Priyank Jaiswal

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A. Education

Institute	Degree	Major	Year
Indian Institute of technology, India	BS	Earth Science	1999
Rice University, USA	MA	Geophysics	2002
Rice University, USA	PhD	Geophysics	2008

B. Employments

[9] 2016 – Present: Associate Professor, Oklahoma State University
Responsible for research, mentoring graduate and undergraduate students in research best practices and developing and teaching geophysics related courses. Successes include patents, grants and publications as well as outreach in line with the university's land grant mission.

[8] 2009 – 2016: Assistant Professor, Oklahoma State University
Responsible for research, mentoring graduate and undergraduate students in research best practices and developing and teaching courses related to geophysics. Highlight was establishing a state-of-art computation seismology lab with industry collaboration.

[7] 2008 – 2009: Post-Doctoral Research Associate, Rice University
Responsible for gas hydrate quantification off-shore Gulf of Mexico. Highlight was initiating collaborations with several research labs in India.

[6] 2008 - 2009: Visiting Scientist, National Oceanographic Institute, Goa, India
Responsible for gas hydrate quantification off-shore Krishna-Godavari Basin. Highlight was development of a long–term project on identifying and mapping coastal hazards along the Indian East coast.

[5] 2004 – 2008: Research Assistant, Rice University
Responsible for adapting an existing full–waveform inversion code for imaging foreland fold and thrust belts in Upper Assam Shelf, India. Highlight was development of a patentable seismic imaging algorithm.

[4] 2002 – 2004: Geophysicist, Total E&P USA Inc.
Responsible for assessing tight-gas assets in South Texas and Gulf of Mexico. Highlight was development of the Virgo Oilfield asset in the Gulf of Mexico.

[3] 1999 – 2002: Research Assistant, Rice University
Responsible for quantifying gas hydrate using traveltime inversion of nodal data from the Gulf of Mexico, leased block MC798.

[2] 2001: Summer Intern, Occidental Oil Inc.

[1] 2005: Summer Intern, Schlumberger

C. Service

Convener:

[3] A Forum on Infrastructure. Stillwater, OK, 2017
[2] Geology and Geophysics Annual Techfest. Stillwater, OK, 2014 – date
[1] Halliburton Teacher Education Program. Stillwater, OK, 2013

Chair:

[4] Processing Advances. SEG Annual Meeting, Houston, TX, 2017
[3] Multiples. SEG Annual Meeting, Los Angeles, CA, 2018
[2] Near Surface. SEG Annual Meeting, Los Angeles, CA, 2018
[1] Earth in 3D. AGU Annual Meeting, Los Angeles, CA, 2012

Editorial:

[3] SEG The Leading Edge Special Issue on Seismic Velocity, 2018
[2] Journal of Engineering and Environmental Geophysics, 2016 – date
[1] AAPG Memoir 116, 2017

Committee:

[2] Science Evaluation Panel, Integrated Ocean Discovery Project, 2015 – date
[1] National Science Foundation LIGO Review Panel, 2016

D. Consulting

D1. Technical

[4] 2019: Pearson
Chapter and question bank development for an introductory geology textbook

[3] 2012 – 2013:Research Tax Consulting, Dallas, Texas
Determine flow rates for newly drilled wells for examining if the well qualifies for tax rebate.

[2] 2002 – 2012:Oil India Limited, Assam, India
Process seismic data from Indian west coast for detection and quantification of gas hydrate.
Process and interpret seismic data from the Upper Assam Shelf for oil and gas exploration.

[1] 2006: Director General of Hydrocarbons, India
Process seismic data from Indian west coast for detection and quantification of gas hydrate.

D2. Short Courses

[2] Velocity Model Building and Depth Imaging
This two day short-course is based on optical seismology. Participants learns about different methods of building velocity model, migration and imaging. Through a set of four hands-on exercise participants learn how to reconstruct structures from seismic arrival times

[1] Inversion and Rock Properties
This one day short-course introduces principles of seismic inversion and how they are applied at different scales to reconstruct rock properties such as porosity and permeability with a special emphasis on uncertainty quantification.

