

VITA
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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

Ph.D. in Geophysics, May 1991

Thesis: *Elastic wave propagation and scattering in anisotropic fractured media*

Developed theoretical inversion and modeling schemes to estimate the properties of fractured media using seismic waves, applying the methods to laboratory and field data.

Baylor University, Waco, TX

B.S. in Geology, summa cum laude, 1985

Thesis: *A magnetic model of a Late Cretaceous mafic volcano, Hilbig oil field, Bastrop County, Texas*

Collected magnetic field measurements with a proton precession magnetometer and interpreted the data based on computer modeling of a volcanic feature causing the anomaly.

RESEARCH EXPERIENCE

Texas A&M University

Associate Professor (9/2000-present)

Assistant Professor (1/1997-8/1999) Principal research efforts are development of seismic ray tracing algorithms, numerical simulation of time-lapse seismic data and optimization of seismic data acquisition. Other research interests include simulation and analysis of vertical seismic profile and crosswell experiments and crustal seismology.

Earth Resources Laboratory, M.I.T.

Research Scientist (1994-1996) Group leader for wave propagation research. Research focused on seismic reservoir characterization, wave propagation in complex media, and seismic wave radiation from nuclear explosions. Responsibilities included significant contributions to the writing and preparation of research proposals and supervision of graduate student research.

Post-doctoral Associate (1992-1994) Studied seismic imaging methods and 3-D wave propagation. Analyzed radiation from borehole seismic sources using crosshole data. Assisted in the development and writing of research proposals.

Université Joseph Fourier (Grenoble, France)

Post-doctoral Researcher (1991-1992) Initiated research on the modeling of elastic waves from borehole seismic sources. Studied the propagation of Lg waves in complex crustal models to understand anomalous extinction of these waves.

Department Of Earth, Atmospheric, And Planetary Sciences, M.I.T.

Research Assistant (1985-1991) Principal research efforts applied paraxial ray tracing to three-dimensional isotropic and anisotropic media. Also studied the effects wave scattering in heterogeneous media using Born theory. Other work included the study of attenuation of acoustic waves, permeability modeling, and velocity analysis of teleseismic data.

Mobil Research And Development Corporation

Research Assistant (Summer, 1988) Production Geophysics Group. Investigated reflectivity and ray methods for computation of synthetic seismograms for anisotropic earth models, with emphasis on fractured rock formations.

Arco Oil And Gas

Research Assistant (Summer, 1987) Depositional Sequence Analysis Group. Developed seismic models of sandstone channel deposits and interpreted seismic data using depositional sequence concepts.

TEACHING EXPERIENCE

Texas A&M University

Associate and Assistant Professor Current courses include Theoretical Seismology, Earthquake Seismology, Principles of Geology (Honors section) and Borehole Acoustics. Also taught courses in exploration seismology.

Massachusetts Institute Of Technology

Research Scientist Taught seismic data processing class. Prepared and delivered lectures for seismology course (graduate) and environmental geophysics.

Post-doctoral Associate Had primary responsibility for developing and teaching a course in seismic exploration theory and methods. Prepared processing exercises using the ProMAX software package and supervised student research papers (1993).

Teaching Assistant Assisted in teaching a graduate student course in seismology. Led laboratory exercises, graded homework and wrote exams (1989).

Baylor University

Instructor Physical geology class (1984-1985).

HONORS AND AWARDS

2006 Practice Award

The Decision Analysis Society of the Institute for Operations Research and the Management Sciences, to E. Bickel, R.L. Gibson, D.A. McVay, S.C. Pickering, and J.R. Waggoner for *WesternGeco Uses Decision Analysis to Communicate the Value of Seismic Surveys to Potential Clients*

College-Level Distinguished Teaching Award, Texas A&M Association of Former Students (2004)

A.I. Levorsen Award, Gulf Coast Association of Geological Societies (2000)

Best paper award for the presentation *Distinguishing water saturation changes from porosity or clay content changes using multicomponent seismic data*, by F. Zhu, R.L. Gibson, Jr., J. Watkins and S.H. Yuh

