

DR. KEHUA YOU

COMPUTATIONAL HYDROGEOLOGIST

Institute for Geophysics, Jackson School of Geosciences, the University of Texas at Austin

J.J. Pickle Research Campus, Bldg. 196, 10100 Burnet Rd., Austin, TX 78758

Phone: 512-471-9642, Email: kehua@ig.utexas.edu

Updated on March 28th, 2024

RESEARCH INTERESTS

Carbon Cycle, Methane Hydrate, Permafrost, Hydrogeology, Multiphase Flow Multicomponent Reactive Transport, Numerical and Analytical Modeling

EDUCATION

Ph.D. in Hydrogeology, Texas A&M University, USA – May 2013

Dissertation title: Influence of atmospheric pressure and water table fluctuations on gas phase flow and transport of volatile organic compounds (VOCs) in unsaturated zone

Advisor: Dr. Hongbin Zhan

B.E. in Environmental Science, University of Science and Technology of China, China – July 2008

Thesis title: Database of Pb Isotope and its application in archeology

Research Project: Antimony Pollution in NY-ALESUND, Svalbard archipelago, Arctic

Advisor: Dr. Liguang Sun

PROFESSIONAL APPOINTMENTS

2023- present **Research Assistant Professor**, Institute for Geophysics, University of Texas, Austin, USA

2015- 2023 **Research Associate**, Institute for Geophysics, University of Texas, Austin, USA

2013-2015 **Postdoctoral Fellow**, Institute for Geophysics, University of Texas, Austin, USA

2011 **Researcher**, Idaho National Laboratory, Idaho Falls, USA

2007-2008 **Research Assistant**, University of Science and Technology of China, Hefei, China

PEER-REVIEWED JOURNAL PUBLICATIONS

* Student **Postdoctoral fellow

In preparation/Under review:

8. **You, K.**, and S. Socolofsky, Development and evolution of the gas seeps that pierce the world ocean, in Preparation.

7. **You, K.**, C. Thomas, A. Savage, A. Cardona, P.B. Flemings, Z. Murphy and J. O'Connell, Dissolved methane diffusion drives hydrate-bearing pressure core degradation during long-term storage in water, Energy & Fuels, Under Second Round Review.

6. Deng, W., **K. You**, Z. Kuang and X. Wang, Temporal constraints on gas hydrate formation by overpressure in shallow marine sediments, In Revision.

5. Wang, Q., Q. Sun, **K. You** and F. Martino, How do overpressure-driven hydrofractures grow in sedimentary basins? Basin Research, Under Second Round Review.
4. *Murphy, Z.W., D. DiCarlo, **K. You** and P.B. Flemings, Gas and water relative permeability of hydrate bearing sediment, In Revision.
3. **You, K.**, P.B. Flemings and D. DiCarlo, Thermal and hydraulic controls on gas production from methane hydrate reservoirs, Marine and Petroleum Geology, In Revision.
2. DiCarlo, D., Z. Murphy, **K. You**, P.B. Flemings and X. Liu, Pore Occupancy of gas hydrate, Physical Review Journals, In Revision.
1. Cardona, A., Y. Fang, **K. You** and P.B. Flemings, Dissolution in methane hydrate-bearing sediments: implication for relative permeability, Under Review.

Published ([Kehua You - Google Scholar](#)):

