

CURRICULUM VITAE

Newman, Andrew V.

Associate Professor
School of Earth and Atmospheric Sciences
Georgia Institute of Technology

Educational Background:

Degree	Field	Year	University
B.S.	Geophysics (minor: Civil Eng.)	1995	Texas Tech University
M.S.	Geological Sciences (emph. Geophysics)	1997	Northwestern University
Ph.D.	Geological Sciences (emph. Geophysics)	2000	Northwestern University

Relevant Employment History:

Undergraduate Research Assistant, Department of Geology, Texas Tech University	1994-1995
Graduate Research Assistant, Department of Geological Sciences, Northwestern University	1995-2000
Graduate Teaching Assistant, Department of Geological Sciences, Northwestern University	1995-1999
Seismology Intern, Impact Forecasting/Aon Risk Technologies	1996, 1999
Seismology Field Intern, IRIS/PASSCAL Seismological Instrument Center	1997
Postdoctoral Researcher, Dept. of Earth Sciences, University of California Santa Cruz	2000-2002
Instructor, Department of Earth Sciences, University of California Santa Cruz	2002
Director's Postdoctoral Fellow/Researcher, Los Alamos National Laboratory	2002-2005
Assistant Professor, School of Earth and Atmospheric Sciences, Georgia Tech.	2005-2011
Associate Professor, School of Earth and Atmospheric Sciences, Georgia Tech.	2011-present

Current Fields of Interest:

Research focuses primarily on active deformation and brittle failure of the earth's lithosphere in seismic and volcanic regions. Focus is broadly defined as earthquake and volcano physics through predominantly field-based geodetic and seismic methods. Other research includes earthquake recurrence, seismic and volcanic hazards, and evaluation of subduction zone tsunamigenesis. While my focus is on fundamental research, most of my projects have direct ties to geologic hazards. Projects include:

- ***Evaluation of timing and mechanisms for strain accumulation and release in continental environments.*** This research, initiated by my PhD research on slow-strain accumulation in the Eastern US, has spread to other environments where strain signals are more readily observable over career timescales.
- ***Characterizing locking and failure of the subduction megathrust and its controls on tsunami generation.*** This research has a number of branches focusing on different aspects of site-specific and global earthquake activity.
- ***Understanding ground deformation associated with magma pressures within primarily silicic caldera systems.*** This research is aimed at illuminating the source and path physics responsible for unrest in active systems.

Publications:

1. Saltogianni, V., S. C. Stiros, A. V. Newman, K. Flanagan, F. Moschas, Time-space modeling of the dynamics of the Santorini volcano (Greece) during the 2011-2012 unrest, *J. Geophys. Res.*, 119, 1-21, doi:10.1002/2014JB011409, 2014.
2. Borrero, J. C., N. Kalligeris, P. J. Lynett, H. M. Fritz, A. V. Newman, J. A. Convers, Observations and Modeling of the August 27, 2012 Earthquake and Tsunami affecting El Salvador and Nicaragua, *Pure Appl. Geophys.* 171 (12), 3421-3435, doi:10.1007/s00024-014-0782-2, 2014.

