

Kurt J. Marfurt

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ConocoPhillips School of Geology and Geophysics
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Objectives: My objectives are to develop, calibrate, and deploy technology to improve exploration and exploitation of hydrocarbon reservoirs and to mentor students in pursuing their research goals.

Teaching Philosophy: I believe students learn best through data-driven research including mastery of commercial software, algorithm development, calibration, and deployment, data integration, followed by presentation and publication.

Overview: 17 years experience in industry research involving project management. customer support, and in-service education and training in a major oil company. 1 year assignment in an international exploration business unit to evaluate blocks, develop plays and accelerate tech transfer. 24 years experience in university teaching and implementing industry-supported research .

My career is characterized by the development and deployment of data-driven algorithmic solutions to exploration problems ranging from seismic signal analysis, through seismic modeling and migration, to seismic attributes and interpretation.

Education:	Ph.D.	Columbia University, New York, NY (1978) Applied Geophysics
	M.S.	Columbia University, New York, NY (1975)
	A.B.	Hamilton College, Clinton, NY (1973) French and Physics

Employment History:

The University of Oklahoma
ConocoPhillips School of Geology and Geophysics
Norman, OK

2007-present: Principal investigator of industry-supported consortium on attribute-assisted seismic processing and interpretation (AASPI). Research in improving lateral seismic resolution, and attribute expression of unconventional reservoirs. Collaboration with petroleum engineering colleagues to develop workflows that provide more quantitative reservoir predictions.

2018-present: Research Professor of Geophysics
Conducting research as well as student mentoring and advising

2007-2018: Frank and Henrietta Schultz Chair Professor of Geophysics
Conducting research as well as teaching and mentoring of students, particularly those interested in entering the energy industry.

The University of Houston
Department of Geosciences
4800 Cullen Rd
Houston, TX 77204-5006

1999-2007 Director, Center for Applied Geosciences and Energy (CAGE), PI of AGL Industrial Consortium, and Professor, Department of Geosciences

Oversight of industry-supported consortium, focused on 3D seismic attribute analysis. Developed algorithms and work flows for imaging of 3D multicomponent VSPs. Teaching and mentoring of students, including part time students currently working in the exploration and production industry.

Amoco Exploration and Production Technology
Geoscience Technology
PO. Box 3385
Tulsa, OK 74102

1981-1999: Research scientist, Research supervisor, and Geophysics Technology Discipline Coach.

Research in seismic modeling, migration, signal processing, basin analysis, seismic stratigraphy, attributes, and multicomponent analysis.

Henry Krumb School of Mines
Columbia University
New York, NY 10025

1978-1981: Assistant Professor of Mining (Geophysics)

1977-1978: Instructor of Mining (Geophysics)

**Professional
Service:**

SEG Director at Large, 2019-2022
SEG and AAPG Short Course Instructor (3D seismic attributes) (2002-present)
Deputy Editor in Chief *Interpretation*, 2019-present
Editor in Chief *Interpretation*: 2016-2018.
Assistant Editor *Interpretation*, 2012-2015.
Associate Editor *Geophysics*, Seismic Attributes and Signal Analysis 2002-2012)

Co-organizer and co-editor of 2011 GCSSEPM Perkins Research Conference.
Guest Editor TLE, March 2009, special issue on attributes.
Assistant Editor Geophysics (1997-2001)
Associate Editor Geophysics, Velocity and Statics (1995-1997)
Associate Editor Geophysics, Seismic Signal Analysis (1985-1987)
Guest Editor TLE, March, 2003 special issue on IRIS activities
Member, Passcal Standing Committee of IRIS (2000-2004)
First Vice President (1984-1985), Geophysical Society of Tulsa

Societies: Member: SEG, EAGE, AAPG, GSH, GSOC

External Honors:

2019. AAPG Robert Berg Outstanding Research Award.

2018. SEG Distinguished Short Course Instructor: "Seismic attributes as the framework for data integration throughout the life of the oil field".

2016. SEG/AAPG best paper in Interpretation for 2015 award: Identification of brittle/ductile areas in unconventional reservoirs using seismic and microseismic data: Application to the Barnett Shale" (second author with Roderick Perez Altamar).

2012. SEG Honorary Membership.

2010. AAPG George C. Matson Best Oral Presentation award: "Detecting stratigraphic features via cross-plotting of seismic discontinuity attributes and their volume visualization" (second author with Satinder Chopra).

2008. Canadian Society Petroleum Geologists medal of merit: "Blind Thrusts and Fault-Propagation Folds in the Upper Cretaceous Alberta Group, Deep Basin: Implications for Fractured Reservoirs", (second author with B. Hart , B. Verban, and G. Plint).

2008. Best poster for the 2007 SEG annual meeting: "Seismic attributes for fault/fracture characterization" (second author with Satinder Chopra) .

2007. Geophysical Society of Houston Honorary Membership.

2006. SEG Distinguished Short Course Instructor: "Seismic attribute mapping of structure and stratigraphy".

1998. Best Paper in Geophysics Award: "3D seismic attributes using a running window semblance-based algorithm" (with R. L. Kirlin, S. L. Farmer, and M. S. Bahorich).

1987. SEG Outstanding Presentation Award: "Seismic Modeling: Recent Advances and the Road Ahead"

Student

Advisement:

Supervised Ph.D. and M.S. theses at Columbia Univ., Univ. of Tulsa, Univ. of Houston, and Univ. of Oklahoma. Also have served on Ph.D. committees at Univ. of Utah, Univ. of Adelaide, Univ. of Calgary, Univ. de Paris IX.

Computer

Skills:

Extensive experience in structured program design, implementation, optimization and maintenance from workstation through supercomputers to distributed parallel computing. Experience with commercial and proprietary 3D seismic interpretation, tomography, modeling, prestack depth migration and interactive processing software.

Current

Research

Interests:

Correlation of seismic attributes to well drilling, completion, and production for unconventional plays. Seismic stratigraphy and seismic geomorphology. Seismic data conditioning to improve structural and stratigraphic image fidelity. Computer-assisted pattern recognition and machine learning.

Areas of

Expertise:

Seismic attribute analysis. Seismic geomorphology. Seismic signal analysis. Seismic imaging. Seismic modeling. Computational geophysics.

Special

Attributes:

Excellent communication skills. Extensive personal contacts in the university, international exploration, and exploration research communities.