Sigma Xi Scientific Research Society (1993)

Best Paper Honorable Mention, SEG Annual Meeting (1992)

nCUBE Fellowship (1990-1991)

National Science Foundation Fellowship (1986-1990)
Highest ranking student, Baylor University class of 1985
Phi Beta Kappa (1985)
Henry L. Robinson Phi Beta Kappa Memorial Scholarship (1984-1985)

PROFESSIONAL SERVICE

Society of Exploration Geophysicists (*Member of Research Committee*)
American Geophysical Union
Seismological Society of America

Board of Directors Member, Incorporated Research Institutions for Seismology (Texas A&M University representative), 1998-present.

Organized and led a workshop on “Challenges in Deepwater Exploration & Production Geophysics” at the 1998 Society of Exploration Geophysicists International Meeting (approximately 230 attendees).

Organized and led a workshop on “CO₂ Sequestration” at the 2002 Society of Exploration Geophysicists International Meeting (approximately 70 attendees).

Chaired several sessions for AGU and SEG meetings.

Invited to serve as Panel Moderator at Geophysical Society of Houston Deep Water Exploration Spring Symposium, May 1998.

Reviewed papers for: Journal of Geophysical Research, Bulletin of the Seismological Society of America, Geophysics, Geophysical Prospecting, Journal of the Acoustical Society of America, Pure and Applied Geophysics, Geophysical Journal International, Journal of South American Earth Sciences.

Reviewed proposals for National Science Foundation, Department of Energy, Petroleum Research Fund.

RESEARCH GRANTS

Principal Investigator: 3-D Born Modeling Applied to Viscoclastic Fractured Reservoir Simulations, TOTAL, 1/2006-12/2006, \$70,000. Renewed 1/1/2007-12/31/2007, \$70,000.

Co-Principal Investigator: Time-lapse seismic monitoring and performance assessment of CO₂ sequestration in hydrocarbon reservoirs, 4/2006-4/2009 (grant renewal), Department of Energy Basic Energy Sciences, \$437,991 (PI: A. Datta-Gupta, Dept. of Petroleum Engineering).

Co-Principal Investigator: Value of Information Quantification, 8/2005-8/2007, WesternGeco, \$175,000 (PI: Eric Bickel, Dept. of Industrial Engineering, other co-PI: Duane McVay, Dept. of Petroleum Engineering)

Principal Investigator: An Adaptive Wavefront Construction Algorithm for Optimal Seismic Ray Tracing, 9/2000-9/2003 (extended to 9/2005), National Science Foundation, Div. of Advanced Computational Infrastructure and Research, \$437,927 (co-PI: N. Amato, Dept. of Computer Science)

Co-Principal Investigator: Time-lapse seismic monitoring and performance assessment of CO₂ sequestration in hydrocarbon reservoirs, 4/2003-4/2006 (grant renewal), Department of Energy Basic Energy Sciences, \$408,320 (PI: A. Datta-Gupta, Dept. of Petroleum Engineering).

Co-Principal Investigator: Development of advanced seismic evaluation processes for hydrocarbon fluid saturation in deep water reservoirs, 9/1/2002-8/31/2005, \$750,000 (\$265,789 to Texas A&M), Dept. of Energy National Petroleum Technology Office. (PI: Michael Batzle, Colorado School of Mines, co-PI: De-hua Han, Univ. of Houston, Paradigm Geophysical Inc. is a partner also).

Co-Principal Investigator: Advanced technology for infill and recompletion candidate well selection, 5/2002-5/2003, Dept. of Energy – National Energy Technology Lab, \$125,777 (PI: Duane MacVay, co-PIs: Jerry Jensen, Walter Ayers, all Dept. of Petroleum Engineering).

Co-Principal Investigator: Time-lapse seismic monitoring and performance assessment of CO₂ sequestration in hydrocarbon reservoirs, 1/2000-12/2002, Department of Energy Basic Energy Sciences, \$414,440 (PI: A. Datta-Gupta, Dept. of Petroleum Engineering; co-PI: Bruce Herbert, Dept. of Geology & Geophysics).

