

J. JAVIER TELLEZ

Assistant Professor

Department of Physical and Environmental Sciences

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EDUCATION

Ph.D. in Geosciences

University of Oklahoma, Norman, OK (Spring 2021)

- Dissertation: Integrated characterization of tight siliciclastic reservoirs: examples from the Cretaceous Burro Canyon Formation, Colorado and Mississippian Meramec strata, Oklahoma
- Jon R. Withrow Named Grant, AAPG Foundation Grants-in-Aid
- Society of Exploration Geophysicists / Chevron Student Leadership Grant
- Robert K. Goldhammer Fellowship for Technical Excellence
- Robberson Conference Presentation and Creative Exhibition Travel Grant
- Best Collaborating Internship Project, Baker Hughes
- Advisor: Dr. Matthew J. Pranter

M.S. in Geology

University of Oklahoma, Norman, OK (Fall 2015)

- Thesis: Seismic sequence-stratigraphic framework and architectural-element identification based on attributes and well logs for Tertiary strata at the Rankin Platform sub-basin, North Carnarvon Basin, Australia
- Robert K. Goldhammer Fellowship for Technical Excellence
- COUAA Colombian Alumni Association grant
- Advisor: Dr. Roger M. Slatt

B.S. in Geology

Universidad Nacional de Colombia, Bogota, Colombia (Fall 2008)

- Thesis: Integration of 3-D seismic interpretation and well-log data to evaluate the potential for new development wells in the Matanegra Block, Llanos Basin, Colombia
- Researcher in structural geology – Seed project -National Agency for Hydrocarbons
- Researcher in basin analysis project - Colciencias – National Agency for Hydrocarbons
- Scholarship for Outstanding Performance
- Advisor: Dr. Andreas Kammer

EXPERIENCE

Geoscience Intern

Baker Hughes, Oklahoma City, OK (Jun-Aug 2018)

- Integrated geological and engineering data with machine learning to analyze drilling performance in the STACK, SCOOP, and Merge areas, Anadarko Basin, Oklahoma

Geology Intern

Pathfinder Exploration LLC, Norman, OK (Feb-Aug 2015)

- Created 3-D geological models to evaluate prospective areas, Anadarko Basin, Oklahoma

Reservoir Geologist

Occidental Oil and Gas, Bogota, Colombia (Jan 2011-Jan 2014)

- Conducted stratigraphic evaluations and provided support for reserves estimation.
- Constructed reservoir models to propose >100 new development wells in the Llanos Basin

Junior Geologist

Occidental Oil and Gas, Bogota, Colombia (Oct 2008-Jan 2011)

- Proposed >50 workovers through geological evaluations to improve reservoir performance
- Provided support for technical meetings with industry partners (Ecopetrol and Repsol)

Geology Intern

Occidental Oil and Gas, Bogota, Colombia (Jan-Oct 2008)

- Generated maps and cross-sections using OpenWorks and Geographix for well prognosis
- Integrated seismic and well data to evaluate the potential for new development wells

RESEARCH

Graduate Research Assistant

Reservoir Characterization and Modeling Laboratory (RCML)

University of Oklahoma, Norman, OK (Spring 2016-Present)

- Investigate outcrop to subsurface stratigraphy of tight fluvial sandstones, Colorado
- Generate UAS-based photogrammetry outcrop models for facies interpretation and fluvial architecture definition, Colorado.
- Conduct reservoir characterization and seismic-constrained Modeling of Mississippian strata, STACK Play, Oklahoma

Attribute Assisted Seismic Interpretation (AASPI) Consortium

University of Oklahoma, Norman, OK (Spring 2016-Present)

- Identified and quantified parasequences using Expectation-Maximization filter
- Used machine-learning techniques for mapping dolomitic facies in calcareous reservoirs
- Applied deep-convolutional neural networks to estimate porosity from thin-section images

Institute of Reservoir Characterization (IRC)

