

Timothy H. Dixon: Curriculum Vitae

Date: August 1, 2016

PERSONAL

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Academic Rank: Professor

Department: Geoscience

Citizenship: US

HIGHER EDUCATION

Institutional: Ph.D., Scripps Institution of Oceanography, University of California, 1979
B.Sc., University of Western Ontario, Honors in Geology, 1974

Certifications: Commercial Pilot, Instructor Rating
NAUI Advanced SCUBA Diver

EXPERIENCE

Academic: 01/11 – Present Professor, Dept Geology, University of South Florida
6/95- 12/10 Professor, Marine Geology & Geophysics, RSMAS,
University of Miami
9/92-5/95 Associate Professor, Marine Geology & Geophysics,
RSMAS, University of Miami

Non-Academic:

Jet Propulsion Laboratory; Post-doctoral Fellow; 9/79-9/80
Jet Propulsion Laboratory; Senior Scientist; 10/80-10/81
Jet Propulsion Laboratory; Member, Technical Staff; 10/81-5/92
Geodynamics Group, Technical Group Leader; 1/85-5/92
NASA Headquarters, Geodynamics Program, Acting Program Manager; 5/92-9/92
Co-Director, Center for Southeastern Tropical Advanced Remote Sensing, 2000-2008
Director and Founder, Natural Hazards Network, University of South Florida, 2013

Field Work & Expedition Experience:

Conducted geological field investigations in the Canadian Shield, Northern Mariana Archipelago, Northeast Africa, California, Dominican Republic. Participated in five sea-going expeditions, including responsibility for Arc Seamount investigations on MARIANA expedition in 1979. Organized GPS field programs in California, Mexico, the northern Caribbean, Central America, northern and central South America, and Iceland. Installed GPS volcano monitoring equipment on Popocateptl (Mexico), Arenal (Costa Rica), Misti (Peru) and Cotopaxi (Ecuador) volcanoes. Conducted glacier studies

in Iceland and Greenland using ground-based interferometric radar. Conducted volcano deformation and DEM studies with ground-based interferometric radar at Nevado del

GPS Program Scientist, NASA GPS Program, 1984-1992
Member, Committee on Geodesy, National Research Council, 1987-1990
Co-Chairman, NASA Topographic Science Working Group, 1986-1988
Member, NASA Working Group on Water Vapor Radiometry, 1988-1990
Convenor, NASA Workshop on SAR Interferometry and Surface Change, 1994
Member, AGU Whitten Medal Committee, 1992-95
Co-Convenor, NASA/NOAA/NSF Workshop on Sea Level Change, 1995
Member, NSF UNAVCO Steering Committee, 1994-1996
Member, NSF Margins Science Committee, 1997-2000
Member, AGU Tectonics Editor Search Committee, 1999
Member, USArray Steering Committee, 1999-2002
Member, Unavco Committee on North America Reference Frame (2003-2004)
Member, PBO Site Selection Committee (Volcanoes)
Geodesy Program Chair, American Geophysical Union Spring Meeting, 2005
Chair, Unavco Facilities Committee, 2004-2008
Member, NSF/Continental Dynamics Panel, 2005-2007
Member, NSF/I&F Panel, 2009-2011
Member, Unavco Board of Directors Nominating Committee, 2009-2011
President-Elect, Geodesy Section, American Geophysical Union, 2010 – 2012
President, Geodesy Section, American Geophysical Union, 2013 – 2014
Member, NSERC (Canada) Review Panel, 2011-2014
Chair, Geology-Geography Section, AAAS (2012- 2013)

Proposal Reviewer:

NSF, Earth Sciences Division: Tectonics, Geophysics, Instrumentation and Facilities,
Continental Dynamics Programs
NSF, Ocean Sciences Division: Marine Geology & Geophysics Program
NSF, Polar Programs Division
NASA
USGS/NEHRP
NOAA
Israeli National Research Council
UK Science Council
Canada NSERC

TEACHING

Teaching Specialization (courses taught):

Continental and Continental Margin Tectonics (graduate)
Geological and Environmental Remote Sensing (graduate)
Geodesy (graduate)
Structural Geology (undergraduate)
Field Camp (undergraduate)
Quantitative Methods in Ecosystem Science (undergraduate)
Natural Hazards (undergraduate)

Karegar, M.A., T.H.Dixon, and S. E. Engelhart (2016), Subsidence along the Atlantic Coast of North