3. Wei, Y. V. V. Titov, A. V. Newman, G. P. Hayes, L. Tang, Tsunami Forecast by Joint Inversion of Real-Time Tsunami Waveforms and Seismic or GPS Data: Application to the Tohoku 2011 Tsunami, *Pure. Appl. Geophys.* 171 (12), 3281-3305, doi:10.1007/s00024-014-0777-z, 2014.
4. Galgana, G. A., A. V. Newman, M. W. Hamburger, R. Solidum, E. Corpuz, Geodetic Observations and Modeling of Time-varying Deformation at Taal Volcano, Philippines, *Geophys. Journ. Int.* 271, 11-23, doi:10.1016/j.jvolgeores.2013.11.005, 2014.
5. Protti, M., V. Gonzalez, A. V. Newman, T. H. Dixon, S. Y. Schwartz, J. S. Marshall, L. Feng, J. I. Walter, R. Malservisi, S. E. Owen, Nicoya Earthquake Rupture Anticipated by Geodetic Measurement of the Locked Plate Interface, *Nature Geoscience* 7(2), 117-121, 10.1038/ngeo2038, 2014.
6. Convers, J. A., and A. V. Newman, Rapid Earthquake Rupture Duration Estimates From Teleseismic Energy Rates, with Application to Real-Time Warning, *Geoph. Res. Lett.*, 40, 1-5, doi:10.1002/2013GL057664, 2013.
7. Yue, H. T. Lay, S. Y. Schwartz, L. Rivera, M. Protti, T. H. Dixon, S. Owen, and A. V. Newman. The 5 September 2012 Nicoya, Costa Rica Mw 7.6 earthquake rupture process from joint inversion of high-rate GPS, strong-motion, and teleseismic P wave data and its relationship to adjacent plate boundary interface properties. *J. Geoph. Res.* 118, 5453-5466, doi:10.1002/jgrb.50379, 2013.
8. Lifton, Z. M., A. V. Newman, K. L. Frankel, C. W. Johnson, T.H. Dixon, Insights Into Distributed Plate Rates Across the Walker Lane from GPS Geodesy *Geoph. Res. Lett* 40(17), 4620-4624, doi:10.1002/grl.50804, 2013.
9. Stiros, S., F. Moschas, L. Feng, and A. V. Newman, Long-term versus short-term deformation in the meizoseismal area of the 2008 Achaia-Elia (M_w 6.4) earthquake in NW Peloponnese, Greece: Evidence from historical triangulation and morphotectonic data. *Tectonophysics*, 592, 150-158, doi:10.1016/j.tecto.2013.02.016, 2013.
10. Dixon, T. H, S. Y. Schwartz, J. M. Protti, V. Gonzalez, A. V. Newman, J. Marshall, and J. Spotila. Detailed Data Available for Recent Costa Rica Earthquake, *EOS Trans. Amer. Geoph. Union.*, 94(2), 17-18, doi:10.1002/2013EO02, 2013.
11. Feng, L., A. V. Newman, M. Protti, V. González, Y. Jiang, T. H. Dixon, Active deformation near the Nicoya Peninsula, northwestern Costa Rica, between 1996 and 2010: Interseismic megathrust coupling, *J. Geophys. Res.*, 117, B06407, doi:10.1029/2012JB009230, 2012.
12. Newman, A. V., S. Stiros, L. Feng, P. Psimoulis, F. Moschas, V. Saltogianni, Y. Jiang, C. Papazachos, D. Panagiotopoulos, E. Karagianni, D. Vamvakaris, Recent Geodetic Unrest at Santorini Caldera, Greece, *Geophys. Res. Lett.* 39, L06309, doi:10.1029/2012GL051286, 2012.
13. Newman, A. V. (2011), Hidden Depths (a comment on the need for improved sea floor geodetic instrumentation), *Nature* 474, 441-443, doi:10.1038/474441a, [not peer reviewed], 2011.
14. Convers, J. A., A. V. Newman, Global Evaluation of Earthquake Energy from 1997 Through mid-2010, *J. Geophys. Res.* 116, B08304, doi:10.1029/2010JB007928, 2011.
15. Newman, A. V., L. Feng, H. M. Fritz, Z. M. Lifton, N. Kalligeris, The Tsunamigenic 2010 M_w 7.1 Solomon Islands Earthquakes: A High-Angle Intraslab Thrust, *Geoph. Journ. Int.* 186 (2), 775-781, doi:10.1111/j.1365-246X.2011.05057.x., 2011.
16. Stankova-Pursley, J., S. L. Bilek, W. S. Phillips, and A. V. Newman (2011), Along-strike variations of earthquake apparent stress at the Nicoya Peninsula, Costa Rica, subduction zone *Geochem. Geophys. Geosys.*, 12, Q08002, doi:10.1029/2011GC003558, 2011.
17. Newman, A. V., G. Hayes, Y. Wei, J. A. Convers, The 25 October 2010 Mentawai Tsunami Earthquake, from real-time discriminants, finite-fault rupture, and tsunami excitation, *Geophys. Res. Lett.*, 38, L05302, doi:10.1029/2010GL046498, 2011.
18. Feng, L., A. V. Newman, G. T. Farmer, P. Psimoulis, S. C. Stiros, Energetic Rupture, Coseismic and Postseismic Response of the 2008 M_w 6.4 Achaia-Elia Earthquake in Northwestern Peloponnese, Greece: An indicator of an immature transform fault zone, *Geophys. Journ. Int.* 183, doi: 10.1111/j.1365-246X.2010.04747.x, 103-110, 2010.