University of Oklahoma, Norman, OK (Spring 2014-Fall 2015)

- Mapped and correlated the Woodford Shale, Ardmore Basin, Oklahoma
- Interpreted seismic-sequence stratigraphy of deepwater seismic-facies, Australia

- Used Self-Organize-Maps for facies mapping and architectural elements definition

Research Geologist

National Agency for Hydrocarbons, Colombia (Fall 2007)

Generated E&P licensing round prospect report for the eastern Cordillera Block, Colombia

TEACHING

Instructor and Co-instructor

Mewbourne College of Earth and Energy, University of Oklahoma, Norman, OK

- Introductory Petroleum Geology and Geophysics (GPHY 3423; required course for Petroleum Engineering majors). Addresses conventional and unconventional petroleum resources, basic sedimentary and structural geology, the petroleum system, source rocks, types of traps and seals, reservoir rock properties, exploration and development methods, basic seismic interpretation, seismic attributes, basic reservoir modeling, and volumetric reserves calculations. Enrollment: ~100 students. Co-instructor for Fall 2016, and 2017. Solely instructor, Fall 2018, ONLINE - Summer 2020.

School of Geosciences, University of Oklahoma and Los Andes University, Bogota, Colombia

- Reservoir Characterization and Modeling – Study Abroad in Bogotá, Colombia (GEOL 4970-5970) introduces concepts and methods of geological reservoir characterization and Modeling. Extensive use of Petrel software. Enrollment: 5 OU students with 30 students from the University of Los Andes and industry. Co-instructed with Dr. Matthew Pranter, Summer 2018

Graduate Teaching Assistant

School of Geosciences, University of Oklahoma, Norman, OK

- Reservoir Characterization and Modeling (GEOL 6970). Introduces concepts and methods of geological reservoir characterization and Modeling. Involves extensive use of Petrel software. Assistant for Colorado field trip to Piceance Basin. Enrollment: 10-25 students from geoscience and petroleum engineering Fall 2018, 2019
- Integrated Reservoir Modeling & Simulation (GEOL/PE 6970-902). Concepts and methods of integrated static reservoir modeling and dynamic fluid-flow simulation. Extensive use of Petrel/Eclipse software. Enrollment: 20 students (10 geoscience and 10 petroleum engineering – work in teams). Fall 2016, 2017
- 3-D Reservoir Modeling (GEOL 6970-901). Concepts and methods of 3-D geologic Modeling. Enrollment: 20-25 students from geoscience and petroleum engineering. Spring 2015, 2016.

Universidad Nacional de Colombia, Bogota, Colombia

- Oceanography and Coastal Marine Environments. Introduces concepts of geology, chemistry, physics, climatology, environmental science and biology as they apply to the oceans, Enrollment: 50 students from geoscience and biology. Spring 2005, 2006.

Short Course Teaching Assistant

AAPG Student Expo at the University of Oklahoma, Norman, OK

- 3-D Reservoir Modeling. Introduces basic concepts and methods of 3-D Modeling.
Enrollment: 25 students. Spring 2017

SERVICE

Professional Society Service

- 2020-present: Reviewer for AAPG Bulletin
- 2018-present: Reviewer for SEG journal *Interpretation*
- 2017 Poster judge, AAPG annual meeting, Houston, TX
- Vice President, AAPG Student Chapter, 2016-2017
- Vice President, SEG Student Chapter, 2017-2018 – Summit level achievement

Colombian Geological Society

- 2007-2008 Geonotas Associated Editor

Alumni Society

- 2007-2008 COUAA Colombian Alumni Association

Student Associations

- 2007-2008 COLSA Columbian Student Association. Exchange Students Coordinator Chair

PROFESSIONAL AFFILIATIONS

- American Association of Petroleum Geologists (AAPG)
- Colombian Association of Geologist and Geophysicist (ACGGP)
- Society for Sedimentary Geology (SEPM)
- Society of Exploration Geophysicists (SEG)
- Rocky Mountain Association of Geologists (RMAG)
- Geological Society of America (GSA)