2014

Remote Sensing of the Environment DOI 10.1016/j.rse.2011.09.005

Jiang, Y., S. Wdowinski, T. H. Dixon, M. Hackl, M. Protti, V. Gonzalez (2012) Slow slip events in Costa Rica detected by continuous GPS observations, 2002-2011, *Geochem, Geophys., Geosys*, 13, Q04006 doi: 10.1029/2012GC004058

Dixon, T. H., D. Voytenko, C. Lembke, S. de la Peña, I. Howat, N. Gourmelen, C. Werner, B. Oddsson (2012) Emerging technology monitors ice-sea interface at outlet glaciers, *EOS: Trans. Am. Geophys. Union*, 93, 497-499.

Feng, L., A. V. Newman, M. Protti, V. González, Y. Jiang, and T. H. Dixon (2012) Active deformation near the Nicoya Peninsula, northwestern Costa Rica, between 1996 and 2010: Interseismic megathrust coupling. *J. Geophys. Research*, 117, doi:10.1029/2012JB009230

2011 OsmanoglA31437a(m)56(er)-11(f)4noeraanser

persistent scatterer InSAR and a hyperbolic model. *Geophys. Res. Letters*, 37, L05304, doi:10.1029/2009GL041644.

Calais, E., A. Freed, G. Mattioli, S. Jonsson, F. Amelung, P. Jansma, S.-H. Hong, T. H. Dixon, C. Prepetit, and R. Momplaisir (2010), Transpressional rupture of an unmapped fault during the 2010 Haiti earthquake, *Nature Geosciences* doi 10.1038/NGEO992.

Dixon, T., F. Amelung, C. G. A. Harrison et al., Rebuilding Haiti smarter, *Science* 327, p. 1325-1326.

Outerbridge KC, Outerbridge, T. H. Dixon, S. Y. Schwartz, J. I. Walter, M. Protti, V. Gonzalez, J. Biggs, M. Thorwart, and W. Rabbel (2010) A tremor and slip event on the Cocos-Caribbean subduction zone as measured by a global positioning system (GPS) and seismic network on the Nicoya Peninsula, Costa Rica. *J Geophys Res* 115: B10408.

Fulton, P. M., G. Schmalzle, R. Harris, T. Dixon (2010) Reconciling patterns of interseismic strain accumulation with thermal observations across the Carrizo section of the San Andreas Fault, *Earth Planet Sci. Letters* 300, p 402-406, doi 10.1016/j.epsl.2010.10.024

Weber, J., M. Vrabec, P. Pavlov-Preseren, T. Dixon, Y. Jiang, B. Stopar, GPS-derived motion of the Adriatic microplate from Istria Peninsula and Po Plain sites, and geodynamic implications, *Tectonophysics*, 483, 214-222, 2110.

2009 Biggs J, F. Amelung, N. Gourmelen N, T. Dixon et al. InSAR observations of 2007 Tanzania rifting episode reveal mixed fault and dyke extension in an immature continental rift, *Geophys. J. Int*, 179, 549-558.

LaFemina P, T. H. Dixon, R. Govers et al, Fore-arc motion and Cocos Ridge collision in Central America, *Geochem, Geophys., Geosys*, 10, Article Number: Q05S14.

Biggs J, D. P. Robinson, T. H. Dixon, The 2007 Pisco, Peru, earthquake (M8.0): seismology and geodesy, *Geophys. J. Int*, 176, 657-669.

2008 Wdowinski, S., S. W. Kim, F. Amelung, T. H. Dixon, F. Miralles-Wilhelm, R. Sonenshein, Space-based detection of wetlands' surface water level changes from L-band SAR interferometry, *Remote Sensing of Environment* 112, 681 – 696.

Kim, S. W., S. Wdowinski, T.H. Dixon, F. Amelung, Joong-Sun Won, and Jeong Woo Kim, InSAR -based mapping of surface subsidence in Mokpo City, Korea, using JERS-1 and ENVISAT SAR data, *Earth Planets Space*, v.60, p. 453-461, 2008.

Dixon, T. H. and R. K. Dokka, Earth scientists and public policy: have we failed New Orleans? *EOS: Trans. Am. Geophys. Union* v. 89, #10, p. 96, 2008.

Cabral-Cano, E., T. H. Dixon, O. Sánchez-Zamora, R. E. Carande, A. FitzGerrell, O. Díaz-Molina, Space geodetic Imaging of ground subsidence in Mexico City. *Geol. Soc. Am. Bull.*, v. 120, p. 1556-1566.

