

# CURRICULUM VITAE

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## MAYA TOLSTOY

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Citizenship: United States

## EDUCATION:

1994 Ph.D., Scripps Institution of Oceanography, University of California, San Diego  
1988 B.S. Honors, Geophysics, University of Edinburgh

## EMPLOYMENT:

7/16 – present Professor, Earth and Environmental Sciences, Columbia University  
9/18 – 12/19 Interim Executive Vice President and Dean of the Faculty of Arts and Sciences,  
Columbia University  
7/13 – 6/16 Associate Professor (tenured), Earth and Environmental Sciences, Columbia  
University  
7/09 – 6/13 Associate Professor, Earth and Environmental Sciences, Columbia University  
7/04 – 6/09 Doherty Research Scientist (tenured), Lamont Doherty Earth Observatory (LDEO),  
Columbia University  
7/98 – 7/04 Doherty Associate Research Scientist, LDEO, Columbia University  
5/99 – 4/02 Visiting Scholar, University of California, Los Angeles  
8/98 – 12/98 Adjunct Professor, Barnard College, Columbia University  
10/96 – 6/98 Postdoctoral Fellow, LDEO, Columbia University  
11/94 – 9/96 Post-Graduate Researcher, Institute of Geophysics and Planetary Physics (IGPP),  
Scripps Institution of Oceanography.  
1988 – 1994 Research Assistant, IGPP, Scripps Institution of Oceanography.

## MAJOR RESEARCH INTERESTS:

Volcanism and Tectonics at Mid-Ocean Ridges including Interdisciplinary Implications.  
Ocean Bottom Seismology and Instrumentation  
Hydroacoustic Monitoring of the Oceans  
The impact of anthropogenic acoustic noise on marine mammals

## HONORS/AWARDS:

2020 Nominated for President Elect of the Seismology Section of the American Geophysical Union  
2019 Rosemary Hutton Lecturer, University of Edinburgh  
2019 Dal Grauer Memorial Lecturer, University of British Columbia  
2016 Birch Lecturer, American Geophysical Union  
2016 Lester W. Strock Lecturer, Skidmore College  
2013 TedX CERN Speaker  
2012 Nobel Conference 48, Invited Speaker

2010 Accomplishment Based Renewal, National Science Foundation (\$448,163 Award)  
2009 NASA Astronaut Candidate Finalist (Final 47)  
2009 WINGS Sea Award (\$10,000 prize)  
2008 *Nature* Paper highlighted in NSF's Annual Report to Congress  
2006 *Science* Paper highlighted in NSF's 2006 Year in Review  
2006 IDEAS Featured Speaker, Hofstra University  
2005-2006 Ridge 2000 Distinguished Lecturer  
1996 LDEO Postdoctoral Fellowship

## **FIELD EXPERIENCE:**

Extensive sea-going experience (31 cruises) - Chief or Co-chief scientist on 18 cruises. 1987-present., primarily OBS work, but including multichannel, electromagnetic, tilt, DSL-120, Argo, dredging, and rock coring (see detailed list at end of CV).

Total of 10 weeks geological mapping in Scotland, 1984-1988; 1 week training in geophysical field techniques (seismic, gravity, magnetics, resistivity) in Wales, UK, 1987; 2 days seismometer deployment following Northridge earthquake, 1994; 3 days GPS field work following Landers earthquake, 1992.

Private Pilot Certificate, and currently in Stage 3 of 3 for an FAA Part 141 Instrument Rating.

## **TEACHING EXPERIENCE** (*Note: on sabbatical Fall 2015 and not teaching AY 2018-19*):

Race, Climate Change and Environmental Justice (EESCGR9810): Fall 2020  
Earth's Environmental Systems: The Solid Earth System (V2200): Fall 2009 – Present, Columbia University  
Earth: Origin, Evolution, Processes and Future (V1011, V1411): Fall 2013 – 2017, Columbia University  
Seagoing Experience in Earth Science (W3000, W3010): Spring 2011, 2012, Columbia University  
Seminar in Marine Geophysics (G9947): Spring 2010, 2016, 2018 Columbia University  
Oceanography (BC3024): Fall 1998, Environmental Science Department, Barnard College.

## **MENTORING/STUDENT ADVISING:**

### **GRADUATE STUDENTS:**

#### *Primary advisor for:*

Y.-J. Tan – Ph.D. 2019 – Postdoc Stanford, Asst. Professor Chinese University of Hong Kong.

T. Bhatnagar – M.Sc. 2016.

D.F. Sumy (previous D.F. Stroup) – Ph.D. 2011, NSF Postdoctoral Fellowship at United States Geological Survey/California Institute of Technology – October 2011; now with the Incorporated Research Institutions for Seismology (IRIS).

