acs.energyfuels.9b04287.
(42) Alhejaili, A.; Babu, P.; Daraboina, N. Effect of Salts on TBAB Semi Clathrate Hydrate Formation: Application to Produced Water Desalination. Energy & Fuels 2020, 34 (10), 12810-12821. DOI: 10.1021/acs.energyfuels.0c02091.
(41) Ravichandran, S.; Daraboina, N. Mechanistic Model To Predict Hydrate Deposition under Stratified Flow Conditions. Energy & Fuels 2019, 33 (10), 9510-9519. DOI: 10.1021/acs.energyfuels.9b01624.
(40) Khurana, M.; Veluswamy, H. P.; Daraboina, N.; Linga, P. Thermodynamic and kinetic modelling of mixed CH4-THF hydrate for methane storage application. Chemical Engineering Journal 2019, 370, 760-771. DOI: https://doi.org/10.1016/j.cej.2019.03.172.
(39) Janamatti, A.; Lu, Y.; Ravichandran, S.; Sarica, C.; Daraboina, N. Influence of operating temperatures on long-duration wax deposition in flow lines. Journal of Petroleum Science and Engineering 2019, 183, 106373. DOI: https://doi.org/10.1016/j.petrol.2019.106373.
(38) Chi, Y.; Yang, J.; Sarica, C.; Daraboina, N. A Critical Review of Controlling Paraffin Deposition in Production Lines Using Chemicals. Energy & Fuels 2019, 33 (4), 2797-2809. DOI: 10.1021/acs.energyfuels.9b00316.

(37) Chi, Y.; Sarica, C.; Daraboina, N. Experimental investigation of two-phase gas-oil stratified flow wax deposition in pipeline. Fuel 2019, 247, 113-125. DOI: https://doi.org/10.1016/j.fuel.2019.03.032.
(36) Navaneetha Kannan, S.; Daraboina, N.; Venkatesan, R.; Sarica, C. Settling and re-entrainment of wax particles in near-gelling systems. AIChE Journal 2018, 64 (2), 765-772. DOI: https://doi.org/10.1002/aic.15948.
(35) Daraboina, N.; Chi, Y.; Sarica, C.; Pereyra, E.; Scott, S. L. Effects of High Pressure on the Performance of Existing Two-Phase Flow Models in Wellbores. In SPE Annual Technical Conference and Exhibition, 2018; D021S011R003, Vol. Day 2 Tue, September 25, 2018. DOI: 10.2118/191597-ms.
(34) Chi, Y.; Zhou, S.; Daraboina, N.; Sarica, C. Experimental study of wax deposition under two-phase gas-oil stratified flow. In 11th North American Conference on Multiphase Production Technology, 2018; BHR-2018-153, Vol. All Days.
(33) Soedarmo, A. A.; Daraboina, N.; Sarica, C. Validation of wax deposition models with recent laboratory scale flow loop experimental data. Journal of Petroleum Science and Engineering 2017, 149, 351-366. DOI: https://doi.org/10.1016/j.petrol.2016.10.017.
(32) Dubey, A.; Chi, Y.; Daraboina, N. Investigating the Performance of Paraffin Inhibitors under Different Operating Conditions. In SPE Annual Technical Conference and Exhibition, 2017; D011S010R002, Vol. Day 1 Mon, October 09, 2017. DOI: 10.2118/187252-ms.
(31) Chi, Y.; Daraboina, N.; Sarica, C. Effect of the Flow Field on the Wax Deposition and Performance of Wax Inhibitors: Cold Finger and Flow Loop Testing. Energy & Fuels 2017, 31 (5), 4915-4924. DOI: 10.1021/acs.energyfuels.7b00253.
(30) Agarwal, J.; Ravichandran, S.; Daraboina, N.; Sarica, C. Effect of Hydrodynamic Parameters on the Wax Mass Density: Scale Up From Laboratory Flow Loop to Crude Production Pipelines. In Offshore Technology Conference, 2017; D011S011R003, Vol. Day 1 Mon, May 01, 2017. DOI: 10.4043/27757-ms.
(29) Soedarmo, A. A.; Daraboina, N.; Sarica, C. Microscopic Study of Wax Deposition: Mass Transfer Boundary Layer and Deposit Morphology. Energy & Fuels 2016, 30 (4), 2674-2686. DOI: 10.1021/acs.energyfuels.5b02887.
(28) Soedarmo, A. A.; Daraboina, N.; Lee, H. S.; Sarica, C. Microscopic Study of Wax Precipitation—Static Conditions. Energy & Fuels 2016, 30 (2), 954-961. DOI: 10.1021/acs.energyfuels.5b02653.
(27) Kumar, A.; Daraboina, N.; Kumar, R.; Linga, P. Experimental Investigation To Elucidate Why Tetrahydrofuran Rapidly Promotes Methane Hydrate Formation Kinetics: Applicable to Energy Storage. The Journal of Physical Chemistry C 2016, 120 (51), 29062-29068. DOI: 10.1021/acs.jpcc.6b11995.
(26) Daraboina, N.; Soedarmo, A.; Sarica, C. Microscopic Study of Wax Inhibition Mechanism. In Offshore Technology Conference, 2016; D011S004R003, Vol. Day 1 Mon, May 02, 2016. DOI: 10.4043/26973-ms.
(25) Chi, Y.; Daraboina, N.; Sarica, C. Investigation of inhibitors efficacy in wax deposition mitigation using a laboratory scale flow loop. AIChE Journal 2016, 62 (11), 4131-4139. DOI: https://doi.org/10.1002/aic.15307.
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Professional Presentations/Invited Speaker/Media

