

**Dr. Russell T. Johns**  
**The Pennsylvania State University at University Park**  
**Department of Energy and Minerals Engineering**  
**Curriculum Vitae (August 1, 2016)**

**MAILING ADDRESS:**

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**FULL NAME:** Russell Taylor Johns

**TITLE:** Professor of Petroleum and Natural Gas Engineering  
Victor and Anna Mae Beghini Faculty Fellowship

**CITIZENSHIP:** U.S.A.

**EDUCATION:**

- Stanford University, Ph.D. Petroleum Engineering, Analytical theory of multicomponent gas drives with two-phase mass transfer, June 1992, Advisor: F.M. Orr, Jr..
- Stanford University, Ph.D. minor Water Resources, June 1992.
- Stanford University, MS Petroleum Engineering, Comparison of pressure transient response in intensely and sparsely fractured reservoirs, June 1989. Advisor: Younes, Jalali-Yazdi.
- Northwestern University, BS Electrical Engineering, June 1982.

**PROFESSIONAL REGISTRATION:** Petroleum Engineering in California.

**CURRENT AND PREVIOUS ACADEMIC POSITIONS:**

- Chair, Petroleum and Natural Gas Engineering Program, Dept. of Energy and Minerals Engineering, The Pennsylvania State University, January 2015 – present.
- Professor, Dept. of Energy and Minerals Engineering, The Pennsylvania State University, 2010 – present.
- Professor, Dept. of Petroleum and Geosystems Engineering, The University of Texas at Austin, 2008 – 2010.
- Associate Professor, Dept. of Petroleum and Geosystems Engineering, The University of Texas at Austin, 2001 - 2008.
- Assistant Professor, Dept. of Petroleum and Geosystems Engineering, The University of Texas at Austin, 1995 - 2001.
- Teaching Assistant, Dept. of Petroleum Engineering, Stanford University, Fall, 1990.
- Graduate Research Assistant, Dept. of Petroleum Engineering, Stanford University, 1987-1992.

**OTHER PROFESSIONAL EXPERIENCE:**

- Colenco Power Consulting Ltd. (1992-1995), Baden, Switzerland, Hydrogeologist-Task Leader. Directed hydrogeological modelling project for Konrad and Morsleben nuclear waste disposal sites. Modelled two-phase flow for German BFS and Swiss co-operative for nuclear waste disposal (NAGRA). Developed new well-testing solutions and inverse-modelling methodology for interpretation of hydraulic tests in low-permeability formations. Analysed over 100 well tests for NAGRA.
- Shell Oil Company (1982-1987), New Orleans, LA, Houston, TX, and Bakersfield, CA, Petrophysical Engineer. Designed log/core evaluation methodology for carbon-dioxide pilot, alkaline pilot, and water floods. Supervised evaluation of exploration wildcats and production wells in LA and CA. Conducted field reviews. One of a few BS engineers selected to work at the Shell Bellaire Research Center; pioneered research on nuclear magnetism logging, CAT scan, and core analyses for residual oil saturation determination. Provided major contribution to study teams, which identified significant potential in older abandoned wells. Top student in Shell's Advanced Petrophysical Engineering class.
- Cincinnati Milacron (summers 1978 - 1981), Cincinnati, Ohio, Electrical Engineer. Worked on all aspects of assembling computer numerical controls in the robot division.

**CONSULTING AND INDUSTRY SHORT COURSES:**

- Johns, R.T., Lake L.W., Hirasaki, G., Rossen, W., and Dindoruk, B., Gas and Solvent Enhanced Oil Recovery, 4th Delft Summer School, Department of Geosciences and Engineering, Delft University of Technology, July 11 – 15, 2016.

- Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, May 16 – 20, 2016.
- Tatweer Petroleum, Enhanced Oil Recovery Gas Flooding, Petroskills, Al-Rumamin, Bahrain, November 15 – 20, 2015.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, May 18 – 22, 2015.
- Hess Oil, Oil Recovery Enhancement Techniques Houston, TX, March, 2015
- Enhanced Oil Recovery Gas Flooding, Petroskills, Vienna, Austria, December 2014.
- Oil Recovery Enhancement Techniques Houston, TX, December 2014.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Perm, Russia, August, 2014.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, July 2014.
- Waterflooding from A to Z, Petroskills, London, England, June 2014.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, June 2014.
- Occidental Petroleum, Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, December 2013.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Vienna, Austria, December 2013.
- PetroChina, Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, November 2013.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, July 2013.
- Oil Recovery Enhancement Techniques, Petroskills, Houston, TX, June 2013.
- Waterflooding from A to Z, Petroskills, London, England, May 2013.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, May 2013.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Vienna, Austria, December, 2012.
- Tellus, Enhanced Oil Recovery Gas Flooding, Petroskills, Ridgeland, MS, September, 2012.
- Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, July – August, 2012.
- Petrom/OMV, Waterflooding from A to Z, Petroskills, Bozua, Romania, July 2012.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, June 2012.
- Waterflooding from A to Z, Petroskills, London, England, June 2012.
- Oil Recovery Enhancement Techniques, Petroskills, Calgary, Canada, May 2012.
- Petrom/OMV, Waterflooding from A to Z, Petroskills, Bucharest, Romania, March 2012.
- Chevron, Waterflooding from A to Z, Petroskills, Bakersfield, CA, December 2011.
- Luks Oil, Enhanced Oil Recovery Gas Flooding, Petroskills, Houston, TX, October 2011.
- British Petroleum, Research Workshop on Gas Flooding, Sunbury, England, August 2011.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, August 2011.
- Waterflooding from A to Z, Petroskills, London, England, August, 2011.
- University of Texas at Austin, Equation-of-State Development for New Compositional Simulation Code, June, 2011.
- Oil Recovery Enhancement Techniques, Petroskills, Calgary, Canada, May 2011.
- Petrom/OMV, Waterflooding from A to Z, Petroskills, Ploeista, Romania, December 2010.
- Waterflooding from A to Z, Petroskills, London, England, September 2010.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, August 2010.
- Chevron Indonesia, Waterflooding from A to Z, Petroskills, Rumbai, Indonesia, May, 2010.
- Bureau of Economic Geology (2009 to 2010) – Fluid Characterization for CO<sub>2</sub> Sequestration
- Shell Oil India, Enhanced Oil Recovery Gas flooding, Petroskills, Bangalore, India, February, 2010
- YPF, Waterflooding from A to Z, Petroskills, Buenos Aires, Argentina, January, 2010.
- Tullow Oil, Waterflooding from A to Z, Cape Town, South Africa, November 2009.
- PDO/Shell Oil Oman, Oil Recovery Enhancement Techniques, Petroskills, Muscat, Oman, May, 2009.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, August, 2009.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, August, 2008.
- Chevron Oil Company (2008). Fluid Characterization.
- Shell Oil India, Oil Recovery Enhancement Techniques, Petroskills, Bangalore, India, July/Aug 2008.
- Oil Recovery Enhancement Techniques, Petroskills, Houston, Texas, June 16<sup>th</sup> – 18<sup>th</sup>, 2008.
- Oil Recovery Enhancement Techniques, Petroskills, Houston, Texas, November 2007.
- Oil Recovery Enhancement Techniques, Petroskills, London, England, August 2007.
- Oil Recovery Enhancement Techniques, Petroskills, Calgary, Canada, May 2007.
- University of Trinidad and Tobago, Advanced Reservoir Engineering, University of Texas Training, Spring 2007
- Enhanced Oil Recovery, University of Texas at Austin, November/December 2006.
- University of Trinidad and Tobago, Fluid Flow in Porous Media, University of Texas Training, Summer 2005
- Golder Associates, Germany (2004)
- Shell Oil Company (2003) – MMP Estimation.

- Colenco Power Consulting Ltd. (1995 - present) – New well test simulator.
- Australian Petroconsultants (1996 - 1997) – Paper reviews.

#### **MAJOR HONORS AND AWARDS:**

- 2016 SPE Reservoir Description and Dynamics Award, presented at the International SPE conference in Dubai, September, 2016.
- Selected in April 2016 for “LaunchBox”. This is a Penn State initiative to start a new company. Together with three graduate students, we are launching “Simulation Building Blocks” as a company to provide a new generation of simulation software for reservoir engineering.
- 2015 SPE Technical Editor Award
- CMG Foundation Chair (2014 – 2018)
- SPE Faculty Pipeline Award (2013)
- Victor and Anna Mae Beghini Faculty Fellowship in PNGE (2010 to present)
- SPE Distinguished Membership (awarded in 2009).
- B.J. Lancaster Professorship in Petroleum Engineering, The University of Texas at Austin (2008 to 2010)
- BSF Leadership (2006 to 2010)
- “A Peer Apart”, SPE honors for reviewing more than 100 technical papers, *JPT*, December 2007.
- 25 year club, Society of Petroleum Engineers (SPE)
- 2004 SPE Outstanding Technical Editor Award
- Dean’s Fellow, The University of Texas at Austin, Fall 2004.
- 2003-2004 Departmental Teaching Award, The University of Texas at Austin
- Appointed by the Society of Petroleum Engineers (SPE) to serve a two-year term as Executive Editor for SPEREE journal
- Appointed by the Society of Petroleum Engineers (SPE) to serve a two-year term as a Review Chairman for the Editorial Review Committee (2001)
- 2000 Engineering Foundation Young Faculty Award for overall program development, teaching excellence, research leadership, and graduate student program development, The University of Texas at Austin
- Selected by the Society of Petroleum Engineers (SPE) to be editor of SPE CO2 Flooding monograph (1999)
- 1998 SPE Best Technical Editor
- 1997 SPE Best Technical Editor
- 1997 Halliburton Engineering Foundation Faculty Excellence Award
- Pioneer Corporation Faculty Fellowship in Petroleum Engineering, UT Austin (1997 - 2008)
- 1994 Cedric K. Ferguson SPE Award for best technical paper by a young investigator under the age of 33
- Church elder in Switzerland (1993 – 1995)
- Selected as the top student in Shell’s Advanced Petrophysical Engineering class (1984)
- Elected to Tau Beta Pi (1981)