D.R. Bohnenstiehl, - Ph.D. 2002 (with distinction). LDEO Postdoctoral Researcher (2002-2004), Storke-Doherty Lecturer (2004-2006), Professor, North Carolina State University (2006-present).

#### *Advisory Committee Member & Primary Advisor for 2 of 3 chapters for:*

R.C. Holmes – Ph.D. 2009 – Research Scientist, Chevron (Houston, Texas).

#### *Advisory Committee Member:*

J. Gibson – Started Fall 2012

#### *Primary Advisor for 1 of 3 chapters:*

J.C. Floyd – Ph.D. 2003 – Associate in Research, Yale (2009-present).

*Mentor and co-author on thesis papers:*

M. West – Ph.D. 2001 (with distinction) – Research Associate Professor, University of Alaska, Fairbanks (2011-present).

*Orals Committee:*

Xinfeng Liang (2010) (Chair)  
Jing Sun (2012) (Chair)  
John Templeton (2012) (Chair)  
Yingzhe Wu (2013) (Chair)  
Tarini Bhatnagar (2014)  
James Gibson (2015)  
Chloe Gao (2016) (Chair)  
Kassandra Costa (2016) (Chair)  
Kyle Frischkorn (2016) (Chair)  
Frankie Pavia (2017) (Chair)  
Yen Joe Tan (2017)

**POSTDOCTORAL RESEARCHER:**

*Primary Postdoctoral Advisor:*

S. Abadi (2013-2015) – now Assistant Professor at University of Washington, Bothell  
T.J. Crone (2007-2009) – now Lamont Associate Research Professor  
D.R. Bohnenstiehl (2002-2004) – now an Associate Professor at North Carolina State University

*Secondary Postdoctoral Mentor:*

S. Nooner (2006-2008) – now Associate Professor at UNC Wilmington

**POSTBACCALAUREATE:**

I have worked with a number of Postbaccalaureate students who are uncertain of their next step and seek a short period of research experience in a technician position. They all have obtained authorship on papers or AGU abstracts. One was lead author on a paper (Chapp et al., 2005, *G-cubed*).

Emily Chapp (2001-2003) – completed MSc at University of Hawaii, currently at Chevron.  
Robert Weekly (2004-2006) – completed Ph.D. program at University of Washington with W. Wilcock  
Lindsey Doermann (2007-2009) – completed Masters in Science Journalism, now working as journalist.  
Andrew Stolzman (2010-2012) – now working at ION Geophysical.

**SUMMER INTERNS:**

Sam Nadell – High school summer intern (Summer 2010) working on East Pacific Ridge data. His work went on to win first place in the Westchester Science and Engineering Fair for Earth Science, as well as the U.S. Stockholm Junior Water Prize Regional Award.

**PROFESSIONAL/COMMITTEE SERVICES (EXTERNAL):**

Co-Organizer: GeoPRISMS synthesis workshop: Lithospheric Extension Across Tectonic Settings, Colorado Springs, CO June 2021.

Co-Organizer: National Academy of Sciences COSG Workshop “Integrative Subduction Zone Science: Moving into the Next Decade,” November 2017.

Co-Convenor: Geoprisms AGU Miniworkshop: “Volcanoes in extensional and compressional settings,” 2016.

Co-Organizer: National Academy of Sciences COSG Workshop “The Cascadia Subduction Zone: Science, Impacts, and Response,” November 2016.

Member: National Research Council - Committee on Seismology and Geodynamics - 2015 – present.

Co-Organizer: National Academy of Sciences Workshop “Geophysical Research Challenges Spanning the Coastal Zone,” Oct 2015.

Member: RESIF (Réseau sismologique et géodésique Français) Scientific Advisory Board– 2013 – 2016.

Member: IRIS OBSIP Management Council, 2012 – 2018.

Co-Convenor: Workshop on Marine Geophysics in the Cascadia Primary Site, Dec. 2<sup>nd</sup>, 2012.

Member: Cascadia Initiative Expedition Team 2011 – 2015.

Presenter: U.S. Senate: NSF’s Hazards Forum (Cascadia) September 7<sup>th</sup>, 2011.

Invitee: National Science Board Mid-Scale Research Discussion Group, February 25<sup>th</sup> 2011.

Co-editor: RIDGE 2000: Special R2K Issue of *Oceanography*, 2011-2012.

Member: Wings Worldquest Advisory Board 2010 – 2018.

Co-Chair, AGU Biogeoscience Session, Developing Integrated Models for Mid-Ocean Ridge Processes at the Ridge 2000 East Pacific Rise Integrated Study Site, December 2008.