34. **You K.** (2024), Biodegradation of ancient organic carbon fuels seabed methane emission at the Arctic Continental Shelves, Journal of Geophysical Research: Global Biogeochemical Cycles, 38(2): e2023GB007999.
33. Portnov, A., P.B. Flemings, **K. You**, K. Meazell, M. Hudec and D. Dunlap (2023), Low temperature and high pressure deepen the gas hydrate stability zone in rapidly formed sedimentary basins, Earth and Planetary Science Letters, 158: 106550.
32. Portnov, A., **K. You**, P. B. Flemings, A. E. Cook, M. Heidari, D.E. Sawyer and S. Bünz (2023), Dating submarine landslides using the transient response of gas hydrate stability, Geology, 51(4), 387-391.
31. **You, K.**, P.B. Flemings, M. Heidari and A. R. Bhandari (2022), The Role of creep in geopressure development, Petroleum Geosciences, 28(3): petgeo2021-064.
30. Phillips, S.C., P. B. Flemings, **K. You** and W. F. Waite (2022), Thermodynamic insights into the production of methane hydrate reservoirs from depressurization of pressure cores, AAPG Bulletin, 106(5), 1025-1049.
29. *Wei, L., A. Cook and **K. You** (2022), Methane migration mechanisms for the GC955 gas hydrate reservoir, Northern Gulf of Mexico, AAPG Bulletin, 106(5), 1005-1023.
28. **Santra, M., P. B. Flemings, M. Heidari and **K. You** (2022), Occurrence of gas hydrate in fault-compartmentalized channel-levee system, Green Canyon, abyssal northern Gulf of Mexico, AAPG Bulletin., 106(5), 981-1003.
27. **You, K.**, L. Summa, P. B. Flemings, M. Santra and Y. Fang (2021), Three-dimensional free gas flow focuses basin-wide microbial methane to concentrated methane hydrate reservoirs in geological system, Journal of Geophysical Research: Solid Earth, 126, e2021JB022793.
26. **You, K.** and P. B. Flemings (2021), Methane hydrate formation and evolution during sedimentation, Journal of Geophysical Research: Solid Earth, 126, e2020JB021235.
25. White, M.D., T.J. Kneafsey, Y. Seol et al. (2020), An international code comparison study on coupled thermal, hydrologic and geomechanical processes of natural gas hydrate-bearing sediments, Marine and Petroleum Geology, 120, 104566.

24. *Meyer, D., P. B. Flemings, **K. You**, and D. DiCarlo (2020), Gas flow by invasion percolation through the hydrate stability zone, *Geophysical Research Letter*, 47(3), e2019GL084380.
23. Flemings, P.B., S.C. Phillips, R. Boswell et al. (2020), Pressure coring a Gulf of Mexico deepwater turbidite gas hydrate reservoir: initial results from the UT-GOM2-1 hydrate pressure coring expedition, *AAPG Bulletin*, 104(9), 1847-1876.
22. **Fang, Y., P.B. Flemings, H. Daigle, S.C. Phillips, P.K. Meazell, and **K. You** (2020), Petrophysical properties of the GC955 hydrate reservoir inferred from reconstituted sediments: Implications for Hydrate Formation and Production, *AAPG Bulletin*, 104(9), 1997-2028.
21. **You K.**, P.B. Flemings, A. Malinverno, T.S. Collett, and K. Darnell. (2019), Mechanisms of methane hydrate formation in geological systems, *Reviews of Geophysics*, 57(4), 1146-1196.
20. *Wei, L., A. Cook, H. Daigle, A. Malinverno, M. Nole, and **K. You** (2019), Factors controlling short-range methane migration of gas hydrate accumulations in thin coarse-grained layers, *Geochemistry, Geophysics, Geosystems*, 20, 3985-4000.
19. **Phillips, S.C., P.B. Flemings, **K. You**, D.W. Meyer, and T. Dong (2019), Investigation of in situ salinity and methane hydrate dissociation in coarse-grained sediments by slow, stepwise depressurization, *Marine and Petroleum Geology*, 109, 128-144.
18. **You, K.** and P. B. Flemings (2018), Methane hydrate formation in thick sandstones by free gas flow, *Journal of Geophysical Research: Solid Earth*, 123.
17. *Meyer, D.W., P. B. Flemings, D. DiCarlo, **K. You**, S. C. Phillips and T. J. Kneafsey (2018), Experimental investigation of gas flow and hydrate formation within the hydrate stability zone, *Journal of Geophysical Research: Solid Earth*, 123.
16. **You, K.** and P. B. Flemings (2018), Methane hydrate formation in thick sand reservoirs: 1. Short-range methane diffusion, *Marine and Petroleum Geology*, 89,428-442.
15. **You, K.**, D. DiCarlo and P. B. Flemings (2016), Impact of gravity on hydrate saturation in gas-rich environments, *Water Resources Research*, 52, 1265-1285.
14. **You, K.**, D. DiCarlo and P. B. Flemings (2015), Quantifying hydrate solidification front advancing using method of characteristics, *Journal of Geophysical Research: Solid Earth*, 120, 6681-6697.
13. **You, K.**, T. Kneafsey, P. B. Flemings, S. Bryant, and P. Polito (2015), Salinity-buffered methane hydrate formation and dissociation in gas-rich systems, *Journal of Geophysical Research: Solid Earth*, 120 (2), 643-661.
12. **You, K.**, and H. Zhan (2013), New solutions for solute transport in a finite column with distance dependent dispersivities and time-dependent sources, *Journal of Hydrology*, 487, 87-97.
11. **You, K.**, and H. Zhan (2013), Comparisons of diffusive and advective fluxes of gas phase volatile organic compounds (VOCs) in unsaturated zones under natural conditions, *Advances in Water Resources*, 52, 221-231.
10. **You, K.**, and H. Zhan (2012), Can water table and atmospheric pressure fluctuations be neglected in soil vapor extraction? *Advances in Water Resources*, 35, 41-54.
9. *Li, J., **K. You**, H. Zhan, and G. Huang (2012), Analytical solution to airflow of barometric pumping in layered unsaturated zone porous media", *Transport in Porous Media*, 93(3), 461-474.