E. Awards and Honors

Student

[2] Capillary effects on seismic velocities, Society of Exploration Geophysicists Annual Meeting, Houston, 2017, delivered by K. Shukla: Top 39

[1] GPGPU Implementation of Biot's systems, Extreme Science and Engineering Discovery Environment (XSEDE) Conference, Miami, 2016, delivered by K. Shukla: Best

International

[1] VAJRA fellowship (https://www.vajra-india.in/), 2020

University

[2] President's Cup, Runner up, 2019

[1] Junior Faculty Award, 2012

Society

[1] SEG Student fellowship, 2008

F. Intellectual Products

F1. Patents

[2] Methods for generation of fracture density maps from seismic data, 2019, Jaiswal, P. and R. Holman, R. US Patent 15/506,733

[1] Methods for Concurrent Generation of Velocity Models and Depth Images from Seismic Data, Rice University, Jaiswal P. and Zelt CA, US Patent 8,902,709

F2. Peer Reviewed Journal Publications

[31] K Shukla, J Chan, V Maarten, P Jaiswal, 2020, A weight-adjusted discontinuous Galerkin method for the poroelastic wave equation: penalty fluxes and micro-heterogeneities, *Journal of Computational Physics*, 403. DOI: 10.1016/j.jcp.2019.109061

[30] Wang J., **P. Jaiswal***, SS Haines, Y. Yang, PE. Hart and S. Wu, 2020, Gas hydrate quantification in Walker Ridge Block 313, Gulf of Mexico from full-waveform inversion of ocean-bottom seismic data, *Interpretation*, 8(1). DOI: 10.1190/INT-2018-0165.1

[29] Shukla, K, Jose M. Carcione, **P Jaiswal**, J Santos and J Ba, 2019, Effect of Capillary Pressure on Seismic Velocities and Attenuation, 2019, *Journal of Porous Media*, 22(4). DOI: 10.1615/JPorMedia.2018021864

[28] Chen, A Liaw, X Zhu, X Wang, T Li, P Jaiswal, X Cheng, Y Wu, 2019, Introduction to special section: Interpretable seismic velocity. *Interpretation*, 8 (1). DOI: 10.1190/INT-2019-0320-SPSEINTRO.1

[27] Shukla, K., J. M. Carcione, R. C. Pestana, P. Jaiswal, and T. Özdenvar. 2019, Modeling the wave propagation in viscoacoustic media: An efficient spectral approach in time and space domain. Computers & Geosciences, 126, 31-40. DOI: 10.1016/j.cageo.2019.01.022

[26] Shukla, K., J. S. Hesthaven, J. M. Carcione, R. Ye, J. de la Puente, and P. Jaiswal. 2019, A nodal discontinuous Galerkin finite element method for the poroelastic wave equation. Computational Geosciences. DOI: 10.1007/s10596-019-9809-1

[25] Wang J., **P. Jaiswal**[*], SS Haines, PE. Hart and S. Wu, 2018, Gas hydrate quantification using full-waveform inversion of sparse ocean bottom seismic data: A case study from Green Canyon Block 955, Gulf of Mexico, *Geophysics*, DOI: 10.1190/geo2017-0414

[24] Wang J.[*], S. Wu, J. Geng and **P. Jaiswal**, 2017, Acoustic wave attenuation in the gas hydrate-bearing sediments of Well GC955H, Gulf of Mexico, *Marine Geophysical Research*, DOI: 10.1007/s11001-017-9336-1

[23] Alam, I.[**] and **P. Jaiswal**[*], 2017, Near Surface Characterization Using V_P/V_S and Poisson's Ratio from Seismic Refractions, *J. Engg. and Env. Geos.*, DOI: 10.2113/JEEG22.2.101

[22] **Jaiswal, P.**[*], R. Holman[**] and M. Grammer, 2017, Pitfalls in 3D seismic interpretation: footprints of an irregular source–receiver layout: *AAPG Bulletin,* DOI: 10.1306/02071716056

[21] Ebrahimi, P.[**] and **P. Jaiswal**[*], 2017, Directional filter aided sub-basalt interpretation: a case study from the Fareo-Shetland basin, *J. App. Geo.*, DOI: 10.1016/j.jappgeo.2016.12.004

[20] Cheng, J.[**], C.A. Zelt[*] and **P. Jaiswal**, 2016, Detecting a known near-surface target through application of frequency-dependent traveltime tomography and full waveform inversion to P- and SH-wave data, *Geophysics,* DOI: 10.1190/geo2016-0085.1

[19] Singh, Y.[*], R.R. Nair, H. Singh, P. Datta, **P. Jaiswal**, P. Dewangan and T. Ramaprasad, 2016, Prediction of gas hydrate saturation throughout the seismic section in Krishna Godavari basin using multivariate linear regression and multi-layer feed forward neural network approach, *Arab J. Geosci*, DOI: 10.10307/s12517-016-2434-6

[18] Aghyan, A.[**], **P. Jaiswal**[*] and HR Siahkoohi, 2016, Redundant Lifting Scheme based denoising method, *Geophysics,* DOI: 10.1190/geo2015-0601.1

[17] Simms, AR[*], LC. Bement, BJ. Carter, T Conley, A Woldergauy, WC. Johnson, **P. Jaiswal** and HM Arauza, 2016, Geomorphic and sedimentary responses of the Bull Creek Valley (Southern High Plains, USA) to Pleistocene and Holocene environmental change, *Quarternary Research*, DOI: 10.1016/j.yqres.2015.11.006