#### **MEMBERSHIP IN PROFESSIONAL AND HONORARY SOCIETIES:**

- Society of Petroleum Engineers (SPE)
- American Geophysical Union (AGU)
- American Chemical Society (ACS)
- Tau Beta Pi national engineering honor society
- Eta Kappa Nu electrical engineering honor society
- Pi Epsilon Tau petroleum engineering honor society

#### **UNIVERSITY/COLLEGE COMMITTEE OR OTHER ASSIGNMENTS:**

- Member, EMS Faculty Integrity Committee (2015 – present)
- Member, INGAR Umbrella Search Committee (2014-2015)
- Member, INGAR Department Search Committee (2014-2015)
- Member, Faculty Activity Committee (2014 for year 2013)
- Member, Institute of Natural Gas Research at Penn State (INGAR) (2012 – present)
- Member, Penn State’s Global Engagement Network (GEN), Petrobras partnership (2012 – 2014)
- Member, EMS College Advisory Search Committee for EME Head (2012 - 2013)
- Member, EMS College FT&R Faculty Promotion Committee (2012 – present)
- Member, EMS Faculty Representative for PSIEE Dean’s Advisory Council (2011 – 2012)
- Member, EME Representative for NSF PIRE Committee (2011 – 2012)
- Member, EME Representative for College Committee on Faculty Nominations (2010 – 2014)

- Member, Accreditation and Assessment Committee (2008 – 2010)
- Member, Tenure Review (2008 – 2010)
- College Selection Committee for the Lockheed Martin Aeronautics Company Award for Excellence in Engineering Teaching and the Outstanding Engineering Teaching by an Assistant Professor Award (Spring 2008)
- University's Graduate School's Outstanding Dissertation Award (Spring 2007)
- PGE Chairman Search (2007 – 2008)
- PGE Chairman Search (2006)
- Nuclear Reactor (1997 - 2004)
- Scholastic Appeals (1995 - 2001)
- College Strategic Planning (1997 - 1998)
- EOE Faculty Advisory (1997 - 1998)
- PGE Chairman Search (1997)
- Honors Colloquium Faculty Mentor (1996)

#### **DEPARTMENTAL COMMITTEE OR OTHER ASSIGNMENTS:**

- Chair, Petroleum and Natural Gas Engineering Program (2015 – present)
- Chair, Faculty Activity Analysis Committee (2016)
- Member, EME Graduate Program and Research Committee (2015 – present)
- Member, EME Undergraduate Programs and ABET Committee (2014 – present)
- Member, EME Promotion and Tenure Committee (2015 – 2017)
- Member, Faculty search committee (2015)
- Member, INGAR Departmental Search Committee (2014-2015)
- Member, Faculty Activity Analysis Committee (2014)
- Member, ABET committee (2013 – 2015)
- Chair, Leone chair committee (2013 – 2014)
- Member, Deitke chair committee (2013 – 2014)
- Member, Promotion and Tenure Committee (2011 – 2013)
- Undergraduate advisor for 1/6<sup>th</sup> of students, PNG program (2010 – present)
- SPE Faculty Representative for Field Trip to Drilling Well (2012)
- SPE Faculty Representative for Field Trip to Drake's Well (2011)
- Chairman, Graduate Studies, The University of Texas at Austin (2001 – 2010)
- Program Manager, Fundamental Processes Research Program, UT Austin (2006 – 2010)
- Program Manager, Subsurface Environmental Engineering Research Program, UT Austin (1997 - 2010)
- Assistant Graduate Advisor, UT Austin (2005 – 2010)
- Member, Geosystems Engineering and Hydrogeology, UT Austin (1996 - 2010)
- Member, Faculty Awards, UT Austin (2008 – 2010)
- Member, ABET/SACS Faculty Liaison, UT Austin (2008 – 2010)
- Member, Faculty Evaluations Committee, UT Austin (2009 – 2010)
- Member, Ad Hoc Faculty Recruiting Committee, UT Austin (2006 – 2008)
- Member, Graduate Recruiting & Admissions, UT Austin (1996 - 2003)
- Member, Remote Program, UT Austin (2001 – 2002)
- Member, Minority Liaison, UT Austin (2000 – 2002)
- Chairman, Ph.D. Qualifying Exam, UT Austin (1997 - Petrophysics, 1998 -Transport, 2000 – Petrophysics, 2001 – Petrophysics, 2002 - Mathematics)
- Member, Ad Hoc Faculty Recruiting Committee, UT Austin (2001 – 2002)
- Member, Laboratory & Computer Subcommittee, UT Austin (1998 - 2001)
- Member, Laboratory, Safety and Space, UT Austin (1997 - 2000)
- Chairman, Ad hoc PGE 310 Committee, UT Austin (1999)
- SPE Student Faculty Advisor, UT Austin (1995 - 1998)
- Member, ABET Committees- Laboratory and Space, Course Requirements, UT Austin (1997 - 1998)
- Member, Safety, UT Austin (1996 - 1997)
- Faculty Meetings Recorder, UT Austin (1995)

#### **PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:**

- Cedric K. Ferguson Medal Awards Committee (2016)

- PetroWiki Moderator for SPE (2013 – 2015)
- Associate Editor, *SPEJ* journal (2011 – present)
- Member, Editorial Board for Fuel (2014 – present)
- Member, Editorial Board for Journal of Unconventional Oil and Gas Resources (2012 – present)
- Reviews of Faculty Tenure Promotions at Other Universities (2011 - 2014)
- Subcommittee Member, ATCE Recovery Mechanisms and Flow in Porous Media (2011 - 2014)
- Member, Reservoir Description & Dynamics Advisory (2002 – present)
- Member, SPE Editorial Review Committee (1996 - present)
- Transport in Porous Media Technical Editor (2005 - present)
- Journal of Petroleum Science and Engineering Technical Editor (2008 - present)
- ITB Journal (2012)
- Journal of Hydrology Technical Editor (2006)
- Journal of Greenhouse Gas Control Technical Editor (2006)
- Journal of Canadian Petroleum Technology Technical Editor (2005)
- Executive Editor, SPEREE journal (2002 – 2005)
- Member, 2004 SPEDOE IOR Program Committee and Session Chairman (2003-2004).
- Review Chairman, SPE Editorial Review Committee (2001 – 2002), two-year term
- Member, SPE Monograph Committee (1999 – 2002), three-year term
- Editor, SPE CO<sub>2</sub> Flooding Monograph (1999 – 2001)
- Water Resources Research Technical Editor (1997 - 2001)
- Environmental & Engineering Geoscience Technical Editor (2001 – 2002)
- ASME Journal of Energy Resources Technology Technical Editor (2001)
- ASCE Technical Editor (1997 - 1999)

#### COMMUNITY ACTIVITIES:

- Boy scouts assistant (2006 – 2009)
- Bible study fellowship (BSF) leadership (2005 – 2010)
- Church choir (2005 – 2007)
- Sunday school teacher (1999 – 2002)
- Church elder (Zurich, Switzerland 1993-1995)

#### PUBLICATIONS:

##### A. Refereed Archival Journals

1. Khorsandi, S., and Johns, R.T., Robust Flash Calculation Algorithm for Microemulsion Phase Behavior," submitted to J. of Surfactant and Detergents, 6/29/16.
2. Ghosh, S. and Johns, R. T., A Dimensionless Equation of State to Predict Microemulsion Phase Behavior, accepted by Langmuir 8/1/2016 (assigned to Dr. David Scholl from Georgia 7/18/16).
3. Nojabaei, B., Johns, R.T., Extrapolation of black- and volatile-oil fluid properties with application to immiscible/miscible gas injection, *Journal of Natural Gas Science & Engineering* (2016), doi: 10.1016/j.jngse.2016.03.101. April, 2016.
4. Connolly, M., and Johns, R., Scale-dependent mixing for adverse mobility ratio flows in heterogeneous porous media, doi: 10.1007/s11242-016-0678-y, *Transport in Porous Media*, pp. 1 – 22, 9 March 2016.
5. Ghosh, S. and Johns, R. T. An Equation-of-State Model to Predict Surfactant/Oil/Brine-Phase Behavior. SPE J. SPE-170927-PA. <http://dx.doi.org/10.2118/170927-PA>, 19 January, 2016.
6. Gorucu, S.E., and Johns, R.T., Robustness of Three-Phase Equilibrium Calculations with New Reduced Parameters, *J.Petrol Sci Eng*, doi: 10.1016/j.petrol.2016.02.025 September 24 2016.
7. Qiao, C., Johns, R.T., and Li L. Modeling Low-Salinity Waterflooding in Chalk and Limestone Reservoirs, *Energy & Fuels* 2016 30 (2), 884-895. DOI: 10.1021/acs.energyfuels.5b02456
8. Li, L, Khorsandi, S, Johns, R. T., and Dilmore, R. M., CO<sub>2</sub> Enhanced Oil Recovery and Storage Using a Gravity-Enhanced Process, *International Journal of Greenhouse Gas Control*. Vol. 42, pp. 502-515, 2015. (paper ranked in the top 5% of all research outputs ever tracked by Ahmetric and top 2% of UGCC outputs.)
9. Qiao, C., Li Li., Johns, R.T., and Xu, J. (2015). Compositional Modeling of Dissolution-Induced Injectivity Alteration During CO<sub>2</sub> Flooding in Carbonate Reservoirs. *SPE Journal*, doi:10.2118/170930-PA
10. Qiao, C., Li Li., Johns, R.T., and Xu J. (2015). A Mechanistic Model for Wettability Alteration by Chemically Tuned Water Flooding in Carbonate Reservoirs. *SPE Journal*, doi:10.2118/170966-PA.
11. Li, L., Khorsandi, S., Johns, R.T., and Ahmadi, K., Multiple Mixing-Cell Method for Three-Hydrocarbon-Phase Displacements, *SPEJ*, <http://dx.doi.org/doi:10.2118/169150-PA>, 2015.

