

Néstor Cardozo

CONTACT INFORMATION

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RESEARCH INTERESTS

Structural Geology and Basin Analysis

EDUCATION

Cornell University, Ithaca, New York USA **January 1998 - January 2003**

Ph.D. Earth and Atmospheric Sciences, January 2003

- Dissertation Topic: "Mechanical and kinematic investigations of fault propagation folding and foreland subsidence"
- Advisors: Richard W. Allmendinger, Teresa Jordan

Ohio University, Athens, Ohio USA **September 1995 - September 1997**

M.S., Geological Sciences, September, 1997

- Thesis Topic: "Thermomechanical modeling of the Llanos Basin, Colombia"
- Advisor: Douglas Green

Universidad Nacional, Bogotá Colombia **September 1994 - September 1995**

Coursework M.S., Geotechnique, September 1994 - September 1995

Universidad Nacional, Bogotá Colombia **September 1988 - June 1994**

B.S., Geology, September, 1994

- Thesis Topic: "Structural Analysis of the Soapaga fault, Eastern Cordillera, Colombia"
- Advisor: Andreas Kammer

PROFESSIONAL EXPERIENCE

University of Stavanger, Norway

Associate Professor

October, 2008 - present

Teaching and Research in Structural Geology and its application to Petroleum Geosciences

Center for Integrated Petroleum Research, Bergen, Norway

Researcher II

September, 2004 - September 2008

Work in the "Fault Facies project", an initiative to realistically include faults in reservoir modeling software. Coordinate strain modeling group who develops tools to compute strain in faulted grids. More information at <http://homepage.mac.com/nfcd/work/faultFacies.html>

Norwegian Geotechnical Institute, Oslo, Norway

Postdoctoral fellow

August, 2003 - August 2004

Work in several consulting projects, including mechanical modeling of fault zones and rockslides, and fracture characterization in carbonates

Department of Earth and Atmospheric Sciences, Cornell University, Ithaca, New York USA

Research Associate

August, 2002 - August 2003

Conduct field, kinematic and mechanical studies of fault related folding. Field areas: Neuquén

Basin, Argentina, and Hudson Valley fold and thrust belt, New York.

Ecopetrol - Universidad Nacional, Bogotá Colombia

Research Associate

August, 1994 - August 1995

Work as a structural geologist in the project "Geological, Geophysical, and Geochemical studies of the Eastern Cordillera of Colombia from Tunja to Paz de Río, Boyacá Colombia"

Occidental de Colombia, Bogotá Colombia

Intern

December 1992 - February 1993

Construct a cross section of the Eastern Cordillera, latitude Bogotá

PUBLICATIONS

Fachri, M., Tveranger, J., Cardozo, N., Pettersen, Ø. and Espedal, M. The impact of fault envelope structure on fluid flow. Submitted to the American Association of Petroleum Geologists Bulletin.

Tveranger, J., Braathen, A., Cardozo, N., Fachri, M., Nøttveit, H., Røe, P., Skorstad, A. and Syversveen A.R. Fault Facies in Reservoir Modelling. Submitted to the Journal of Structural Geology.

Braathen, A., Tveranger, J., Fossen, H., Skar, T., Cardozo, N., Semshaug, S.E., Bastesen E. and Sverdrup E. 2009. Fault Facies and its applications to sandstone reservoirs. American Association of Petroleum Geologists Bulletin 93, 891-917.

Cardozo, N. and Aanonsen, S.I. 2009. Optimized trishear inverse modeling. Journal of Structural Geology 31, 546-560.

Cardozo, N. and Allmendinger, R.W. 2009. SSPX: A program to compute strain from displacement/velocity data. Computers and Geosciences 35, 1343-1357.

Fredman, N., Tveranger, J., Cardozo, N., Braathen, A., Soleng, H., Røe, P., Skorstad, A. and Syversveen, A.R. 2008. Fault facies modelling: Technique, and approach for 3D conditioning and modeling of faulted grids. American Association of Petroleum Geologists Bulletin 92, 1457-1478.

Cardozo, N., Røe, Per, Soleng, H., Fredman, N. Tveranger, J. and Schueller, S. 2008. A methodology for efficiently populating faulted corner point grids with strain. Petroleum Geoscience 14, 205-220.

Cardozo, N. 2008. Trishear in 3D: Algorithms, implementation, and limitations. Journal of Structural Geology 30, 327-340.

