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EDUCATION

Ph.D. 1990 Geology, Cornell University: minors in structural mechanics and geodynamics
M.S. 1987 Geology, Cornell University
B.A. 1984 Geology, Dartmouth College

PROFESSIONAL EXPERIENCE

2020-Present Leonidas T. Barrow Centennial Chair in Mineral Resources, The University of Texas at Austin
2022-2024 Associate Chair, Department of Geological Sciences, U.T. Austin.
2015-2020 John A. and Katherine G. Jackson Chair in Energy and Mineral Resources, The University of Texas at Austin
2013-2015 Visiting Research Scientist, Woods Hole Oceanographic Institute (June-August)
2007-Present Professor, Department of Earth and Planetary Sciences, The University of Texas at Austin
2007-2015 Jackson Chair of GeoSystems, The University of Texas at Austin
2007-2015 Research Professor, Texas Institute of Geophysics and Bureau of Economic Geology, The University of Texas at Austin
2009-2012 Graduate Adviser, Department of Geological Sciences, The University of Texas at Austin
2003-2007 Professor of Geosciences, Pennsylvania State University
2002-2003 Visiting Scientist, Massachusetts Institute of Technology, Department of Civil and Environmental Engineering
1998-2007 Co-Director of the Petroleum GeoSystems Initiative, Pennsylvania State University
1997-2003 Associate Professor of Geosciences, Pennsylvania State University
1993-1997 Assistant Professor of Geosciences, Pennsylvania State University
1992-1993 Research Scientist and Crosby Lecturer, Massachusetts Institute of Technology
1991-1992 Associate Research Scientist, Lamont-Doherty Geological Observatory
1991 Visiting Scientist, Exxon Production Research Company
1990-1991 Post-Doc. Associate, Lamont-Doherty Geological Observatory
1983 Geologist, Comp. Minera Autlan, Otongo Hgo., México
1982-1983 Geologist, Refinadora Costarricense De Petróleo, San Juan, Costa Rica

PUBLICATIONS & PRESENTATIONS

h-index: 50 (Google Scholar)

i10-index: 164, since 2020: 111 (Google Scholar)

* indicates graduate student advisee

+ indicates post-doc advisee or supervised staff

° indicates undergrad advisee

³ indicates graduate student co-advisee

Books

Flemings, Peter B., 2021, A Concise Guide to Geopressure: Origin, Prediction, and Applications, Cambridge University Press. University Printing House, Cambridge CB2 8BS, United Kingdom, DOI: 10.1017/9781107326309.

Papers in Refereed Journals

1. **Flemings, P.B.**, et. al., 2025. Proceedings of the UT-GOM2-2 Deepwater Hydrate Coring Expedition, University of Texas Institute for Geophysics, <https://doi.org/10.5281/zenodo.13971076>.