[16] **Jaiswal, P.**[*] 2015, Hydrate Quantification: Integrating Full-Waveform Inversion, Attributes and Rock Physics: *Interpretation*, DOI: 10.1190/INT-2015-0021.1

[15] **Jaiswal, P.**[*], F. Al-Hadrami[**], Atekwana EA and Atekwana EA, 2014, Mechanistic models of biofilm growth in porous media: *JGR Biogeosciences*, DOI: 10.1002/2013JG002440

[14] Dewangan, P.[*], R. Mandal[**], **P. Jaiswal,** T. Ramprasad and G. Sriram, 2014, Estimation of seismic attenuation of gas hydrate bearing sediments: A case study from Krishna-Godavari offshore basin, *J. Mar. Pet. Geol.*, DOI: 10.1016/j.marpetgeo.2014.05.015

[13] **Jaiswal, P.**[*], S. Al-Bulushi[**] and P. Dewangan, 2014, Logging-While-Drilling and Wireline Velocities: Site NGHP-01-10, Krishna-Godavari Basin, India, *J. Mar. Pet. Geol.*, DOI: 10.1016/j.marpetgeo.2014.05.006

[12] K. Shukla[*,**], and **Jaiswal P.**, 2014, Recovering uniform coverage in a 3D Survey: Case study from onshore southern India, *Int. J. Geophy.*, 2014, DOI: 10.1155/2014/987605

[11] **Jaiswal P.**[*], B Varacchi[**], P. Ebrahimi[**], J. Puckett and J. Dvorkin, 2014, Can seismic velocities predict sweet spots in the Woodford Shale? A case study from McNeff 2-28 Well, Grady County: *J. App. Geo.*, DOI: 10.1016/j.jappgeo.2014.02.005

[10] **Jaiswal P.**[*], P. Dewangan, T. Ramprasad, and C.A. Zelt, 2012. Seismic characterization of hydrates in faulted, fine-grained sediments of Krishna-Godavari Basin: Full Waveform Inversion: *JGR Solid Earth*, DOI: 10.1029/2012JB009201

[9] **Jaiswal P.**[*], P. Dewangan, T. Ramprasad, and C.A. Zelt, 2012. Seismic characterization of hydrates in faulted, fine-grained sediments of Krishna-Godavari basin: Unified Imaging: *JGR Solid Earth*, DOI: 10.1029/2011JB009024

[8] Woldearegay, A.[**], **P. Jaiswal**[*], A. Simms, H. Alexander, L.C. Bement, and B. J. Carter, 2012. Near-Surface Imaging With Combined First-Arrival Traveltime Inversion and Pre-Stack Depth Migration: Bull Creek Drainage System, Oklahoma: *Geophysics*, DOI: 10.1190/geo2011-0218

[7] Dewangan P.[*], G. Sriram, T. Ramprasad, M.V. Ramana, and **P. Jaiswal**, 2011. Fault system and thermal regime in the vicinity of site NGHP-01-10, Krishna–Godavari basin, Bay of Bengal, *J. Mar. Pet. Geol.*, DOI: 10.1016/j.marpetgeo.2011.03.009

[6] **Jaiswal, P.**[*], C.A. Zelt, A.W. Bally, and R. Dasgupta, 2009. Seismic imaging of the Naga Thrust using multiscale waveform inversion: *Geophysics (Special Publication on Inverse Methods)*, DOI: 10.1190/1.3158602

[5] **Jaiswal, P.**[*], and C.A. Zelt, 2008. Unified Imaging of Multichannel Seismic Data: Combining Traveltime Inversion and Pre-Stack Depth Migration: *Geophysics (Special Publication on Velocity Model Building for Depth Migration)*, DOI:10.1190/1.2957761

[4] **Jaiswal, P.**[*], C.A. Zelt, A.W. Bally, and R. Dasgupta, 2008. 2-D traveltime and waveform inversion for improved seismic imaging: Naga Thrust and Fold Belt, India, *Geophy. J. Int.*, DOI: 10.1111/j.1365-246X.2007.03691.x

[3] **Jaiswal, P.**[*], C.A. Zelt, and I.A. Pecher, 2006. Seismic Characterization of a Gas Hydrate System in the Gulf of Mexico Using Wide-Aperture Data, *Geophy. J. Int.*, DOI: 10.1111/j.1365-246X.2006.02869.x

[2] Roy, K.K.[*], and **P. Jaiswal**, 2002. Finite Element Direct Current Resistivity Forward Modeling C++ Source Code: *Journal of Geophysics*, 22, 57-82.