12. Wang, Z., Khanzode, A., and Johns, R.T., A Parametric Study of Reservoir Cooling for Enhanced Recovery by CO<sub>2</sub> Flooding, *SPEJ*, <http://dx.doi.org/10.2118/170626-PA> August 1, 2015.
13. Khorsandi, S., Shen, W., and Johns, R. T., Global Riemann Solver and Front Tracking Approximation of a Three-Component Gas Flood, *Quarterly of Applied Mathematics*, Brown University, 2015.
14. Venkatraman, A, Lake, L.W., and Johns, R.T., Modeling the Impact of Geochemical Reactions on Hydrocarbon Phase Behavior During CO<sub>2</sub> Gas Injection for Enhanced Oil Recovery, *Fluid Phase Equilib.* Volume 402 (2015) 56-68. <http://dx.doi.org/10.1016/j.fluid.2015.05.028>
15. Gorucu, S.E., and Johns, R.T., Comparison of Reduced and Conventional Two-Phase Equilibrium Calculations, *SPEJ*, <http://dx.doi.org/10.2118/163577-PA>, April, 2015.
16. Rezaveisi, M., Johns, R. T., & Sepehrnoori, K.. Application of Multiple-Mixing-Cell Method to Improve Speed and Robustness of Compositional Simulation. Society of Petroleum Engineers. *SPEJ*. doi:10.2118/169063-PA, January, 2015.
17. Johns, R.T., Khorsandi, S., and Ahmadi, K., Comments on “Computational Procedure for Determination of Minimum Miscibility Pressure of Reservoir Oil,” *Fuel*, 142:304-305. DOI: 10.1016/j.fuel.2014.09.097 February, 2015.
18. Adepoju, O. O., Lake, L. W., & Johns, R. T. (2014, November 1). Anisotropic Dispersion and Upscaling for Miscible Displacement. Society of Petroleum Engineers. *SPEJ*, doi:10.2118/166390-PA
19. Gorucu, S.E., and Johns, R.T., New Reduced Parameters for Flash Calculations Based on Two-Parameter BIP Formula, *J. Petrol.Sci.Eng.* 116, pp. 50-58, (2014), <http://dx.doi.org/10.1016/j.petrol> February 2014.
20. Khorsandi, S., Ahmadi, K., and Johns, R.T., Analytical Solutions for Gas Displacements with Bifurcating Phase Behavior, *SPEJ*, 19 (05), pp. 943-955, 2013.
21. Yinghui Li, SPE, Russell T. Johns, SPE, Kaveh Ahmadi, SPE, U. of Texas at Austin, Corrigendum to “A Rapid and Robust Alternative to Rachford–Rice in Flash Calculations”, *Fluid Phase Equilib.* 366, 25 March 2014, Pages 134–135 Online Feb. 14 2014.
22. Venkatraman, A., M. A. Hesse, L. W., Lake, and R. T. Johns (2014), Analytical solutions for flow in porous media with multicomponent cation exchange reactions, *Water Resour. Res.*, 50 (7), pp. 5831 – 5847, doi:10.1002/2013WR015091
23. Venkatraman, A., Lake, L., and Johns, R.T., Gibbs Free Energy Minimization for Prediction of Solubility of Acid Gases in Water, *Industrial and Engineering Chemical Research Journal*, 2014, 53 (14), pp 6157–6168.
24. Moinfar, A, Varavei, A., Sephehnoori, K., and Johns, R.T., Development of an Efficient Embedded Fracture Model for 3D Compositional Reservoir Simulation in Naturally Fractured Reservoirs, *SPEJ*, 19(2), pp. 289 – 303, 2013.
25. Rezaveisi, M., Sepehrnoori, K., and Johns, R.T., Tie-Simplex Based Phase Behavior Modeling in an IMPEC Reservoir Simulator, *SPEJ*, 19(2), pp. 327 - 339, 2013.
26. Rai, K., Johns, R.T., and Delshad, M., Oil Recovery Predictions for Surfactant Polymer Flooding, *Journal of Petroleum Science and Engineering*, 112, pp. 341-350 DOI information: 10.1016/j.petrol.2013.11.028, 2013.
27. Nojabaei, B. N., Johns, R.T., and Lifu, C., Effect of Capillary Pressure on Fluid Density and Phase Behavior in Tight Rocks and Shales, *SPEREE*, 16 (03), 281-289, 2013.
28. Mohebbinia, S., Sepehrnoori, K., and Johns, R.T. Four-Phase Equilibrium Calculations of Carbon Dioxide/Hydrocarbon/Water Systems with a Reduced Method. *SPEJ*. 18 (5): 943-951. SPE-154218-PA. <http://dx.doi.org/10.2118/154218-PA>, 2013.
29. Ansari,R.Z.,Johns,R.T.,Superposition of Steady-State Coning Solutions for Multiple Wells with Reservoir Boundaries, *J Petrol Sci Eng*, 108, 362-369, (2013), <http://dx.doi.org/10.1016/j.petrol.2013.07.006>
30. Roshanfekar, M., Johns, R.T., Delshad, M., and Pope, G., Modeling of Pressure and Solution Gas for Chemical Floods, *SPEJ*, Volume 18, No. 3, pp. 428-439, June 2013.
31. Adepoju, O, Lake, L.W., and Johns, R.T., Investigation of Anisotropic Mixing in Miscible Displacements, *SPE Reservoir Evaluation & Engineering*, Volume 16, Number 1, pp. 85-96, February 2013.
32. Roshanfekar, M., Johns, R.T., Pope, G., Britton, L., Linnemeyer, H., Britton, C., and A. Vyssotski, Simulation of the Effect of Pressure and Solution Gas on Oil Recovery from Surfactant/Polymer Floods, *SPEJ*, Volume 17, No. 3, pp. 705-716, September 2012.
33. Li, Y., Johns, R.T., Ahmadi, K., A Rapid and Robust Alternative to Replace Rachford-Rice in Flash Calculations, *Fluid Phase Equilibria*, 316, 85-97, 2012.
34. Ahmadi, K. and R.T. Johns, Multiple Mixing-Cell Model for MMP Determination, *SPEJ*, Volume 16, No. 4, pp. 733-742, December 2011.
35. Ahmadi, K., Johns, R.T., Mogensen, K., Maersk Oil, and Noman, R., Limitations of Current Method of Characteristic Models Using Shock-Jump Approximations to Predict MMPs for Complex Gas-Oil Displacements, *SPEJ*, Volume 16, No. 4, pp. 743-750, December 2011.
36. Okuno, R., Johns, R.T., and K. Sepehrnoori, Mechanisms for High Displacement Efficiency of Low-Temperature CO<sub>2</sub> Floods, *SPEJ*, Volume 16, No. 4, pp. 751-767, December 2011.
37. Roshanfekar, M., and R.T. Johns, Prediction of Optimum Salinity and Solubilization Ratio for Microemulsion Phase Behavior with Live Crude at Reservoir Pressure, *Fluid Phase Equilibria*, vol. 304, no. 1, pp. 52-60, 2011.