Keynote Speaker

Oct 2024	"Hydrate-based desalination for produced water treatment" Canadian Chemical Engineering Conference, Toronto, Canada, Keynote, International
Aug 2024	"Paraffin Deposition Prediction and Mitigation: Connecting Laboratory Testing to the Field Application" Petro phase, Merida Mexico, Role: Keynote, International
Feb 2024	"Academic Engagement with Industry for Flow Assurance Management: Integrated Multiscale Approach" International Chemical Engineering Conference on Energy, Environment, and sustainability (ICECEES 2024), IIT Roorkee, Roorkee, India, Keynote, Regionality of Activity: International

Invited Speaker

Nov 2024	Presentation Title: "Thermal Removal Mechanism of Wax Deposits: Providing Guidelines for Active Heating", Location: Bhubaneswar, India, Role: Invited, Regionality of Activity: International
Oct 2024	Presentation Title: "Recent Advances and Prospects of Hydrate-Based **Pre-Combustion Carbon Capture**, topical on scaleup/scale-out challenges", 2024 AIChE Annual Meeting, Location: Sandiego,USA, Role: Invited, Regionality of Activity: Regional
Jun 2024	Presentation Title: "Developing Hydrate technology for clean air and water", Global E3, Location: USA, Role: Invited, Regionality of Activity: Regional

Sept 2023	Presentation Title: “Academic Engagement with Industry for Flow Assurance Management: Integrated Multiscale Approach” Louisiana State University, Location: USA, Role: Invited, Regionality of Activity: Regional
Apr 2023	Presentation Title: ““Engagement with Industry for Flow Assurance Management” University of Tulsa, PE department, Location: USA, Role: Invited, Regionality of Activity: Local
Jan 2022	Presentation Title: “Application of gas hydrate technology:” Vellore Institute of Technology, Location: Vellore, India, Role: Invited, Regionality of Activity: International
Jan 2022	Presentation Title: “Engagement with Industry for Flow Assurance Management:” Indian Institute of Petroleum and Energy, Location: Visakhapatnam, India, Role: Invited, Regionality of Activity: International
Jan 2022	Presentation Title: “Fossil fuels continue to be dominant” GITAM, Location: India, Role: Invited, Regionality of Activity: International
Dec 2021	Presentation Title: "Flow assurance in subsea developments" Indian Institute of Technology -Madras Role: Invited, Regionality of Activity: International
Apr 2021	Presentation Title: “Paraffin mitigation in multiphase flow”, EPIC, Location: Brazil, Role: Invited, Regionality of Activity: International
Jul 2020	Presentation Title: "Investigating of thermal effects on two-phase gas oil stratified flow wax deposition" Ocean, Offshore and Arctic Engineering Conference (OMAE), of the American Society of Mechanical Engineers (ASME), Location: Fort Lauderdale, FL, USA, Role: Invited, Regionality of Activity: Regional
Apr 2019	Presentation Title: "Novel desalination Technology" Sustaining Oklahoma's Energy Resources (SOER), Location: Oklahoma city, OK, USA, Role: Invited, Regionality of Activity: Regional
Jul 2018	Presentation Title: "Industrial perspective on managing hydrate issues in subsea developments" Indian Institute of Technology, Madras (IIT), Location: Madras, India Role: Invited, Regionality of Activity: International
May 2018	Presentation Title: "Gas hydrates and its applications" AIChE SLS Annual Conference, National University of Singapore, Location: Singapore Role: Invited, Regionality of Activity: International

