

Ian O. Norton

Present Position: Senior Research Fellow, University of Texas Institute for Geophysics

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Professional Experience:

1981-2007: ExxonMobil Upstream Research or ExxonMobil Exploration (retired August 2007)

1980-1981: Research position, University of Texas Institute for Geophysics, Galveston

1978-1980: Exploration geophysicist, SOEKOR exploration company, South Africa

1972-1978: PhD student, University of Witwatersrand, South Africa. Included 3 years as Visiting Scholar with John G. Sclater, Massachusetts Institute of Technology.

Education:

1978: Ph.D, University of Witwatersrand

1969: B.Sc. (Hons.), University of Cape Town

Work Experience:

At ExxonMobil I worked mostly play to basin-scale studies aimed at finding prospective basins and defining their principal plays. Basins worked included all major producing basins on all continents, plus many marginal or non-producing basins. Responsibilities primarily involved basin modeling and the tectonic and structural components of play mapping and analysis, working with other team members to understand all components of the hydrocarbon system – what we call ‘regional analysis’. As part of the tectonic analysis component, I developed a global plate tectonic model that has become the com-pany’s standard. It is used for detailed paleogeographic reconstructions of play elements distribution.

Software experience: Programming in Fortran, C and additional graphics languages; Geoframe, the Schlumberger seismic interpretation package (both 2D and 3D); ArcGIS mapping system.

Teaching: Instructor on Death Valley portion of Extensional Tectonics Field School (advanced) for ExxonMobil and several consulting trips. Ph.D. Thesis committee for Christian Heine (Univ. Sydney; 2007) and Bryan Richter (Univ. Calif. Santa Barbara, 1998)

Professional Societies:

American Geophysical Union

American Association of Petroleum Geologists

Geological Society of America

Recent Publications

Papers

Published

Van Avendonk, H., G.L. Christeson, I.O. Norton D.R. Eddy, 2015, Continental rifting and sediment infill in the northwestern Gulf of Mexico, *Geology*, v. 43; no. 7; p. 631–634.

Snedden, J.W., I.O. Norton, G.L. Christeson, J.C. Sanford, 2014, Interaction of Deepwater Deposition and a Mid-Ocean Spreading Center, Eastern Gulf of Mexico Basin, USA, AAPG Datapages.

Christeson, G.L., H.J.A. Van Avendonk, I.O. Norton, J.W. Snedden, D.R. Eddy, G.D. Karner, C.A. Johnson, 2014, Deep crustal structure in the eastern Gulf of Mexico, *J. Geophys. Res.*, doi/10.1002/2014JB011045

Drew R. Eddy, D.R., H.J.A. Van Avendonk, G.L. Christeson, I.O. Norton, G.D. Karner, C.A. Johnson, J.W. Snedden, 2014, Deep crustal structure of the northeastern Gulf of Mexico: Implications for rift evolution and seafloor spreading, *J. Geophys. Res.*, 10.1002/2014JB011311

Lawver, L. A., L. M. Gahagan, and I. O. Norton, Palaeogeographic and tectonic evolution of the Arctic region during the Palaeozoic, in *Arctic Petroleum Geology*, edited by A. M. Spencer, A. F. Embry, D. L. Gautier, A. V. Stoupakova and K. Sorensen, Geological Society, London, *Memoirs* v. 35, 61-77, 2011, doi:10.1144/M35.5, #2136

Norton, I. O., Two-stage formation of Death Valley, *Geosphere*, 7, 171-182, 2011, doi:10.1130/GES00588.1, #2311

Stern, R. J., E. Y. Anthony, M. Ren, B. E. Lock, I. O. Norton, J.-I. Kimura, T. Miyazaki, T. Hanyu, Q. Chang, and Y. Hirahara, Southern Louisiana salt dome xenoliths: First glimpse of Jurassic (ca. 160 Ma) Gulf of Mexico crust, *Geology*, 39, 315-318, 2011, doi:10.1130/G31635.1, #2339

Ren, M., R. Stern, B. E. Lock, R. Griffin, E. Y. Anthony, and I. O. Norton, Origin of igneous rock fragments from south Louisiana salt domes, *Trans., Gulf Coast Assn. Geol. Socs.*, 59, 641-651, 2009, #2338

Norton, Ian O., 2007, Speculations on tectonic origin of the Hawaii hotspot. In *Plates, Plumes and Planetary Processes*, eds. G.R. Foulger and D.M. Jurdy, Geological Society of America, Special Paper 430, pp 451-470.

Summa, L.L., Goodman, E D., Richardson, M., Norton, I.O. and Green, A.R, 2003: Hydrocarbon systems of northeastern Venezuela; plate through molecular scale analysis of the genesis and evolution of the eastern Venezuela Basin, in *Paleogeographic reconstruction and hydrocarbon basins; Atlantic, Caribbean, South America, Middle East, Russian Far East, Arctic*, Jan Golonka (editor), *Marine and Petroleum Geology*. 20; 3-4, Pages 323-349.

Norton I.O., 2000: Global hotspot reference frames and plate motion, in: *The history and dynamics of global plate motions*, Richards, Mark A., Gordon, Richard G. and Van der Hilst, Robert D. (editors) *AGU Geophysical Monograph*. 121; Pages 339-357.

Norton, Ian O., 1995: Plate motions in the North Pacific; the 43 Ma nonevent. *Tectonics*. 14; 5, Pages 1080-1094.

Papers in press/review

Norton, Ian O. and Kenneth O. Stanley, Influence of tectonic setting on hydrocarbon potential of the South Caspian Basin, invited paper submitted to AAPG Halbouty memorial volume on

Tectonics and Resources of Asia.

Kevin Bohacs, Ian Norton, Debbie Gilbert, Martin Kennedy, Jack Neal, Walter Borkowski, Marcia Rottman, Plate Tectonics and Marine Organic-Matter-Rich Rocks. Chapter submitted to book on Global Regional Geology being compiled by Bert Bally and Dave Roberts.

Current Proposals/Support

40% of time to Applied Geodynamics Laboratory, Bureau of Economic Geology, PIs. Martin Jackson and Michael Hudec

19% of time to 'Design of attribute structure for global tectonic map and application to Muehlberger Tectonic Map of North America', AAPG

25% of time to research project 'Gulf of Mexico OBS refraction study'