Co-Chair: Ridge 2000 EPR Science Integration Workshop, Cotuit, MA, September 2008.

Lead PI: ORION Concept Proposal for a Buoy Observatory at 9°50' N on the East Pacific Rise, 2006.

Member (Ex Officio): Marcus Langseth Science Oversight Committee 2006 – present.

Member: Advisory Board, NOVA scienceNOW (PBS), 2005 – present.

Member: External Review Panel for Discovery of Sound in the Sea (URI/ONR website), Oct. 2004.

Member: ORION Committee to define global buoy science requirements, Oct. 2004.

Site Co-ordinator: RIDGE 2000, EPR Integrated Studies, Sept. 2003 – November 2005.

Member: RIDGE 2000 Time Critical Studies Committee, 2002 – 2012.

Member: RIDGE 2000 Steering Committee, Nov. 2001 – Nov. 2002.

Member: RIDGE Steering Committee, Nov. 1999 – Nov 2001.

Co-Chair: InterRidge Workshop “Long-Term Monitoring of the Mid-Atlantic Ridge,” Portugal, Oct. 1998.

Judge: Best Student Paper - Tectonophysics, AGU 1995, 1996, 2002.

Representative (Scripps): OCEANS presentation for Congress, D.C., May 1995.

Member: NSF-Ocean Sciences-Marine Geology and Geophysics Panel.

Member: National Oceanographic and Atmospheric Administration Ocean Exploration Panel.

## **PROFESSIONAL/COMMITTEE SERVICES (INTERNAL):**

### *Columbia:*

Member: Dean of the School of Professional Studies Search Committee, AY 2020 – 2021.

Member: Presidential Fourth Purpose Task Force, Spring 2020.

Co-Chair: Uris Vision Committee, AY 2018-2019.

Chair: Policy Planning Committee for Faculty of Arts & Sciences, AY 2017- 2018.

Chair: Policy Planning Committee Subcommittee on Diversity, Fall 2016 – present.

Chair: Natural Sciences Equity Committee, March 2017 – Spring 2018.

Member: Social Sciences Equity Committee, Spring 2018.

Member: Humanities Equity Committee, Fall 2017-Spring 2018.

Associate Chair: Policy Planning Committee for Faculty of Arts & Sciences, Spring 2016.

Member: Policy Planning Committee for Faculty of Arts & Sciences, Fall 2016 – present (3-year term).

Member: Review Committee, Provost’s Grants for Junior Faculty who Contribute to Diversity, 2016 -

Member: Committee on Arts Option, Sexual Respect, 2014-2015.

Co-Chair: Commission on the Status of Women, July 2009 – July 2014.

Member: Commission on the Status of Women, Sept. 2005 – July 2014.

Member: Vice-Provost’s Task Force on Diversity, January 2008 – 2009.

Columbia University Senator: Sept. 2004 – June 2009.

Member: Research Scientist Senate Subcommittee, Sept. 2004 – June 2009

Member: Trustee Advisory Committee on Marine Mammals and Sound 2004 – 2006.

Member: Physical Development Senate Subcommittee, Sept. 2004- 2005.

*Department of Earth and Environmental Sciences:*

Member: Graduate Student Admissions Committee, 2018  
Member: DEES Diversity Committee, 2017 - present  
Member: Curriculum Committee –2016 – 2017.  
Director of Undergraduate Studies – January 2014 – June 2015.  
Member: DEES Broad Search Committee, Sept. 2015 – Sept. 2016.  
Member: Hiring Priorities Committee, Spring 2015.  
Member: Governance Committee, 2013 – 2014.  
Member: Graduate Student Guide Revision Committee, 2013 - 2014.  
Member: Graduate Student Research Awards Committee, 2012 –2014.  
Member: Graduate Student Admissions Committee, 2010- 2014.

*Lamont-Doherty Earth Observatory of Columbia University:*

Chair: Marine Operations Working Group, LDEO, R/V Langseth advisory, 2005 - 2007  
Chair: Postdoctoral Fellowship Committee 2008 – 2009  
Led: Open House Mid-Ocean Ridge Display, Design and Host Team 2008  
Member: LDEO Postdoctoral Fellowship Committee 2007  
Member: Stork-Doherty Selection Committee 2007  
Member: Observatory Technical Innovation Center Committee 2006 - 2011  
Member: OBSIP Internal Oversight Committee 2006 – present  
Member: LDEO Promotions and Careers Committee 1998-2003  
Member: Campus Life Committee 1996-1998  
Member: Numerous search committees for hiring scientific and technical staff.