38. Rossen, W.R., Venkatraman, A., Johns, R.T., Kibodeaux, K.R., and Lai, H., and Moradi Tehrani, Fractional Flow Theory Applicable to Non-Newtonian Behavior in EOR Processes, *Transport in Porous Media*, 89 (2), 213-236, 2011.
39. Garmeh, G, and R.T. Johns, Upscaling of Miscible Floods in Heterogeneous Reservoirs Considering Reservoir Mixing, SPE Reservoir Evaluation & Engineering, October 2010, Volume 13, Number 5, pp. 747-763.
40. Johns, R.T., Ahmadi, K., Zhou, D., and Yan, M., A Practical Method for Minimum Miscibility Pressure Estimation of Contaminated CO<sub>2</sub> Mixtures, SPE Reservoir Evaluation & Engineering, October 2010, Volume 13, Number 5, pp. 764-772.
41. Okuno, R., R.T. Johns, and K. Sepehrnoori, A New Algorithm for Rachford-Rice for Multiphase Compositional Simulation, *SPEJ*, Volume 15, Number 2, pp. 313-325, June, 2010.
42. Okuno, R., R.T. Johns, and K. Sepehrnoori, Three-Phase Flash in Compositional Simulation Using a Reduced Method, *SPEJ*, Volume 15, No. 3, pp. 689-703, September 2010
43. Roshanfekar, M., Li, Y., and R.T. Johns, Non-iterative Phase Behavior Model with Application to Surfactant Flooding, and Limited Compositional Simulation, *Fluid Phase Equilibria*, Vol. 289, No. 2, pp. 166-175, March, 2010.
44. Okuno, R., Johns, R.T., and K. Sepehrnoori, Application of a Reduced Method in Compositional Simulation, *SPEJ*, Volume 15, Number 1, pp. 39-49, March, 2010.
45. LaForce, T., Cinar, Y., Orr, FM., Jr., and Johns, R.T., Experimental Confirmation for Analytical Composition Routes in Three-Phase Partially Miscible Flow, *SPEJ*, Volume 15, Number 1, pp. 160-170, March, 2010.
46. LaForce, T., and R.T. Johns, Effect of Initial Gas Saturation on Miscible Gasflood Recovery, *Journal of Petroleum Science and Engineering*, Volume 70, Issues 3-4, pp. 198-203, February 2010.
47. Garmeh, G., R.T. Johns, and L.W. Lake, SPE; Pore-Scale Simulation of Dispersion in Porous Media, *SPEJ*, Vol 14, No. 4, pp. 559-567, December 2009.
48. Egwuenu, A.M., Johns, R.T., and Li, Y., SPE, The University of Texas at Austin, Improved Fluid Characterization for Miscible Gas Floods, SPE Reservoir Evaluation & Engineering, August 2008, Volume 11, Number 4, pp. 655-665.
49. Derek J. Wood, Larry W. Lake, SPE, and Russell T. Johns, SPE, The University of Texas at Austin, and Vanessa Nunez, Bureau of Economic Geology, A Screening Model for CO<sub>2</sub> Flooding and Storage in Gulf Coast Reservoirs Based on Dimensionless Groups, SPE Reservoir Evaluation & Engineering, June 2008, Volume 11, Number 3, pp. 513-520.
50. Bermudez, L, Johns, R.T., and Parakh, H., Parametric Investigation of WAG Floods Above the MME, *SPEJ* 12 (2), pp. 224-234, June 2007.
51. Yinghui Li, SPE, and Russell T. Johns, SPE, U. of Texas at Austin, Rapid Flash Calculations for Compositional Simulation, SPE Reservoir Evaluation & Engineering, OCTOBER 2006, Volume 9, Number 5, pp. 521-529.
52. LaForce, T. and Russell T. Johns, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, Austin, Texas, USA, Analytical solutions for surfactant-enhanced remediation of nonaqueous phase liquids, WATER RESOURCES RESEARCH, VOL. 41, W10420, doi:10.1029/2004wr003862, October, 2005.
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## ORAL PRESENTATIONS:

### A. Professional Society Presentations

(papers which were included in conference Proceedings volumes or which were accepted for journal publication are listed with publications above)

1. Li, L., Khorsandi, S., and R.T. Johns, Impact of relative permeability hysteresis and CO<sub>2</sub> dissolution at reservoir conditions on CO<sub>2</sub>-alternating water injection performance, Session Convener, American Geophysical Union, San Francisco, December 2016.
2. Qiao, C., Li Li, and R.T. Johns, Development of a New and Fast Linear Solver for Multi-component Reactive Transport Simulation, AGU fall meeting, San Francisco, CA, December 9<sup>th</sup>, 2013
3. Subramanian, S., Dindoruk, B., Johns, R.T., Fractional flow heterogeneity in compositional systems: Accuracy of numerical weighting schemes, 4<sup>th</sup> SIAM conference on Mathematical and Computational Issues in the Geosciences, June 16 - 18, 1997.
4. Johns, R.T., Analytical solution for sequential hydraulic tests in low-conductivity fractured formations, AGU conference, San Francisco, December, 1996.
5. Ri Lake, L.W., Johns, R.T., Rossen, B., and Pope, G., Fundamentals of Enhanced Oil Recovery, Society of Petroleum Engineers, pp. 496, ISBN:978-1-61399-328-6, Richardson, TX, 2014. vera, A. and Johns, R., Reverification of the hydrocoin test case 5 with NAMMU6.2 and comparison with TOUGH2, ICA Modeling and Computation in Environmental Sciences - 1<sup>st</sup> GAMM Seminar, Stuttgart, Germany, October 12-13, 1995.

### B. Invited Lectures, Presentations, or Posters (not listed above)

1. Johns, R.T., Simulation of Surfactant-Polymer Floods with a Predictive and Robust Microemulsion Flash Calculation, Shell Oil, Rijswijk, The Netherlands, July 14, 2016.
2. Johns, R.T., Low Salinity Polymer Flooding, Shell Oil, Rijswijk, The Netherlands, July 14, 2016.
3. Johns, R.T., Lake L.W., Hirasaki, G., Rossen, W., and Dindoruk, B., Gas and Solvent Enhanced Oil Recovery, 4<sup>th</sup> Delft Summer School, Department of Geosciences and Engineering, Delft University of Technology, July 11 – 15, 2016
4. Qiao, C., Li Li, and Johns, R.T., Modeling Low Salinity Enhanced Oil Recovery in Carbonates, Energy Days at Penn State University, State College, PA, May 19 2016.
5. Wen, H., Qiao, C., Li Li, and Johns, R.T., Reservoir souring: experiments, simulation and understanding, Energy Days at Penn State University, State College, PA, May 19 2016.
6. Khorsandi, S., Qiao, C., and Johns, R.T., Displacement efficiency for low salinity polymer flooding, Energy Days at Penn State University, State College, PA, May, 19, 2016
7. Li, L., Khorsandi, S., Johns, R.T., and Dillmore, R.M., New technique both enhances oil recovery and sequesters carbon dioxide, Energy Days at Penn State University, State College, PA, May, 19, 2016
8. Johns, R.T., Khorsandi, S., and Qiao, C., Simulation of Surfactant-Polymer Floods with a Predictive and Robust Microemulsion Flash Calculation, Foundation CMG, EAGE Conference, Vienna, Austria, June 2<sup>nd</sup> 2016.

9. Johns, R.T., Li, L., and Khorsandi, S., CO<sub>2</sub> Storage and EOR, Foundation CMG, Vienna, Austria, May 31<sup>st</sup> 2016.
10. Johns, R.T., Khorsandi, S., and Qiao, C., Simulation of Surfactant-Polymer Floods with a Predictive and Robust Microemulsion Flash Calculation, FloTek, The Woodlands, TX, May 23 2016.
11. Johns, R.T., Khorsandi, S., and Qiao, C., Simulation of Surfactant-Polymer Floods with a Predictive and Robust Microemulsion Flash Calculation, Chevron Oil Company, Houston, TX, May 23 2016.
12. Johns, R.T., Siripatrachai, N., and Ertekin, T., Impact of Capillary Pressure on Unconventional Recovery, Chevron Oil Company, Houston, TX, May 23 2016.
13. Weng, H., Qiao, C., Li Li, and Johns, R.T., Reservoir Souring: Experiments, Modeling, and Understanding, Energy Day, The Pennsylvania State University, May 2016.
14. Qiao, C., Li Li, and Johns, R.T., Modeling Low Salinity Enhanced Oil Recovery in Carbonates, Energy Day, The Pennsylvania State University, May 2016.
15. Li, L, Khorsandi, K., and Johns, R.T., Seminar for Aera Energy, Bakersfield, CA February 24, 2016.
16. Johns, R.T., Advances in MMP Prediction Using Method of Characteristics (MOC), EOR Technical Symposium for Franklin M. Orr, Stanford University, November 6 2015.
17. Johns, R.T., World EOR Forum, Expert Panel for Ecopetrol, Bogota, Columbia, October 28-30, 2015.
18. Johns, R.T., Seminar for UD Sturm Law School on The Myths of Fossil Fuels and the Environment, October 2015.
19. Johns, R.T., Presentation on research at CMG Foundation Summit, Calgary, CA, September 2015.
20. Johns, R.T. and Qiao, C., Simulation of Reactive Flow, CMG Foundation Summit, Calgary, CA, September 2015.
21. Johns, R.T, Miscible Gas Field Case Studies, Hess Energy, Houston, TX March 27, 2015.
22. Johns, R.T., Fluid Behavior and Rock Interactions, Foundation CMG Chair Poster with Reservoir Simulation Symposium SPE conference, Houston, TX, February, 2015.
23. Johns, R.T., Prediction of Microemulsion Phase Behavior under Reservoir Conditions, Stanford University, Energy Resources Engineering Department Seminar, January 12, 2015.
24. Johns, R.T. and Nojabaei, B., Enhanced Recovery and Reduced Flaring in Oil Shale Reservoirs by Recycling of Produced Gases, General Electric Poster Exhibition, Penn State University, State College, PA, January 8, 2014.
25. Johns, R.T., Fluid Behavior and Rock Interactions, Foundation CMG Chair Poster, Calgary, Canada, September, 2014.
26. Johns, R.T and Ghosh, S., A New HLD-NAC Approach to Predict Microemulsion Phase Behavior for Live Oil at Reservoir Pressure and Temperature, Chevron Research, Houston, TX, July 28, 2014.
27. Johns, R.T., EOR, Myths About Natural Gas, Enhanced Oil Recovery, and the Environment, University Women's Book Club, State College, PA, March 24, 2014.
28. Johns, R.T., A New HLD-NAC Approach to Predict Microemulsion Phase Behavior for Live Oil at Reservoir Pressure and Temperature, graduate seminar at Texas A&M, College Station, TX, March 18, 2014.
29. Nojabaei, B., and Johns, R.T.: Effect of capillary pressure on phase behavior in tight rocks and shales, 28<sup>th</sup> Annual Graduate Exhibition, The Pennsylvania State University, University Park, PA, March 24, 2013.
30. Venkatraman, A., Lake, L., and Johns, R.T.: Gibbs free energy minimization for reactive flow in porous media, SIAM conference on Mathematical and Computational Issues in the Geosciences, University of Padova, Italy, June 17-20, 2013.
31. Johns, R.T., Challenges for phase behavior modeling in compositional simulation, Invited speaker for Session I: CO<sub>2</sub> Enhanced Oil Recovery and CO<sub>2</sub> Sequestration, SPE Complex fluids workshop, November 5-7, 2012 Houston, TX.
32. Venkatraman, A., Hesse, M.A., Lake, L., and Johns, R.T.: Prediction of composition profiles for multicomponent Ion-exchange occurring during flow through porous media, Gordon conference on Flow & Transport in Permeable Media, June 23 – 24 2012, Les Diablerets, Switzerland.
33. Johns, R.T. and L. Ayala, Natural Gas Technology Workshop, Poster on Unconventional Gas Resources Consortium, State College, PA, June 29<sup>th</sup>, 2011.
34. Johns, R.T, Three-phase flash calculations in compositional simulation, Penn State department seminar, February 2010.
35. Johns, R.T., Occidental presentation on gas flooding, Houston, Tx, and world wide subsidiaries, May 2009.
36. Johns, R.T., Effect of dispersion on gas flooding oil recovery, Chevron seminar, Houston, TX, May 2008.
37. LaForce, T., Cinar, Y., Orr, FM., Jr., and Johns, R.T., Experimental confirmation of analytical composition routes in three-phase partially miscible flow, previously presented at *SPE/DOE Fifteenth Symposium on Improved Oil Recovery*, SPE No. 99505, April 22 - 26, Tulsa, OK, 2006, invited to also present at EAGE IOR conference in Cairo, Egypt, April 22 – 24, 2007.
38. Johns, R.T., Fast Flash Calculations, Enhanced Oil Recovery SPE Forum, Broomfield, CO, June 25 – 30, 2006.
39. Parakh, H., and Johns, R.T., Use of Stripping Ratios to Identify Dispersion Levels and Displacement Mechanisms in Miscible Gas Floods, Canadian International Petroleum Conference (CIPC),