[1] Roy, K.K.[*], **P. Jaiswal** and A. Mukherjee, 2000. Finite Element Direct Current Resistivity Forward Modeling through Cholesky's method: *Indian Journal of Geology*, 72, 61-75.

F3. Peer Reviewed Book Chapters:

[3] Raj, R., **P Jaiswal**, B. V. Berg, and G. M. Grammer. 2019, Pore Size and Ultrasonic Velocity: Lessons from Miss Lime Reservoirs, in D. F. McNeill, P. Harris, E. C. Rankey and J. C.C. Hsieh, eds., Carbonate Pore Systems: New Developments and Case Studies. SEPM Special Publication 112: SEPM (Society for Sedimentary Geology).

[2] **P. Jaiswal***, J. M. Gregg, S. Parks, R. Holman, S. Mohammadi and G. M. Grammer, Evidence of Fault/Fracture "Hydrothermal" Reservoirs in the Southern Midcontinent Mississippian Carbonates, *Mississippian Reservoirs of the Midcontinent: AAPG Memoir 116*, DOI: 10.1306/13632161M1163366

[1] Clemens, S.C., Kuhnt, W., LeVay, L.J., and the Expedition 353 Scientists, 2015, Indian monsoon rainfall: *International Ocean Discovery Program Preliminary Report*, 353. DOI: 10.14379/iodp.pr.353.2015

F4. Semi Peer Reviewed:

[5] Butler, DK, **P Jaiswal**, L Whitesell, 2019, Report: A forum on infrastructure, *Fast Times*, 24 (3), 52 – 58

[4] Butler, DK, **P Jaiswal**, L Whitesell, 2018, A forum on infrastructure: Unique challenges for infrastructure in the central United States from low-level seismicity, *The Leading Edge*, 37 (5), 386 – 387

[3] Wang. J., **Jaiswal, P.** and Wu S., 2017, Laminar Versus Massive Nature of Hydrate-Bearing Sands in Well GC955-H: Insights from Rock Physics Modeling, *Fire in the ice,* US Department of Energy, 17 (1), 15 – 18

[2] **Jaiswal, P.**, 2011. Detecting Hydrates with Patchy BSR: Krishna-Godavari Basin, India, *Fire in the ice,* US Department of Energy, 11 (2), 5 – 9.

[1] Barak, O., F. Herkenhoff, R. Dash, **P. Jaiswal**, J. Giles, S. de Ridder, R. Brune, and S. Ronen, 2014, Six-component seismic land data acquired with geophones and rotation sensors: Wave-mode selectivity by application of multicomponent polarization filtering. *The Leading Edge*, 33 (11), 1224-1232.

F5. Peer Reviewed Archival Conference Abstracts:

[39] Shukla K, R Pestana, **P Jaiswal**, T Ozdenvar, and J Carcione, An efficient fully spectral method for constant-Q seismic-wave propagation, SEG Technical Program Expanded Abstracts 2018

[38] S Abbasi and **P Jaiswal**, Seismic-multiples attenuation using principal components, SEG Technical Program Expanded Abstracts 2018

[37] **Jaiswal P**, Rohit Raj, Sumit Verma, Mechanistic insights into paired primary and mode-converted AVO responses, SEG Technical Program Expanded Abstracts 2018

[36] Haase JS, M Soliman, H Kim, **P Jaiswal**, JK Saunders, F Vernon, W Zhang, Combined GPS and seismic monitoring of a 12-story structure in a region of induced seismicity in Oklahoma. AGU Fall Meeting Abstracts, 2017

[35] Shukla K., Josè M. Carcione , **P. Jaiswal** and Juan Santos 2017, Effect of capillary pressure on seismic velocities, SEG Technical Program Expanded Abstracts 2017, 4184-4189

[34] Shukla K. and **P. Jaiswal**, 2017, Wavefield based regularization of multicomponent seismic data, SEG Technical Program Expanded Abstracts 2017, 2575-2579

[33] Shukla K., Maarten V. de Hoop , Ruichao Ye, and **P. Jaiswal**, 2017, A discontinuous Galerkin method with a modified penalty flux for broad-band Biot's equation, SEG Technical Program Expanded Abstracts 2017, 4080-4085

[32] Aghayan A., **P Jaiswal**, EA Atekwana, Potential field data processing using the redundant lifting scheme, SEG Technical Program Expanded Abstracts 2017, 1797-1802

[31] Afshin, A., **P. Jaiswal**, E. A. Atekwana, M. G. Abdelsalam, K. Shukla, M. A. Atya, 2016, Seismic characterization of aquifer structure in Kharga basin- Egypt, Am. Geophy. Union Annual Fall Meeting. Abstract ID: 199070

[30] Shukla K., Jan S Hesthaven and **P. Jaiswal**, 2016, Efficient Seismic Modeling using Poroelastic Approach, at XSEDE, Miami, USA.