Co-Principal Investigator: Design and implementation of rich frameworks for web-based learning in introductory earth science education, 3/2000-3/2001, National Science Foundation, \$75,700 (PI: Bruce Herbert, Co-PIs: Richard Gibson, S. Bednarz, A. Stricker)

Co-Principal Investigator: Geologic Near-Surface Fault Mapping of Lignite Strata, 1999-2000, Texas A&M University Energy Resources Program (PI: Mark Everett, Texas A&M Dept. of Geology & Geophysics), \$16,220.

Principal Investigator: Integrated Reservoir Characterization Using Time-Lapse Seismic, Production and Well Data, 1998-2000, Texas Advanced Technology Program (co-PI Akhil Datta-Gupta, Texas A&M Dept. of Petroleum Engineering), \$152,500.

Principal Investigator: New Models for Seismic Crosswell Experiments Applied to Petroleum Reservoir Characterization, 1997-1998, Texas A&M University Energy Resources Program, \$18,850.

Principal Investigator: Advanced Seismic Data Acquisition and Processing, Gas Research Institute, 1997-2000 \$150,000 (subcontracted through Blackhawk Geometrics, Golden, Colorado; contract funding originally from Gas Research Institute, value \$1,972,000, other partners are Green Mountain Geophysics, Shell, ARCO).

Co-Investigator: High resolution seismic modeling and analysis of fractured reservoirs, Department of Energy, 1996-1998, Small Business Innovation Research grant (with Science Research Laboratory, Somerville, Massachusetts), Phase II, \$750,000 (**primary author:** wrote text, originated idea, labeled Co-Investigator because of job title restrictions).

Co-Investigator: High resolution seismic modeling and analysis of fractured reservoirs, Department of Energy, 1995, Small Business Innovation Research grant (with Science Research Laboratory, Somerville, Massachusetts), Phase I, \$75,000 (**primary author:** wrote text, originated idea, labeled Co-Investigator because of job title restrictions).

TECHNOLOGY TRANSFER

Software Development, 1999: Software developed under GRI sponsored research contract is implemented in Green Mountain Geophysics “GRIP” software; \$40,000/license

Software Development, 2006-2007: Seismic wave propagation modeling software developed under Total sponsored research project is integrated into Total’s internal data analysis software system.

STUDENT THESES ADVISED

Advisor: Seismic Modeling of Complex Stratified Reservoirs, Ph.D. Dissertation, Hung Liang Lai, 2007, Texas A&M University.

- Advisor:** The determination of lithology from core physical properties measurements, M.Sc. Thesis, Paula Clark, 2006, Texas A&M University.
- Advisor:** Efficient Ray Tracing Algorithms based on Wavefront Construction and Model Based Interpolation Method, Ph.D. Dissertation, Kyoung Jin Lee, 2005, Texas A&M University.
- Advisor:** Estimating attenuation properties of bentonite layer in Cut Bank oil field, Glacier County, Montana, M.Sc. Thesis, Necdet Karakurt, 2005, Texas A&M University.
- Advisor:** Limitations for detecting small-scale faults using the coherency analysis of seismic data, M.Sc. Thesis, David Barnett, 2005, Texas A&M University.
- Advisor:** Acoustic impedance inversion of Lower Permian carbonate buildups in the Permian Basin, Texas, M.Sc. Thesis, Pablo Buenafama Aleman, 2004, Texas A&M University.
- Advisor:** Image resolution analysis: a new, robust approach to seismic survey design, Ph.D. Dissertation, Constantinos Tzimeas, 2004, Texas A&M University.
- Advisor:** Time-lapse seismic monitoring of subsurface fluid flow, Ph.D. Dissertation, Sung Hwan Yuh, 2002, Texas A&M University.
- Advisor:** Study of the seismic attenuation generated by the mud layer in Lake Maracaibo, Venezuela, M.Sc. Thesis, Javier Perez, 2002, Texas A&M University.
- Advisor:** Simulation of anisotropic wave propagation in vertical seismic profiles, M.Sc. Thesis, Vincent Durussel, 2002, Texas A&M University.
- Co-advisor:** Shear-wave velocity estimation using multiple logs and multicomponent seismic AVO interpretation, 2000, Ph.D. Thesis, Fuping Zhu, Texas A&M University.
- Co-advisor:** Integrated geophysical study of near-surface faults in the Wilcox Group, Texas, with application to lignite mining, M.Sc. Thesis, Sara Satti, Texas A&M University.
- Advisor:** 4-D seismic technologies: intersurvey calibration, 1998, M.Sc. Thesis, Jeffrey P. Kelley, Texas A&M University.
- Co-advisor:** Detection of fracture orientation using azimuthal variation of P-wave AVO responses, 1997, M.Sc. Thesis, Maria A. Perez, M.I.T.
- Co-advisor:** Seismic wave propagation in and around boreholes, 1995, M.Sc. Thesis, Tiepeng Zhou, M.I.T.

