

Dr. Janice M. Gillespie

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Educational History

1987 - 1992

Doctor of Philosophy Degree in Geology
University of Wyoming, Laramie, WY
Dissertation--Tectonic significance of Jura-Cretaceous strata in the western
interior foreland basin of southern Canada and northwestern Montana, U.S.

1981 - 1984

Master of Science degree in Geology
South Dakota School of Mines and Technology, Rapid City, SD
Thesis--Depositional environments and hydrocarbon potential of the Upper Cretaceous Lance
Formation, eastern Wind River Basin, WY

1977- 1981

Bachelor of Science degree in Geology, magna cum laude
Bemidji State University, Bemidji, MN

Awards and Externally Funded Grants

2014 Distinguished Educator Award, Pacific Section American Association of
Petroleum Geologists
2003 Millie Ablin Outstanding Professor Award
2000 Bautzer Faculty University Advancement Award
California Department of Conservation—\$96,856 to determine depth
to Underground Sources of Drinking Water in Kern County, San Joaquin Basin
National Science Foundation-- Award Number:1108494; Dual-Credit Physical
Geology Classes: A Strategy for Improving the "Pipeline" from High Schools into
University Geology Programs \$197,000 co-PI with Dr. Dirk Baron
National Science Foundation-- EHR 1137774 CSUB Center for Climate Change and
Carbon Sequestration \$5,000,000—co-PI with Drs. Negrini, Baron and Horton.
US Department of Energy – “Study of reservoir heterogeneities and structural
features affecting production in the lower shallow oil zone, eastern Elk Hills area,
California”--\$20,000
Geotechnology Training Center at CSU Bakersfield (with Drs. Negrini and Horton) – \$6.4
million in hardware, software and cash donations to establish a computer- based GIS training
center for students and petroleum industry employees on the CSUB campus.
National Science Foundation Grant EAR-9507991 (Dr. Geoff Thyne, co-P.I.)-- "Significance
of Fracture-Induced Anisotropy on Recharge into an Alluvial Aquifer"--\$100,000
Petroleum Research Fund (American Chemical Society) Grant #29620-GB8-SF96--
"Sequence Stratigraphy and Facies Architecture of Pliocene Strata on the Bakersfield

Arch"--\$23,000

China Lake Naval Air Weapons Station (Geothermal Program Office)--"Study of Ground Water/Surface Water Interactions and Aquifer Architecture of the Indian Wells Valley, CA" (with Dr. Geoff Thyne)--\$300,000 in sampling, analyses and equipment costs.

Current and Previous Employment

Senior Research Scientist 9/15 to Present—US Geological Survey, California Water Science Center—three dimensional subsurface aquifer salinity mapping for implementation of a monitoring program to characterize the impact of oil and gas development on California's groundwater resources.

Professor 1/91 to present--Dept. of Geology, California State University, Bakersfield, CA--Responsible for supervising research projects and teaching upper division and graduate-level courses in petroleum geology, ground water and GIS (ArcGIS, GeoGraphix, Petra, Petrel). Department chair from 2003 to 2006.

Visiting Researcher: Lawrence Berkeley National Lab-- Summer 2011 thru 2013—Dept. of Energy funded research in carbon capture and storage in declining oilfields in the southern San Joaquin Valley, Kern County, CA

Petroleum Geology/Petrophysics Instructor 7/08 to Present—Conduct seminar courses for the local petroleum community through the Conservation Committee of California Oil and Gas Producers

Consulting Petroleum Geologist intermittent 1984-1990--Geologic evaluation of Shannon Sandstone in Powder River Basin, Wyoming, seismic interpretation Williston Basin, ND.

Petroleum Geology Intern 1989--ARCO Oil and Gas Co., Lafayette, LA-- Exploration study of the Lower Cretaceous Glen Rose reef and back reef facies in northern Louisiana. Delineated prospective areas for hydrocarbon accumulations based upon core and production data and electric log and seismic analysis and correlation.