Conference presentation/proceeding

Oct 2024	Presentation Title: “Recent Advances and Prospects of Hydrate-Based Pre-Combustion Carbon Capture, topical on scaleup/scale-out challenges”, 2024 AIChE Annual Meeting , Location: Sandiego,USA, Role: Conference presentation, Regionality of Activity: International
Oct 2024	Presentation Title: “Paraffin Deposition in Stratified Gas and Oil Production Lines”, 2024 AIChE Annual Meeting , Location: Sandiego,USA, Role: Conference presentation, Regionality of Activity: International
Oct 2024	Presentation Title: “Impact of Pressure on Thermodynamic Behavior of Waxy Model Oil with Methane”, 2024 AIChE Annual Meeting , Location: Sandiego,USA, Role: Conference presentation, Regionality of Activity: International
June 2024	Presentation Title: " Evaluation of 1,1-Difluoroethane as hydrate former for hydrate-based produced water desalination”, European Conference on Gas Hydrates, Location: Triste, Italy, Role: Conference presentation, Regionality of Activity: International
Oct 2024	Presentation Title: “Hydrate-based desalination for produced water treatment, Canadian Chemical Engineering Conference, Location: Toronto, Canada, Role: Conference presentation, Regionality of Activity: International
Oct 2024	Presentation Title: “Drywater as an Effective Porous Medium: Enhanced Kinetics of Hydrate Formation for Precombustion Carbon Capture”, Canadian Chemical Engineering Conference, Location: Toronto, Canada, Role: Conference presentation, Regionality of Activity: International
Aug 2024	Presentation Title: “Paraffin Deposition Prediction and Mitigation: Connecting Laboratory Testing to the Field Application” Petro phase, Location: Merida Mexico, Role: Conference presentation , Regionality of Activity: International
Jul 2023	Presentation Title: “Pilot scale experimental investigation of hydrate formation in pseudo-one-pass conditions” , 10th International Conference on Gas Hydrates (ICGH10), Location:Singapore, Role: Conference presentation, Regionality of Activity: International
Jul 2023	Presentation Title: “Thermodynamic and Kinetic Measurements for Carbon dioxide /TBAB Mixed Hydrates in the Presence of Produced Water”, 10th International Conference on Gas Hydrates (ICGH10), Location:Singapore, Role: Conference presentation , Regionality of Activity: International
Jul 2023	Presentation Title: “Rheological Properties of Natural Gas Hydrates”, 10th International Conference on Gas Hydrates (ICGH10), Location:Singapore, Role: Conference presentation , Regionality of Activity: International
Nov 2023	Presentation Title: “Providing Guidelines for Thermal Removal of Paraffin Deposits from Production Lines”, AIChe conference, Location:Orlando, FL, USA, Role: Conference presentation, Regionality of Activity: International