## BIBLIOGRAPHY

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PEER-REVIEWED PUBLICATIONS: (*ISI H-index 27, Google Scholar H-index 30, i10-index 53*)

\* Indicates graduate student, postdoctoral researcher or other supervisee/co-supervisee at time of work..

66. Pritchard, M. E., R. M. Allen, T. W. Becker, M. D. Behn, E. E. Brodsky, R. Bürgmann, C. Ebinger, J. T. Freymueller, M. Gerstenberger, B. Haines, Y. Kaneko, S. D. Jacobsen, N. Lindsey, J. J. McGuire, M. Page, S. Ruiz, **M. Tolstoy**, L. Wallace, W. R. Walter, W. Wilcock, and H. Vincent, New Opportunities to Study Earthquake Precursors, *Seismological Research Letters*, in press, 2020.
65. Waldhauser, F., W.S.D. Wilcock, **M. Tolstoy**, C. Baillard, Tan, Y.J., and D. Schaff, Precision Seismic Monitoring and Catalog Production at Axial Seamount Using Real-Time Double-Difference (RTDD) Methods, *J. Geophys. Res.*, DOI: 10.1029/2019JB018796, 2020.
64. C. Baillard, W.S.D. Wilcock, A. Arnulf, **M. Tolstoy**, F. Waldhauser, A Joint Inversion for Three-dimensional P- and S-wave Velocity Structure and Earthquake Locations Beneath Axial Seamount, *J. Geophys. Res.*, <https://doi.org/10.1029/2019JB017970>, 2019.
63. \*Tan, Y.J., F. Waldhauser, **M. Tolstoy**, and W.S.D. Wilcock, Axial Seamount: Periodic tidal loading reveals stress dependence of the earthquake size distribution (*b* value), *Earth Planet. Sci. Lett.*, DOI: <https://10.1016/j.epsl.2019.01.047>, 2019.
62. Levy, S., D.R Bohnenstiehl, P. Sprinkle, M.S. Boettcher, W.S.D. Wilcock, **M. Tolstoy** and F. Waldhauser, The mechanics of fault re-activation surrounding the 2015 eruption of Axial Seamount, *Geology*, 46 (5): 447-450. DOI: <https://doi.org/10.1130/G39978.1>, 2018.
61. **M. Tolstoy**, W.S.D. Wilcock, Y.J. Tan, F. Waldhauser, A tale of two eruptions: How data from Axial Seamount led to a discovery on the East Pacific Rise, *Oceanography*, 31(1):124–125, <https://doi.org/10.5670/oceanog.2018.118>, 2018.