Petroleum Geologist Geological Engineer 1985-1987--Tenneco Oil Co., Pacific Coast Division, Bakersfield, CA--Responsibilities included petrophysical analysis, enhanced oil recovery, and exploration for shallow gas reservoirs in the southern San Joaquin Basin, CA.

Teaching Assistant intermittent 1983-1988—South Dakota School of Mines and Technology/Indiana University/University of Wyoming—Physical Geology Labs, Stratigraphy/Sedimentology lecture, field mapping in the northern Black Hills, SD and WY and southwest Montana overthrust belt.

Geologist 1982-1983--Branch of Oil and Gas Resources, USGS, Lakewood, CO--Assigned to a tight gas sands project to analyze facies patterns and diagenesis as a clue to predicting the distribution of oil and gas in the upper Cretaceous Lance Formation in the Wind River Basin, Wyoming.

Organizations

Lawrence Livermore Natl. Laboratory Expert Panel, California State Water Quality Control Board SB 4 Committee
California Professional Geologist # 6397
Advisory Committee Grand Staircase-Escalante National Monument, Utah
Advisory Committee California StateMAP project, California Geological Survey
Geological Society of America
American Association of Petroleum Geologists
San Joaquin Geological Society

Publications

Esser B. K., Beller H. R., Carroll S. A., Cherry J. A., Gillespie J. M., Jackson R. B., Jordan P. B., Madrid V., Parker B. L., Stringfellow W. T., Varadharajan C. and Vengosh A. (2015)
Groundwater monitoring for oil and gas development under California SB4. In
<https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/76285>. Lawrence Livermore National Laboratory LLNL-PRES-679944. Available at:

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<https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/68638>

Gillespie, J.M., Jordan, P.D., Goodell, J., Harrington, K., Jameson, S., 2015, Local and global impacts of carbon capture and storage combined with enhanced oil recovery in four depleted oilfields, Kern County, California:

HYPERLINK "<https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/76285>"
<https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/76285>

Bradley K. Esser, Harry R. Beller, Susan A. Carroll, John A. Cherry, Jan Gillespie, Robert B. Jackson, Preston D. Jordan, Vic Madrid, Joseph P. Morris, Beth L. Parker, William T. Stringfellow, Charuleka Varadharajan, and Avner Vengosh, 2015, Executive Summary: Recommendations on Model Criteria for Groundwater Sampling, Testing, and Monitoring of Oil and Gas Development in California: Lawrence Livermore National Laboratory LLNL-TR-674463, 9 p.

Harrington, K. J.* and Gillespie, J.M., 2015, Carbon storage and CO₂-enhanced oil recovery potential in the Temblor Formation, northeast McKittrick oilfield, San Joaquin Valley, CA: Environmental Geosciences v. 22, p. 33-56.

Gillespie, J.M., Meyer, J.*, Kong, D.*, and Anderson, S.*, 2015, Using Oilfield Chemical Analyses To Determine Salinity Gradients And The Depth To Underground Sources Of Drinking Water In Kern County's Oilfields: Pacific Section Am. Assn. Petroleum Geologists, abstracts with programs, Oxnard, CA, May 4-5, 2015.

Jordan, P.D. and Gillespie, J.M., 2015, Produced Water Disposal in The Southern San Joaquin Basin: a direct analog for brine leakage in response to carbon storage: Pacific Section Am.

Assn. Petroleum Geologists, abstracts with programs, Oxnard, CA, May 4-5, 2015.

Gillespie J.M. with Christa Sadler, 2014, Geology Road Guide Cottonwood Canyon Grand Staircase-Escalante National Monument: Glen Canyon Natural History Assn., Page, AZ

Gillespie, J.M., Robbins, J.R.*, Saleeby, J. and Saleeby, Z., 2014, Detrital zircon analysis of the late Miocene Kern River Formation, Kern River Oilfield, southern San Joaquin Basin, California: Geol Soc. Am. Annual Meeting, Vancouver, BC, Canada, October 19-22, 2014

Harrington, K.* and Gillespie, J.M., 2014, Carbon Capture Potential in the Temblor Formation, McKittrick oilfield, San Joaquin Valley California: Geol Soc. Am. Annual Meeting, Vancouver, BC, Canada, October 19-22, 2014

