

## **DOUGLAS JOHN FOSTER**

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Houston, Texas 77019  
713-870-6984

### **EMPLOYMENT HISTORY:**

#### **Jackson School of Geosciences Institute for Geophysics at The University of Texas at Austin (UTIG)**

Austin, Texas

Senior Research Scientist, April 2015

#### **ConocoPhillips Company**

Houston, Texas

Senior Scientist, 2002-2015

**Key accomplishments:** *Develop and integrate new technologies throughout ConocoPhillips. Coordinate and advise on research and technical service projects within Upstream Technology and outside companies (i.e. contractors and partners). Serve as technical advisor for the Deepwater Gulf of Mexico (GOM) exploration group (from 2008-present). Consult with global operating companies on exploration and development activities. This consulting includes the coordination of technical service projects for specific exploration activities (acreage acquisition, and exploration and appraisal drilling). Some specific exploration projects have been in Deepwater GOM, Kazakhstan, Alaska, and Canada. Recent work includes advising on Deepwater GOM, India, Angola, Guyana, Nova Scotia, and Senegal exploration activities.*

#### **Phillips Petroleum Company**

Bartlesville, Oklahoma

Senior Exploration Research Advisor, 2000-2002

**Key accomplishments:** *Coordinated amplitude versus offset (AVO) projects for Phillip's worldwide exploration. This work has resulted in acquiring leases in West Africa and Norway. Continued application of detailed AVO analysis for exploration and appraisal of the north slope of Alaska. Consulted on exploration and development activities in Brazil, Norway, Angola, Nigeria, Australia, and Kazakhstan.*

#### **ARCO Exploration and Production Technology**

Plano, Texas

Exploration Research Advisor, 1998-2000

Senior Principal Research Geophysicist, 1998

**Key accomplishments:** *Consulted on global exploration prospects for the ARCO International Oil and Gas Co., ARCO Alaska Co. and Vastar Resources Co. This*

*consultation emphasized integrating AVO best practices into exploration practices. Designed and implemented a technique for fast and accurate imaging of 3-D seismic data. This method was used on large 3-D seismic data from the Gulf of Mexico and Trinidad. Developed techniques for lithology and fluid prediction using elastic waves.*

### **Mobil Oil Corporation**

Dallas, Texas

Geophysical Research Advisor, 1994-1998

**Key accomplishments:** *Team leader of research group for seismic direct hydrocarbon detection methods. Managed a \$1.6 million yearly budget for internal and external funding of research and technical service. The main effort of this group was to develop and apply state-of-the-art technologies for hydrocarbon detection and lithology prediction. Served as a global consultant on exploration prospects. Initiated and completed a reconnaissance seismic direct hydrocarbon detection (AVO) project for generating prospects in Niger Delta (Nigeria.)*

### **ARCO Oil and Gas Company**

Plano, Texas

Principal Research Geophysicist, 1990-1994

Senior Research Geophysicist, 1984-1990

**Key accomplishments:** *Developed Radon transform multiple suppression algorithm, giving ARCO a competitive advantage in 1986. Developed multi-component algorithms for elastic wavefield analysis. Coordinated a task force on AVO analysis which led to new and more robust techniques for direct hydrocarbon detection methods. Developed amplitude preserving imaging algorithms for complex geological environments.*

### **OUTSIDE ACTIVITIES:**

**Adjunct Professor** (Physics), University of Houston.

**Ultra-Deepwater Advisory Committee** for the U. S. Department of Energy  
2011-2014.

**Member of the Editorial Board** for the Journal of Seismic Exploration.

**Member of the Editorial Board** for The Leading Edge.

**Visiting Scientist** attending the workshop on Inverse Problems in Wave Propagation, Institute of Mathematics and its Applications, University of Minnesota, March 1995.