- Calgary, Canada, June 7-10, 2004.
40. Egwuenu, A.M., Johns, R.T., and Yinghui, L., Experience with MMP calculations by PVTsim, PVTsim User Group Meeting, Houston, TX, September 30, 2004.
  41. Yuan, H., and Johns, R.T., Recent advancements in the application of analytical theory to multicomponent gas drives, CSM Affiliates meeting, Austin, TX, October 23, 2002.
  42. Johns, R.T., Application of vertical equilibrium models to solve environmental and petroleum coning problems, Stanford University, Palo Alto, CA, June 2002.
  43. Mahadevan, J., Lake, L.W., and Johns, R.T., Estimation of echo dispersivity from single well tracer tests, Student paper, SPE Annual Tech. Conf. and Exhib., New Orleans, LA, September 30 - October 3, 2001.
  44. Mahadevan, J., Lake, L.W., and Johns, R.T., Estimation of true dispersivity, poster presentation, Shell Oil Co., Houston, TX, November, 2000.
  45. Long, M. and Johns, R.T., Interpretation of variable-skin well tests, ESP fall research review meeting, Austin, TX, November 4-5, 1999.
  46. Long, M. and Johns, R.T., A new mathematical model for hydraulic testing and characterization of proposed nuclear waste disposal sites, ESP spring research review meeting, Austin, TX, April 15, 1999.
  47. Long, M. and Johns, R.T., Hydraulic testing for characterization of proposed nuclear waste sites, ESP fall research review meeting, Austin, TX, November 5-6, 1998.
  48. Long, M. and Johns, R.T., Effect of pre-test pressure on DST interpretation, ESP spring research review meeting, Austin, TX, April 23-24, 1998.
  49. Delliste, A.M. and Johns, R.T., Analytical coning solutions to dual-phase pumping, ESP spring research review meeting, Austin, TX, April 23-24, 1998.
  50. Johns, R.T., Lecture on "Analytical solutions for compositional modeling," Reservoir Engineering Research Institute (RERI), May, 1987.
  51. Johns, R.T. and Long, M., Solution for sequential hydraulic tests in low-conductivity fractured formations, ESP spring research review meeting, Austin, TX, April 10-11, 1997.
  52. Johns, R.T., Vomvoris, S.G., and Löw, S., Review of hydraulic field tests in the Opalinus Clay of Northern Switzerland," Proceedings OECD, Nottingham, England, June 6 - 8, 1994.
  53. Johns, R.T. and Jalali-Yazdi, Y., Comparison of pressure transient response in intensely and sparsely fractured reservoirs, 14<sup>th</sup> Workshop on Geothermal Reservoir Eng., Stanford, CA, January 24-26, 1989.
  54. Johns, R.T., Sponge and rubber sleeve coring, Core Recovery Conference, Shell Research Center, 1985.
  55. Johns, R.T., Estimate of residual oil saturation at White Castle field, Shell Oil Petrophysical and Geological Conference, Houston, TX, September 17, 1985.
  56. Johns, R.T., Gulf coast experience with Welex's TMD and Schlumberger's TDT-K, Shell Oil Petrophysical and Geological Conference, Houston, TX, October 24-26, 1983.

#### CONTINUING EDUCATION:

- Attended workshop, new faculty teaching/orientation seminar, UT Center for Teaching Effectiveness, Austin, TX, August 21-23, 1995.
- Attended Lake's undergraduate PGE323 course on Primary Recovery, Fall 2009.
- Attended course on Waterflooding by Petroskills, Spring 2009.
- Attended Petroskills Training Course, Instructor Development Workshop, Houston, TX, June 2011.

#### FUNDED GRANTS AND CONTRACTS

Project Description		Total \$	\$ Share
Johns, R.T., Karpyn, Z., Ayala, L., Foundation CMG Industrial Research Chair - Fluid Behavior and Rock Interactions 2014 – 2018 (payment 2016).	Co -Pi	250,000	83,000
Johns, R.T., Enhanced Oil Recovery Research Group, Joint Investigation Project, 2015	PI	200,000	200,000
Ayala, L. and Johns, R.T., Unconventional Natural Resources Group, Joint Investigation Project, 2015	Co -PI	60,000	30,000
Abu Dhabi National Oil Company, Prediction and Modeling of Microemulsion Phase Behavior for ASP Flooding of Carbonate Reservoirs, 2015 (1st year)	PI	330,000	330,000
Johns, R.T., Karpyn, Z., Ayala, L., Foundation CMG Industrial Research Chair - Fluid Behavior and Rock Interactions 2014 – 2018 (one year shown), includes \$100,000 one-time grant for equipment. Payment 2015.	Co -Pi	350,000	117,000
Johns, R.T., CO2 Mobility Control Support, (NETL-URS), January 1 2014 – November 14 2014	PI	117,000	117,000
Ayala, L. and Johns, R.T., Unconventional Natural Resources Group, Joint Investigation Project, 2014	Co -PI	160,000	80,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2014	PI	200,000	200,000