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2. You, K., **Flemings, P.B.**, DiCarlo, D. 2025. Hydraulic and thermal controls on gas production from methane hydrate reservoirs. *Marine and Petroleum Geology* 177: 107378.
3. **Flemings, P. B.**, Thomas, C., Phillips, S.C., Collett, T.S., Cook, A.E., Solomon, E., Colwell, F.S., Johnson, J.E. and 36 co-authors, 2024, UT-GOM2-2 Preliminary Report Terrebonne Basin Northern Gulf of Mexico, The University of Texas Institute for Geophysics, <https://doi.org/10.5281/zenodo.13648253>.
4. Bhandari, A.R., Cardona, A., **Flemings, P.B.**, Germaine, J.T. 2024. The geomechanical response of the Gulf of Mexico Green Canyon 955 reservoir to gas hydrate dissociation: A model based on sediment properties with and without gas hydrate. *Marine and Petroleum Geology*. Volume 167, 107000. <https://doi.org/10.1016/j.marpetgeo.2024.107000>.
5. You, K., Thomas, C., Savage, A., Cardona, A., **Flemings, P.B.**, Murphy, Z., O'Connell, J., 2024. Dissolved Methane Diffusion Drives Hydrate-Bearing Pressure Core Degradation during Long-Term Storage in Water. *Energy & Fuels*. Volume 38 (12), 10879-10889. <https://doi.org/10.1021/acs.energyfuels.4c01487>.
6. Ramiro-Ramirez, S., Bhandari, A. R., Reed, R. R., **Flemings, P.B.**, 2024. Permeability of upper Wolfcamp lithofacies in the Delaware Basin: The role of stratigraphic heterogeneity in the production of unconventional reservoirs. *AAPG Bulletin*. Volume 108 (2), 293-326. DOI: 10.1306/12202222033.
7. Portnov, A., **Flemings, P.B.**, You, K., Meazell, K., Hudec, M.R., Dunlap, D.B., 2023. Low temperature and high pressure dramatically thicken the gas hydrate stability zone in rapidly formed sedimentary basins. *Marine and Petroleum Geology*. Volume 158, Part A, <https://doi.org/10.1016/j.marpetgeo.2023.106550>.
8. Cardona, A., Bhandari, A. R., Heidari, M., **Flemings, P. B.**, 2023. The Viscoplastic Behavior of Natural Hydrate-Bearing Sandy-Silts Under Uniaxial Strain Compression (K_0 Loading). *Journal of Geophysical Research: Solid Earth*, 128, e2023JB026976. <https://doi.org/10.1029/2023JB026976>.
9. Nikolinakou, M.A., **Flemings, P.B.**, Gao, B., Saffer, D.M., 2023. The Evolution of Pore Pressure, Stress, and Physical Properties During Sediment Accretion Subduction Zones. *Journal of Geophysical Research: Solid Earth*, 128, e2022JB025504. <https://doi.org/10.1029/2022JB025504>.
10. Bhandari, A.R., **Flemings, P.B.**, Ramiro-Ramirez, S., 2023. Stress-Dependent Matrix Permeability in Unconventional Reservoir Rocks. *Journal of Physics of Fluid Flow and Transport in Unconventional Reservoir Rocks*, 163-175. doi.org/10.1002/J.ch8.
11. Ramiro-Ramirez, S., Bhandari, A.R., **Flemings, P.B.**, Reed, R.M., 2023. Permeability of Upper Wolfcamp Lithofacies in the Delaware Basin: The Role of Stratigraphic Heterogeneity in Production of Unconventional Reservoirs, *The American Association of Petroleum Geologists Bulletin* 108 (2), 293-326. DOI:10.1306/12202222033.
12. Portnov, A., You, K., **Flemings, P.B.**, Cook, A.E., Heidari, M., Sawyer, D.E., Bünz, S., 2023. Dating submarine landslides using the transient response of gas hydrate stability, *Geology* (2023) 51 (4): 387–391. <https://doi.org/10.1130/G50930.1>.
13. Lockhart, L.P., **Flemings, P.B.**, Nikolinakou, M.A., Germaine, J., 2023. Velocity-Based Pore Pressure Prediction in a Basin with Late-Stage Erosion: Delaware Basin, U.S. (150), 106159, doi.org/10.1016/j.marpetgeo.2023.106159.
14. *Varona, G.M., **Flemings, P.B.**, Portnov, A., 2023 Hydrate-Bearing Sands Record the Transition from Ponded Deposition to Bypass in the Deep-Water Gulf of Mexico. *Marine and Petroleum Geology*. 151, 106172. <https://doi.org/10.1016/j.marpetgeo.2023.106172>.
15. +You, K., **Flemings, P.B.**, +Bhandari, A.R., +Heidari, M., Germaine, J., 2022. The Role of Creep in Geopressure Development. *Petroleum Geoscience*, 28, petgeo 2021-064, <https://doi.org/10.1144/petgeo2021-064>.
16. Chen, X., Espinoza, D.N., Tisato, N., **Flemings, P.B.**, 2022. Gas Permeability, Pore Habit, and Salinity Evolution during Methane Hydrate Dissociation in Sandy Sediments. *Energy & Fuels* 36 (16), 9080-9090. <https://doi.org/10.1021/acs.energyfuels.2c01720>.
17. **Flemings, P.B.**, Cook, A.E., Collett, T., Boswell, R., 2022. Gas hydrates in Green Canyon Block 955, deep-water Gulf of Mexico: Part II, Insights and future challenges. *AAPG Bulletin*, 106 (5), 937-947. <https://doi.org/10.1306/bltnintro030922>.
18. Zablocki, M., Germaine, J. T., Plumb, R., & **Flemings, P. B.**, 2022. The impact of clay fraction on the strength and stress ratio (K_0) in Gulf of Mexico mudrocks and quartz silt mixtures: implications for borehole stability and fracture gradient. *Petroleum Geoscience*, 28(2), petgeo2021-056.