Gillespie, J.M. and Jordan, P.D., 2014, Evaluation of three mid-Cenozoic sandstone reservoirs in the San Joaquin Valley for potential carbon storage: Pacific Section American Society of Petroleum Geologists paper 6-1, April 28-29, 2014, Bakersfield, CA

Harrington, K.*, Gillespie, J. and Jordan, P., 2014, Carbon capture potential in the Temblor Formation, McKittrick oilfield, southern San Joaquin Basin, CA: American Society of Petroleum Geologists Poster P62, April 28-29, 2014, Bakersfield, CA

Jordan, Preston; Janice Gillespie. (Lawrence Berkeley National Laboratory). 2013. Potential Impacts of Future Geological Storage of CO₂ on the Groundwater Resources in California's Central Valley: Southern San Joaquin Basin Oil and Gas Production Analog for Geologic Carbon Storage. California Energy Commission. Publication number: CEC-500-2014-029. HYPERLINK

"<http://www.energy.ca.gov/2014publications/CEC-500-2014-029/CEC-500-2014-029.pdf>"
<http://www.energy.ca.gov/2014publications/CEC-500-2014-029/CEC-500-2014-029.pdf>

Gillespie, J.M., Knight, P., Kiouses, S. and Baron, D., 2013, Establishment of a successful dual credit high school geosciences program: a case history from Kern County, California: Geol. Soc. of America Abstracts with Programs Paper No. 176-10, GSA Annual Meeting, October 28-31, 2013, Denver, CO

Goodell, Jonathan A.* and Gillespie, Janice, 2013, Carbon Capture and Sequestration in the Monterey Stevens Sandstone, San Joaquin Valley, California: AAPG Search and Discovery Article #90162 ©2013 Pacific Section AAPG, SPE and SEPM Joint Technical Conference, Monterey, California, April 19-25, 2013

Wilson, John*; Chehal, Simarjit*; Gonzales, Gina*; Jordan, Preston D.; Gillespie, Janice, 2012, Potential Pressure Responses to Carbon Dioxide Sequestration by Analogy to Net Fluid Change in Reservoirs of the Southern San Joaquin Valley Basin: AAPG Search and Discovery Article #90142 © 2012 AAPG Annual Convention and Exhibition, April 22-25, 2012, Long Beach, California.

Gillespie, J.M., 2011, Potential for carbon capture and storage in Kern County oilfields: CSU Geospatial Review v. 9, p. 3

Knight, P.W., Gillespie, J.M. and Baron, D.L., 2009, Experiences from 13 years of a dual enrollment physical geology class at the California State University and South High school in Bakersfield, California: Geological Society of America Abstracts with Programs, Vol. 41, No. 7, p. 320

Auffant, A.D.*, Mahan, A.M.* and Gillespie, J.M., 2009, Paleoenvironmental reconstructions for the Pliocene Calitroleum and Gusher reservoirs, Elk Hills and western Bakersfield Arch, California in Knauer, L., ed., Contributions to the Geology of the San Joaquin Basin, California, Pacific Section American Asso. Of Petroleum Geologists Misc. Pub. 48 p. 67-80.

Steward, D.C.* and Gillespie, J.M., 2009, Sequence stratigraphy of the late Neogene strata on the Bakersfield Arch, San Joaquin Basin, California in Knauer, L., ed., Contributions to the Geology of the San Joaquin Basin, California, Pacific Section American Asso. Of Petroleum Geologists Misc. Pub. 48, p. 81-98.

Negrini, R., Baron, D., Gillespie, J., Horton, R., Draucker, A.*, Durham, N.*, Huff, J.*, Philley, P.*, Register, C.*, Parker, J. and Haslebacher, T., 2009, A middle Pleistocene lacustrine delta in the Kern River depositional system: structural control, regional stratigraphic context and impact on groundwater quality in Knauer, L., ed., Contributions to the Geology of the San Joaquin Basin, California, Pacific Section American Asso. of Petroleum Geologists Misc. Pub. 48, p. 99-118.