19. Chen, T., A. V. Newman, L. Feng, H. M. Fritz, Slip Distribution from the 1 April 2007 Solomon Islands Earthquake: A Unique Image of Near-Trench Rupture, *Geophys. Res. Lett.*, 36, L16307, doi:10.1029/2009GL039496, 2009.
20. Feng, L., A. V. Newman, Constraints on continued episodic inflation at Long Valley Caldera, based on seismic and geodetic observations, *J. Geophys. Res.*, 114 (B06403), doi:10.1029/2008JB006240, 2009.
21. Chen, P., A. V. Newman, T. Wu, C. Lin, Earthquake Probabilities and Energy Characteristics of Seismicity Offshore Southwest Taiwan, *Terr. Atmos. Ocean. Sci.* Vol. 19, No. 6, 697-703, doi: 10.3319/TAO.2008.19.6.697, 2008.
22. Ghosh, A., A. V. Newman, A.M. Thomas, G. T. Farmer, Interface Locking along the Subduction Megathrust from Microseismicity near Nicoya, Costa Rica, *Geoph. Res. Lett.*, 35 (L01301), doi: 10.1029/2007GL031617, 2008.
23. Newman, A., Earthquake Risk from Strain Rates on Slipping Faults, *EOS, Trans. Am. Geoph. Union*, 88 5, 60, 2007.
24. Newman, A. V., T. H. Dixon, N. Gourmelen, A Four-Dimensional Viscoelastic Model for Deformation of the Long Valley Caldera, California, Between 1995 and 2000, *Journ. Volc. Geoth. Res.*, 150 (1-3), doi:10.1016/j.jvolgeores.2005.07.017, 244 - 269, 2006.
25. Poland, M., M. Hamburger, A. Newman, The Changing Shapes of Active Volcanoes: History, Evolution, and Future Changes for Volcano Geodesy, *Journ. Volc. Geoth. Res.*, 150 (1-3), doi:10.1016/j.jvolgeores.2005.11.005, 1 - 13, 2006.
26. DeShon, H. R., S. Y. Schwartz, L. M. Dorman, A. V. Newman, V. Gonzalaz, M. Protti, T. Dixon, E. Norabuena, E. Flüh, Seismogenic Zone Structure along the Middle America Trench, Nicoya Peninsula, Costa Rica, from 3D local earthquake tomography using P- and S-wave data, *Geoph. Journ. Int.*, 164 (1), 109-124, 2006.
27. Calais, E., G. Mattioli, C. DeMets, J.-M. Nocquet, S. Stein, A. V. Newman, P. Rydelek, Tectonic strain in plate interiors?, *Nature*, 438, doi: 10.1038/nature04428, 2005.
28. Stein, S. A., A. Friedmann, A. V. Newman, Dependence of Possible Characteristic Earthquakes on Spatial Sampling of Seismicity and Paleoseismic Estimates: Illustration for the Wasatch Seismic Zone, *Seism. Res. Lett.* 76 (4), 2005.
29. Newman, A. V., NBC's "10.5" may answer an age-old seismologic question, *Trans. Am. Geoph. Union (EOS)* 85, (17), 172-173 2004.
30. Norabuena, E., T. H. Dixon, S. Y. Schwartz, H. R. DeShon, A. V. Newman, M. Protti, V. Gonzalez, L. M. Dorman, E. Flueh, P. Lundgren, F. Pollitz, D. Sampson, Geodetic and Seismic Constraints on some Seismogenic Zone Processes in Costa Rica, *J. Geophys. Res.* 109 (B11403), doi:10.1029/2003JB002931, 2004.
31. Stein, S., A. Newman, Characteristic, Uncharacteristic, and Absent Earthquakes as Possible Artifacts of Short Earthquake Histories, *Seismo. Res. Lett.*, 75, 2, 173-187, 2004.
32. Stein, S., J. Thomasello, A. V. Newman, Reply to: Frankel, A.D., and Hough, S.E., Should Memphis Build for California's Earthquakes? *Trans. Am. Geophys. Union (EOS)*, 84 (29), 273, 2003.
33. Stein, S., J. Thomasello, A. V. Newman, Should Memphis Build for California's Earthquakes?, *Trans. Am. Geophys. Union (EOS)*, 84 (19), 17, 2003.
34. Newman, A. V., S. Y. Schwartz, V. Gonzalez, H. R. DeShon, J. M. Protti, L. Dorman, Along-strike Variability in the Seismogenic Zone Below Nicoya Peninsula, Costa Rica, *Geoph. Res. Lett.*, 29 (20), 38:1-4, doi:10.1029/2002GL015409, 2002
35. Newman, A. V., J. Schneider, S. Stein, A. Mendez, Uncertainties in Seismic Hazard Maps for the New Madrid Seismic Zone, *Seismol. Res. Lett.*, 72 (6), 653-667, 2001.
36. Okal, E. A., A. V. Newman, Tsunami Earthquakes: The Quest for a Regional Signal, *Phys. Earth and Planet. Int.*, 124, 45-70, 2001.
37. Newman, A. V., T. H. Dixon, G. Ofoegbu, J. E. Dixon, Geodetic and Seismic Constraints on Recent Activity at Long Valley Caldera, California: Evidence for Viscoelastic Rheology, *Jour. Volc. Geoth. Res.*, 105 (3), 183-206, 2001.