Johns, R.T., Fundamental Research: Methodology for Assessment of Oil and Gas Systems, (NETL-URS), January 1 2014 – November 14 2014	Pi	120,000	120,000
Energy Institute Support, Spring 2013	PI	20,000	20,000
Johns, R.T., Fundamental Research on Basin Scale Storage Resource Assessment, (NETL-URS), January 1 2013 – November 14 2013	PI	105,072	105,072
Ayala, L. and Johns, R.T., Unconventional Natural Resources Group, Joint Investigation Project, 2013	Co -Pi	160,000	80,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2013	PI	350,000	350,000
Ayala, L. and Johns, R.T., Unconventional Natural Resources Group, Joint Investigation Project, 2012	Co -Pi	100,000	50,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2012	PI	250,000	250,000
Ayala, L. and Johns, R.T., Unconventional Natural Resources Group, Joint Investigation Project, 2011	Co -Pi	100,000	50,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2011	PI	250,000	250,000
Sepehrnoori et al., Enhanced Oil Recovery by CO <sub>2</sub> Injection, ADNOC 2011	Co -PI	240,340	120,170
Sepehrnoori et al., Enhanced Oil Recovery by CO <sub>2</sub> Injection, ADNOC 2010	Co -PI	234,860	117,430
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2010	PI	300,000	300,000
Sepehrnoori et al., Enhanced Oil Recovery by CO <sub>2</sub> Injection, ADNOC 2009-2010	Co -PI	228,874	114,437
Johns, R.T., Evaluation of Specifications for Sequestered CO <sub>2</sub> , BEG, 2009-10	PI	10,006	10,006
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2009-10	PI	300,000	300,000
Johns, Lake, and Delshad, Scaling groups for screening of SP/ASP Flooding, Chemical EOR JIP, 2009-10	PI	50,000	50,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2008-09	PI	300,000	300,000
Johns, Delshad, and Pope, Modeling the effect of pressure on microemulsion phase behavior, Chemical EOR JIP, \$50 K unrestricted, 2008-09	PI	50,000	50,000
Johns, Lake, and Delshad, Scaling groups for screening of SP/ASP Flooding, Chemical EOR JIP, 2008-09	PI	50,000	50,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2007-08	PI	250,000	250,000
Johns, Delshad, and Pope, Modeling the effect of pressure on microemulsion phase behavior, Chemical EOR JIP, \$50 K unrestricted, Summer, 2008	PI	50,000	50,000
Johns, Lake, and Delshad, Scaling groups for screening of SP/ASP Flooding, Chemical EOR JIP, Summer, 2008	PI	50,000	50,000
Nguyen, Q., Johns, R.T., Pope, G., and Lake, L.W., CO <sub>2</sub> Flooding with Conformance Control in Heterogeneous Carbonate Reservoirs, 2007 – 2008	PI	300,000	150,000
Johns, R.T., Gas Flooding Research Group, Joint Investigation Project, 2006-07	PI	150,000	150,000
Johns, Delshad, and Pope, Modeling the effect of pressure on microemulsion phase behavior, Chemical EOR JIP, \$50 K unrestricted	PI	50,000	50,000
Johns, Lake, and Delshad, Scaling groups for screening of SP/ASP Flooding, Chemical EOR JIP	PI	50,000	50,000
Nguyen, Q., Lake, L.W., and Johns, R.T., Thermal characterization of oil shale with mineral heterogeneity (total grant is \$235,000/yr for two years). Received 1 <sup>st</sup> check January 2007	Co -PI	470,000	156,667
Unrestricted Grant from Shell Oil in general area of fluid characterization	PI	25,000	25,000
Bryant, S.L., Johns, R.T., and Lake L.W., Origin of scale dependent dispersivity and its implications for miscible gas flooding, DOE, 2004 (total grant is \$800,000 for three years). January 2005	Co -PI	800,000	266,667
Johns, R.T., Investigation of Three-Phase Flow in Miscible Gas Floods, ACS, December 2001.	PI	120,000	120,000
Johns, R.T. and Lake, L.W., Improved Oil Recovery Efficiency by Gas Injection, ATP, October 2001	PI	249,808	124,904
Rossen, W.R., Johns, R.T., Pope, G.A., Development of more-efficient gas flooding applicable to shallow reservoirs, DOE, June 2001. (total grant is	Co -PI	\$338,000	\$169,000

\$888,000 for three years)			
Rossen, W.R., Johns, R.T., Pope, G.A., Development of more-efficient gas flooding applicable to shallow reservoirs, DOE, June 2000. (total grant is \$888,000 for three years)	Co -PI	\$300,000	\$150,000
Johns, R.T., Effect of mixing and dispersive processes on oil recovery, unrestricted grant from ARCO/BP/Exxon, March 2000	PI	\$60,000	\$60,000
Pope, G. and Johns, R.T., Surfactant remediation of recalcitrant groundwater contaminants, ATP, October 1999	PI	\$234,716	\$117,358
Johns, R.T., Investigation of pressure transient response in low-permeability reservoirs, ACS, September 1999	Co -PI	\$10,000	\$10,000
Johns, R.T., Effect of mixing and dispersive processes on oil recovery, unrestricted grant from ARCO/BP/Exxon, August, 1999	PI	\$60,000	\$60,000
Rossen, W.R., Johns, R.T., Pope, G.A., Development of more-efficient gas flooding applicable to shallow reservoirs, DOE, August, 1999. (total grant is \$888,000 for three years)	Co -PI	\$250,000	\$125,000
Johns, R.T., RERP, Effect of dispersion on composition paths in multicomponent gas drives, June 1999	PI	\$27,000	\$27,000
Johns, R.T., RERP, Effect of dispersion on composition paths in multicomponent gas drives, Sept. 1998	PI	\$25,000	\$25,000
Johns, R.T., Investigation of pressure transient response in low-permeability reservoirs, ACS, September 1998	PI	\$10,000	\$10,000
Johns, R.T. Effect of mixing and dispersive processes on oil recovery, unrestricted grant from Arco/BP/Exxon, May 1998	PI	\$60,000	\$60,000
Johns, R.T. EOGRRP, Effect of dispersion on composition paths in multicomponent gas drives, 1997	PI	\$20,000	\$20,000
Lake, L.W., and Johns, R.T., Burlington Resources, Unrestricted grant for petrophysical labs, 1997	Co -PI	\$12,500	\$6,250
Sharma, M. and Johns, R.T., Grant No. 47561 Texas Engineering Experiment Station - Pantex Project, 1996	Co -PI	\$69,000	\$34,500
Charbeneau R.J., Lake, L.W., and Johns, R.T., American Petroleum Institute (API), Optimization of free product hydrocarbons from dual-pump wells, 1996	Co -PI	\$100,000	\$33,333
Johns, R.T. EOGRRP, Effect of dispersion on composition paths in multicomponent gas drives, 1996	PI	\$20,000	\$20,000
Sharma, M. and Johns, R.T., Grant No. 47561 Texas Engineering Experiment Station - Pantex Project, 1996	Co -PI	\$122,000	\$61,000
Johns, R.T., Special Equipment Grant, College of Engineering, The University of Texas at Austin, 1995	PI	\$31,000	\$31,000
Johns, R.T., Research Initiation Grant, Bureau of Engineering Research, The University of Texas at Austin, 1995	PI	\$5,000	\$5,000
<b>Approximate Total</b>		<b>\$8,954,876</b>	<b>\$6,228,494</b>

**CHART OF PSU/UT INSTRUCTIONAL ACTIVITIES**

Course No.	Title (Shaded rows are graduate courses)	Semester	Enrollment		Course Evaluation Average
			Total	Returned Survey	
PGE 383	Environmental Solutions in Petroleum & Geosystems Eng.	Summer 1995	10	10	4.0/5.0
PGE 424	Petrophysics and Fluid Flow Laboratory	Fall 1995	26	19	2.7/5.0
PGE 383	Environmental Solutions in Petroleum & Geosystems Eng.	Spring 1996	7	7	4.2/5.0
PGE 424	Petrophysics and Fluid Flow Laboratory	Fall 1996	20	14	3.5/5.0
PGE 383	Multiphase Flow in the Near Subsurface	Spring 1997	5	5	4.6/5.0
PGE 383	Mathematics of Enhanced Remediation and Recovery	Summer 1997	4	4	4.7/5.0
PGE 424	Petrophysics and Fluid Flow Laboratory	Fall 1997	35	28	2.8/5.0
PGE 176	Special Problems in PGE (Student Paper Contest)	Spring 1998	NA	NA	NA
PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 1998	7	7	4.2/5.0
PGE 383	Mathematics of Enhanced Remediation and Recovery	Summer 1998	3	5	4.3/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 1998	30	15	3.4/5.0
PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 1999	6	5	4.0/5.0
PGE 393	Department Graduate Seminar	Spring 1999	NA	NA	NA
PGE 387K	Fundamentals of EOR I	Summer 1999	8	8	4.6/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 1999	37	35	4.4/5.0
PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 2000	6	4	4.8/5.0
PGE 383	Advanced Pressure Transient Analysis (Remote course)	Summer 2000	4	4	4.1/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2000	35	28	3.6/5.0
PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 2001	13	11	4.5/5.0
PGE 373L	Senior Design for Geosystems & Hydrogeological Eng.	Spring 2001	5	4	3.8/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2001	29	20	4.1/5.0
PGE 383	Advanced Pressure Transient Analysis (Remote course)	Fall 2001	4	4	4.6/5.0
PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 2002	13	12	4.4/5.0
PGE 373L	Senior Design for Geosystems & Hydrogeological Eng.	Spring 2002	7	7	4.3/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2002	42	36	3.5/5.0
PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 2003	5	4	4.4/5.0
PGE 384	Advanced Thermodynamics and Phase Behavior	Spring 2003	13	13	4.4/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2003	64	48	4.1/5.0
PGE 387K	Fundamentals of Enhanced Oil Recovery I	Spring 2004	14	13	4.3/5.0