19. Daigle, H., Fang, Y., Phillips, S.C., **Flemings, P. B.**, 2022, Pore structure of sediments from Green Canyon 955 determined by mercury intrusion. AAPG Bulletin, 106 (5), 1051-1069, <https://doi.org/10.1306/02262120123>.
20. ⁺Fang, Y., **Flemings, P. B.**, Daigle, H., Phillips, S.C., O'Connell, J., 2022, Permeability of methane hydrate-bearing sandy silts in the deepwater Gulf of Mexico (Green Canyon Block 955). AAPG Bulletin, 106 (5), 1071-1100. <https://doi.org/10.1306/08102121001>.
21. ⁺Fang, Y., **Flemings, P. B.**, Germaine, J.T, Daigle, H., Phillips, S.C., O'Connell, J., 2022, Compression behavior of hydrate-bearing sediments. AAPG Bulletin, 106 (5), 1101-1126. <https://doi.org/10.1306/01132221002>.
22. Phillips, S.C., **Flemings, P. B.**, You, K., Waite, W., 2022, Thermodynamic insights into the production of methane hydrate reservoirs from depressurization of pressure cores. AAPG Bulletin, 106 (5), 1025-1049. <https://doi.org/10.1306/08182120216>.
23. ⁺Santra, S., **Flemings, P. B.**, Heidari, M., You, K., 2022, Occurrence of high-saturation gas hydrate in a fault-compartmentalized anticline and the role of seal, Green Canyon, abyssal northern Gulf of Mexico. AAPG Bulletin, 106 (5), 981-1003. <https://doi.org/10.1306/08182120149>.
24. Yoneda, J., Jin, Y., Muraoka, M., Oshima, M., Suzuki, K., Waite, W., **Flemings, P. B.**, 2022, Comprehensive pressure core analysis for hydrate-bearing sediments from Gulf of Mexico Green Canyon Block 955, including assessments of geomechanical viscous behavior and nuclear magnetic resonance permeability. AAPG Bulletin, 106 (5), 1143-1177. <https://doi.org/10.1306/04272120204>.
25. ^{*}Meazell, K., **Flemings, P. B.**, 2022, The evolution of seafloor venting from hydrate-sealed gas reservoirs. Earth and Planetary Science Letters. Volume 579, 2022, 117336, ISSN 0012-821X <https://doi.org/10.1016/j.epsl.2021.117336>.
26. Crutchley, G. J., Mountjoy, J. J., Hillman, J. I. T., Turco, F., Watson, S., **Flemings, P. B.**, et al., 2021, Upward-doming zones of gas hydrate and free gas at the bases of gas chimneys, New Zealand's Hikurangi margin. Journal of Geophysical Research: Solid Earth, 126, e2020JB021489. <https://doi.org/10.1029/2020JB021489>.
27. ⁺You, K., Summa, L., **Flemings, P. B.**, Santra, M., & Fang, Y., 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. <https://doi.org/10.1029/2021JB022793>.
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29. ^{*}Hooghorst, J.J., Nikolinakou, M.A., Harrold, T.W.D., Fernandez, O., **Flemings, P.B.**, Marcuello, A., 2021, Geologically constrained evolutionary geomechanical modelling of diapir and basin evolution: A case study from the Tarfaya basin, West African coast. Basin Res.; 33: 2049– 2068. <https://doi.org/10.1111/bre.12547>.
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31. ⁺Bhandari, A., **Flemings, P.B.**, Hofmann, R., 2021, The dependence of shale permeability on confining stress and pore pressure. Journal of Natural Gas Science and Engineering, 92: 104008. <https://doi.org/10.1016/j.jngse.2021.104008>.
32. Daigle, H., Cook, A., Fang, Y., Bihani, A., Song, W., **Flemings, P. B.**, 2020, Gas-driven tensile fracturing in shallow marine sediments. Journal of Geophysical Research: Solid Earth, 125, e2020JB020835. <https://doi.org/10.1029/2020JB020835>.
33. ⁺Heidari, M., Nikolinakou, M. A., & **Flemings, P. B.**, 2020, Modified Cam-Clay Model for Large Stress Ranges and Its Predictions for Geological and Drilling Processes. Journal of Geophysical Research: Solid Earth, 125, e2020JB019500. <https://doi.org/10.1029/2020JB019500>.
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35. ⁺Santra, M., **Flemings, P.B.**, Scott, E., Meazell, K.P., 2020, Evolution of gas hydrate-bearing deep-water channel-levee system in abyssal Gulf of Mexico: Levee growth and deformation. AAPG Bulletin; 104 (9): 1921–1944. <https://doi.org/10.1306/04251918177>.

36. +Thomas, C., Phillips, S.C, **Flemings, P.B.**, Santra, M., Hammon, H., et al., 2020, Pressure coring operations during The University of Texas–Gulf of Mexico 2-1 (UT-GOM2-1) Hydrate Pressure Coring Expedition in Green Canyon Block 955, northern Gulf of Mexico. AAPG Bulletin; 104 (9): 1877–1901. <https://doi.org/10.1306/02262019036>.
37. Boswell, R., Collett, T.S., Cook, A., **Flemings, P.B.**, 2020, Introduction to Special Issue: Gas Hydrates in Green Canyon Block 955, deep-water Gulf of Mexico: Part I. AAPG Bulletin; 104 (9): 1843–1846. <https://doi.org/10.1306/bltnintro062320>.
38. +Fang, Y., **Flemings, P. B.**, Daigle, H., Phillips, S.C, Meazell, K.P., You, K., 2020, Petrophysical properties of the Green Canyon Block 955 hydrate reservoir inferred from reconstituted sediments: Implications for hydrate formation and production. AAPG Bulletin; 104 (9): 1997–2028; <https://doi.org/10.1306/01062019165>.
39. **Flemings, P. B.**, Phillips, S.C., Boswell, R., Collett, T.S., Cook, A., et al., 2020, Pressure coring a Gulf of Mexico deep-water turbidite gas hydrate reservoir: Initial results from The University of Texas–Gulf of Mexico 2-1 (UT-GOM2-1) Hydrate Pressure Coring Expedition. AAPG Bulletin; 104 (9): 1847–1876. <https://doi.org/10.1306/05212019052>.
40. *Murphy, Z. W., DiCarlo, D. A., **Flemings, P. B.**, & Daigle, H., 2020, Hydrate is a nonwetting phase in porous media. Geophysical Research Letters, 47, e2020GL089289. <https://doi.org/10.1029/2020GL089289>
41. Chen, X.J., Espinoza, D.N., **Flemings, P.B.**, Luo, J., Tisato, N., 2020, Pore-Scale Evidence of Ion Exclusion during Methane Hydrate Growth and Evolution of Hydrate Pore-Habit in Sandy Sediments, Marine and Petroleum Geology., Volume.117, 104340; <https://doi.org/10.1016/j.marpetgeo.2020.104340>.
42. Daigle, H., Reece, J. S, **Flemings, P.B.**, 2020, A modified Swanson method to determine permeability from mercury intrusion data in marine muds, Marine and Petroleum Geology, Volume 113, article no. 104155, <https://www.sciencedirect.com/science/article/pii/S0264817219306075>.
43. *Meyer, D.W., **Flemings, P.B.**, You, K., DiCarlo, D., 2020, Gas flow by invasion percolation through the hydrate stability zone, Geophysical Research Letters. <https://doi.org/10.1029/2019GL084380>.
44. +Phillips, S.C., **Flemings, P.B.**, Holland, M.E., Schultheiss, P.J., Waite, W.F., Jang, J., Petrou, E.G., and Hammon, H., 2020. High concentration methane hydrate in a silt reservoir from the deepwater Gulf of Mexico, AAPG Bulletin, doi:10.1306/01062018280.
45. *Darnell, K.N., **Flemings, P.B.**, DiCarlo, D., 2019, Nitrogen-Driven Chromatographic Separation During Gas Injection Into Hydrate-Bearing Sediments, Water Resources Research, online; doi:10.1029/2018WR023414.
46. Ruarri, J., Day-Stirrat R.J., Bryndzia, L.T., Schleicher, A.M., Adriaens R., Hofmann, R., **Flemings P.B.** 2019, Hydration behavior by X-ray diffraction profile fitting of smectite-bearing minerals in a Plio-Pleistocene mudrock from Eugene Island, Gulf of Mexico; Marine and Petroleum Geology, Volume 102, pages 86-100, <https://dx.doi.org/10.1016/j.marpetgeo.2018.12.008>.
47. Daigle, H., Reece, J. S., **Flemings, P.B.**, 2019, Evolution of the percolation threshold in muds and mudrocks during burial, Geophysical Research Letters., Volume 46, 8064–8073, doi:10.1029/2019GL083723.
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49. +Nikolinakou, M.A., **Flemings, P.B.**, Heidari, M., Hudec, M.R, 2019, Stress and deformation in plastic mudrocks overturning in front of advancing salt sheets; Implications for system kinematics and drilling, Rock Mechanics Rock Engineering. <https://doi.org/10.1007/s00603-019-11852-2>.
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51. +Phillips, S.C., **Flemings, P.B.**, You, K., Meyer, D.W., Dong, T., 2019, Investigation of in situ salinity and methane hydrate dissociation in coarse-grained sediments by slow, stepwise depressurization, Marine and Petroleum Geology, Volume 109, 2019, Pages 128-144, ISSN 0264-8172, <https://doi.org/10.1016/j.marpetgeo.2019.06.015>.
52. *Pinkston, F.W., **Flemings, P.B.**, 2019, Overpressure at the macondo well and its impact on the deepwater horizon blowout. Scientific Reports (Nature Publisher Group), 9, 1-11. doi:<http://dx.doi.org/10.1038/s41598-019-42496-0>.
53. +Bhandari, A.R., **Flemings, P.B.**, Ramiro-Ramirez, S., Hofmann, R., Polito, P.J., 2019, Gas and liquid permeability measurements in Wolfcamp samples, Fuel, Volume 236, Pages 1026-1036, ISSN 0016-2361, <https://doi.org/10.1016/j.fuel.2018.09.038>.