Bold text in the lists of publications indicates a student directly under my supervision.

PAPERS IN PROGRESS

- Kumar, A., Datta-Gupta, A., **Shekhar**, R., and Gibson, Jr., R. L., 2006. Modeling time lapse seismic monitoring of co2 sequestration in hydrocarbon reservoirs including compositional and geochemical effects: revised version submitted to Petroleum Science and technology.
- Bickel, J., Gibson, R. L., McVay, D. A., Pickering, S., and Waggoner, J., 2006. Quantifying 3D land seismic reliability and value: submitted to SPE Reservoir Evaluation and Engineering.

PEER REVIEWED PUBLICATIONS

- K.J. Lee**, and Gibson, Jr., R. L., 2007. An improved mesh generation scheme for the wavefront construction method: *Geophysics*, **72**(1), T1–T8.
- Gibson, Jr., R. L., **Vincent Durussel**, and **Kyoung-Jin Lee**, 2005. Modeling and velocity analysis with a wavefront-construction algorithm for anisotropic media: *Geophysics*, **70**(4), T63–T74.
- Gibson, Jr., R. L., and **Tzimeas**, C., 2004. Reply by the authors to discussion by G. J. O. Vermeer of “Quantitative measures of image resolution for seismic survey design”: *Geophysics*, **69**, 619–623.
- Gibson, Jr., R. L., and **Tzimeas**, C., 2002. Quantitative measures for seismic survey design: *Geophysics*, **67**, 1844–1852.
- Gibson, Jr., R. L., Theophanis, S., and Toksöz, M. N., 2000. Physical and numerical modeling of tuning and diffraction in azimuthally anisotropic media: *Geophysics*, **65**, 1613–1621.
- Pérez**, M. A., Gibson, Jr., R. L., and Toksöz, M. N., 1999. Detection of fracture orientation using azimuthal variation of P-wave AVO responses: *Geophysics*, **64**, 1253–1265.
- Gibson, Jr., R. L., Turpening, W. R., Born, A., and Turpening, R. M., 1997. Observations of borehole source amplitude reduction due to casing: *Geophysical Prospecting*, **45**, 1–20.
- Gibson, Jr., R. L., Toksöz, M. N., and Dong, W., 1996. Seismic radiation patterns from explosively loaded cylindrical cavities in isotropic and transversely isotropic media: *Bulletin of the Seismological Society of America*, **86**, 1910–1924.
- Ben-Menahem, A., and Gibson, Jr., R. L., 1995. Radiation of elastic waves from sources embedded in anisotropic inclusions: *Geophysical Journal International*, **122**, 249–265.
- Ito, G., McNutt, M., and Gibson, Jr., R. L., 1995. Crustal structure of the Tuamotu Plateau, 15°S, and its implications for its origin: *Journal of Geophysical Research*, **100**, 8097–8114.
- Gibson, Jr., R. L., and Peng, C., 1994. Low- and high-frequency radiation from seismic sources in cased boreholes: *Geophysics*, **59**, 1780–1785.
- Gibson, Jr., R. L., and Campillo, M., 1994. Numerical simulation of high and low frequency Lg wave propagation: *Geophysical Journal International*, **118**, 47–56.
- Gibson, Jr., R. L., 1994. Radiation from seismic sources in cased and cemented boreholes: *Geophysics*, **59**, 518–533.
- Chazalon, A., Campillo, M., Gibson, Jr., R. L., and Carreno, E., 1993. Crustal wave propagation anomaly across the pyrenean range: Comparison between observations and numerical simulations: *Geophysical Journal International*, **115**, 829–838.
- Ben-Menahem, A., and Gibson, Jr., R. L., 1993. Directional attenuation of SH waves in poroelastic inhomogeneous media: *Journal of the Acoustical Society of America*, **93**, 3057–3065.
- Gibson, Jr., R. L., Toksöz, M. N., and Batini, F., 1993. Ray-born modelling of fracture zone reflections in the larderello geothermal field: *Geophysical Journal International*, **114**, 81–90.
- Ben-Menahem, A., Gibson, Jr., R. L., and Sena, A. G., 1991. Green’s tensor and radiation patterns of point sources in general anisotropic inhomogeneous elastic media: *Geophysical Journal International*, **107**, 297–308.
- Gibson, Jr., R. L., and Ben-Menahem, A., 1991. Elastic wave scattering by anisotropic obstacles: application to fractured volumes: *Journal of Geophysical Research*, **96**, 19905–19924.