60. W.S.D. Wilcock, R.P. Dziak, **M. Tolstoy**, W. Chadwick, S. Nooner, D.R. Bohnenstiehl, J. Caplan-Auerbach, F. Waldhauser, C. Baillard, A. Arnulf, Y.J. Tan, The Recent Volcanic History of Axial Seamount: Geophysical Insights into Past Eruption Dynamics with an Eye Toward Enhanced Observations of Future Eruptions, *Oceanography* 31(1):114–123, <https://doi.org/10.5670/oceanog.2018.117>, 2018.
59. \*Tan, Y.J., **M. Tolstoy**, F. Waldhauser, D.R. Bohnenstiehl, Tidal triggering of microearthquakes over an eruption cycle at 9°50'N East Pacific Rise, *Geophys. Res. Lett.*, 10.1002/2017GL076497, 2018.
58. Crone, T.J., **M. Tolstoy**, J.C. Gibson, G. Mountain, Acoustic Radiation of the R/V Marcus G. Langseth's Seismic Source in the Shallow Waters of New Jersey's Continental Shelf, *PLoS ONE* 12(8): e0183096. <https://doi.org/10.1371/journal.pone.0183096>, 2017.
57. \*Abadi, S.H., **M. Tolstoy**, W.S.D. Wilcock, Range estimation of baleen whale calls using a dual-line hydrophone streamer during mitigating procedures in seismic reflection surveys, *PLoS ONE*, <http://dx.doi.org/10.1371/journal.pone.0171115> 2017.
56. Wilcock, W.S.D., **M. Tolstoy**, F. Waldhauser, C. Garcia, Y. J. Tan, D.R. Bohnenstiehl, J. Caplan-Auerbach, R.P. Dziak, A.F. Arnulf, M.E. Mann, Seismic constraints on caldera dynamics from the 2015 Axial Seamount eruption, doi: 10.1126/science.aah5563, *Science*, 2016.
55. \*Tan, Y.J., **M. Tolstoy**, F. Waldhauser, W.S.D. Wilcock, Dynamics of a seafloor spreading episode at the East Pacific Rise, doi:10.1038/nature20116, *Nature*, 2016.
54. **Tolstoy, M.**, Comment on “Sensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supply”, doi: 10.1126/science.aaf0625, *Science*, 2016.
53. \*Bhatnagar, T. **M. Tolstoy**, F. Waldhauser, Influence of fortnightly tides on earthquake triggering at the East Pacific Rise, DOI: 10.1002/2015JB012388, *J. Geophys. Res.*, 2016.
52. \*Abadi, S.H., W.S.D. Wilcock, **M. Tolstoy**, T.J. Crone, S.M. Carbotte, Estimating Sound Power Levels and Mitigation Radii for the R/V Marcus G. Langseth Using an 8-km Long MCS Streamer, *J. Acoust. Soc. Amer.*, **138**, 1762, doi:10.1121/1.4937768 2015.
51. **Tolstoy, M.**, Mid-ocean ridge eruptions as a climate valve, *Geophys. Res. Lett.*, 10.1002/2014GL063015, 2015. (\*Spotlighted by GRL, covered in Science as Perspectives piece, and In Depth news piece\*)
50. Crone, T.J., **M. Tolstoy**, H. Carton, Estimating Sound Power Levels and Mitigation Radii for the R/V Marcus G. Langseth Using an 8-km Long MCS Streamer, doi: 10.1002/2014GC005420, *Geochem. Geophys. Geosyst.*, 2014.
49. Toomey, D.R. R.M. Allen, A.H. Barclay, S.W. Bell, P.D. Bromirski, R.L. Carlson, X. Chen, J.A. Collins, R.P. Dziak, B. Evers, D.W. Forsyth, P. Gerstoft, E.E.E. Hooft, D. Livelybrooks, J.A. Lodewyk, D.S. Luther, J.J. McGuire, S.Y. Schwartz, **M. Tolstoy**, A.M. Tréhu, M. Weirathmueller, and W.S.D. Wilcock,, The Cascadia Initiative: A Sea Change In Seismological Studies of Subduction Zones, 27(2):138–150, *Oceanography* <http://dx.doi.org/10.5670/oceanog.2014.49>, 2014.
48. Fornari, D.J., S.E. Beaulieu, J.F. Holden, L.S. Mullineaux, and **M. Tolstoy**, Introduction to the Special Issue: From RIDGE to Ridge 2000, 25(1):12–17, <http://dx.doi.org/10.5670/oceanog.2012.01> *Oceanography*, 2012 .
47. Fornari, D.J., K.L. Von Damm, J.G. Bryce, J.P. Cowen, V. Ferrini, A. Fundis, M.D. Lilley, G.W. Luther III, L.S. Mullineaux, M.R. Perfit, M.F. Meana-Prado, K.H. Rubin, W.E. Seyfried Jr., T.M. Shank, S.A. Soule, **M. Tolstoy**, and S.M. White, The East Pacific Rise Between 9° and 10°N: Twenty-Five Years of Integrated, Multidisciplinary Oceanic Spreading Center Studies, 25(1):18–43, <http://dx.doi.org/10.5670/oceanog.2012.02> *Oceanography*, 2012.
46. Waldhauser, F., **M. Tolstoy**, Seismogenic Structure and Processes Associated with Magma Upwelling and Hydrothermal Circulation Beneath the East Pacific Rise at 9°50'N, 2, Q08T10, doi:10.1029/2011GC003568, *Geochem. Geophys. Geosyst.*, 2011.