PUBLICATIONS AND POSTERS

- Tellez, J., M. J. Pranter, C. H. Sondergeld, C. S. Rai, J. Fu, H. Han, S. Dang, C. McLain, in press, Mechanical stratigraphy of Mississippian strata using machine learning and seismic-based reservoir characterization and modeling, Anadarko Basin, Oklahoma. *Interpretation*, Vol. 9, No. 2 (May 2021); p. SE53–SE71, doi: 10.1190/INT-2020-0167
- Ortiz, L., **Tellez, J.J.**, Bedle, H, 2020, Seismic characterization of a blocky mass transport deposit in the Traella Limestone Formation, North Carnarvon Basin, Australia, *Interpretation*, vol:8, iss:4
- La Marca Molina, K., Bedle, H., **Tellez, J.**,2020, Seismic attributes and analogs to characterize a large fold in the Taranaki Basin. *Interpretation*, vol:8 iss:4
- **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2020, Fluvial sequence stratigraphy and architecture of the Burro Canyon Formation, southwestern Piceance Basin, Colorado,

Interpretation vol:8, iss:4

- **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2019, UAV-Based Photogrammetry for Facies Architecture and Fluvial Sequence Stratigraphic Definition of the Burro Canyon Formation, Piceance Basin, Colorado, AAPG International Conference & Exhibition, Buenos Aires, Argentina, Aug 2019
- **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2019, Fluvial architecture and sequence stratigraphy of the Burro Canyon Formation using UAV-based outcrop models, southwestern Piceance Basin, Colorado, AAPG Rocky Mountain Section Convention Program, Cheyenne, Wyoming
- Duarte-Coronado, D., **J. J. Tellez**, R. De Lima, K. Marfurt, and R. Slatt, 2019, Deep convolutional neural networks as an estimator of porosity in thin-section images for unconventional reservoirs: SEG Technical Program Expanded Abstracts 2019, doi:10.1190/segam2019-3216898.1
- Cervantes, A, **J. J. Tellez**, K. La Marca, 2019, Using machine learning techniques for mapping dolomitic facies in a triple porosity calcareous reservoir. Campeche Sound, Gulf of Mexico, AAPG International Conference & Exhibition, Argentina, Aug 2019
- Sinha, S., Kiran, R., **J. J. Tellez**, and K. Marfurt, 2019, Identification and Quantification of Parasequences Using Expectation-Maximization Filter: Defining Well Log Attributes for Reservoir Characterization: Proceedings of the 7th Unconventional Resources Technology Conference, doi:10.15530/urtec-2019-1023
- **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2018, Application of UAV-based photogrammetry for outcrop characterization of fluvial deposits of the Burro Canyon Formation, Piceance Basin, Colorado: RMAG, The Outcrop, v. 67, no. 3, May 2018
- **Tellez, J. J.**, K. Lewis, S. Clark, R. Cole, M. J. Pranter, and Z. A. Reza, 2018, Exploring multi-scale heterogeneity of braided-fluvial reservoirs: implications for reservoir performance, AAPG Annual Convention & Exhibition, Salt Lake City, UT, May 2018
- **Tellez, J. J.**, R. Slatt, K. Marfurt, 2016. Seismic Facies Classification and Characterization of Deepwater Architectural Elements. A Case of Study, North Carnarvon Basin Australia, AAPG Annual Convention & Exhibition, Houston, TX, Apr 2017
- **Tellez, J. J.**, R. Slatt, 2016, Seismic Geomorphology and Characterization of Deepwater Architectural Elements and Its Applications in 3-D Modeling: a Case of Study, North Carnarvon Basin, Australia, AAPG/SEG Annual Convention & Exhibition, Houston, TX, Sep 2016, Cancun, Mexico.
- **Tellez, J. J.**, 2015. Seismic Sequence Stratigraphy and Architectural Elements for Cenozoic Strata at the Rankin Platform Sub-Basin, North Carnarvon Basin, Australia.