- Gibson, Jr., R. L., Sena, A. G., and Toksöz, M. N., 1991. Paraxial ray tracing in 3-D inhomogeneous, anisotropic media: *Geophysical Prospecting*, **39**, 473–504.
- Ben-Menahem, A., and Gibson, Jr., R. L., 1990. Scattering of elastic waves by localized anisotropic inclusions: *Journal of the Acoustical Society of America*, **87**, 2300–2309.
- Gibson, Jr., R. L., and Toksöz, M. N., 1990. Permeability estimation from velocity anisotropy in fractured rock: *Journal of Geophysical Research*, **95**, 15643–15657.
- Gibson, Jr., R. L., and Toksöz, M. N., 1989. Viscous attenuation of acoustic waves in suspensions: *Journal of the Acoustical Society of America*, **85**, 1925–1934.

NON-PEER REVIEWED PUBLICATIONS

- Zhu**, F., Gibson, Jr., R., Watkins, J., and **Yuh**, S., 2000. Distinguishing fizz gas from commercial gas reservoirs using multicomponent seismic data: *The Leading Edge*, **19**, 1238–1245.
- Yuh**, S. H., Yoon, S., Gibson, Jr., R. L., and Datta-Gupta, A., 2000. 4-D seismic feasibility study from an integrated reservoir model: *Journal of Petroleum Technology*, **52**, 26–28 (*Summary selected for publication and prepared by the journal*).

PROCEEDINGS AND TRANSACTIONS

- Zhu**, F., Gibson, Jr., R., Watkins, J., and **Yuh**, S., 2000. Distinguishing water saturation changes from porosity or clay content changes using multicomponent seismic data: *Gulf Coast Association of Geological Societies Transactions*, Volume L, 249–258.
- Satti, S. A., Everett, M. E., and Gibson, Jr., R. L., 2000. Integrated geophysical study of near-surface faults in the Wilcox Group, Texas, with applications to lignite mining: *Proc. of Symposium on the Application of Geophysics to Engineering and Environmental Problems*, Feb. 2000, 243–252.
- Yuh**, S. H., Yoon, S., Gibson, Jr., R. L., and Datta-Gupta, A., 2000. A feasibility study of time-lapse seismic monitoring and using stochastic reservoir models: *Offshore Technology Conference Proceedings*, Vol. 1, 673–678.
- Nolte, B., Gibson, Jr., R. L., and Toksöz, M. N., 1996, Irregular-grid modeling of regional wave propagation, *in* Lewkowicz, J. F., McPhetres, J. M., and Reiter, D. T., Eds., *Proceedings of the 18th Annual Seismic Research Symposium*, 231–240.
- Gibson, Jr., R. L., Lee, J. M., Toksöz, M. N., Dini, I., and Cameli, G. M., 1995, Three-dimensional Kirchhoff migration analysis of VSP data from a geothermal field, *in* *Proceedings of the World Geothermal Congress, 1995*, International Geothermal Association, 2, 869–873.
- Cameli, G. M., Batini, F., Dini, I., Lee, J. M., Gibson, Jr., R. L., and Toksöz, M. N., 1995, Seismic delineation of a geothermal reservoir in the Monteverdi area from VSP data, *in* *Proceedings of the World Geothermal Congress, 1995*, International Geothermal Association, 2, 821–826.
- Gibson, Jr., R. L., Toksöz, M. N., and Dong, W., 1994, Radiation from seismic sources in cylindrical cavities, *in* Cipar, J. J., Lewkowicz, J. F., and McPhetres, J. M., Eds., *Proceedings of the 16th Annual Seismic Research Symposium*, 113–119.