Gillespie, J., Auffant A.*, Cobos, L.S.*, Mahan, A.*, Negrini, R., Steward, D.* and Taylor, S.*, 2008, Changing sediment sources in the Mio-Pliocene Etchegoin Formation on the western Bakersfield Arch and Elk Hills, California: Pacific Section AAPG Abstracts with Programs, Bakersfield, California p. 9.

Gillespie, J.M., 2007, Geology of Devils Tower: A Virtual Experience in Views of the National Parks: http://www.nature.nps.gov/views/Classic/Sites/DETO/DETO_Index.htm

Negrini, R., D. Baron, J. Gillespie, R. Horton, K. Blake*, J. Huff*, C. Meyer*, E. Powers*, A. Draucker*, S. Draucker*, N. Durham*, G. Hilton, L. Mondrian*, S. O'Rear, P. Philley*, C. Register*, 2005. A Middle Pleistocene Lacustrine Delta Lobe in the Kern River Alluvial Fan and its Close Association with Groundwater Arsenic Concentrations: One Outcome of USDA-CREES Grant #2001-01170, USDA-CSREES National Water Quality Conference, La Jolla, CA, February.

Auffant, A.*, Gillespie, J., Long, B. and Clark, M., 2004, Stratigraphy, paleogeography and hydrocarbon migration of the Shallow Oil Zone in Elk Hills and Coles Levee fields, San Joaquin Basin, California: Pacific Section AAPG Abstracts with Programs, Bakersfield, CA, May 9-12, 2004, p. A1.

Cobos, Luz S.* and Gillespie, J., 2004, Sequence stratigraphy of the Etchegoin Formation, Elk Hills oilfield, southern San Joaquin Basin, California: Pacific Section AAPG Abstracts with

Programs, Bakersfield, CA, May 9-12, 2004, p. A6.

*Huff, J., R., Negrini, J. Gillespie, *K. Blake, 2004. Mapping of Lithologies in the Kern Water Bank, Kern County, California, AAPG Abstracts with Programs, Pacific Section annual meeting, Bakersfield, CA., p. 12.

Negrini, R., Gillespie, J., Philley, P.*, Baron, D., Horton, R., Huff, J.* and Parker, J., 2004, Large scale, coarsening upward sequences in the stratigraphy of the Kern Water Bank: prograding fan deltas into a more extensive ancestral Buena Vista Lake?: Pacific Section AAPG Abstracts with Programs, Bakersfield, CA, May 9-12, 2004, p. A20.

Coburn, M.G.* and Gillespie, J.M., 2002, A hydrogeologic study to optimize steamflood performance in a giant oilfield: Kern River Field, California: American Association of Petroleum Geologists Bulletin, v. 86, no. 8, p. 1489-1505.

Charron, F. and Gillespie, J.M., 2002, GIS information access at the California Well Sample Repository in Proceedings of the 22nd annual ESRI International Use Conference, July 8-12, San Diego, CA, Paper #615

Hagan, K.F.*, Gillespie, J.M., Baron, D., Haslebacher, T., 2001, The effects of the White Wolf fault on groundwater hydrology in the southern San Joaquin Valley, California: Proceedings of the 23rd biennial groundwater conference, October 30-31, Sacramento, CA, p. 63.

Mahan, A.*, Gillespie, J.M. and Horton, R.A., 2001, New strontium isotope ages from invertebrate macrofossils in the San Joaquin Formation, Elk Hills, California: American Association of Petroleum Geologists Bulletin v. 85, no. 6, p. 1133.

Thyne, G.D., Gillespie, J.M. and Ostdick, J.R.*, 1999, Evidence for interbasin groundwater flow through fractured crystalline rocks, southeastern Sierra Nevada, California: Geol. Soc. Am. Bull., v. 111, p. 1600-1616.

Auffant, A. D.*, Gillespie, J.M. and Clark, M.S., 1999, Stratigraphic and depositional analysis of gas-bearing Scaez sands, Pliocene San Joaquin Formation, Coles Levee Field, San Joaquin Basin, California: AAPG Bull. V. 83, p. 681.