CV: A.V. Newman
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38. Newman, A. V., S. Stein, J. C. Weber, J. F. Engeln, A. Mao, T. H. Dixon, Reply to: Zoback, M. D., Seismic hazard at the New Madrid seismic zone, *Science*, 285, 30 July, 1999.
39. Newman, A. V., S. Stein, J. C. Weber, J. F. Engeln, A. Mao, T. H. Dixon, Reply: New Results Justify Open Discussion of Alternative Model, *Trans. Am. Geophys. Union (EOS)*, 80 (17), April 27, 1999.
40. Newman, A. V., S. Stein, J. C. Weber, J. F. Engeln, A. Mao, T. H. Dixon, Slow Deformation and Implied Long Earthquake Recurrence Intervals From GPS Surveys Across the New Madrid Seismic Zone, *Science*, 284, 619-621, April 23, 1999.
41. Newman, A. V., E. A. Okal, Teleseismic Estimates of Radiated Seismic Energy: The E/M_0 Discriminant for Tsunami Earthquakes, *J. Geophys. Res.*, 103 (11), 26,885-26,898, 1998.

Non-Refereed Publications:

- Newman, A. V., Segall, P., Owen, S., "Geodesy Grand Challenges: What are the Mechanics of Volcanic and Magmatic Systems", a document to the Global Geodesy Community focusing the main scientific challenges approachable in the field, 2012.
- Miller, M., A. V. Newman, "Geodesy Grand Challenges: Natural Hazard Early Warning Systems", a document to the Global Geodesy Community focusing the main scientific challenges approachable in the field, 2012.
- Newman, A. V., Geodetic and Seismic Studies of the New Madrid Seismic Zone and Implications for Earthquake Recurrence and Seismic Hazard, Ph.D. Thesis for *Northwestern University*, 2000.