ABSTRACTS

- Ravi Shekhar**, Richard L. Gibson, J., Kumar, A., and Datta-Gupta, A., 2006. Seismic modeling of compositional and geochemical effects in CO_2 sequestration: SEG Technical Program Expanded Abstracts, **25**(1), 2176–2180.
- Bickel, J., Gibson, R. L., McVay, D. A., Pickering, S., and Waggoner, J., 2006. Quantifying 3D land seismic reliability and value: paper SPE102340 presented at 2006 SPE Annual Technical Conference and Exhibition, San Antonio, Texas, 24-27 September.
- Bickel, J., Gibson, R., McVay, D., Pickering, S., and Waggoner, J., 2006. Value of seismic information with multiple drilling targets: Meeting, EAGE, Expanded Abstracts, page B012.
- Gibson, Jr., R. L., 2005. Influence of internal reservoir structure on composite reflection coefficients: SEG Technical Program Expanded Abstracts, **24**(1), 312–315.
- Baker, K., Batzle, M., and Gibson, Jr., R. L., 2005. Use of outcrop analogues to predict lithology influence on the seismic signature: SEG Technical Program Expanded Abstracts, **24**(1), 821–824.
- Seung Yoo**, and Gibson, Jr., R. L., 2005. Frequency dependent AVO analysis after target oriented stretch correction: SEG Technical Program Expanded Abstracts, **24**(1), 293–296.
- Ravi Shekhar**, and Gibson, Jr., R. L., 2005. Fractured reservoir characterization using seismics: SEG Technical Program Expanded Abstracts, **24**(1), 1445–1448.
- Kyoung-Jin Lee**, and Gibson, Jr., R. L., 2005. Traveltime estimation using a model-based interpolation ray-tracing method for layered models: SEG Technical Program Expanded Abstracts, **24**(1), 1767–1770.
- Hung-Liang Lai**, and Gibson, Jr., R. L., 2005. Stochastic models of turbidite reservoirs for seismic simulations: SEG Technical Program Expanded Abstracts, **24**(1), 1453–1456.
- Gibson, Jr., R. L., 2004. Composite reflection coefficients for stratified reservoir models: SEG Technical Program Expanded Abstracts, **23**(1), 267–270.
- Buenafama, P., and Richard L. Gibson, J., 2004. Case history: Acoustic impedance inversion of the lower permian carbonate buildups in permian basin, texas: SEG Technical Program Expanded Abstracts, **23**(1), 529–532.
- Hung-Liang Lai**, Richard L. Gibson, J., and **Kyoung-Jin Lee**, 2004. Quasi-shear wave ray tracing by wavefront construction in 3-d, anisotropic media: SEG Technical Program Expanded Abstracts, **23**(1), 1909–1912.
- Lee**, K.-J., and Gibson, Jr., R. L., 2003. Numerical properties of cubed sphere meshes in wavefront construction: 73rd Internat. Mtg. Soc. Explor. Geophys., Expanded Abstracts, 1793–1796.
- Gibson, Jr., R. L., **Lee**, K.-J., and **Durussel**, V., 2003. Wavefront construction modeling and inversion of VSP data for anisotropy parameters: 73rd Internat. Mtg. Soc. Explor. Geophys., Expanded Abstracts, 2362–2365.
- Yuh**, S.-H., and Gibson, Jr., R. L., 2002. Uncertainty analysis in time-lapse seismic modeling: 72nd Internat. Meeting Soc. Explor. Geophys., 1723–1726.
- Lee**, K.-J., and Gibson, Jr., R. L., 2002. An efficient mesh for wavefront construction and its numerical properties for anisotropic media: Fall AGU Meeting.
- Gibson, Jr., R. L., **Lee**, K.-J., and **Durussel**, V., 2002. Efficient meshes for wavefront construction applied to anisotropic media: 72nd Internat. Meeting Soc. Explor. Geophys., 1943–1946.