Nov 2019	Presentation Title: “Modeling Asphaltene Deposition in Production Pipelines”, AIChe conference, Location:Orlando, FL, USA, Role: Conference presentation , Regionality of Activity: International
Nov 2019	Presentation Title: “Paraffin Deposition Modeling – Is the Current Methodology Sufficient”, AIChe conference, Location:Orlando, FL, USA, Role: Conference presentation, Regionality of Activity: International
Nov 2019	Presentation Title: “Techno-Economic Analysis of Clathrate Hydrate Based Desalination (HyDesal) Process Utilizing LNG Cold Energy”, AIChe conference, Location:Orlando, FL, USA, Role: Conference presentation, Regionality of Activity: International
Oct 2019	Presentation Title: “Desalination of contaminated water via clathrate hydrates" IPEC 2019, Location:San Antonio, TX, USA, Role: Conference presentation, Regionality of Activity: Regional
Nov 2018	Presentation Title: “The current state of knowledge: wax deposition modeling and upscaling challenges”, 2018 AIChE Annual Meeting , Location: Pittsburg, PA,USA, Role: Conference presentation, Regionality of Activity: International
Nov 2018	Presentation Title: “Existence of supersaturation and its effects on wax deposition behavior”, 2018 AIChE Annual Meeting , Location: Pittsburg, PA,USA, Role: Conference presentation, Regionality of Activity: International
Jul 2018	Presentation Title: “Experimental and Modeling Study of Gas-Oil Stratified Flow Wax Deposition" Petrophase, , Location:Utah, PA,USA, Role: Conference presentation, Regionality of Activity: International
Nov 2016	Presentation Title: “Settling and Re-Entrainment of Wax Particles in Near Gelling Systems", AIChE Annual Meeting , Location:San Francisco, CA,USA, Role: Conference presentation, Regionality of Activity: International
Nov 2016	Presentation Title: “Performance of Biodegradable Kinetic Inhibitors on Natural Gas Hydrate Formation ", AIChE Annual Meeting , Location:San Francisco, CA,USA, Role: Conference presentation, Regionality of Activity: International
Apr 2016	Presentation Title: “Inhibitors Efficacy in Wax Mitigation Using a Laboratory Scale Flow Loop”. Spring Meeting and 12th Global Congress on Process Safety, Location:Houston, Texas, Role: Conference presentation, Regionality of Activity: International
Nov 2013	Presentation Title: “CO2 Capture By Gas Hydrate Formation: Combined Effect of Thermodynamic and Kinetic Promoters”, AIChE Annual Meeting , Location:San Francisco, CA,USA, Role: Conference presentation, Regionality of Activity: International

Nov 2013	Presentation Title: “Inhibition of hydrate formation with hyperactive antifreeze protein”, AIChE Annual Meeting , Location:San F rancisco, CA,USA, Role: Conference presentation, Regionality of Activity: International
Sept 2013	Presentation Title: “Capture of CO2 and Storage in Depleted Gas Reservoirs in Alberta as Gas Hydrate" presented, Fourth International Acid Gas Injection Symposium, Location:Calgary, Canada, Role: Conference presentation, Regionality of Activity: International
Sept 2013	Presentation Title: “Nucleation, Growth and Dissociation of Gas Hydrates in Gas/Water and Gas/Oil/Water Type Systems " presented, Fourth International Acid Gas Injection Symposium, Location:Calgary, Canada, Role: Conference presentation, Regionality of Activity: International
May 2013	Presentation Title: “Experimental evaluation of the efficacy of ice structuring proteins as natural gas hydrate inhibitors." Presented, Properties and Phase Equilibria for Product and Process Design, Location:Argentina, Brazil, Role: Conference presentation, Regionality of Activity: International
Apr 2013	Presentation Title: “Enhanced kinetic inhibition of natural gas hydrate formation. Presented, 9th European Federation of Chemical Engineering (EFCE).", Location:Hague, Netherlands, Role: Conference presentation, Regionality of Activity: International
Oct 2012	Presentation Title: “Secure Storage of Impure CO2 in the Form of Solid Hydrate in Depleted Gas Pool in Northern Alberta". presented, 62nd Canadian Society Chemical Engineering conference, Location: Vancouver, Canada, Role: Conference presentation, Regionality of Activity: International
Oct 2011	Presentation Title: “New Insights into gas hydrate decomposition in the Presence of synthetic and Biological Inhibitors, Location: Ontario, Canada, Role: Conference presentation, Regionality of Activity: International
Aug 2011	Presentation Title: “Green gas hydrate inhibitors?" Ice -Binding Protein conference, Location: Ontario, Canada, Role: Conference presentation, Regionality of Activity: International
Jul 2011	Presentation Title: “Multiscale assessment of the performance of kinetic hydrate inhibitors," 7th International Conference on Gas Hydrates, Location: Scotland, UK, Role: Conference presentation, Regionality of Activity: International
Jul 2011	Presentation Title: “Experimental investigation of the effect of poly-N-vinyl pyrrolidone on methane/propane clathrate in the presence of silica sand, 7th International Conference on Gas Hydrates, Location: Scotland, UK, Role: Conference presentation, Regionality of Activity: International
Mar 2011	Presentation Title: “Inhomogeneous hydrate formation induced by kinetic hydrate inhibitors." Presented, American Chemical Society conference, Location: Anaheim, USA, Role: Conference presentation, Regionality of Activity: International