8. *Li, J., H. Zhan, G. Huang, and **K. You (2012)**, "Determining air permeability in reclaimed coastal land based on tidal fluctuations", *Environmental Earth Sciences*, 66(4), 1259-1268.
7. **You, K.**, H. Zhan, and J. Li (2011), Analysis of models for induced gas flow in unsaturated zone, *Water Resource Research*, 47, W04515.
6. **You, K.**, H. Zhan, and J. Li (2011), Gas flow to a barometric pumping well in a multilayered unsaturated zone, *Water Resources Research*, 47, W05522.
5. **You, K.**, H. Zhan, and J. Li (2010), A new solution and data analysis for gas flow to a barometric pumping well, *Advances in Water Resources*, 33(12), 1444-1455.
4. *Li, J., H. Zhan, G. Huang, and **K. You (2010)**, Tidal induced airflow in a two-layered coastal land with atmospheric pressure fluctuations, *Advances in Water Resources*, 34, 649-658.
3. Sun, L., L. Yuan, N. Jia, **K. You**, X. Wang, and Y. Wang (2010), Sb pollution in the soil, moss and sediments of Ny-Alesund, Svalbard, Arctic, *SciencePaper Online*.
2. *Xu, L., L. Sun, **K. You**, J. Wang, and Y. Wang (2010), Geochemical characteristics of Pb in cultural layers of Yuchisi Site and source tracing of primitive metallurgy in China, *Acta Pedologica Sinica*, 47(2), 193-205.
1. *Xu, L., L. Sun, J. Zhang, R. Zhu, **K. You**, and J. Wang (2008), 2500 BC: the beginning of chalcolithic period in China recorded by Hg, *Quaternary Research*, 28(6), 1070-1080.

CONFERENCE PUBLICATIONS

5. **You, K.**, and P. B. Flemings (2017), Methane hydrate formation in thick sand reservoirs: Long-range gas transport or short-range methane diffusion? ICGH9, Denver, Colorado, USA.
4. *Meyer, D. W., **K. You**, S. Phillips, Flemings P.B., DiCarlo D. and Kneafsey, T. (2017), Methane hydrate formation in coarse-grained, brine-saturated sample through the induction of a propagating gas front, ICGH9, Denver, Colorado, USA.
3. **Phillips, S. C., **K. You**, P.B. Flemings, D.W. Meyer and T. Dong (2017), Dissociation of laboratory-synthesized methane hydrate in coarse-grained sediments by slow depressurization, ICGH9, Denver, Colorado, USA.
2. *Wei, L., A.E. Cook, A. Malinverno, H. Daigle, M. Nole, R. Andris, **K. You** and J. M. Frederick (2017), Methane hydrate formation in coarse-grained, brine-saturated sample through the induction of a propagating gas front, ICGH9, Denver, Colorado, USA.
1. Flemings, P. B. et al. (2017), GOM2: Prospecting, drilling and sampling coarse-grained hydrate reservoirs in the Deepwater Gulf of Mexico, ICGH9, Denver, Colorado, USA.

GRANTS AND FELLOWSHIPS

- | | |
|-----------|--|
| 2024 | Lead Principle Investigator at UTIG , "Modeling chemical and thermodynamic transformations of hydrocarbon droplets and bubbles during transport through oceanic sub-bottom geologic features", Shell, \$91,802 for UTIG, Awarded. |
| 2023-2026 | Principle Investigator , "Toward a process understanding of the methane thermodynamics associated with subsea permafrost thaw at the Arctic Continental Shelves", NSF, \$293,820. |