[29] Anyiam, U.*, **P. Jaiswal** and J. Pashin, 2016, 3D Seismic Attribute Expressions of Deep Offshore Niger Delta, AAPG International Conference, Calgary, Canada.

[28] Shukla K., **P. Jaiswal**, and S. Mallick, 2015, A first-arrival wavelet based rotation strategy for 3D-3-C data: A case study from Rock Springs Uplift, Wyoming, Soc. Exp. Geophy. Annual Meeting Expanded abstracts, LA, USA, doi: 10.1190/segam2015-5930587.1

[27] Shukla K., and **P. Jaiswal**, 2015, Amplitude preservation in multicomponent processing using local similarity, Soc. Exp. Geophy. Annual Meeting Expanded abstracts, LA, USA. doi: 10.1190/segam2015-5924954.1

[26] Shukla K., Jan S Hesthaven and **P. Jaiswal**, 2015, Numerical Solution of Poroelastic Wave Equation Using Nodal Discontinuous Galerkin Finite Element Method, Presented at XSEDE, St. Louis, Missouri, USA.

[25] Alam, I., and **P. Jaiswal**, Near-surface seismic imaging with P- and SH- Wave Full Waveform Inversion, SEG Expanded Abstracts 2015.

[24] Zhang, Y., Y. Wang and **P. Jaiswal**, A model for propagation of tensile fractures in heterogeneous natural media, SEG Expanded Abstracts 2015.

[23] Barak*, O., **P. Jaiswal**, S. d. Ridder, J. Giles, R. Brune, and S. Ronen, 2014, Six-component seismic land data acquired with geophones and rotation sensors, SEG Expanded Abstracts 2014. 1863-1867.

[22] Ebrahimi, P., and **Jaiswal, P.,** 2014**,** Enhancement of sub-basalt stratigraphy of Fareo-Shetland Basin, SEG Expanded Abstracts 2014: 1570-1574.

[21] Alam, M.I., **Jaiswal, P.**, 2014, Combining P- and SH- wave travel time tomography for

void detection: EEGS Symposium: Boston, pp. 1-1.

[20] Raj, R., **Jaiswal, P.**, Atekwana, EA, Briand, B. and Alam, MI, Elastic Wave Imaging of in-Situ Bio-Alterations in a Contaminated Aquifer, Abstract B21A-0007, presented at 2014 Fall Meeting, AGU, San Francisco, 15 – 19 Dec.

[19] Shukla, K. and **Jaiswal, P.**, Numerical Solution of Poroelastic Wave Equation Using Nodal Discontinuous Galerkin Finite Element Method, Abstract S43B-4550, presented at 2014 Fall Meeting, AGU, San Francisco, 15 – 19 Dec.

[18] Alam, MI and **Jaiswal, P.**, Near Surface Imaging Using P- and SH- Full Waveform Inversion, Abstract NS33A-3956, presented at 2014 Fall Meeting, AGU, San Francisco, 15 – 19 Dec.

[17] Chen, MA J., Zelt, C., and **Jaiswal, P.** (2013) A case history: Application of frequency-dependent traveltime tomography and full waveform inversion to a known near-surface target. SEG Technical Program Expanded Abstracts 2013: pp. 1743-1748. doi: 10.1190/segam2013-1088.1

[16] Abbasi, S. and **Jaiswal, P.** (2013) Attenuating long-period multiples in short-offset 2D streamer data: Gulf of California. SEG Technical Program Expanded Abstracts 2013: pp. 4201-4205. doi: 10.1190/segam2013-1221.1

[15] Briand, B. and **Jaiswal, P.** (2013) p-p and s-s ground roll comparison. Symposium on the Application of Geophysics to Engineering and Environmental Problems: Denver.

[14] Alam, M. and **Jaiswal, P.** (2013) effect of two seismic sources on void detection using full waveform inversion. Symposium on the Application of Geophysics to Engineering and Environmental Problems: Denver.

[13] Burberry, C., B. Michael and **P. Jaiswal** (2012), 2D visualization of the Naga Thrust Triangle Zone, North-east India, using structural modeling of 2D seismic data, Geological Society of America Abstracts with Programs. 44, 7, pp.425

[12] B. Varacchi, **P. Jaiswal**, J. Dvorkin, and J. Puckette (2012) Elastic Properties of Silica-Rich Mudrocks: Woodford Shale, Anadarko Basin, Oklahoma. SEG Technical Program Expanded Abstracts 2012: pp. 1-7. doi: 10.1190/segam2012-1230.1

[11] Woldearegay, **P. Jaiswal**, and A. Simms (2011) Seismic characterization of near-surface drainage pattern: Bull Creek, Oklahoma. SEG Technical Program Expanded Abstracts 2011: pp. 2639-2643. doi: 10.1190/1.3627740

[10] **Jaiswal P.** and CA Zelt, Frequency Domain Full-Waveform Inversion in Imaging Thrust Related Features, AGU Fall Meeting, Expanded Abstract, S42A-07, San Francisco (USA), 2010.