Dec 2010 Presentation Title: “Energy and flow assurance aspects of gas hydrate". Presented. The clean energy research center, Location: UBC, Canada, Role: Conference presentation, Regionality of Activity: International

Oct 2010 Presentation Title: “Understanding the Action of kinetic hydrate inhibitors" presented, 60th Canadian Society Chemical Engineering conference, Location: Saskatoon, Saskatchewan, Canada, Role: Conference presentation, Regionality of Activity: International

Service

2025 Research Council Member (ECS), University Committee, Tulsa, USA

2025 College Rights and Responsibilities Committee, Tulsa, USA

2025 Faculty Senator Representing ECS, University Committee, Tulsa, USA

2025 Director of American Society of Engineering Education- Chemical Engineering Division.

2025 Advisor for “Omega Chi Epsilon” Departmental Society, Tulsa, USA

2024 Symposia Chair, Symposium in honor of Professor Peter Englezos (Invitation Only), CSCHE, Toronto, Canada, October 6-9, 2024.

2024 Academic Technical Advisory Panel member and PHMSA representative, U.S. DOT “Investigate Damage Mechanisms for Hydrogen and Hydrogen/Natural Gas Blends to Determine Inspection Intervals for ILI Tools” Kiefner Industries.

2024 Director of American Society of Engineering Education- Chemical Engineering Division.

2024 Co-Guest Editor for Energy and Fuels, 10th International Conference on Gas Hydrates Proceedings, Singapore, July 2023

2024 Technical Committee Member, SPE Brazil Flow Assurance Technology Congress, Rio, Brazil, November 2024

2024 Session Chair, Canadian Society of Chemical Engineers, Toronto, Canada, Date October 7, 2024.

2024 Organizer for student special waste site visit, Republic services, Dec 3, 2024, Oklahoma, USA

2024 Research Council Member (ECS), University Committee, Tulsa, USA

2024 Faculty Senator Representing ECS, University Committee, Tulsa, USA

2024 Judge for Research Colloquium, University service, Tulsa, USA

2024 Chair, Dr. Amiri’s first year review, Department Committee, Tulsa, USA

2024 Advisor for “Omega Chi Epsilon” Departmental Society, Tulsa, USA

2023 Session Chair, 10th International Conference on Gas Hydrates (ICGH10), Singapore, Date: June 21 – 26, 2023, Suntec City Conference Centre

2023 Director of American Society of Engineering Education- Chemical Engineering Division.

2023 Dissertation Award Committee member, 10th International Conference on Gas Hydrates (ICGH10), Singapore, Date: June 21 – 26, 2023, Suntec City Conference Centre

2023 Mentor, The institute on Teaching and Mentoring, SREB, Tampa, USA, October 26-29, 2023.

2023 Research Council Member (ECS), University Committee, Tulsa, USA

2023 ECS Dean Search Committee member, University committee, Tulsa, USA

2023 Faculty Senator Representing ECS, University Committee, Tulsa, USA

2023 Judge for Research Colloquium, University service, Tulsa, USA

2023 Committee member for contract faculty promotion, College Committee, Tulsa, USA

2023 ECS faculty search committee member

2023 Chair, Dr. Weston's tenure and promotion department review, Department Committee, Tulsa, USA

2023 Faculty Mentor for Dr. Gupta, Department service, Tulsa, USA

2022 Program Committee Member, Offshore Technology Conference (OTC), Houston, USA 2022

2022 Panel member, IITM ENERGY CONSORTIUM, How can the world accelerate climate-tech adoption? Short, mid, and long-term disruptive actions by Industry, Academia, and Policymakers. IIT Madras, India December, 2022

2022 Judge for Tulsa regional Science fair, Tulsa, USA

2022 Committee member for Rights and Responsibility, College Committee, Tulsa USA

2022 Faculty Senator Representing ECS, University Committee, Tulsa, USA

2021 Session Chair/Co-chair on "Fundamentals and Applications of Flow Assurance sessions", AIChE Meeting, November 2021, Boston USA.