Master thesis. The University of Oklahoma, pp. 108

INVITED TALKS / WORKSHOPS

- **Tellez, J.**, M. J. Pranter. Seismic-based reservoir characterization and modeling for the Meramec strata, Anadarko Basin, Oklahoma. Dallas Geological Society, February 2021
- **Tellez, J. J.**, M. J. Pranter, 2016, Application of UAV-Based Photogrammetry for Outcrop Characterization of Fluvial Deposits of the Burro Canyon Formation, Piceance Basin, GTW, New Opportunities with Drones: New Needs, FAA Rule Changes, New Technologies, Houston, TX, Dec 2016
- **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2017, Application of UAV-Based Photogrammetry for Outcrop Characterization of Fluvial Deposits of the Burro Canyon Formation, Piceance Basin, Colorado, 7TH International Symposium on Hydrocarbon Accumulation Mechanism and Petroleum Resources Evaluation, Beijing, China, Oct 2017

PROFESSIONAL DEVELOPMENT

Professional Short Courses, Workshops, and Field Trips

- Risk Analysis and Decision Making using Crystal Ball. Dr. James Murtha. Oct 5, 2012
- Applied Subsurface Mapping. Sia Agah. SCA Companies Apr 9, 2012
- Core Sedimentology. Timothy Cross. Occidental Petroleum, Apr 04, 2011
- Fundamentals of Basin and Petroleum System Analysis. Alton Brown. Mar 21, 2011 Occidental Petroleum.
- Fundamentals of Geostatistics and its Application in Reservoir Characterization. Tien When Lo. Occidental Petroleum Nov 3, 2010
- Integrated Reservoir Analysis. Dan Hartmann and Jhon Farina. Occidental Petroleum, Sep 08, 2010
- Ferron Sandstone Outcrops in Utah – Field trip, Tom Ryer. Occidental Petroleum, Aug 28, 2010
- Reservoir Characterization of Fluvio-Deltaic systems. Tom Ryer. Occidental Petroleum Mar 9, 2010
- Petroleum Geoengineering. Patrick Corbett. SEG Short Course, Jul 2009
- Seismic Interpretation and Analysis in Thrust Belts. Roberto Linares, Aug 13 – 14, 2007

HONORS AND AWARDS

- 2018 Provost Award of Excellence in Teaching: Certificate of Distinction for top 10 percent of all graduate assistants across campus by student evaluations for courses taught during the Fall 2018 semester, University of Oklahoma
- 2017 ETCS Award for Most Dedicated International Instructor, Graduate College of the University of Oklahoma. Fall 2017 semester, University of Oklahoma

- 2018 Best Collaborating Internship Project, Baker Hughes. Awarded for integrating disciplines to achieve the project objective, Summer 2018, Oklahoma City, OK
- 2018 Second place Award in Poster Presentation: AAPG Student Expo: **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2019, UAV-Based Photogrammetry for Facies Architecture and Fluvial Sequence Stratigraphic Definition of the Burro Canyon Formation, Piceance Basin, Colorado, 2018 AAPG Student Expo, University of Oklahoma, Norman, Oklahoma
- 2018 Second place Award for Poster Presentation: Conoco Phillips Research Symposium, **Tellez, J. J.**, M. J. Pranter, and R. Cole, 2019, UAV-Based Photogrammetry for Facies Architecture and Fluvial Sequence Stratigraphic Definition of the Burro Canyon Formation, Piceance Basin, Colorado 2018, AAPG Student Expo, University of Oklahoma, Norman, Oklahoma
- 2008 First Place Award, intern project at Occidental Oil and Gas: Integration of petrophysical data and 3D seismic interpretation for potential new development wells in Matanegra Block. Cano Limon Field, Colombia