- Han, D. H., Batzle, M., and Gibson, Jr., R. L., 2001. Fizz water and low gas saturated reservoirs: Geophysical Society of Houston Spring Symposium: Reservoir Resolution Through Comprehensive Use of Seismic Data Attributes.
- Sparks, D., Gibson, Jr., R. L., and Aharonov, E., 2001. Discrete element models of seismic wave propagation in sediments: Fall Meet. Suppl., EOS Trans. AGU, Abstract T32E-0925.
- Gibson, Jr., R. L., 2001. Wavefront construction for ray tracing in anisotropic media: SIAM Conference on Mathematical and Computational Issues in the Geosciences.
- Zhu**, F., Gibson, Jr., R., and Estill, R., 2001. A critical clay content model of sand-shale mixtures from log data in the gulf of thailand: 71st Internat. Meeting Soc. Explor. Geophys., 1720–1723.
- Zhu**, F., and Gibson, Jr., R., 2001. Long offset seismic data for AVO crossplotting and planar plotting: Gulf Coast Assoc. of Geolog. Soc.
- Gibson, Jr., R. L., and **Lee**, K.-J., 2001. Improved mesh interpolation for ray tracing by wavefront construction methods for anisotropic media: Fall Meet. Suppl., EOS Trans. AGU, Abstract S32C-0639.
- Yuh**, S. H., and Gibson, Jr., R. L., 2001. Time-lapse seismic monitoring of CO₂ sequestration in hydrocarbon reservoirs: 71st Internat. Meeting Soc. Explor. Geophys., 1627–1630.
- Gibson, Jr., R. L., and Stieglitz, T. C., 2001. The influence of travelttime operators on spatial resolution in migrated images: 71st Internat. Meeting Soc. Explor. Geophys. Expanded Abstracts, 1001–1004.
- Zhu**, F., Gibson, Jr., R., Watkins, J., and **Yuh**, S., 2000. R_{pp}/R_{ps} to discriminate commercial gas reservoirs from noncommercial reservoirs: 2000 Amer. Assoc. Petroleum Geologists Ann. Convention, Official Program, A165–A166.
- Yuh**, S. H., Yoon, S., Gibson, Jr., R. L., and Datta-Gupta, A., 2000. Effects of pressure and fluid saturation changes on time-lapse AVO response: 70th Ann. Internat. Meeting Soc. Explor. Geophys., 1481–1484.
- Tzimeas**, C., and Gibson, Jr., R. L., 2000. Assessment of image quality for large 3-D seismic surveys: 70th Ann. Internat. Meeting Soc. Explor. Geophys., 64–67.
- Gibson, Jr., R. L., 2000. Ray tracing by wavefront construction for anisotropic media: 70th Ann. Internat. Meeting Soc. Explor. Geophys., 2305–2308.
- Yuh**, S. H., Nordaas, K., Gibson, Jr., R. L., and Datta-Gupta, A., 1999. A feasibility study of time-lapse seismic monitoring using stochastic reservoir models: 69th Ann. Internat. Mtg. Soc. Explor. Geophys. Expanded Abstracts, 1663–1666.
- Gibson, Jr., R. L., Datta-Gupta, A., **Yuh**, S. H., and Yoon, S., 1999. Numerical modeling for uncertainty assessment in dynamic reservoir characterization: 69th Ann. Internat. Mtg. Soc. Explor. Geophys. Expanded Abstracts, 2038–2041.
- Gibson, Jr., R. L., 1999. Ray tracing by wavefront construction in 3-D, anisotropic media: Fall Meet. Suppl., EOS Trans. AGU, F696.
- Gibson, Jr., R. L., and **Tzimeas**, C., 1999. Image resolution: a simple and effective quantitative approach to seismic acquisition: 61st European Assoc. of Geoscientists and Engineers Conference, Helsinki, Finland, 6–02.
- Tzimeas**, C., and Gibson, Jr., R. L., 1999. Enhanced spatial resolution measures: an alternative to conventional illumination analysis: 69th Ann. Internat. Mtg. Soc. Explor. Geophys. Expanded Abstracts, 657–660.
- Gibson, Jr., R. L., **Tzimeas**, C., and Lavelly, E., 1998. Optimal seismic survey design for imaging and inference of elastic properties: 68th Ann. Internat. Mtg. Soc. Expl. Geophys. Expanded Abstracts, 74–77.