2023	Lead Principle Investigator at UTIG , “Modeling chemical and thermodynamic transformations of hydrocarbon droplets and bubbles during transport through oceanic sub-bottom geologic features”, Shell, \$77,188 for UTIG.
2023	Co-Principle Investigator with PI A. Portnov at UTIG, “Magellan hydrate research project”, Woodside, \$60,758.
2022	Principle Investigator , “Constrains of deep marine sediment compaction on microbial methane production”, UTIG Blue Sky, One semester’s support for one graduate student.
2022	Lead Principle Investigator at UTIG , “Reactive gas migration and its impact to gas composition through sediments below the seafloor”, Shell, \$48,000 for UTIG.
2020-2021	Principle Investigator , “Simultaneous natural gas production and CO2 storage in hydrates: a carbon-neutral strategy for the energy transition”, UTIG Blue Sky, One graduate student Fellowship.
2017-2020	Lead Principle Investigator at UTIG , “Characterization and Modeling of Methane Hydrate Reservoirs in the Gulf of Mexico”, ExxonMobil, \$239,703 of \$905,681 for UTIG.
2015-2025	Co-Principle Investigator with PI P. Flemings at UTIG, “Deepwater methane hydrate characterization in the Gulf of Mexico: scientific assessment and production potential”, DOE, \$108,090,527.
2012-2013	GEPL GRAD Fellowships, Texas A&M University, \$30,000
2011-2012	Chevron Fellowships, Texas A&M University, \$30,000 Doris & Joe P. Watson 42 Endowed Graduate Scholarship, Texas A&M University, \$5,000
2010-2011	ConocoPhillips Fellowships, Texas A&M University, \$30,000
2009-2010	Aramco Fellowships, Texas A&M University, \$30,000
2008-2009	ConocoPhillips Fellowships, Texas A&M University, \$30,000 Incentive Scholarship, Texas A&M University, \$5,000
2005-2006	"Huang Mao Tong" Special Scholarship, University of Science and Technology of China, \$400
2004-2008	Natural Inspiring Scholarship, University of Science and Technology of China, \$800
2004-2005	Outstanding Student Scholarship, \$200

OPEN-SOURCE SOFTWARE PRODUCTS

MDAP	A finite-volume based numerical simulator for predicting the coupled thermal, hydraulic, microbial and chemical processes occurring within the thawing permafrost.
GeoPCreep	A one-dimensional numerical simulator for predicting the pore pressure development and evolution during sedimentation and burial with the effect of creep and smectite-illite transformation.
Methanogenesis	A numerical simulator for predicting the organic carbon consumption and microbial methane production based on the Introductory Carbon Balance Model.
GasSeep	A one-dimensional numerical simulator for predicting the thermal, hydraulic, chemical and geomechanical evolution of a fractured gas seep system from the gas source to the seafloor.

UT_HYD A multiphase, multicomponent reactive transport numerical model for predicting the formation and evolution of a methane hydrate reservoir and predicting the gas production from the reservoir.

AWARDS & HONORS

2012 Research awards in 5th Annual Texas A&M Geology & Geophysics Research Symposium
2011 Research awards in 4th Annual Texas A&M Geology and Geophysics Research Symposium
2010 Research awards in 3rd Annual Texas A&M Geology and Geophysics Research Symposium
2008 Graduation with honors, University of Science and Technology of China
2007 Excellent Undergraduate Research Project, University of Science and Technology of China

INVITED WORKSHOPS

2024 Polar Geospatial Data Workshop, Polar Geospatial Center, University of Minnesota, USA
2024 Workshop on Permafrost Gas Hydrates, Helmholtz Centre Potsdam German Research Centre Geosciences (GFZ), German.

INVITED TALKS

2023 Methane Dynamics Associated with the Thawing Subsea Permafrost at the Arctic Continental Shelves since the Last Glacial Maximum, Marine Geoscience Forum, China.
2023 Impact of Global Warming and Related Thawing Permafrost on Gas Hydrates Located in or Beneath Permafrost, Helmholtz Centre Potsdam German Research Centre Geosciences (GFZ), German.
2023 Formation of Concentrated Methane Hydrate Reservoirs, Guangzhou Marine Geological Survey, China.
2021 Formation of Concentrated Methane Hydrate in Geological System, University of Louisiana.
2020 Coupled Multiphase Flow and Reactive Transport Processes in Gas Hydrate Systems, Gordon Research Conference, Galveston, Texas.
2019 Mechanisms of Methane Hydrate Formation in Geological Systems, Chapman Colloquium Series, University of New Hampshire.
2018 Methane Recycling through Burial of Methane Hydrate-Bearing Sediments, UTIG Brownbag Seminar, the University of Texas at Austin.
2018 Conceptual and Quantitative Models of Hydrate Formation by Microbial Biogenesis at GC-955, GOM2 Workshop, Ohio State University.
2017 Developing Testable Hypotheses for Drilling Expedition of Methane Hydrate-Bearing Thick Sand Reservoirs in Gulf of Mexico, Departmental seminar, Texas A&M University.
2016 Methane Hydrate Formation by Long Range Gas Transport, UTIG seminar, the University of Texas at Austin.
2015 Hydrate Formation in Gas-Rich Environments, Hydro Brownbag seminar, the University of Texas at Austin.
2015 Hydrate Formation in Gas-Rich Environments, UTIG Brownbag Seminar, the University of Texas at Austin.