PGE 370/383	Fundamentals of Subsurface Environmental Engineering	Spring 2004	11	9	4.8/5.0
PGE 323	Fluid Flow Through Permeable Media	Spring 2005	59	47	4.1/5.0
PGE 384	Advanced Thermodynamics and Phase Behavior	Spring 2005	16	10	4.7/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2005 – Morn. Sec 1	40	35	3.6/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2005 – Aftern. Sec 2	47	23	3.9/5.0
PGE 387K	Fundamentals of Enhanced Oil Recovery	Spring 2006	18	9	4.4/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2006 – Morn. Sec 1	51	44	3.5/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2006 – Aftern. Sec 2	44	34	3.6/5.0
PGE 323	Fluid Flow Through Permeable Media	Spring 2007	93	60	4.1/5.0
PGE 387K	Fundamentals of Enhanced Oil Recovery	Summer 2007	7	5	4.6/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2007 – Morn. Sec 1	49	34	4.0/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2007 – Aftern. Sec 2	48	34	4.1/5.0
PGE 384	Advanced Thermodynamics and Phase Behavior	Spring 2008	22	20	4.7/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2008 – Morn. Sec 1	61	41	3.5/5.0
PGE 326	Thermodynamics and Phase Behavior	Fall 2008 – Aftern. Sec 2	63	34	3.7/5.0
PGE 387K	Fundamentals of Enhanced Oil Recovery	Spring 2009	23	22	4.6/5.0
PGE 323L	Reservoir Engineering II	Spring 2010	58	51	4/3/5.0
PGE 323L	Reservoir Engineering II	Spring 2010	73	68	4.1/5.0
PGE 384	Advanced Thermodynamics and Phase Behavior	Spring 2010	43	36	4.2/5.0
PNG 430	Reservoir Modeling	Fall 2010	35	11	6.8/7.0
PNG 502	Unsteady Flow	Spring 2011	4	4	NA < 5
PNG 518	Design of Miscible Recovery Processes	Spring 2011	15	9	6.3/7.0
PNG 430	Reservoir Modeling	Fall 2011	60	14	6.1/7.0
PNG 597B	Chemical and Thermal Enhanced Oil Recovery	Spring 2012	9	9	6.8/7.0
PNG 430	Reservoir Modeling	Fall 2012	82	35	6.3/7.0
PNG496	Independent Study	Spring 2013	1	1	NA < 1
PNG 518	Design of Miscible Recovery Processes	Spring 2013	8	8	6.6/7.0
PNG 430	Reservoir Modeling	Fall 2013	102	35	5.5/7.0
PNG 520	Phase Relations	Fall 2013	27	17	6.3/7.0
PNG597A	Advanced Petrophysics	Spring 2014	26	13	5.9/7.0
PNG 430	Reservoir Modeling (1 <sup>st</sup> section – merged report)	Fall 2014	158	59	5.8/7.0
PNG 430	Reservoir Modeling (2 <sup>nd</sup> section – merged report)	Fall 2014	158	59	5.8/7.0
PNG 597	Chemical Enhanced Oil Recovery	Spring 2015	5	4	6.9/7.0
PNG 430	Reservoir Modeling (1 <sup>st</sup> section – merged report)	Fall 2015	213	73	5.3/7.0

PNG 430	Reservoir Modeling (2 <sup>nd</sup> section – merged report)	Fall 2015	213	73	5.3/7.0
PNG 518	Design of Miscible Recovery Processes	Spring 2016			?/7.0

**UT Student Evaluation Scale: 5 – Excellent, 4 – Very Good, 3 – Satisfactory, 2 – Unsatisfactory, 1 – Very Unsatisfactory**

**PSU Student Evaluation Scale: 7 – Superior, 6 – Excellent, 5 – Good, 4 – Average, ...**

**Note: PSU Evaluations are voluntarily done online. The score is an average of A and B categories.**

#### **PH.D. SUPERVISIONS COMPLETED**

- Soumyadeep Ghosh, *A Novel Equation-of-State to Model Microemulsion Phase Behavior for Enhanced Oil Recovery Applications*, Department of Energy and Mineral Engineering, The Pennsylvania State University, December 2015.
- Bahareh Nojabaei, *Phase Behavior and Flow Analysis of Shale Reservoirs Using a Compositionally-Extended Black-Oil Approach*, Department of Energy and Mineral Engineering, The Pennsylvania State University, December 2015.
- Changhe Qiao, *General Purpose Compositional Simulation for Multiphase Reactive Flow with a Fast Linear Solver*, Department of Energy and Mineral Engineering, The Pennsylvania State University, December 2015.
- Mohsen Rezaveisi, *Improvements in Phase Behavior Modeling for Compositional Simulation*, The University of Texas at Austin, May, 2015.
- Ashwin Venkatramana, *Gibbs Free Energy Minimization for Flow in Porous Media*, Department of Petroleum and Geosystems Engineering, University of Texas, May, 2014.
- Saeedeh Mohebbinia, *Advanced Equation of State Modeling for Compositional Simulation of Gas Floods*, Department of Petroleum and Geosystems Engineering, University of Texas, December 2013.
- Seyhan Emre Gorucu, *Reduced Phase Equilibrium Calculations: New Reduced Parameters, Critical Analysis and Fluid Characterization*, Department of Energy and Mineral Engineering, The Pennsylvania State University, December 2013.
- Ali Moinfar, *Development of an Efficient Embedded Discrete Fracture Model for 3D Compositional Reservoir Simulation in Fractured Reservoirs*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2013
- Adepoju, Olaoluwa O., *Scale-Up of Dispersion for Simulation of Miscible Displacements*, Cosupervised with Dr. Larry W. Lake, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, May 2013
- Rahmatabadi, Kaveh Ahmadi, *Advanced Methods for MMP Calculation*, Department of Petroleum and Geosystems Engineering, University of Texas, May 2011.
- Carrizales, Maylin, *Electromagnetic Heating of Heavy Oil Reservoirs*, Cosupervised with Dr. Larry W. Lake, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 2010.
- Roshanfekar, Meghdad, *Effect of Pressure and Methane on Microemulsion Phase Behavior and Its Impact on Surfactant-Polymer Flood Oil Recovery*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 2010
- Garmeh, Gholamreza, *Estimation of Dispersion in Miscible Gas Floods and Upscaling*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 2009.
- Okuno, Ryosuke, *Modeling of Multiphase Behavior for Gas Flooding Simulation*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2009.
- Li, Yinghui, *Fast and Robust Phase Behavior Modeling for Compositional Reservoir Simulation*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2007.
- LaForce, T., *Mathematics of Partially Miscible Three Phase Flow*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, May 2005.
- Hua Yuan, *Application of Miscibility Calculations to Gas Floods*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2003.
- Long Ma, *Interpretation of Sequential Well Tests*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2000.

#### **M.S. SUPERVISIONS COMPLETED**

- Dhiraj Singla, *Effect of Grid-Block Size and Heterogeneity on Miscible Residual Oil Saturation*, Department of Energy and Mineral Engineering, The Pennsylvania State University at University Park, August 2013.
- Zhenzhen Wang, *A Parametric Study on Reservoir Cooling for Enhanced Oil Recovery from CO<sub>2</sub> Injection*, Department of Energy and Mineral Engineering, The Pennsylvania State University at University Park, August 2013.



- Michael Connolly, *Study of Scale Dependence of Dispersion Using Higher Order Schemes*, Department of Energy and Mineral Engineering, The Pennsylvania State University at University Park, May 2013.
- Liwei Li, *Three-Phase Mixing Cell Method for Gas Flooding*, Department of Energy and Mineral Engineering, The Pennsylvania State University at University Park, May 2013.
- Amey Khanzode, *A Parametric Study of Reservoir Cooling for Enhanced Recovery by CO<sub>2</sub> Flooding*, Department of Energy and Mineral Engineering, The Pennsylvania State University at University Park, December 2012.
- Khyati Rai, *Screening Model for Surfactant-Polymer Flooding Using Dimensionless Groups*, Co-supervised with Drs. Lake and Delshad, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 2008.
- Derek Wood, *Creating a Quick Screening Model for CO<sub>2</sub> Flooding and Storage in Gulf Coast Reservoirs*, Co-supervised with Dr. Lake. Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2006.
- Rafay Zahid Ansari, *Superposition of Analytical Coning Solutions*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, May 2006.
- Azubuikwe Ekwuenu, *Improved Fluid Characterization for Miscible Gas Floods*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December, 2004.
- Harshad Parakh, *Simulation Study of Miscible Gas Injection for Gas Enriched Above the Minimum Miscibility Enrichment*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December, 2004.
- Karem Alejandra Khan Torres – No thesis – course option selected, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2004.
- Lucas Elliott, *Numerical Reservoir Simulation of In-Situ Thermal Desorption Below the Water Table*, Co-supervised with Dr. Pope. Department of Civil Engineering, University of Texas at Austin, August, 2003.
- Leonardo Bermudez, *Effect of Mixing on Gas Floods Above the MME Using Slug and WAG Injection*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August, 2002.
- Abimbola Obigbesan, No thesis – course option selected, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, June 2002.
- Reinel Solano, *Effect of Mixing Mechanisms on Recovery by Enriched-Gas Injection above the Minimum Miscible Enrichment*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December, 2000.
- Jagannathan Mahadevan, *Estimation of True Dispersivity*, Co-supervised with Dr. Lake, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 2000.
- Pashupati Sah, *Effect of Dispersive Mixing and Enrichment on Oil Recovery in 1-D Multicomponent Gas Drives*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, August 2000.
- Sathish Subramanian, *Effect of Relative Permeability and Mixing on Recovery in Multicomponent Gas Drives*, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 1998.
- Arnaud Delliste, *Steady-State Coning Solutions for Multiphase Flow to a Well*, December 1998.
- Mike McAdams, Civil Engineering, *Optimization of Free Product Recovery – A Comparison of TWOLAY and UTCHEM*, Co-supervised with Dr. Randy Charbeneau, Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 1997.
- Zahid Khan, Co-supervised with Dr. Kamy Sepehrnoori. Department of Petroleum and Geosystems Engineering, University of Texas at Austin, December 2007.
- Lise Slagstad, *Coning Models for Dual-Pump Systems in Aquifers Contaminated with Non-Aqueous Phase Liquids*, Co-supervised with Dr. Larry Lake. Department of Petroleum and Geosystems Engineering, University of Texas at Austin, May 1997.