Howard, P.A.*, McAlee, J.* and Gillespie, J.M., 1997, The role of fractures in surface and groundwater flow: a field study of two canyons in the southeastern Sierra Nevada: Abstracts with programs, Geol. Soc. Am. 93rd Ann. Cordilleran Sec. Meeting, Kona, HI.

Coburn, M.G.* and Gillespie, J.M., 1997, Aquifer architecture of the Kern River, Chanac and Santa Margarita Formations in the Kern River Oil field, California: Am. Assn. Pet. Geol. Bull. v. 81, p. 682.

Jones, C.J.* and Gillespie, J.M., 1997, Listric normal faults in the Miocene-Pliocene section at North and South Coles Levee Fields: a response to Pleistocene growth of the Elk Hills anticline, in Geologic evolution of the western Cordillera: Perspectives from undergraduate

research; Cooper, J. D. and Girty, G.H., eds., Pacific Section SEPM, p. 49-56.

Gillespie, J.M. and Thyne, G.D., 1996, Indian Wells Valley California: Evidence for fracture-redirceted recharge from the southern Sierra Nevada into an alluvial valley aquifer: Geological Society of America National Convention Abstracts with Programs, p. A-346.

Swartz, R.J.*, Thyne, G.D. and Gillespie, J.M., 1996, Dissolved Arsenic in the Kern Fan, San Joaquin Valley, California: Naturally occurring or the result of human activities?: Environmental Geosciences, v.3, p. 143-153.

Gillespie, J.M. and Heller, P.L., 1995, Beginning of foreland subsidence in the Columbian-Sevier belts, southern Canada and northwest Montana: Geology v. 23, no. 8, p. 723-26.

Anthony, J.A.* and Gillespie, J.M., 1995, The Macoma Claystone (Pliocene): its distribution and role in controlling the bottom of the fresh water aquifer in the western Fruitvale Oilfield, Bakersfield, California: Am. Assoc. Pet. Geol. Bull. v. 79, p. 578.

Steward, D.C.* and Gillespie, J.M., 1994, Pliocene facies trends and controls on deposition of Lower Gusher shallow gas reservoirs, North Coles Levee Field, San Joaquin Basin, California [abs.]: Am. Assoc. Pet. Geol. Bull. v. 78, p. 676.

Ostdick, J.R.* and Gillespie, J.M., 1994, An investigation of excessive drawdowns in Sycamore Well Field, Arvin-Edison Water Storage District, southern San Joaquin Basin, California: Am. Assoc. Pet. Geol. Bull. v. 78, p. 671.

Bruce, B.L.* and Gillespie, J.M., 1994, An investigation of potential groundwater impact by San Emidio new town development, southern San Joaquin Basin, California: Am. Assoc. Pet. Geol. Bull. v. 78, p. 658.

Luther, C.L.* and Gillespie, J.M., 1994, A provenance study of Jura-Cretaceous sediments, southwest Alberta and northwest Montana: Geological Society of America, Rocky Mountain Section Mtg., May 4-6, Durango, CO, p. 28.

Gillespie, J.M., 1993, Pliocene gas potential on the Bakersfield Arch, California: Pacific Petroleum Geologist Newsletter, no. 3, p. 4-5.

Gillespie, J.M. and Heller P.L., 1992, Contrasts in the time of initiation and driving mechanisms of the northern Cordilleran fold-thrust belt, southern Alberta and northern Montana: 1992 SEPM Theme Meeting, Ft. Collins, CO INVITED

Gillespie, J.M. and Heller P.L., 1992, Tectonic significance of Jura-Cretaceous strata in the western interior foreland basin of northwest Montana and southern Canada: AAPG Ann. Mtg., Calgary, Alberta INVITED

Gillespie, J.M. and Fox, J.E., 1991, Tectonically influenced sedimentation in the Lance

Formation, eastern Wind River Basin, Wyoming: The Mountain Geologist, v. 28, p. 53-66.

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