2013 Impact of Atmospheric Pressure and Water Table Fluctuations on Gas Phase Flow and Transport of Volatile Organic Compounds (VOCs) in Unsaturated Zones, Hydro Brownbag Seminar, the University of Texas at Austin.

SCIENTIFIC CONFERENCE PRESENTATIONS

52. **You, K.**, 2023 (ORAL), Methane emission from the thawing subsea permafrost at the Arctic Continental Shelves since the Last Glacial Maximum, Abstract presented at AGU Annual Meeting, 11-15 December, San Francisco.
51. **You, K.**, P.B. Flemings and D. DiCarlo, 2023, Hydraulic and thermal controls on gas production from methane hydrate reservoirs, Abstract presented at AGU Annual Meeting, 11-15 December, San Francisco.
50. **You, K.**, C. Thomas, A. Savage, Z. Murphy, J. O'Connell and P. B. Flemings, 2023, Dissolved methane diffusion drives hydrate-bearing pressure core degradation during long-term storage in water, Abstract presented at 10th International Conference on Gas Hydrate, July 2023, Singapore.
49. **You, K.**, A. Portnov and P. B. Flemings, 2023(ORAL), Methane dynamics associated with the thawing subsea permafrost since the Last Glacial Maximum, Abstract presented at 10th International Conference on Gas Hydrate, July 2023, Singapore.
48. **You, K.**, S. Phillips, P.B. Flemings, F.S. Colwell, and J. Mikucki, 2022(ORAL), Coarse-grained sediments as potential microbial factories for methane generation in marine sediments, Abstract presented at AGU Annual Meeting, 12-16 December, Chicago, IL.
47. Flemings, P.B., Y. Fang, **K. You** and A. Cardona, 2022 (ORAL), The water relative permeability behavior of hydrate-bearing sediment, Abstract presented at AGU Annual Meeting, 12-16 December, Chicago, IL.
46. Murphy, Z., P.B. Flemings, D.A. DiCarlo and **K. You**, 2022 (ORAL), Simultaneous CH₄ production and CO₂ storage in hydrate reservoirs, Abstract presented at AGU Annual Meeting, 12-16 December, Chicago, IL.
45. **You, K.**, A. Portnov, P. B. Flemings and D. Liu, 2022, Methane dynamics associated with the thawing subsea permafrost since the Last Glacial Maximum, Abstract presented at CAGE International Conference on Methane in a Changing Arctic, Sep. 14-16th, Tromsø, Norway.
44. Smith, L.D., A. Savage, P.B. Flemings, F. Cowell, J. Mikucki, and **K. You**, 2022, Too much pressure: Effect of sediment compaction on microbial viability, Abstract presented at ABSCICON 2022, Atlanta, AG.
43. **You, K.**, and P.B. Flemings, 2021(ORAL), Coarse-grained sediments as potential microbial factories for methane generation in marine sediments, Abstract presented at GSA Annual Meeting, 10-13 Oct, Portland, Oregon.
42. Flemings, P.B., **K. You**, L. Summa and M. Santra, 2021 (ORAL), The biogenic gas hydrate hydrocarbon system, Abstract presented at AAPG Annual Convention & Exhibition.
41. Portnov, P., **K. You**, P.B. Flemings, A. Cook, M. Heidari and D. Sawyer (ORAL), 2021, Dating submarine landslides using the transient response of gas hydrate stability, Abstract presented at AAPG Annual Convention & Exhibition.