- Gibson, Jr., R. L., **Tzimeas**, C., and Lavelly, E., 1998. Seismic survey design for optimal imaging and resolution of elastic properties: European Assoc. of Exploration Geophysicists Research Workshop on Depth Imaging of Reservoir Attributes, Boussens, France.
- Lavelly, E., Gibson, Jr., R. L., and **Tzimeas**, C., 1997. 3-D seismic survey design for optimal resolution: 67th Ann. Internat. Meeting Soc. Explor. Geophys. Expanded Abstracts, 31–34.
- Gibson, Jr., R. L., and Theophanis, S., 1996. Ultrasonic and numerical modeling of reflections from azimuthally anisotropic media: 66th Ann. Internat. Mtg. Soc. Explor. Geophys. Expanded Abstracts, 1025–1028.
- Pérez**, M. A., and Gibson, Jr., R. L., 1996. Detection of fracture orientation using azimuthal variation of P-wave AVO responses: 66th Ann. Internat. Mtg. Soc. Explor. Geophys. Expanded Abstracts, 1353–1356.
- Gibson, Jr., R. L., and Toksöz, M. N., 1995. Incorporation of source and receiver borehole effects in the computation of synthetic seismograms: 65th Ann. Internat. Mtg. Soc. Explor. Geophysicists Expanded Abstracts, 61–64.
- Gibson, Jr., R. L., Toksöz, M. N., and Dong, W., 1995. Seismic radiation from explosively loaded cylindrical cavities in isotropic and transversely isotropic media: NATO Advanced Study Institute *Monitoring a Comprehensive Test Ban Treaty*, Alvor, Portugal, 21 January–22 February 1995.
- Gibson, Jr., R. L., Lee, J. M., Toksöz, M. N., Dini, I., and Cameli, G. M., 1994. The application of 3-d Kirchhoff migration to VSP data from complex geological settings: 64th Ann. Internat. Mtg. Soc. Explor. Geophys., Expanded Abstracts, 1290–1293.
- Gibson, Jr., R. L., and Cheng, N., 1994. Regional seismic waves generated by explosions in cylindrical cavities: Fall Meet. Suppl., EOS Trans. AGU, 433.
- Gibson, Jr., R. L., Turpening, W. R., Born, A., and Turpening, R. M., 1993. Seismic sources in cased and cemented boreholes: 63rd Ann. Internat. Mtg. Soc. Explor. Geophys., Expanded Abstracts, 313–316.
- Gibson, Jr., R. L., and Toksöz, M. N., 1993. Three-dimensional Kirchhoff migration analysis of VSP data from an Italian geothermal field: Ann. Meeting, Abstracts.
- Gibson, Jr., R. L., 1993. Theoretical and observed seismic wave radiation from cased and cemented boreholes: 55th Meeting and Technical Exhibition, Europ. Assoc. Expl. Geophys., Technical Programme.
- Gibson, Jr., R. L., 1992. Models of seismic wave radiation from borehole sources in fast and slow formations: 62nd Ann. Internat. Mtg. Soc. Expl. Geophys., Expanded Abstracts, 133–136.
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