#### **OTHER RESEARCH PROJECTS COMPLETED**

- Viscosity Estimation for Heavy Oils (Sara Sanderson – six month assignment from Denmark Technology Institute)

#### **CURRENT PH.D. PROJECTS AND STUDENTS**

- ASP flooding (Hafsa Abubaker Hashim Abboud)
- ASP Flooding (Daulet Magzymov)
- Chemical Flooding Simulation (Victor Torrealba)
- Compositional Phase Permeabilities (Pooya Khodaparast)
- CO<sub>2</sub> Storage and EOR (Liwei Li)
- Method of Characteristic Solutions for Compositional Floods (Saeid Khorsandi Kouhanestani)
- Development of Compositional Simulator (Nithiwat Siripatrachai with Dr. Ertekin)

#### **STUDENTS SUPPORTED FOR OTHER FACULTY**

- Erhamah Alsuwaidi (Dr. Sergei Lvov)

- Amir Kianinejad (Dr. DiCarlo)
- Federico M Caldelas (Dr. DiCarlo)
- Hassan Dehghanpour (Drs. Huh, Johnston, and Bryant)
- Rouzbeh Ghanbarnezhad Mog (Dr. Lake)
- Farshad Lalehrokh
- David Livasy
- Mohammad Mirzaei-Galeh-Ka

#### **CURRENT M.S. PROJECTS AND STUDENTS**

- ASP Flooding (Evan Galimberti)
- Gas flooding (Mohammed A. Al-Saffar)
- Coning and Wellbore Model Improvement (Eunnam Ahn)

#### **OTHER RESEARCH SUPERVISION**

##### ***Ph.D. Dissertation Committees***

- Chong Hyun Ahn, 2016. (in progress)
- Luoyi Hua, 2016 (no dissertation).
- Amir Kianinejad, Petroleum and Geosystems Engineering, *Measurement and Modeling of Three-Phase Relative Permeability as a Function of Saturation Path*, The University of Texas at Austin, November 2015.
- Najem Adelke, *Pneumatic Transport Modeling of Underbalanced Drilling Hydraulics in Horizontal and Deviated Wellbores*, Energy and Mineral Engineering, 2015.
- Mohamad Zeini Jahromi, *Development of a Three-Dimensional, Three-Phase Coupled Model for Simulating Hydraulic Fracture Propagation and Long-term Recovery in Tight Gas Reservoirs*, Energy and Mineral Engineering, 2013.
- Xiang Li, *Modeling of CO<sub>2</sub> Enhanced Methane Recovery in Gas Shale Reservoir*, Energy and Mineral Engineering, ??
- Christopher James Landy, *Pore-scale Imaging and Lattice Boltzmann Modeling of Single- and Multi-phase Flow in Fractured and Mixed-wet Permeable Media*, Energy and Mineral Engineering, May 2013.
- Soraya S. Betancourt, *Some Aspects of Deep Formation Testing*, Petroleum and Geosystems Engineering, May 2012.
- Rouzbeh Ghanbarnezhad, Petroleum and Geosystems Engineering, *Modeling of Fluid Flow of Carbon Dioxide through Permeable Media*, December 2011.
- Hassan Dehghanpour, Petroleum and Geosystems Engineering, *Measurement and Modeling of Three-Phase Relative Permeability*, August 2011.
- Rohollah A. Pour, Petroleum and Geosystems Engineering, *Development and Application of a 3D Equation-of-State Compositional Fluid-Flow Simulator in Cylindrical Coordinates for Near-Wellbore Phenomena*, September 2011.
- Abraham John, Petroleum and Geosystems Engineering, *Dispersion in Large Scale Permeable Media*, August 2008.
- Rhaman Jha, Petroleum and Geosystems Engineering, June 2008.
- Xingru Wu, Petroleum and Geosystems Engineering, *An Investigation of Partitioning Tracers for Geothermal Reservoirs*, 2006.
- Chrissi Lynn Brown, Civil Engineering, *Design of a Field Scale Project for Surfactant Enhanced Remediation of a DNAPL Contaminated Aquifer*, May 2004.
- Zeno George Philip, Petroleum and Geosystems Engineering, *Incorporating Subcritical Crack Growth Mechanics into Natural Fracture Characterization for Improved Reservoir Simulation*, December 2003.
- Hamoud Ali Al-Anazi, Petroleum and Geosystems Engineering, *Experimental Measurements of Condensate Blocking and Treatments in Low and High Permeability Cores*, August 2003.
- Shekhar Jayanti, Petroleum and Geosystems Engineering, *Modeling Tracers and Contaminant Flux in Heterogeneous Aquifers*, July 2003.
- Qiang Xu, Petroleum and Geosystems Engineering, *Theoretical and Experimental Study of Foam for Enhanced Oil Recovery and Acid Diversion*, January 2003.
- Liang Cheng, Petroleum and Geosystems Engineering, *Modeling and Simulation Studies of Foam Processes in Improved Oil Recovery and Acid Diversions*, December 2001.
- Aura Araque Martinez, Petroleum and Geosystems Engineering, *Modeling the Effects of Geochemistry on Well Impairment*, December 2000.
- Jing Du, Petroleum and Geosystems Engineering, *Mapping Hydraulic Fracture with Tiltmeters: Advanced Techniques for Non-Uniform Fracture Opening and Layered Media*, August 2000.
- Jirawat Chewarougoaj, Petroleum and Geosystems Engineering, *Improved Procedures for Estimating*

*Uncertainty in Hydrocarbon Recovery Predictions*, May 2000.

- Neil Edward Deeds, Civil Engineering, *Development and Evaluation of Partitioning Interwell Tracer Test Technology for Detection of Non-aqueous Phase Liquids in Fractured Media*, July 1999.
- Jean-Philippe Nicot, Civil Engineering, *Inverse Modeling of Subsurface Environmental Partitioning Tracer Tests*, December 1998.
- Travis McGrath, Civil Engineering, *A Non-Dimensional Approach for Assessing Uncertainty in DNAPL Contamination*, December 1998.
- Carlos Fernando Fonseca, Petroleum and Geosystems Engineering, *Chemical-Mechanical Modeling of Wellbore Instability in Shales*, May 1998.
- Jiachuan Wang, Petroleum and Geosystems Engineering, *Applications of Geochemical Modeling*, in progress.
- Chenggang Chen, Petroleum and Geosystems Engineering, *A Front-Tracking Model for Water Encroachment in Gas Reservoirs*, in progress.
- Hiroshi Kawahara, Petroleum and Geosystems Engineering, *Applications of Wavelet Transforms to Petrophysical Data*, in progress.
- Chun Shen, Petroleum and Geosystems Engineering, title unknown, in progress.

#### **M.S. Thesis/Report Committees**

- Miao Zhang, *Variable Pressure-Drop/Flow-Rate System Analysis of Natural Gas Reservoirs: A Density-Based Approach*, Department of Energy and Mineral Engineering, December 2013.
- Peng Ye, *A Pseudofunctionless Approach to Natural Gas Reservoir Engineering Analysis*, December, 2011.
- Bryan Sams, *CO<sub>2</sub> Sequestration*, August 2004.
- Seung Hi Yi, Civil Engineering, *A Non-Linear Regression Analysis of Subsurface DNAPL (Dense Non-Aqueous Phase Liquid) Distributions Using Dimensionless Parameters*, May 1999.
- Kiam Chai Ooi, Petroleum and Geosystems Engineering, *Laboratory Evaluation of Surfactant Remediation of Nonaqueous Phase Liquids*, December 1998.
- Jeff Edgar, Petroleum and Geosystems Engineering, *Laboratory Evaluation of Partitioning Tracers*, December 1997.
- Qiang Fang, Petroleum and Geosystems Engineering, *Dynamic Displacement Measurements for Rapid Characterization of Flow in Unsaturated Aquifers*, May 1996.
- David Warren Boucher, Petroleum and Geosystems Engineering, *Analysis of Dynamic Fluid Displacements for Rapid Characterization of Flow in Unsaturated Aquifers*, December 1995.

#### **POSTDOCTORAL-STUDENTS**

Changhe Qiao, PhD, Mathematics, The Pennsylvania State University, 2015.

Myeong Hwan Noh, PhD Petroleum Engineering, The University of Texas at Austin, 2004.

Chowdhury K. Mamun, PhD Chemical Engineering, The University of Texas at Austin, 2001 - 2002.

#### **UNDERGRADUATE-STUDENTS**

Kevin J. Caputo 2016.

SuLi Tham, *A Simulation Study of Enhanced Oil Recovery Using Carbon Dioxide Foam in Heterogeneous Reservoirs*, PSU, Honors Thesis, 2015.

Marwah Alsinan, *Black Oil Flash Calculations and Simulation*, PSU, Spring 2013.

Daniel Rodriguez, *ASP Flooding Experiments*, PSU, Summer 2012 – Spring 2013

Katie Maisel, *ASP Flooding Experiments*, PSU, Summer, 2012 – Spring 2013.

Chonpatin Phaiboonpalayoi, *Three-Phase Coning*, Fall and Spring 2009 - 2011.

David Livasy, *Reduction of Residual Oil Saturation by Polymer Flooding*, Summer 2009.

Jain Vaibhav, *Modeling Brine Intrusion in Coastal Regions*, Fall 2008.

Babaji Chitturi, *Superposition of Analytical Solutions for Gas/Water Coning*, 2004.

Tae W. Kim, *Modeling of Constant K-value Flash and Implementation on Web*, Spring 2007.

#### **ADDITIONAL ADVISING ACTIVITIES**

Gaurav Nolkha, E&CE (computer programmer), The University of Texas at Austin, 2007-

Faculty Adviser: Society of Petroleum Engineers Student Chapter, The University of Texas at Austin, 1995-1998.

Faculty Adviser: K Advisor for Undergraduate Senior Group Project, Mechanical Engineering Department, The University of Texas at Austin, 1998.

Faculty Mentor: Honors Colloquium, 1996.

Scholar: Sara Sanderson 8/15/05 – 1/15/06