40. Li, W., A. Cook, and **K. You** (2021), Methane migration mechanisms for the GC 955 gas hydrate reservoir, Northern Gulf of Mexico, Abstract presented at AAPG Annual Convention & Exhibition.
39. Santra M., P.B. Flemings, **K. You** and W. Waite (ORAL), 2021, Occurrence of high-saturation gas hydrate in a fault-compartmentalized anticline and the role of seal, Green Canyon, Abyssal Northern Gulf of Mexico, Abstract presented at AAPG Annual Convention & Exhibition.
38. **You, K.**, M. Santra, L. Summa, and P.B. Flemings, 2020, Impact of focused free gas flow and microbial methanogenesis kinetics on the formation and evolution of geological gas hydrate system, Abstract presented at 2020 AGU Fall Meeting, 1-17 Dec, Virtual.
37. Wei, L., A. Cook and **K. You**, 2020, Methane migration mechanisms for the GC955 gas hydrate reservoir, Northern Gulf of Mexico, Abstract presented at 2020 AGU Fall Meeting, 1-17 Dec, Virtual.
36. **You, K.**, M. Santra, L. Summa, and P.B. Flemings, 2020 (ORAL), Impact of coupled free gas flow and microbial methanogenesis on the formation and evolution of concentrated hydrate deposits, Abstract presented at AAPG Annual Convention & Exhibition, Virtual.
35. Santa, M., **K. You**, L. Summa, and P.B. Flemings, 2020 (ORAL), Gas hydrate in a fault-compartmentalized anticline and the role of seal, Green Canyon, Abyssal Northern Gulf of Mexico, Abstract presented at AAPG Annual Convention & Exhibition, 7-10 June, Houston, TX.
34. Fang, Y., P.B. Flemings, H. Daigle, S. Phillips, K. Meazell and **K. You** (ORAL), 2019, Petrophysical properties of the GC955 Gulf of Mexico hydrate reservoir inferred from reconstituted sediments: implications for hydrate formation, Abstract presented at 2019 AGU Fall Meeting, 9-13 Dec., San Francisco.
33. **You, K.**, P. B. Flemings, and M. Santra, 2018, Heterogeneous hydrate formation controlled by capillary-driven free gas flow, Abstract presented at 2018 AGU Fall Meeting, 10-14 Dec., Washington, D.C.
32. Meyer, D., P. B. Flemings, **K. You**, and D. DiCarlo (ORAL), 2018, Gas flow through the hydrate stability zone enabled by methane diffusion-limited hydrate formation, Abstract presented at 2018 AGU Fall Meeting, 10-14 Dec., Washington, D.C.
31. **You, K.**, and P. B. Flemings, 2018 (ORAL), Heterogeneous hydrate distribution controlled by capillary pressure in sandstones composed of layers with different qualities, Abstract presented at 2018 Gordon Research Seminar, Natural Gas Hydrate Systems, Galveston, TX, 24-25 Feb.
30. **You, K.**, and P. B. Flemings, 2018, Heterogeneous hydrate distribution controlled by capillary pressure in sandstones composed of layers with different qualities, Abstract presented at 2018 Gordon Research Conference, Natural Gas Hydrate Systems, Galveston, TX, 26 Feb-2 March.
29. **You, K.**, and P. B. Flemings, 2017 (ORAL), Methane recycling during burial of methane hydrate-bearing sediments? Abstract presented at 2017 AGU Fall Meeting, 11-15 Dec., New Orleans, LA, USA.
28. **You, K.**, and P. B. Flemings, 2017 (ORAL), Methane recycling during burial of methane hydrate-bearing sediments? Abstract presented at 25th Hubbert Quorum, 10 Dec., New Orleans, LA, USA.
27. **You, K.**, and P. B. Flemings, 2017 (ORAL), Methane hydrate formation in thick sand reservoirs: long-range gas transport or short-range methane diffusion? Abstract presented at 9th International Conference on Gas Hydrates, 25-30 June, Denver, Colorado, USA.