[9] **Jaiswal P.**, C.A. Zelt, R. Dasgupta, K.K. Nath, Multiscale Imaging of a Thrust Belt, 72nd EAGE Conference and Exhibition, Barcelona (Spain), Expanded Abstracts, P386, 2010.

[8] **Jaiswal P.** and R. Dasgupta, Imaging of 2-D multichannel land seismic data using an iterative inversion-migration scheme, Naga Thrust and Fold Belt, Assam, India, EGU

General Assembly, Vienna (Austria), Expanded Abstracts 12, EGU2010-377, 2010

[7] Dewangan, P., P. **Jaiswal,** T. Ramprasad, *et al.,* Gas Hydrates in the Krishna-Godavari Basin, East Coast India, 71th EAGE Conference and Exhibition, Amsterdam (Netherland), Expanded Abstracts, Z022, 2009.

[6] **Jaiswal P.,** C.A. Zelt, and R. Dasgupta, Near-surface imaging with traveltime and waveform inversion, 78th SEG Annual Meeting, Las Vegas (USA), Expanded Abstracts 27, 1865-1869, 2008.

[5] **Jaiswal P.** and C.A. Zelt, Towards a Unified Imaging Procedure for 2-D Land Multichannel Seismic Data, 70th EAGE Conference and Exhibition, Rome (Italy), Expanded Abstracts, P167, 2008.

[4] **P. Jaiswal** and C. A. Zelt, 2D waveform and traveltime inversion for seismic imaging of the Naga thrust fault, India, 77th SEG Annual Meeting, San Antonio (USA), Expanded Abstracts 26, 1755-1759, 2007.

[3] **Jaiswal P.**, C.A. Zelt, and R. Dasgupta, Traveltime And Full-Waveform Inversion For Improved Seismic Imaging In Geologically Complex Areas, 69th EAGE Conference and Exhibition, London (England), Expanded Abstracts, CO32, 2007.

[2] **Jaiswal P.,** C.A. Zelt, and R. Dasgupta, Velocity modeling of Naga Thrust, Northeast India, 68th EAGE Conference and Exhibition, Vienna (Austria), Expanded Abstracts, P166, 2007.

[1] **Dasgupta, R.**, P. K. Singh, T. Bhattacharya, and **P. Jaiswal**, Possible gas hydrates without distinctive BSR - A case study, 76th SEG Annual Meeting, New Orleans (USA), Expanded Abstracts 25, 676-679, 2006.

F6. Invited Presentations

[19] *Gas Hydrate Quantification*: International Workshop on Deep-sea Geological Expedition and Resources Prospect in the 21st century, Sanya, China, Nov 15, 2018

[18] *Seismic character of the basement below the Mw 5.6 September 3 2016 Pawnee Epicenter, Oklahoma:* Intercontinental Drilling Program workshop, Norman, Oklahoma, May 4, 2018

[17] *Seismic imaging of Biomass*: IRESS workshop, Rice University, USA, February 23, 2018

[16] *Combining P- and SH- wave travel time tomography for void detection*: Defense Research Development Organization, Hyderabad, India, November 2017

[15] *Acoustic anomalies related to mid-miocene climatic optimum:* Kochi Core Center, Kochi University, Japan, May 2016

[14] *Fracture characterization of fractures in the Mississppian*: Sandridge USA, Oklahoma City, September 2015

[13] *Gas Hydrate Imaging:* Directorate General of Hydrocarbons, New Delhi, India, July 2014

[12] *Seismic rock-physics modeling of the Woodford:* Geophysical Society of Oklahoma City (GSOC), Oklahoma City, March 26, 2012.

[11] *Near-surface investigations using waveform tomography*: 25th Environmental and Engineering Geophysical Society (SAGEEP) Meeting, Tuscon, March 24, 2012.

[10] *Gas-hydrate imaging and quantification in fractured sediments*: Gordon Research Conference, Ventura Beach (USA), March 20, 2012.

[9] *Seismic rock-physics modeling of shale:* Tulsa Geophysical Society (TGS), Tulsa, March 7, 2012

[8] *Seismic imaging using full waveform inversion*: University of Nebraska, Lincon, January 20, 2012

[7] *Gas Hydrate Imaging with Traveltime and Waveform Inversion*: International Conference on Gas Hydrate (ICGH), Edinburgh (UK), July 19, 2011.