Committees and Activities – External:

Editor, Geophysical Research Letters (~1000 manuscripts handled since Mar 2012)	2012-2017
IRIS's Global Seismographic Network Standing Committee	2012-2014
Membership Committee, UNAVCO, Inc.	2005-present
Member Institution Representative (GT) to WInSAR	2005-present
Member Institution Representative (GT) to UNAVCO, Inc.	2005-present
AGU Natural Hazards Focus Group Advisory Board	2009-present
Session Chair/Organizer for "Sea Floor Geodesy" at UNAVCO Science meeting	2012
Chair, UNAVCO Education and Outreach Standing Committee	2007-2009, 2011-2012
Served on NSF Proposal Review Panel	2010
Convener for AGU session "Earthquakes at the Edge: Observing and Understanding Transitions of Seismogenic Properties and Processes Along Subduction Zones"	2009
Convener for AGU session "Volcano Geodesy: Monitoring and Modeling"	2009
Chair for UNAVCO Biennial Science meeting "SIG: Getting students excited about Modern Geodesy",	2008
Convener for AGU Union session "Processes Controlling Earthquake Potential of Subduction Zones"	2007
Convener for AGU session "July 17, 2006 Java Tsunami Earthquake"	2006
Guest Editor for Journal of Volcanology and Geothermal Research, special issue "The Changing Shape of Active Volcanoes: Recent Advances in Volcano Geodesy"	2006
EarthScope, PBO Site Committee for Volcanoes	2006-2009
Convener for AGU session "Recent Results and Advances in Volcano Geodesy"	2004
Coordinator for IGPP sponsored Los Alamos National Laboratory and U.S. Department of Energy EarthScope Workshop	2004
Convener for AGU session "Changing Shape of Active Volcanoes"	2003

Honors, Awards, and Recognitions:

NSF-CAREER Award	2009-2014
Geophysical Research Letters Research Highlight (and Cover)	2012

Science Magazine recognizes presentation as an AGU Highlight	2008
Kavli Frontiers of Science Fellow, National Academy of Sciences	2006
IGPP Young Fellow Award, for excellence in advancing our understanding of volcano and earthquake processes through geodesy and seismology, Los Alamos National Laboratory	2004
Director's Postdoctoral Fellow, Los Alamos National Laboratory	2002-2004
Horace A. Scott Award for Outstanding Graduate Research and Potential, Northwestern University, Department of Geological Sciences	1999-2000
University Fellow, Northwestern University	1997
Undergraduate Scholarship in Geology, Texas Tech University	1993-1994

Membership in Professional and Honor Societies:

Member: American Association for the Advancement of Science	2007-present
Member: American Geophysical Union	1995-present
Member: Seismological Society of America	1996-present
Member: Geological Society of America	1996-present
Member: Union of Concerned Scientists	1998-present

Graduate and Undergraduate Students Supervised:

Graduates Students

Abhijit Ghosh; Completed MS; Study of seismogenic coupling in Costa Rica	2005-2007
Jay Jackson; Completed non-thesis MS	2005-2007
Lujia Feng; Completed PhD; Deformation of Volcanic and Earthquake Environments	2006-2011
Yan Luo; Completed MS; Seismicity and deformation in Costa Rica	2009-2011
Zachary Lifton; Completed PhD; Evaluation modern and neotectonics strain	2009-2013
Jaime Convers; Completed PhD; Real-time Earthquake Energy Assessment	2006-2013
Grant Farmer; MS student working on active Deformation of Santorini Volcano	2006-2008
Allison Mercer; PhD student working on LiDAR for Flow Field Characterization	2012-present
Amy Williamson; PhD student working on earthquake and tsunami generation	2013-present
Tiegan Hobbs; PhD student working on postseismic deformation in Central America	2014-present

Postdoctoral Fellows Supervised:

Ting Chen, Developed user-friendly geodetic modeling code with application the 2007 Solomon Islands Earthquake. (Currently Assoc. Professor at Wuhan University in China).	2007-2009
Christos Kyriakopoulous, Developing 3D geologically and structurally realistic finite-element models of the subduction environment around Nicoya Costa Rica. Work will illuminate the role the incoming plate has on megathrust coupling that leads to large, and potentially tsunamigenic earthquakes.	2012-2014