54. Day-Stirrat R.J., Bryndzia L.T., Schleicher A.M., Adriaens R., Hofmann R., **Flemings P.B.** 2019: Hydration behavior by X-ray diffraction profile fitting of smectite-bearing minerals in a Plio-Pleistocene mudrock from Eugene Island, Gulf of Mexico; *Marine and Petroleum Geology*; <https://dx.doi.org/10.1016/j.marpetgeo.2018.12.008>.
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18. Dooley, T., Jackson, M.P.A., Hudec, M. R., Nikolinakou, M.A., Luo, G., Norton, I., **Flemings, P.B.**, Mueller, K., and Snedden, J., 2011, Applied Geodynamics Laboratory annual report to Industrial Associates for 2011, slide set 30: The University of Texas at Austin, Bureau of Economic Geology, annual report prepared for *Anadarko, Apache, BHP Billiton, BP, CGGVeritas, Chevron, Cobalt, ConocoPhillips, EcoPetrol, ENI, ExxonMobil, Fugro, Global Geophysical, Hess, IMP, Ion, Korea National Oil Corporation, McMoRan, Maersk, Marathon, Murphy, Nexen, Noble, Petrobras, PGS, Repsol-YPF, Samson, Saudi Aramco, Shell, Statoil, TGS-Nopec, Total, WesternGeco, and Woodside*, CD-ROM.
19. **Flemings, P.B.**, Germaine, J.T., Adams, A., Betts, W., Braunscheidel, M., Casey, B., Day-Stirrat, R., Gao, B., Heppard, P., Horan, A., Luo, G., Marjanovic, J., Merrell, M., Nikolinakou, M., Sawyer, D., Sayers, C., Schneider, J., Smith, A., and You, Y., 2011, UT GeoFluids annual report to Industrial Associates for 2011: slide set 2, The University of Texas at Austin, Bureau of Economic Geology, *annual report prepared for Anadarko, BHP, BP, Chevron, ConocoPhillips, ExxonMobil, Hess Corp, Schlumberger, Shell, Statoil, Total* (26 presentations), Online