**ACADEMIC HISTORY:**

**Doctor of Philosophy** (Applied Geophysics), Columbia University, New York City, 1985

**Master of Science** (Geophysics), University of Missouri at Rolla, 1980

**Bachelor of Science** (Mathematics), University of Santa Clara, California, 1978

**AWARDS:**

**Technology Achievement Award** (ConocoPhillips, 2002)

**Shield Award** (Phillips, 2002)

**Outstanding Technical Achievement Award** (Phillips Alaska, 2001)

**Outstanding Technical Achievement Award** (ARCO, 1999)

**Exceptional Contribution Award** (ARCO, 1990)

**Group Manager Award** (ARCO, 1988)

**PUBLICATIONS:**

Carrion, P.M., and Foster, D.J., *Analysis of wave motion in even- and odd-dimensional acoustic media using Radon transforms*: Journal of the Acoustical Society of America, September 1989.

Carrion, P.M., and Foster, D.J., *Inversion of seismic data using precritical reflection and refraction data*: Geophysics, May 1985.

Castagna, J.P., Swan, H.W., and Foster, D.J., *Framework for AVO gradient and intercept interpretation*: Geophysics, May-June 1998.

Foster, D.J., *Finite difference synthetic seismogram with a point source*: Masters Thesis, University of Missouri, Rolla, June 1980.

Foster, D.J., *Full wave equation downward continuation: A nonlinear deconvolution*: Proceedings of the European Association of Exploration Geophysicists (EAEG) and Society of Exploration Geophysicists (SEG) research workshop on deconvolution and inversion: Blackwell Scientific Publications, 1987.

Foster, D.J., *Velocity analysis and extrapolation of seismic data in vertically inhomogeneous media*: Ph.D. Dissertation, Columbia University, New York, New York, 1985.

Foster, D.J., and Carrion, P.M., *Born inversion with a variable background velocity*: Geophysics, October 1984.

Foster, D.J., and Carrion, P.M., *Full wave equation downward continuation of seismic reflection data*: Geophysical Prospecting, November 1985.

Foster, D.J., and Carrion, P.M., *Generalized Born inversion of seismic reflection data*: Geophysical Journal of the Royal Astronomical Society, May 1986.

Foster, D.J., and Huang, J.I., *Global Asymptotic solutions of the wave equation*: Geophysical Journal International, March 1991.

Foster, D.J., Keys, R.G., and Lane, F.D., *Interpretation of AVO Anomalies*: Geophysics, September-October 2010.

Foster, D.J., Keys, R.G., and Reilly J.M., *Another Perspective on AVO Crossplotting*: The Leading Edge, September 1997.

Foster, D.J., Keys, R.G., and Schmitt, D.P., *Detecting subsurface hydrocarbons with elastic wavefields*: Proceedings of the workshop on Inverse Problems in Wave Propagation, Institute of Mathematics and its Applications, Springer-Verlag, New York, 1997.

Foster, D.J., and Mosher, C.C., *Multidimensional inversion of seismic data*: Inverse Problems, Vol.4, 1988.

Foster, D.J., and Mosher, C.C., *Suppression of multiple reflections using the Radon transforms*: Geophysics, March 1992.

Keys, R.G., and Foster, D.J., eds., *Comparison of Seismic Inversion Methods on a Single Real Data Set*: SEG publication, catalog #284A, 1998.

Mosher, C.C., Foster, D.J., and Wu, R-S., *Phase-shift migration with wave-packet algorithms*: Proceedings of the International Society for Optical Engineering (SPIE), Vol. 2822, Denver, Colorado, 1996.

Mosher, C.C., Foster, D.J., and Hassanzadeh, S., *Seismic imaging with offset plane waves*: Proceedings of SPIE, Vol. 2822, Denver, Colorado, 1996.

Mosher, C.C., Keho, T., Weglein, A.B., and Foster, D.J., *The impact of migration on AVO analysis*: Geophysics, December 1996.

Weglein, A.B., Foster, D.J., Matson, K., Shaw, S., Cavalho, P., and Corrigan, D., *Predicting the correct spatial location of reflectors without knowing or determining the precise medium and wave velocity: initial concept, algorithm and analytic and numerical example*, Journal of Seismic Exploration, January, 2002.

Weglein, A.B., Araujo, F.V., Carvalho, P.M., Stolt, R.H., Matson, K.H., Coates, R.T., Corrigan, D., Foster, D.J., Shaw, S., and Zhang, H., *Inverse scattering series and seismic exploration*, Inverse Problems **19**, 2003.