2007 Turner H. L. III, P. LaFemina, A. Saballos, G. S. Mattioli, P. E. Jansma, T. Dixon, Kinematics of the Nicaraguan forearc from GPS geodesy, *Geophys. Res. Lett.*, 34, L02302, doi:10.1029/2006GL027586.

Sella, G., S. Stein, T. H. Dixon, M. Craymer, T. James, S. Mazzotti, R. K. Dokka, Observation of glacial isostatic adjustment in “stable” North America with GPS, *Geophysical Research Letters*, 34, L02306, doi:10.1029/2006GL027081.

Plattner, C., R. Malservisi, T. H. Dixon, P. LaFemina, G. F. Sella, J. Fletcher and F. Suarez-Vidal, (2007) New constraints on relative motion between the Pacific Plate and Baja California microplate (Mexico) from GPS measurements, *Geophys. J. Int.* doi: 10.1111/j.1365-246X.2007.03494.x

Pritchard M. E., E. Norabuena, C. Ji, R. Borosc hek, D. Comte. M. Simons. T. H. Dixon, P. A. Rosen (2007) Geodetic, teleseismic, and strong motion constraints on slip from recent southern Peru subduction zone earthquakes, *J. Geophys. Res.*, 112, B03307 doi 10.1029/2006JB004294

Sinigalliano, C. D., M. L. Gidley, T. Shibata, D. Whitman, T. H. Dixon, E. Laws, A. Hou, D. Bachoon, L. Brand, L. Amaral-Zettler, R. J. Gast, G. F. Steward, O. D. Nigro, R. Fujioka, W. Q. Betancourt, G. Vithanage, J. Mathews, L. E. Fleming, and H. M. Solo-Gabriele, Impacts of Hurricanes Katrina and Rita on the microbial landscape of the New Orleans area, *Proc. National Academy Sciences*, balt4/zpq-pnas/zpq-pnas/zpq-orig/zpq6250-07a.

Cailleau, B., P. C. LaFemina, T. H. Dixon, Stress accumulation between volcanoes: an explanation for intra-arc earthquakes in Nicaragua, *Geophys. J. Int.* doi: 10.1111/j.1365-246X.2007.03353.x

2006 Dokka, R. K., G. Sella, T. H. Dixon, Tectonic control of New Orleans subsidence and coupled southward displacement of Southeast Louisiana, *Geophysical Research Letters*, v. 33, L23308, doi 10.1029/2006GL027250, 2006.

Iaffaldano, G., H. P. Bunge, T. H. Dixon, Feedback between mountain belt growth and plate convergence, *Geology*, v. 34, 893-896, 2006.

López A. M., S. Stein, T. Dixon, G. Sella, E. Calais, P. Jansma, J. Weber, P. LaFemina (2006), Is there a northern Lesser Antilles forearc block?, *Geophys. Res. Lett.*, 33, L07313, doi:10.1029/2005GL025293

Dixon, T. H., F. Amelung, A. Ferretti, F. Novali, F. Rocca, R. Dokka, G. Sella, S.-W. Kim, S. Wdowinski, D. Whitman, New Orleans Subsidence: Rates and Spatial Variation Measured by Permanent Scatterer Interferometry, *Nature* 441, 587-588.

Schmalzle, G., T. H. Dixon, R. Malservisi, R. Govers, Strain accumulation across the Carrizo Segment of the San Andreas Fault, California: Impact of laterally varying crustal properties, *J. Geophys. Res.*, 111, B05403, doi 10.1029/2005 JB003843.

Newman, A. V., T. H. Dixon, N. Gourmelen, A four-dimensional viscoelastic deformation model for Long Valley Caldera, California, between 1995-2000, *J. Volc. Geotherm Res.*, 150, 244-269.