20. Dooley, T., et al., 2010, Applied Geodynamics Laboratory annual report to Industrial Associates for 2010: slide set 29, The University of Texas at Austin, Bureau of Economic Geology, *prepared for Anadarko, BHP Billiton, BP, CGGVeritas, Chevron, Cobalt, ConocoPhillips, Devon, ENI, ExxonMobil, Fugro, Global Geophysical, GX Technology, Hess, IMP, INEXS, Maersk, Marathon, Mariner, Murphy, Nexen, Noble, Pemex, Petrobras, PGS, Repsol-YPF, Samson, Saudi Aramco, Shell, StatoilHydro, TGS-Nopec, Total, WesternGeco, and Woodside*, CD-ROM
21. **Flemings, P.B.**, Germaine, J.T., Basin, T., Braunscheidel, M., Darnell, K., Day-Stirrat, R., Hudec, M.R., Luo, G., Nikolinakou, M., Sawyer, D.E., Schneider, J., and You, Y., 2010, UT GeoFluids annual report to Industrial Associates for 2010: slide set 1, The University of Texas at Austin, Bureau of Economic Geology, *annual report prepared for Anadarko, BHP, BP, Chevron, ConocoPhillips, Devon, ExxonMobil, Hess Corp, Schlumberger, Shell* (22 presentations), Online
22. *Dugan, B., and Germaine, J.T., 2009, Data Report: Strength Characteristics of Sediments from IODP Expedition 308, Sites U1322 and U1324, in **Flemings, P.B.**, John, C., and the Expedition 308 Scientists, eds., *Integrated Ocean Drilling Program Management International, Inc., Proceedings of the Integrated Ocean Drilling Program*, v. 308
23. Jackson, M.P.A., Dooley, Tim, Hudec, M. R., Wagner, Bryce, McDonnell, Angela, **Flemings, P.B.**, Luo, Gang, Nikolinakou, M.A., and Loucks, R. G., 2009, Applied Geodynamics Laboratory annual report to Industrial Associates for 2009: slide set 28: The University of Texas at Austin, Bureau of Economic Geology, *annual report prepared for Anadarko, BHP Billiton, BP, CGGVeritas, Chevron, Cobalt, ConocoPhillips, Devon, ENI, ExxonMobil, Fugro, GX Technology, Hess, IMP, Maersk, Marathon, Mariner, Murphy, Nexen, Noble, Pemex, Petrobras, PGS, Repsol-YPF, Samson, Saudi Aramco, Shell, StatoilHydro, TGS-Nopec, Total, WesternGeco, and Woodside*, CD-ROM.
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26. Gilhooly, W.P., III, Macko, S.A., and **Flemings, P.B.**, 2008, Data report: isotope compositions of sedimentary organic carbon and total nitrogen from Brazos-Trinity Basin IV (Sites U1319 and U1320) and Ursa Basin (Sites U1322 and U1324), deepwater Gulf of Mexico, in **Flemings, P.B.**, Behrmann, J.H., John, C.M., and the Expedition 308 Scientists, eds., *Integrated Ocean Drilling Program Management International, Inc., Proceedings of the Integrated Ocean Drilling Program*, v. 308
27. *Long, H., **Flemings, P.B.**, *Dugan, B., Germaine, J.T., and Ferrell, D., 2008, Data Report: Penetrometer Measurements of In situ Temperature and Pressure on IODP Expedition 308, in **Flemings, P.B.**, Behrmann, J.H., John, C.M., and the Expedition 308 Scientists, eds., *Integrated Ocean Drilling Program Management International, Inc., Proceedings of the Integrated Ocean Drilling Program*, v. 308
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FIELD EXPEDITIONS

- 2023 Permafrost Coring, Fairbanks, Alaska, March 2023 (10 days)
- 2023 GoM²-2 Hydrate Expedition, June-October 2023 (15 weeks)
- 2022 Probe Deployment Tool (PDT) Upgrade and Bench Test, February 2022 (1 week)
- 2021 PCTB Land Test for GOM2, April 2021 (1 week)
- 2020 Cameron Engineering Field Test for GOM2, March 2020 (1 week)
- 2017 GoM²-1, May 2017 (6 weeks)
- 2014 Panoche Valley, May 2014 (1 week)
- 2012 IODP Expedition 342, Pore Pressure Penetrometer Deployment, June 2012 (1 month)
- 2012 Motion Decoupled Hydraulic Delivery System Test, Sugarland, TX, April 2012 (1 week)
- 2012 Motion Decoupled Hydraulic Delivery System Test, Sugarland, TX, January 2012 (1 week)
- 2011 Pore Pressure Penetrometer Test, Sugarland, TX, August 2011 (1 week)
- 2010 Pore Pressure Penetrometer Deployment, Boston, June 2010 (1 week).
- 2009 IODP Expedition 319, Summer 2009 (Physical Properties Specialist)
- 2005 IODP Expedition 308---Gulf of Mexico Hydrogeology (co-Chief Scientist) (2 months)
- 2003 JAMSTEC KRO3 Cork Data Recovery Cruise (2 weeks)
- 2002 ODP Leg 204---Hydrate Ridge (shore-based scientist)
- 2002 JAMSTEC KRO2-10 Cork Data Recovery Cruise (2 weeks)
- 2001 ODP Leg 196---Nankai Accretionary Prism (8 weeks)
- 1997 ODP Leg 174A---New Jersey Margin (logging scientist) (4 weeks)

OTHER EVIDENCE OF RESEARCH ACCOMPLISHMENTS

Video Interview for GeoStories, Jackson School of Geosciences, “High-Stakes Science Under Pressure”, Spring 2025

Video Interview for the Jackson School of Geosciences, “The Mystery of Methan Hydrate”, December 2023

Video Interview for the Jackson School of Geosciences, “What is the Role of Methane Hydrate in the Energy Transition?”, February 2024