2021 Program Committee Member, Offshore Technology Conference (OTC), Houston, USA 2021

2021 Judge for Tulsa Regional Science fair, Tulsa, USA

2021 Faculty search committee member, Department committee, Tulsa, USA

2020 Faculty search committee member, Department committee, Tulsa, USA

2019 Session Chair/Co-chair on "Fundamentals and Applications of Flow Assurance sessions", AIChE Meeting, November 2019, Orlando USA.

2019 Judge for Tulsa Regional Science fair, Tulsa, USA

2019 Volunteer for SPE Care program, San Antonio, USA

Professional Affiliations and Memberships

2013-current:	American Institute of Chemical Engineers (AIChE)-Senior Member
2015-current:	Society of Petroleum Engineers (SPE) -Senior Member
2023-current:	American Society of Engineering Education - Director
2024-current:	Canadian Society for Chemical Engineering (CSChE) - member
2019-2022:	Offshore Technology Conference programming subcommittee member (OTC) – Technical committee
2011:	American Chemical Society (ACS) - member
2012:	Carbon Management Canada (CMC) – member

Grants & Contracts

Title	Role	Funding Agency-Sponsor	Total Funding	Status
Advancing Gas Hydrate-Based CO_2 Capture Technology for Seamless Integration with Hydrogen Production	PI	Department of Energy, USA - FECM	$1,552,416	Submitted/pending
Hybrid gas hydrate – sequential precipitation process to recover ammonia and critical metals from produced water	PI	Department of Energy, USA - Recover	$2,030,000	Submitted/pending
Operational Technology (OT) and Internet of Things (IoT) Asset Identification and Management	Co-PI	US Department of Defense - Army	$3,750,000	Submitted/pending
Well construction and cementing solutions at high temperature conditions	Co-PI	Advanced Research Projects Agency-Energy (ARPA-E)	$3,101,157	Submitted/pending
Experimental, Numerical, and Data-driven Modeling of Hydrogen Loss in Subsurface Formations	Co-PI	DOE – Basic Energy Sciences	$2,566,602	Submitted/pending
Paraffin Precipitation and Deposition Testing using Fiber Optics Technology	PI	Chevron	$150,000	Submitted/pending
Produced Water Treatment Using a Compact Separator System	Co-PI	Department of Energy, USA	$1,500,000	Funded
Wax Precipitation in Low-CGR Gas-Dominated Systems	PI	Chevron	$340,000	Funded

Natural Gas and Biogas Blending Study: SoCal Gas, the dollar amount of research	Co-PI	SoCal Gas	$280,000	Funded
Asphaltene Prediction in Multiphase Flow	PI	Chevron	$200,000	Funded
Testing of Model Oil Paraffin Properties using High-Pressure DSC	PI	Chevron	$35,000	Funded
Tulsa University Paraffin deposition projects-JIP	Co-PI	various oil companies	$1,945,000	Funded
MRI: Acquisition of a High-Pressure, High-Temperature Small Angle X-Ray Scattering Instrument for Oklahoma	Co-PI	National Science Foundation	$461,162	Funded
Electrolytes: Predicting Phase Equilibria Using CPA Equation of State Phase 1 and 2	PI	Chevron	$353,000	Funded
Collaborative Research: Hydrate Technology for Desalination Process (Solar and Alternative Technologies)	SP	National Science Foundation	$347,044	Funded
Flow loop- Investigating the effect of droplet size and water cut on wax deposition phenomenon-Phase 1 and 2	PI	Chevron	$288,000	Funded
Performance Testing of Various Paraffin Inhibitors for Caspian Sea Condensate	PI	Infineum, UK	$100,000	Funded
Improvements of 2inflow loop for Hydrate Deposition & Migration Methods	Co-PI	Chevron	$637,798	Funded
Application of data analytics for paraffin deposition	PI	CoRE	$24,817	Funded
Current State of the Art on Hydrate Based Technology	PI	CoRE	$20,000	Funded
Proof of Concept Hydrate Experiments for Pseudo-One-Pass Conditions	Co-PI	Chevron	$250,000	Funded
Feasibility Study of Fiber Optics Utilization in Multiphase Flow and Paraffin Deposition	Co-PI	Total	$45,000	Funded
Paraffin Deposition Characteristics of a Chevron Gulf of Mexico	Co-PI	Chevron	$15000	Funded