[6] *Inverse methods for imaging complex geological structures*: ExxonMobil Corp., Houston, July 1, 2011

[5] *Inversion based imaging*: Geophysical Society of Oklahoma City (GSOC), Oklahoma City, January 11, 2010.

[4] *Gas Hydrate - Resource or Hazard*: University of Texas, El Paso, October 14, 2010.

[3] *Seismic imaging using a composite Inversion/Migration method*: Unitat De Tecnologia Marina - Cmima, Barcelona, Spain, June 29, 2010

[2] *Seismic imaging using a composite Inversion/Migration method*: Institut Francais du Petrole (IFP), Rueil Malmaison, France, December 10, 2009

[1] *Gas Hydrates in the Krishna-Godavari Basin, East Coast India*: ILP Joint Task Force Meeting, Clermont-Ferrand (France), October 7, 2009.

G. Grant Support (PI unless stated)

G1. Extramural Cash (Total: $2,987,816; Share: $1,138,971**)**

[15] Southeast Regional CO2 Utilization and Storage Acceleration Partnership (SECARB-USA), 2019 – 2022, DOE, $596,042 (Share as Co-PI: $100,000)

[14] Student Travel Grant for 2018 Forum on Infrastructural Resilience to Low-Level Seismicity in Oklahoma, NSF, $19,600

[13] Element: Data: HDR: Enabling data interoperability for NSF archives of high-rate real-time GPS and seismic observations of induced earthquakes and structural damage detection in OK, 2018 – 2021, NSF CSSI, $244,704 (Share as Lead PI: $112,529)

[12] Pore-distribution and seismic velocities, 2017 – 2019, Devon Energy, $50,000

[11] Collaborative Research: Seismic Response to the 2016 M5.8 Pawnee Earthquake, 2016 – 2017, NSF RAPID, $8,781.

[10] Indian Monsoon Rainfall in the Core Convective Regions: Collaborative Proposal. NSF – Integrated Ocean Drilling Program (IODP) Expedition 353 (Indian Monsoon Rainfall), 2014-2017, (Share as Co-PI: $64,857)

[9] Geometry of the Kharga Basin (New Valley Oasis) and its Groundwater Capacity, 2012-

	2017, NSF-USAID, $250,000 (Share as Co-PI: $62,500)
[8]	Comprehensive Study of the Stratigraphy, Sedimentology and Diagenesis of the Mississippian Carbonates of the Southern Mid-Continent Consortium, 2013-2016, $1.1M, (Share as Co-PI: $113,827)
[7]	Structural and stratigraphic controls on methane hydrate occurrence and distribution: Gulf of Mexico, Walker ridge 313 and green canyon 955. US Department of Energy, 2013-2016, $304,104
[6]	A physical test model based on stress-shadowing to optimize drilling operations during fracking, Oklahoma Center for Advancement of Science and Technology (OCAST), 2013-2015, $90,000 (Share as PI: $45,000)
[5]	Atlas of Shale Pits, 2012 – 2013. American Association of Petroleum Geologists, $26,360
[4]	Oklahoma State – Halliburton Geoscience Ambassador Program, 2012 – 2013, Halliburton Inc, $20,000
[3]	Converted-Wave Imaging, 2011 – 2012. Dawson Geophysical, $9000
[2]	Velocity-Depth Modeling of Upper Assam Shelf, 2010 – 2011. Oil India Limited, $100,000
[1]	Detection and quantification of gas hydrate, 2009 – 2011. US Department of Energy, $104,368 (subcontract from Rice U)

G2. In-Kind (Commercially Valued)

[5]	Halliburton Landmark Software Grant, 2009 – continuing, >$12M
[4]	CGG Veritas Hampson-Russel Software Grant, 2010 – continuing, >$250K
[3]	Schlumberger Petrel Software Grant, 2010 – continuing, > $3M
[2]	Cheseapaeake High-performance Server Hardware Grant, 2011, $350,000
[1]	Dell High-performance PC Hardware Grant, 2009, $21,000

H. Professional Affiliations

Society of Exploration Geophysicists (SEG), American Association of Petroleum Geologists (AAPG), Geological Society of America (GSA), American Geophysical Union (AGU), and European Association of Geoscientists and Engineers (EAGE)

I. Teaching

	Course	Level	Av. Enroll
[4]	Exploration Seismology (2009 – date; fall)	Grad. and Senior Undergrad	10
[3]	Hydrocarbon Prospect Development (AAPG Imperial Barrel Award) (2009 – 2012; fall)	Grad. and Senior Undergrad	10