Interview – Alcalde, Texas Exes. “UT Research on Methane Hydrate Could Transform the Energy Landscape”, April 2024

Interview – TEXAS Geosciences, “Deepwater Methane Mystery”, August 2023

Interview – TEXAS Geosciences News, “Methane Hydrate: The Mission Continues”, August 2023

UT NEWS: UT Austin Studies Mysterious Substance that Could Transform the Future of Energy, May 2021

Interview – Institute for Geophysics, “Pressure Coring Technology One Step Closer to Gulf of Mexico Hydrates Test”, May 2020

UT NEWS: Science & Technology, Complex Geology Contributed to Deepwater Horizon Disaster, New Study Finds, May 2019

UT NEWS: Science & Technology, UT Study Shows How to Produce Natural Gas While Storing Carbon Dioxide, June 2019

Interview – TEXAS Geosciences News, “Fueling the Future”, October 2017

Interviewed for National Public Radio, September 2017

Interview – TEXAS Geosciences News, “Unlocking the Potential of Methane Hydrate”, October 2016

Interview – TEXAS Geosciences News, “Drilling Deep for Fire and Ice”, October 2014

Interviewed for The Energy Makers, Episode 159, November 2014

Interviewed and research featured in article “UT will research new Gulf energy source” published in *Houston Chronicle*, Oct 22, 2014

Interviewed and research featured in article “UT-led team gets \$58M for fuel study” published in *Austin American Statesman*, Oct 22, 2014

Interviewed and research featured in article “Drilling Deep for Fire and Ice” published in *JSG Newsletter*, 2014

Interviewed and research featured in article “Uncharted Waters: A Behind the Scenes Look at the Struggle to Kill the Deepwater Horizon Oil Spill” published in *JSG Newsletter*, 2013.

Interviewed and featured in article “Students Organize First JSG Research Symposium” published in *JSG Newsletter*, 2012.

Interviewed and research featured in article “Hands-On Learning Monopoly: Oil Edition” published in *JSG Newsletter*, 2010.

Interviewed and featured in article “Bureau Organizes First Annual Industry Day” published in *JSG Newsletter*, 2009.

Interviewed and featured in article “Jackson School Hosts Fort Valley Students” published in *JSG Newsletter*, 2008.

Interviewed and research featured in article “Swept Away: Peter Flemings Works Best Under Pressure” published in *JSG Newsletter*, 2007.

Interviewed and research featured in article “Tidal Waves Called Threat to East Coast” published in *The New York Times*, July 2000.

Interviewed and research featured in article “If You See a Really Big Wave at Shore, There's an Explanation” published in *The Philadelphia Inquirer*, July 2000.

Interviewed and research featured in article “All coasts face tidal wave risk Slides could spark disaster” published in *USA Today*, July 2000.

Interviewed for Discovery Channel program *Science News*, October 2000.

Interviewed and research featured in article published in *Penn State Intercom*, November 2000.

RESEARCH PROJECTS, GRANTS AND CONTRACTS

In Progress:

<u>Duration</u>	<u>Title</u>	<u>Source</u>	<u>Amount</u>
2022-2024	Multiphase Flow Properties of Thawing Permafrost Soils	Sandia	\$239,245
2021-2025	Impact of upper-plate splay faults on stress, pressure, porosity, and strength of sediments and the megathrust	NSF	\$292,433
2014-2025	Deepwater Methane Hydrate Characterization in the Gulf of Mexico: Scientific Assessment and Production Potential	DOE	\$109,397,911
2013-2029	UT GeoFluids—Industrial Consortium	Industry	\$5,378,385

Completed:

<u>Duration</u>	<u>Title</u>	<u>Source</u>	<u>Amount</u>
2017-2020	ExxonMobil Grid Research Project	ExxonMobil	\$116,565
2014-2019	SUTUR Task 11: The Effective Stress Law for Permeability During Pore Pressure and Pressure Cycling of Shale	Shell	\$1,572,345
2016-2019	A multi-scale experimental investigation of flow properties in coarse-grained hydrate reservoirs during production	DOE	\$1,499,991
2016-2018	SUTUR: Multi-faceted study of water cut in the Permian Wolfcamp in the Delaware Basin, West Texas	Shell	\$83,000
2012-2015	Controls on Methane Expulsion During Melting of Natural Gas Hydrate Systems: Topic Area 2	DOE	\$1,170,807
2012-2015	SUTUR Task 1: Mechanisms of Gas Flow in Shale	Shell	\$457,127
2012-2015	SUTUR Equipment Grant	BEG	\$180,000
2014	Jackson School of Geosciences Equipment Grant	JSG	\$100,000