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- Dixon, T. H., F. Farina, C. deMets, F. Suarez Vidal, J. Fletcher, B. Margquez-Azua, M. Miller, O. Sanchez, P. Umhoefer, New kinematic models for Pacific-North America motion from 3 Ma to present, II: evidence for a Baja California shear zone, *Geophys. Res. Letters*, v. 27, 3961-3964.
- Jansma, P. E., G. S. Mattioli, A. Lopez, C. DeMets, T. H. Dixon, P. Mann, E. Calais, Neotectonics of Puerto Rico and the Virgin Islands, northeastern Caribbean, from GPS geodesy, *Tectonics*, v. 19, 1021-1037.
- 1999 DeMets, C., and T. H. Dixon, New kinematic models for Pacific-North America motion from 3 Ma to present, 1: evidence for steady motion and biases in the NUVEL-1A model, *Geophys. Res. Letters*, v. 26, 1921-1924.
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- Newman, A., S. Stein, J. Weber, J. Engeln, A. Mao, and T.H. Dixon, Seismic hazard at the new Madrid seismic zone – Response, *Science*, 285, p. 664-665.
- Newman, A., S. Stein, J. Weber, J. Engeln, A. Mao, and T.H. Dixon, Slow deformation and lower seismic hazard at the New Madrid seismic zone, *Science*, v. 284, p. 619 - 621.
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T.H. Dixon, F. Farina, C. DeMets, P. Jansma, P. Mann, E. Calais, Relative motion between the Caribbean and North American plates based on a decade of GPS observations, *J. Geophys. Res.*, 103, p. 15157 - 15182.

1997

- 1992 M.M. Miller and T.H. Dixon, Late Proterozoic evolution of the northern part of the Onib-Hamisana zone, northeast Sudan: constraints on Pan-African accretionary tectonics, J. Geol. Soc. London, v.149, p.743-750.
- 1991 T.H. Dixon, G. Gonzalez, S. Lichten and E. Katsigris, First epoch geodetic measurements with the Global Positioning System across the northern Caribbean plate boundary zone, J. Geophys. Res., v.96, 2397-2415.
- T.H. Dixon, D.M. Tralli, G. Blewitt and J.P. Dauphin, Geodetic baselines across the Gulf of California using the Global Positioning System, Am. Assoc. Petroleum Geol., Memoir 47, Chapter 24, p.497-507.
- T.H. Dixon, An introduction to the Global Positioning System and some geological applications, Reviews of Geophysics, v.29, 249-276.
- T.H. Dixon, G. Gonzalez, S.M. Lichten, D.M. Tralli, G. Ness, P. Dauphin, A preliminary determination of Pacific-North America relative motion in the southern Gulf of California using the Global Positioning System, Geophys. Res. Lett., v. 18, 861-864.
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- 1990 E.R. Ivins, T.H. Dixon, and M.P. Golombek, Extensional reactivation of an abandoned thrust: a bound on shallowing in the brittle regime, J. Structural Geol., v.12, p. 303-314.
- T.H. Dixon, G. Blewitt, K. Larson, D. Agnew, B. Hager, W. Prescott and W. Strange, Global Positioning System measurements of crustal deformation in southern California: some constraints on performance. EOS: Trans. Am. Geophys. Union, v.71, p.1051-1056.
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- Kellog, J.N. and T.H. Dixon, Central and South America GPS Geodesy-CASA UNO, Geophys. Res. Lett., v.17, p.195-198.

S. Kornreich Wolf, T.H. Dixon and J. Freymueller, The effect of tracking network configuration on GPS baseline estimates for the CASA UNO experiment, Geophys. Res. Lett., v. 17, p.647-650.

Collaborative Research: A Plate Boundary Observatory on the Nicoya Peninsula, Costa Rica. 8/25/2011 – 9/30/2014. \$199,743 (NSF)

Collaborative Research: Acquisition of GPS and seismic equipment for Phase 2 of a Plate Boundary Observatory, Nicoya Peninsula, Costa Rica. 6/1/2011 – 4/30/2013. \$36,890 (NSF)

Integrating GRACE and surface deformation data to study hydrological...4/1/2014 – 3/31/2017 (NASA)

Geodetic observations at the early stage of subduction zone seismic cycle: towards complete seismic cycle coverage. 3/01/2014 – 2/28/2017 \$250,000 (NSF)

Collaborative Research: RAPID: Nevado del Ruiz Volcano, Colombia: Enhancing Geodetic Observations and Digital Elevation Models in Response to Recent Activity.7/1/2015-6/30/2016. \$29,000 (NSF).

Measuring Sea Floor Motion: New Technology for Continental Margin Geodesy 12/1/2015 – 11/30/2018. \$822,000 (NSF).

SERVICE

University Service

UM: MGG Geophysics Search Committees, Research Advisory Council, Academic Committee, Facilities Committee, Strategic Planning Committee.