45. Crone, T.J., **M. Tolstoy**, D. Stroup, The Permeability Structure of Young Ocean Crust from Poroelastically Triggered Earthquake, doi:10.1029/2011GL046820, *Geophys. Res. Lett.*, 2011.
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43. Crone, T.J., **M. Tolstoy**, Assessing the Magnitude of the 2010 Gulf of Mexico Oil Leak Using Optical Plume Velocimetry, 10.1126/science.1195840, *Science*, 2010.
42. Diebold, J. B., **M. Tolstoy**, L. Doermann, S. L. Nooner, S. C. Webb, and T. J. Crone, R/V *Marcus G. Langseth* seismic source: Modeling and calibration, *Geochem. Geophys. Geosyst.*, 11, Q12012, doi:10.1029/2010GC003216, 2010.
41. \*Holmes, R.C., **M. Tolstoy**, A.J. Harding, J.A. Orcutt, Australian Antarctic Discordance as a Simple Mantle Boundary, doi:10.1029/2010GL042621, *Geophys. Res. Lett.*, 2010.
40. \*Stroup, D., **M. Tolstoy**, T.J. Crone, A. Malinverno, D.R. Bohnenstiehl, F. Waldhauser, Systematic Along-Axis Tidal Triggering of Microearthquakes Constrains Crustal Permeability, doi:10.1029/2009GL039493, *Geophys. Res. Lett.*, 2009.
39. Monigle, P., D.R. Bohnenstiehl, **M. Tolstoy**, F. Waldhauser, Seismic tremor at the 9°50'N East Pacific Rise eruption site, doi:10.1029/2009GC002561, *Geochem., Geophys. and Geosyst.*, 2009.
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37. Dziak, R.P., D.R. Bohnenstiehl, H. Matsumoto, M. Fowler, J. Haxel, **M. Tolstoy**, F. Waldhauser, Recent Volcanic Eruptions, Properties and Behaviour of the EPR 8 degrees-11degrees N, *Geochem., Geophys. and Geosyst.*, 10, Q06T06, doi:10.1029/2009GC002388, 2009.
36. Baran, J.M., J.R. Cochran, R.C. Holmes, **M. Tolstoy**, S.M. Carbotte, Constraints on the mantle temperature gradient along the Southeast Indian Ridge from crustal structure and isostasy: Implications for the transition from an axial high to an axial valley, *Geophys. J. Int.*, doi: 10.1111/j.1365-246X.2009.04300.x, 2009.
35. **Tolstoy, M.**, F. Waldhauser, D.R. Bohnenstiehl, R.T. Weekly, W.-Y. Kim, Seismic identification of along-axis hydrothermal flow on the East Pacific Rise, *Nature*, **451**, doi:10.1038/nature06424, 2008. (\*Featured paper in NSF annual report to Congress\*)
34. \*Holmes, R.C., **M. Tolstoy**, J.R. Cochran, J.S. Floyd, Crustal Thickness Variations Along the Southeast Indian Ridge (100°-116°E, 47°-51°S) From 2-D Body Wave Tomography, *Geochem., Geophys. and Geosyst.*, **9**, Q12020, doi:10.1029/2008GC002152, 2008.
33. **Tolstoy, M.**, Seismological constraints on magmatic and hydrothermal processes at ridges, *AGU Geophysical Monograph Series: Modeling Hydrothermal Processes at Mid-Ocean Ridges*, eds. R.P. Lowell, M. Perfit, J. Seewald, A. Metaxas, 178, 22pp, GM1784436, 2008.
32. Bohnenstiehl, D.R., F. Waldhauser, **M. Tolstoy**, Frequency-magnitude distribution of microearthquakes beneath the 9°50' N region of the East Pacific Rise, October 2003 through April 2004, doi:10.1029/2008GC002128, *Geochem., Geophys. and Geosyst.*, 2008.
31. Lutz, R.A., T.M. Shank, G.W. Luther III, C. Vetriani, **M. Tolstoy**, D.B. Nuzzio, T.S. Moore, F. Waldhauser, M. Crespo-Medina, A. Chatziefthimou, E.R. Anis, A.J. Reed, Interrelationships between vent fluid chemistry, temperature, seismic activity and biological community structure at a mussel-dominated, deep-sea hydrothermal vent along the East Pacific Rise, *Journal of Shellfish Research*, **27**, 177-190, 2008.

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29. Cowen, J.P., D.J. Fornari, T. M. Shank, B. Love, B. Glazer, A. H. Treusch, R. C. Holmes, S.A. Soule, E. T. Baker, **M. Tolstoy** and K. R. Pomraning, Volcanic Eruptions at East Pacific Rise Near 9° 50'N, *EOS Trans. AGU*, **88**:81-92, doi:10.1029/2007EO070001, 2007.
28. **Tolstoy, M.**, J.P. Cowen, E.T. Baker, D.J. Fornari, K.H. Rubin, T.M. Shank, F. Waldhauser, D.R. Bohnenstiehl, D.W. Forsyth, R.C. Holmes, B. Love, M.R. Perfit, R.T. Weekly, A Seafloor Spreading Event Captured by Seismometers: Forecasting and Characterizing an eruption, *Science*, DOI: 10.1126/science.1133950, 2006. (\*Featured paper in NSF's Year in Review 2006\*)
27. **Tolstoy, M.** and D.R. Bohnenstiehl, Contributions of hydroacoustic analysis to understanding the Great Sumatra-Andaman Earthquake, *Surveys in Geophysics*, doi: 10.1007/s10712-006-9003-6, 2006.
26. **Tolstoy, M.** and D.R. Bohnenstiehl. Hydroacoustic Constraints on the Rupture Duration, Length and Speed of the Great Sumatra-Andaman Earthquake, *Seis. Res. Lett.*, **76**:419-425, 2005.
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24. Dziak, R.P., D. Smith, D. Bohnenstiehl, C. Fox, D. Desbruyeres, H. Matsumoto, **M. Tolstoy**, and D. Fornari, Evidence of a recent magma dike intrusion at the slow-spreading Lucky Strike segment, Mid-Atlantic Ridge, *Journal of Geophysical Research*, **109**:B12102, doi:10.1029/2004JB003141, 2004.
23. \*Bohnenstiehl, D.R., R. P. Dziak, **M. Tolstoy**, C. Fox, and M. Fowler, Temporal and Spatial History of the 1999-2000 Endeavour Seismic Series, Juan de Fuca Ridge, *Geochem., Geophys. and Geosyst.*, **5**:Q09003, doi:10.1029/2004GC000735, 2004.
22. **Tolstoy, M.**, J.B. Diebold, S.C. Webb, D.R. Bohnenstiehl, E. Chapp, R.C. Holmes, and M. Rawson, Broadband Calibration of the R/V Ewing Seismic Sources, *Geophys. Res. Lett.*, **31**:L14310, doi:10.1029/2004GL020234, 2004.
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## SELECTED MEDIA COVERAGE & OUTREACH:

Cabled Array commentary (1 paragraph) + 2015 GRL paper (5 paragraphs) featured in New York Times, (Science Times front page), Bill Broad article: “The 40,000 mile volcano” on January 12<sup>th</sup> 2016.

2015 GRL paper on “Mid-ocean ridge eruptions as a climate valve” covered by >100 media outlets, including National Geographic, Time Magazine, Scientific American, Discovery, 2015.

Interviewed on search for MH370 (technology/seafloor character) - Up With Steve Kornacki, 2014

Interviewed for Sandi Klein Show: Conversations with Creative Women, 2014.

Presenter for *History Channel* for three webcasts on Earthquakes, Volcanoes and Tsunamis, 2011.

Interviewed and quoted by numerous media outlets for work on Gulf of Mexico Oil Spill, Summer 2010.

Interviewed about career and work on *NPR – Leonard Lopate* – April 28<sup>th</sup> 2009.

Interviewed about career on "*Seeking Solutions With Suzanne*" (shown on CNN headline news) – March 2009.

Interviewed for *History Channel* special (Underwater Universe) on seafloor volcanism and tsunamis, January 2009.

East Pacific Rise 2008 *Nature* paper covered in national and international media (e.g. *MSNBC*, *LiveScience*, *AFP*) – January 2008.

East Pacific Rise eruption *Science* paper covered extensively in the national and international media, including *New York Times*, *Washington Post*, *Boston Globe*, *The Telegraph* (UK) and the *Drudge Report*, November -December 2006.

Interviewed by Science Central for feature piece on career for *NBC* and *ABC affiliates*, Aug. 2006.

Interviewed for *National Geographic TV* special on how Hollywood portrays science, Sept. 2005.

Sumatra-Andaman Research featured on TV, print and web. Interviewed on *CNN Live*, and by Science Central for *NBC and ABC affiliates*, July-August 2005. Headline story and top video on *CNN.com*.

Featured scientist in James Cameron 3-D IMAX documentary ‘*Aliens of the Deep*’ – released January 28<sup>th</sup> 2005.

Axial tidal research featured and quoted in numerous print, TV, and web news outlets, including: *New Scientist*, *National Geographic Channel*, *Seattle Times*, and *The Week*. 2002.

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Career and research also featured on web, (Women Exploring the Ocean), print, (*Scientific American*, *National Geographic School Publishers* and *SuperScience Magazine*), radio (*WAMC’s 51% Tech Club* (NSF supported public radio show)), and TV (*CNBC – ‘Bulls Eye’*).

**SELECTED ABSTRACTS** (American Geophysical Union ONLY) - 91 TOTAL:

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**Tolstoy, M.**, A.J. Harding and J.A. Orcutt, Deepening of the Axial Magma Chamber on the Southern East Pacific Rise Toward the Garret Fracture Zone, IUGG 1995.

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**Tolstoy, M.**, A.J. Harding and J.A. Orcutt, Evolution of Crustal Structure at 34° S on the Mid-Atlantic Ridge, EOS Trans, AGU 74:646, 1993.

**Tolstoy, M.**, A.J. Harding and J.A. Orcutt, An Explanation for 'Bull's Eye' Mantle Bouguer Anomalies on the Southern Mid-Atlantic Ridge, EOS Trans, AGU 73:495, 1992.

**Tolstoy, M.**, A.J. Harding and J.A. Orcutt, Crustal Thickness Models for Two Segments of the Southern Mid-Atlantic Ridge, Trans. EGS, SE14, 1992.

