
Petroleum Engineering / Rock Mechanics**Expertise**

Petroleum, Rock Mechanics, Numerical Modeling

Education

Ph.D. (Petroleum Engineering, Rock Mechanics), 2005
M.S. (Petroleum Engineering, Well Construction Technology), 2000
University of Oklahoma, Norman, Oklahoma

B.S. (Petroleum Engineering), 1996
Universidad Industrial de Santander, Bucaramanga, Colombia

Professional Affiliations

American Rock Mechanics Association (ARMA), 2002 - Present

Society of Petroleum Engineers (SPE), 1996-Present: SPE Steering Committee Member, *Drilling and Completions Magazine*, 2004-Present; SPE Technical Reviewer, *Drilling and Completions Magazine*, 2005-Present

Professional Experience

2007 - Present *Itasca Consulting Group, Inc., Minneapolis, Minnesota*
Petroleum/Geomechanical Engineer

2005 - 2007 *Geomechanics International, Inc., Houston, Texas*
Geomechanical Engineer

2004 - 2005 *Baker Hughes, Houston, Texas, Geomechanical Engineer*

2003 *NSI Technologies, Tulsa, Oklahoma, Geomechanical Engineer*

2002 *Conoco Phillips and Phillips Petroleum Company, Bartlesville, Oklahoma,*
Geomechanical Engineer

1999 - 2004 *University of Oklahoma, Mewbourne School of Petroleum and Geological*
Engineering, Researcher and Teaching Assistant

1995 - 1999 *Colombian Petroleum Institute, ECOPETROL, Bucaramanga, Colombia,*
Petroleum Engineer

1994 - 1995 *Engineering and Construction Limited, Bucaramanga, Colombia*
Petroleum Engineer

1993 - 1994 *Universidad Industrial de Santander, Petroleum Engineering Department,*
Researcher and Teaching Assistant

Project Experience

Geomechanical Field Work and Modeling: Conducted wellbore stability studies; sanding prediction; compaction/subsidence studies; rock mechanics characterization; pore pressure prediction; proppant study of the hydraulic fracturing of gas wells; fault seal analysis; modeling and design of hydraulic fracturing operations; thick-wall cylinder and uniaxial compression testing. Studied fracture permeability as a function of confining pressure.

Petroleum Field Work and Analysis: Engaged in the design, planning and construction of city gas-distribution networks; modification of water-flooding injection profiles; chemical de-asphalting of heavy oils (research and plant construction); design and construction of paraffin dispersion systems; design and construction of wastewater treatment systems; construction, cleaning and maintenance of Colombia's National Pipeline Network.

Research and Teaching: Researched well stimulation, rock mechanics and enhancement of water-flooding injection profiles. Teaching Assistant for Introduction to Rock Mechanics, Visual Basic, Reservoir Engineering I and II.