26. **You, K.**, and P. B. Flemings, 2016, Methane hydrate formation in thick sand reservoirs: long-range gas transport or short-range methane diffusion? Abstract presented at 2016 Fall Meeting, AGU, San Francisco, 12-16 Dec.
25. **You, K.**, 2016 (ORAL), Methane hydrate formation from gas and liquid water, Thematic School on Dynamic Recrystallization, France, 6-11 Nov.
24. **You, K.**, P. B. Flemings, and D. DiCarlo, 2016, Quantifying hydrate formation in gas-rich environments using the method of characteristics, Abstract presented at 2016 Gordon Research Conference, Natural Gas Hydrate Systems, Galveston, TX, 28 Feb. - 4 March.
23. **You, K.**, P. B. Flemings, and D. DiCarlo, 2016 (ORAL), Quantifying hydrate formation in gas-rich environments using the method of characteristics, Abstract presented at 2016 Gordon Research Seminar, Natural Gas Hydrate Systems, Galveston, TX, 26-27 Feb.
22. Meyer, D.W., **K. You**, S. Phillips, P. B. Flemings, D. DiCarlo, and T. Kneafsey, 2016, Methane hydrate formation in a saturated, coarse-grained sample through the induction of a propagating gas front, Abstract presented at 2016 Gordon Research Conference, Natural Gas Hydrate Systems, Galveston, TX, 28 Feb. - 4 March.
21. Phillips, S., T. Borgfeldt, **K. You**, D. Meyer and P. B. Flemings, 2016, Dissociation of laboratory-synthesized methane hydrate by depressurization, Abstract presented at 2016 Gordon Research Conference, Natural Gas Hydrate Systems, Galveston, TX, 28 Feb. - 4 March.
20. **You, K.**, P. B. Flemings and D. DiCarlo, 2015, Quantifying hydrate solidification front advancing using method of characteristics, Abstract presented at 2015 Fall Meeting, AGU, San Francisco, 14-18 Dec.
19. Meyer, D., **K. You**, T. Borgfeldt, P. B. Flemings, D. DiCarlo, and T. Kneafsey, 2015, Methane hydrate formation in a saturated, coarse-grained sample through the Induction of a propagating gas front, Abstract presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.
18. Borgfeldt, T., P. B. Flemings, D. Meyer, and **K. You**, 2015, Experimental dissociation of methane hydrates through depressurization, Abstract presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.
17. **You, K.**, P. B. Flemings and D. DiCarlo, 2015 (ORAL), Quantifying hydrate solidification front advancing using method of characteristics, Abstract presented at 23rd Hubbert Quorum, San Francisco, 13 Dec.
16. **You, K.**, and P. B. Flemings, 2014, Dynamics of permafrost-associated methane hydrate during climate change, Abstract presented at 2014 Fall Meeting, AGU, San Francisco, 15-19 Dec.
15. **You, K.**, and P. B. Flemings, 2014, Salinity-buffered methane hydrate formation and dissociation in gas-rich systems, Abstract presented at the Gordon Research Conferences, Natural Gas Hydrate Systems, Galveston, TX, 24-28 March.
14. Darnell, K., P. B. Flemings, S. Bryant, and **K. You**, 2014, Simulations of seafloor methane venting from warming-induced hydrate destabilization, Abstract presented at the Gordon Research Conferences, Natural Gas Hydrate Systems, Galveston, TX, 24-28 March.
13. **You, K.**, and P. B. Flemings, 2014 (ORAL), Salinity-buffered methane hydrate formation and dissociation in gas-rich systems, Abstract presented at the Gordon Research Seminar, Natural Gas Hydrate Systems, Galveston, TX, 23 March.