Cardozo, N., Allmendinger, R.W., Morgan, J.K. Influence of mechanical stratigraphy and initial stress state on the formation of two fault propagation folds. Journal of Structural Geology, 27, 1954-1972.

Cardozo, N. 2005. Trishear modeling of fold bedding data along a topographic profile. Journal of Structural Geology, 27, 495-502.

Gómez, E., Jordan, T.E., Allmendinger, R.W., and Cardozo, N. 2005. Development of the Colombian foreland-basin system as a consequence of diachronous exhumation of the northern Andes. Geological Society of America Bulletin, 117, 1272-1292.

Cardozo, N., Bhalla, K., Zehnder, A.T., Allmendinger, R.W. 2003. Mechanical models of fault propagation folds and comparison to the Trishear kinematic model. Journal of Structural Geology, 25, 1-18.

Cardozo, N., Jordan, T. 2001. Causes of Spatially Variable Tectonic Subsidence in the Miocene Bermejo Foreland Basin, Argentina. *Basin Research*, 13, 335-357.

Jordan, T., Schlunegger, F., and Cardozo, N. 2001. Unsteady and Spatially Variable Evolution of the Neogene Andean Bermejo Foreland Basin, Argentina. *Journal of South American Earth Sciences*, 14, 775-798.

CONFERENCE
PRESENTATIONS

Cardozo, N. 2009. Modelamiento estructural de pliegues por propagación de falla. XII Congreso Colombiano de Geología. Paipa, Boyaca, Colombia.

Cardozo, N. and Aanonsen, S.I. 2009. Optimized trishear inverse modeling. Vinterkonferansen, Bergen.

Cardozo, N. and Allmendinger, R.W. 2008. SSPX: A Program to Visualize Strain in Discrete Element Models. GSA 2008 Joint Annual Meeting. Houston, Texas.

Tveranger, J., Cardozo, N., Kjeldaa, G.C., Nøttveit, H. and Røe, P. 2008. Volumetric fault zone modelling using fault facies. Fault zones; structure geomechanics and fluid flow. Geological society of London, London.

Cardozo, N. and Allmendinger, R.W. 2008. Inverse strain modeling of displacement/velocity data using the program SSPX. 33 International Geological Conference, Oslo.

Cardozo, N. 2008. 3D forward trishear fault propagation fold modeling. 33 International Geological Conference, Oslo.

Cardozo, N. and Cuisiat, F. 2008. Fault propagation folding modeling in FLAC. 1st Int'l. FLAC/DEM Symposium on Numerical Modeling, Minneapolis, Minnesota.

Fachri, M., Tveranger, J. and Cardozo, N. 2008. Fault Facies modeling: Developments and applications in various sedimentary and fault system configurations. AAPG Annual convention and exhibition, San Antonio, Texas.

Fischer, M.P., Keating, D., Cardozo, N. and Majerowicz, C. 2007. Fracture and fault prediction in basement-involved fault related folds: Comparisons between physical models and trishear calculations. AAPG Annual convention and exhibition, Long Beach, California.

Cardozo, N., Røe, P., Soleng, H., and Tveranger, J. 2007. Volume based strain computation in Havana: A methodology for efficiently populating corner point grids with strain. Vinterkonferansen, Stavanger.

Allmendinger, R.W. and Cardozo, N. 2005. The three faces of Trishear Fault-Propagation Folding: Simulation, Validation, and Uncertainty. International conference on Theory and Application of Fault-Related Folding in Foreland Basins, Beijing.

Cardozo, N., Bhalla, K., Zehnder, A.T., Allmendinger, R.W. 2001, Mechanical models of fault propagation folds and comparison to the Trishear kinematic model. GSA annual meeting, Boston.

Cardozo, N. 1997. Thermomechanical modeling of the Llanos Basin, Colombia, South America. American Geophysical Union. Spring meeting. Baltimore.

Jordan, T., Schlunegger, F., and Cardozo, N. 1999. Múltiples hipótesis en la evolución de la cuenca Neógena de antepaís de Bermejo, Argentina. Congreso Geológico Argentino. Salta.

COMPUTER
PROGRAMS

Trishear3D: 3D forward modeling of fault related folds
SSPX: Inverse strain modeling
OSXGeoCalc: Structural Geology Calculator
OSXBackstrip: Backstripping of Sedimentary Rocks
OSXFlex2D: 2D flexural modeling

All programs are for Mac OS X v. 10.4 and above.
Available at <http://homepage.mac.com/nfcd/work/programs.html>

Last updated: September 13, 2009