2014-2015	Jackson School of Geosciences Seed Grant: Migration of gas in coarse-grained hydrate-bearing sediments	JSG	\$35,000
2013-2014	JSG Equipment Grant	Jackson School of Geosciences	\$124,000
2012-2014	Theory, experiment, and observation of the impact of warming on methane hydrate melting and gas venting in the Arctic.	NASA	\$30,000
2012	UT GeoFluids - Industrial Consortium	Industry	\$556,600
2011-2013	Observing the Transient Temperature and Pressures of the Tohoku Earthquake: Observatory Fabrication	Consortium for Ocean Leadership	\$14,998
2011	UT GeoFluids - Industrial Consortium	Industry	\$535,700
2008-2012	A motion decoupled hydraulic delivery system for the IODP	Integrated Ocean Drilling Program Management International	\$534,000
2009-2012	Geotechnical Characterization of IODP Site C0009 and Petrophysical Analysis of the Megasplay gault at IODP Site C0010	Consortium for Ocean Leadership	\$79,386
2010	UT GeoFluids - Industrial Consortium	Industry	\$561,600
2009-2010	IODP Expedition 319 - NANTROSEIZE Stage 2 Riser/Riserless Observatory aboard the D/V Chikyu	CORE	\$64,386
2009	UT GeoFluids - Industrial Consortium	Industry	\$495,000
2007	G3: GeoMechanics, GeoFluids, & GeoHazards Initiative Support (with Marone, and Elsworth)	Energy Institute, The Pennsylvania State University	\$55,000
2007	Overpressure and Slope Stability in the Deepwater Gulf of Mexico	American Chemical Society, Petroleum Research Fund Supplement for Underrepresented Minority Research	\$5,000
2006-2008	Overpressure and Slope Stability in the Deepwater Gulf of Mexico	American Chemical Society, Petroleum Research Fund	\$80,000
2005-2008	JOI Postcruise – Sawyer	Joint Oceanographic Institute	\$23,467
2005-2008	JOI Postcruise – Long	Joint Oceanographic Institute	\$21,353
2005-2008	JOI Postcruise – Flemings	Joint Oceanographic Institute	\$29,011
2005	JOI Cruise – Flemings	Joint Oceanographic Institute	\$65,762

2004-2009	GeoFluidsIII Consortium	Amerada Hess, Anadarko, BP, BHP Petroleum, Chevron, ConocoPhillips, Devon Energy, Encana (withdrew), ExxonMobil, Shell, Unocal (bought by Chevron)	\$1,081,000
2004-2007	Collaborative Research: Analysis and Development of a New Pressure Probe for the IODP	National Science Foundation	\$199,991
2004	Downhole Tools in the Integrated Ocean Drilling Program: Goals, Techniques, Needs, and Strategies for Development	JOI	\$39,988
2002-2005	Petroleum GeoSystems Initiative	Shell Offshore Inc., The Shell Foundation and ChevronTexaco	\$300,000
2002-2005	ODP Leg 204 Post-Cruise Science: Constraining a soil model for Hydrate Ridge sediments through Triaxial Deformation Experiments, award no. F001698	Texas A&M Research Foundation, JOI/ODP	\$6,600
2001-2004	GeoFluidsII Consortium	Amerada Hess, Anadarko, BP, BHP Petroleum, Burlington Resources, Chevron, Conoco, Devon Energy, Pan Canadian, Phillips, Shell, Unocal	\$648,000
2001-2002	ODP Leg 196 Post-Cruise Science Funds	Texas A&M Research Foundation, JOI/ODP	\$25,594
2001	USSSP Participant, Leg 196	Texas A&M Research Foundation, JOI/ODP	\$19,186
2000-2002	Overpressure and Fluid Flow in New Jersey Continental Slope: Implications for Slope Stability and Cold Seeps	National Science Foundation	\$108,000
1998-2001	GeoFluidsI Consortium	Amerada Hess, Arco/Vaster, BHP Petroleum, Burlington Resources, Chevron, Conoco, Phillips, Shell, Unocal	\$405,000
1998-2001	Petroleum GeoSystems Initiative	Shell Offshore Inc. and The Shell Foundation	\$350,000

1998-2001	Time-Lapse Seismic Consortium	Chevron, Conoco, Statoil, Texaco	\$180,000
1998-2000	Three-Dimensional Characterization and Modeling of Mio-Pliocene Clinoforms, Offshore New Jersey: Depositional Processes, Stratigraphic Architecture, and Lithology Distribution	American Chemical Society, Petroleum Research Fund	\$60,000
1997-1999	Integrated Analysis of Miocene and Pleistocene Lowstand Wedges	Texas A&M Research Foundation, JOI/ODP	\$19,206
1997-1999	NSF Hydrodynamic	National Science Foundation	\$89,012
1997-1998	Post-Cruise Scientific Research Up-Front Funds	Texas A&M Research Foundation, JOI/ODP	\$3,000
1997	USSSP Participant, Leg 174A	Texas A&M Research Foundation, JOI/ODP	\$16,112
1996-1998	Demonstration of Stress Control on Entrapment of Gas in Geopressed Strata with Application to: Exploration (risking seal integrity) and Production (optimizing well bore stability and fracture completion approaches)	Gas Research Institute	\$757,171
1996	Simulation of Hydrocarbon Migration in Faulted Systems: Stage Two	Exxon Production Research Company	\$69,003
1995-1999	4D Seismic Interpretation of Three Fields in the Gulf of Mexico	Amoco, Chevron, Exxon, Pennzoil, Shell, Texaco, BP, Norsk Hydro, Unocal	\$450,000
1995-1996	Core Laboratories Fellowship	Core Laboratories	\$33,850
1995	Simulation of Hydrocarbon Migration in Faulted Systems: Stage One	Exxon Production Research Company	\$20,000
1994-1997	Shell Foundation Faculty Career Initiation Fund	Shell Oil Company Foundation	\$75,000
1994-1995	Flemings	Columbia University	\$1,000
1994	Global Basins Research Network	Industry Consortium	\$59,500
1993-1995	Dynamic Enhanced Recovery Technologies	Columbia Subcontract, Department of Energy	\$875,546
1993-1994	Sequence Stratigraphic Interpretation and Stratigraphic Modeling Study of Two Neogene Passive Margins	Columbia Subcontract, American Chemical Society	\$25,091