12. **You, K.**, and P. B. Flemings, 2013, One dimensional advancing solidification front in the hydrate system, Abstract presented at 2013 Fall Meeting, AGU, San Francisco, 9-13 Dec.
11. Kneafsey, T., P. B. Flemings, S. Bryant, **K. You**, and P. Polito, 2013, Preliminary experimental examination of controls on methane expulsion during melting of natural gas hydrate systems, Abstract presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
10. **You, K.**, and H. Zhan, 2012, Comparisons of diffusive and advective fluxes of gas phase volatile organic compounds (VOCs) in unsaturated zones under natural conditions, Abstract presented at 2012 Fall Meeting, AGU, San Francisco, 3-7 Dec.
9. **You, K.**, and H. Zhan, 2012 (ORAL), Transport mechanisms of gas phase volatile organic compounds (VOCs) in natural attenuation, Abstract presented at 2012 International Groundwater Forum, Baoding, China, 6-7 Jul.
8. **You, K.**, and H. Zhan, 2012 (ORAL), Investigation of gas phase volatile organic compounds transport in unsaturated zones under natural conditions, Abstract presented at 2012 IPACES Annual Meeting, Guangzhou, China, 3-4 Jul.
7. **You, K.**, and H. Zhan, 2012, Investigation of gas phase volatile organic compounds transport in unsaturated zones under natural conditions, Poster presented at 5th Annual Texas A&M Geology and Geophysics Research Symposium, College Station, Texas, 13 April.
6. **You, K.**, and H. Zhan, 2012 (ORAL), Investigation of the gas flow and vapor transport of volatile organic compounds (VOCs) in porous media, Abstract presented at 3rd Annual Berg-Hughes Center Research Conference and Problem Identification Workshop, College Station, Texas, 12 April.
5. **You, K.**, and H. Zhan, 2011 (ORAL), Non-Fickian solute transport in a finite column test, Abstract presented at 2011 Fall Meeting, AGU, San Francisco, 5-9 Dec.
4. **You, K.**, and H. Zhan, 2011, Analytical investigation of gas flow to a barometric pumping well in a multi-layered unsaturated zone, Poster presented at 4th Annual Texas A&M Geology and Geophysics Research Symposium, College Station, Texas, 19 April.
3. **You, K.**, and H. Zhan, 2010, Investigation of gas flow to a barometric pumping well in unsaturated zones, Abstract presented at 2010 Fall Meeting, AGU, San Francisco, 13-17 Dec.
2. **You, K.**, and H. Zhan, 2010, Gas flow to a barometric pumping well in unsaturated zones, Abstract presented at 2010 Hydrology Conference, San Diego, 11-13 Oct.
1. **You, K.**, and H. Zhan, 2010, Gas flow to a barometric pumping well in a homogeneous unsaturated zone, Poster presented at 3th Annual Texas A&M Geology and Geophysics Research Symposium, College Station, Texas, 19 April.

TEACHING EXPERIENCES

2018	Guest lecturer in Energy Exploration, University of Texas at Austin
2016	Guest lecturer in Energy Exploration, University of Texas at Austin
2015	Guest lecturer in Energy Exploration, University of Texas at Austin
2014	Guest lecturer in Geology, University of Alabama
2012	Guest lecturer in Hydrogeology, Texas A&M University
2010	Teaching Assistant in Geology 101, Texas A&M University

MENTORING EXPERIENCES

2023-Present	Tolulope Agbaje	[PhD]	Informal Mentoring
2018-2023	Zachary Murphy	[PhD]	Committee Member
2021-2023	Addison Savage	[MS]	Informal Mentoring
2016-2018	Tiannong Dong	[MS]	Committee Member
2012-2018	Dylan Meyer	[PhD]	Informal Mentoring

PROFESSIONAL SERVICES

2024	Proposal Reviewer for NSF
2011-Present	Journal Reviewer such as Nature, Geophysical Research Letter, Water Resources Research, Journal of Contaminant Hydrology, Marine and Petroleum Geology, Geological Journal, Journal of Engineering Mechanics, Vadose Zone Journal, Journal of Hydrologic Engineering, Journal of Sustainable Development, Hydrology and Earth System Sciences Discussions, Journal of Natural Gas Science & Engineering, Water, Energies
2022-present	UTIG Fellowship Committee
2024	Judge for 13 th Annual Jackson School Student Research Symposium
2023	OSPA Judge for AGU Fall Meeting
2022	Convener and Session Chair in AGU Fall Meeting
2022	OSPA Judge for AGU Fall Meeting
2021	Session Convener at Geological Society of America annual meeting
2020	Judge for the bright stars program of AGU Fall Meeting
2019-2020	UTIG Postdoctoral Committee
2020	Discussion Leader in Gordon Research Seminar on “Natural Gas Hydrate Systems”
2020	Judge for 9 th Annual Jackson School Student Research Symposium
2019	Proposal Reviewer for IODP
2019	Proposal Reviewer for UT Energy Institute
2019	Book Reviewer for ELSEVIER
2018	Session Primary Convener and Chair for AGU Fall Meeting
2018	Discussion Leader in Gordon Research Seminar on “Natural Gas Hydrate Systems”
2018	Judge for 7 th Annual Jackson School Student Research Symposium
2017	Session Convener for AGU Fall Meeting
2017	OSPA Judge for AGU Fall Meeting
2016	Session Primary Convener and Chair for AGU Fall Meeting
2015	OSPA Judge for AGU Fall Meeting
2015	Judge for 4 th Annual Jackson School Student Research Symposium
2014	Discussion Leader in Gordon Research Seminar on “Natural Gas Hydrate Systems”
2014	OSPA Judge for AGU Fall Meeting

PROFESSIONAL MEMBERSHIPS

2010-Present	American Geophysical Union
2021	Geological Society of America