[2]	Natural Disaster (2016 – date; Gen Ed., Online only; fall, summer and spring)	Grad. and Senior Undergrad	45
[1]	Geology and Human Affairs (2012 – date; Gen Ed., fall and spring)	Freshman Undergrad	150

Description

[4] Introduction to Exploration Seismology:
Through a series of eight in-class exercises, this semester long course introduces students to the fundamentals of wave propagation and optical seismology. Upon completion a student is able to a) sketch geometrically accurate reflection and refraction ray paths in a three-layered earth model and estimate the corresponding arrival times; b) use processes such as bandpass filtering and deconvolution to enhance signal-to-noise ratio of seismic data; and c) interpret basic structural features by mapping horizon and faults in a 3D seismic volume. The first third of the course includes ray tracing, fold calculation in a seismic profile and move-out analysis. The second third of the course includes 2D seismic processing modules such as time, requency and wavenumber filtering, deconvolution, stacking and migration using a commercial software (VISTA or equivalent). The last part of the course focuses on basic seismic interpretation including horizon and fault mapping in a 3D seismic volume using a commercial software (VISTA or equivalent).

[3] Hydrocarbon Prospect Development :
This semester long course trains a group of student for the American Association of Petroleum Geologist (AAPG) Imperial Barrel Award competition. The student team learns to evaluate a hydrocarbon prospect using seismic volume, well logs and auxiliary data released by AAPG. The evaluation is compiled in the form of a presentation delivered before a selected group of industry experts. OSU was the regional champion in 2010.

[2] Natural Disaster :
This semester long online only course introduces students to various kinds of natural disasters such as earthquakes, volcanoes, landslide and flooding and the causative relation between human society and natural disasters. A series of 14 lectures covers basic of fundamental geology, geological processes, how hazards play natural functions and what the human society can do to minimize the loss of life and property in the wake of natural hazards. The course emphasizes on topics such as urbanization and climate change.

[1] Introductory Geology : This semester long introductory course on geology introduces fundamental concepts of plate tectonics, rocks and soil to freshmen students. Other topics such as the influence of geology and related earth sciences on the human environment, energy and material resources, beneficial and hazardous natural processes, and the planetary and biological evolution of earth is also covered. Lab investigations include rock and soil identification and answering data-based environmentally oriented questions.

J. Mentors and Mentees

J1. PhD Mentees:

[4] Rohit R., 2016 – date, Pore architecture and elastic velocities

[3] Aghyan, A., 2014 – date, Architecture of the Kharga Acquifer: insights from joint inversion of gravity, seismic and electromagnetic data

[2] Shukla, K., 2012 – date, Viso-Poroelastic modeling using nodal discontinuous Galerkin method

[1] Alam, I., 2011 – 2016, Elastic properties of near surface material

J2. MS Mentees:

[13] Juenger, J, 2018 – date, Subsurface void detection from P- and SH waves

[12] Johnson, N, 2018 – date. Subsurface characterization using differential soil settling

[11] Sharma, S., 2014 – 2016, *In-situ* seismic characterization of biofilm bearing sediment

[10] Anyiam, U., 2013 – 2015, 3D seismic attribute expressions of deep offshore Niger Delta. ISBN: 9781369352979

[9] Ebrahimi, P., 2013 – 2015, Mechanistic models of unconventional reservoirs. ISBN: 9781339502564

[8] Holman, R. 2012 – 2014, Seismic Characterization of Fractured Rock Fabric in Mississippian Limestone, Payne County, Oklahoma. ISBN: 9781339134314

[7] Abbasi, S., 2012 – 2014, Multiple Attenuation in 2D, Short Streamer Multi-Channel Seismic Data: Guaymas Basin, Gulf of California. ISBN: 9781339108087

[6] Hanzel, J., 2012 – 2014, LIDAR Based Fracture Characterization: An Outcrop Study of the Woodford Shale, McAlister Shale Pit. ISBN 9781321274462, 1321274467

[5] Al-Hadrami, F., 2011 – 2013, Quantitative interpretation of bio-seismic response, ISBN 303262207, 9781303262203

[4] Al-Bulushi, S., 2010 – 2012, Quantification of gas hydrates in cracked, fine-grained sediments, ISBN 126742303X

[3] Popelka, K., 2010 – 2012, Detection of Thermal Structure of Ocean from Seismic Arrival Times, ISBN 1267590785

[2] Varacchi, B., 2009 – 2011, Rock physics and mechanical stratigraphy of the Woodford Shale, Anadarko Basin, Oklahoma, ISBN 1267197889, 37

[1] Woldearegay, A., 2009 – 2011, Near-surface seismic imaging using first arrival time inversion with pre-stack depth migration, ISBN 1124912053

J3. Mentors

PhD: Colin A. Zelt, Rice University

MS: Colin A. Zelt, Rice University