1992-1993	Upgrades to Lamont's Marine Geo and Geophysics Workstation Network for Analysis, Visualization and Numerical Modeling with Large Datasets	National Science Foundation	\$140,067
1991-1992	Stratigraphic Modeling Program	Chevron	\$25,000
1991-1992	Forward and Inverse Modeling of Two Cretaceous Foreland Basins: A Cooperative Research Program	National Science Foundation	\$113,313

Grants and Contracts for Facility Improvement

<u>Duration</u>	<u>Title</u>	<u>Source</u>	<u>Amount</u>
2005	Upgrading of Linux Computing Facility for Research in Climate-Change, Glacier Dynamics and Fluid Flow	National Science Foundation	\$44,087
2000-2001	Geoscience Instrumentation and Facilities	National Science Foundation	\$158,047
1999-Present	Applied Geophysical Instructional Facility	Shell	\$40,000
1999-2002	Applied Geophysical Instructional Facility	Conoco	\$52,000
1997-present	Applied Geophysical Instructional Facility	Landmark Graphics Corporation	\$4,713,940
1997-1999	Applied Geophysical Instructional Facility	Chevron, Conoco, Dupont, Kerr McGee, Shell, Texaco	\$118,000
1997-1999	Applied Geophysical Instructional Facility	IBM	\$303,390

Student Funding Raised

<u>Duration</u>	<u>Title</u>	<u>Source</u>	<u>Amount</u>
2014-2015	Predicting Pressure and Stress State Near Salt in the Mad Dog Region	Statoil	\$58,076
2013-2014	Multi-scale Pore Structure at the Core Scale in Shales	Statoil	\$29,000
2013-2014	Reservoir Pore Pressure Prediction from Shale Pressure Estimation	Statoil	\$58,000
2013-2014	Theory, experiment, and observations of the impact of warming on methane hydrate melting and gas venting in the arctic	NASA	\$30,000
2011- 2012	Residementation of Nankai	Consotrium of Ocean Leadership	\$20,000
2006-2007	Devon Energy Fort Valley State University Fellowship	Devon Energy	\$20,000/yr.
2006-2007	Marathon Oil Fort Valley State University Fellowship	Marathon Oil	\$30,000/yr.
2006-2007	ExxonMobil Fort Valley State University Fellowship	ExxonMobil	\$25,000/yr.
2006-2007	Shell Oil Fort Valley State University Fellowship	Shell Oil Company	\$30,000/yr.
2006-2007	Chevron GeoSystems Fellowship	Chevron	\$30,000/yr.
2006-2007	Shell GeoSystems Fellowship	Shell	\$60,000/yr.
2005-2007	Chevron Undergraduate Diversity Fellowship	Chevron	\$1,000/yr.
2005-2007	BP Fort Valley State University Fellowship	BP	\$15,000/yr.
2005-2007	Chevron Fort Valley State University Fellowship	Chevron	\$15,000/yr.
2005-2006	Newfield Undergraduate and Graduate Fellowships	Newfield	\$2,000
2005-2006	Chevron GeoSystems Fellowship	Chevron	\$15,000
2005-2006	Shell GeoSystems Fellowship	Shell	\$30,000
2004-2007	ConocoPhillips GeoPressure Fellowship	ConocoPhillips	\$20,000/yr.
2004-2007	ConocoPhillips Graduate Fieldwork Fellowship	ConocoPhillips	\$10,000/yr.

2003-2004	ConocoPhillips GeoPressure Fellowship	ConocoPhillips	\$29,000
2001-2005	ChevronTexaco GeoSystems Fellowship	ChevronTexaco	\$60,000/yr.
2001-2005	BP Graduate Fellowship	BP	\$15,000/yr.
2001-2004	Amerada Hess GeoSystems Graduate Scholarship	Amerada Hess	\$10,000/yr.
1998-2005	Shell GeoSystems Fellowship	Shell	\$60,000/yr.
1998-2001	Chevron GeoSystems Fellowship	Chevron	\$16,000/yr.
1998-2001	Texaco GeoSystems Fellowship	Texaco	\$55,000/yr.
1996-2007	ExxonMobil Fellowship in Quantitative Geosciences	ExxonMobil	\$20,000/yr.

NEW PROGRAMS DEVELOPED

2006	Geohazards, Geomechanics, and GeoFluids Initiative (with Elsworth, Marone, Saffer)
Fall 1999	Petroleum GeoSystems Master's Degree Initiative

COMPUTER SOFTWARE DEVELOPED

2014-Present	UT Centroid
2001-Present	PSTAR
2001-Present	Overburden Evaluator
2001-Present	PSU-FRAC
1998-Present	STORMSED1.0 <i>see</i> - Cookman, J., Flemings, P.B. , 2001, STORMSED1.0: Hydrodynamics and Sediment Transport in a 2-D Steady-State, Wind- and Wave-Driven, Coastal Circulation Model, <i>Computers and Geosciences</i> 27 (6): 647-674.
1996-1997	Strata: Basin Modeling Tool <i>see</i> - Flemings, P.B. , and Grotzinger, J.P., 1996, STRATA: Freeware for Solving Classic Stratigraphic Problems. <i>GSA Today</i> , vol. 6, no. 12, p. 1-7.