**Tolstoy, M.**, A.J. Harding and J.A. Orcutt, Crustal Thicknesses Along the Ridge Axis of the Southern Mid-Atlantic Ridge, EOS Trans, AGU, 72:467, 1991.

**Tolstoy, M.**, J.A. Orcutt, M.A.H. Hedlin, G.M. Kent and A.E. Newell, A Refraction Study of the Southern Mid-Atlantic using Ocean Bottom Seismometers, EOS Trans, AGU, 71:1572, 1990.

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## **INVITED PRESENTATIONS**

(2004 – present)

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University of Edinburgh – **Rosemary Hutton Lecturer** – March 2019.

The Pratt House, New York City – Earth Series Lecture – **Invited Speaker** – March 2019.

University of British Columbia – **Dal Grauer Memorial Lecturer** – February 2019.

Carnegie Dept. of Terrestrial Magnetism - **Invited Speaker** – February 2018.

Tulane University - **Invited Speaker** – January 2018.

VOICE Workshop – **Invited Speaker** – May 2017.

Rutgers University – **Invited Speaker** – April 2017.

UCLA – Earth, Planetary, and Space Sciences – **Invited Speaker** – March 2017.

Wigtown Big Bang Weekend – **Invited Speaker** - January 2017.

AGU Fall Meeting – **2016 Birch Lecturer** – December 2016.

Skidmore College – **2016 Lester W. Strock Lecturer** – April 2016.

AGU Fall Meeting – **Invited Speaker** – December 17<sup>th</sup> 2015.

IRIS Ocean Bottom Seismography Workshop – **Invited Speaker** – October 5<sup>th</sup> 2015.

Earthscope National Meeting – **Keynote Speaker** – June 17<sup>th</sup> 2015.

NOVAE Workshop (Axial Seamount Cabled Array), Seattle – **Invited Speaker** – April 20<sup>th</sup> 2015.

Rockland County Middle School – **Invited Speaker** – STEM Panel – January 24<sup>th</sup> 2015.

Wings Worldquest Forum, Explorers Club – **Invited Speaker** – October 17<sup>th</sup> 2014.

Birch Wathen Lenox Middle School – **Invited Speaker** – February 11<sup>th</sup> 2014.

Distinguished Lecture – Lotus Club – **Invited Speaker** – November 14<sup>th</sup> 2013

LDEO Public Lecture – **Invited Speaker** – May 16<sup>th</sup> 2013

TedX CERN, Geneva, Switzerland – **Invited Speaker** – May 3<sup>rd</sup> 2013.

Ohio State University – **Invited** – **WIMS Lecture** – April 10<sup>th</sup> 2013.

Wings Worldquest, New York City – **Invited Speaker** – February 25<sup>th</sup> 2013.

Nobel Conference 48 – Our Global Ocean – **Invited Speaker** – October 3<sup>rd</sup> 2012.

LDEO: Media Training Workshop – **Invited Speaker** – July 19<sup>th</sup> 2011.

Wings Worldquest Fellows Retreat, New York City – **Invited Speaker** – April 16<sup>th</sup> 2011.

LDEO: The Life and Science of John B. Diebold 1944-2010 – **Invited Speaker** – Sept. 24<sup>th</sup> 2010.

Northwest Research Associates, Seattle – **Invited Speaker** – March 30<sup>th</sup>, 2010.

University of Washington, School of Oceanography, Seattle – **Invited Speaker** – March 29<sup>th</sup>, 2010.

Channel 13 Celebration of Teaching and Learning – **Invited Featured Speaker** – March 4<sup>th</sup>, 2010.

NERIES – ESONET OBS – Marine Seismology Workshop – **Invited Speaker** – February 11<sup>th</sup>, 2010.

Columbia University– **Invited Keynote Speaker** – Center for Computational Learning Annual Retreat – *Seeing Beneath the Sea with Mid-Ocean Ridge Earthquakes* - December 4<sup>th</sup> 2009.

Cornell University, Department of Earth and Atmospheric Sciences - **Invited Speaker** – *Seafloor Plumbing at the East Pacific Rise inferred from Microearthquakes* - October 7<sup>th</sup> 2009.

Womensphere Emerging Leaders Global Summit, **Keynote Speaker and Panelist** – September 26<sup>th</sup>, 2009.

International Ocean Drilling Program/Interidge Workshop – Melting, Magma Fluids and Life - National Oceanography Center, University of Southampton, UK - **Invited Speaker** – *Implications for mid-ocean ridge*

*hydrothermal and magmatic processes from microearthquake data at 9°50'N on the East Pacific Rise* - 27-29<sup>th</sup> July 2009.

National Arts Club - Wings Worldquest Fellows Retreat – **Invited Speaker** – *Exploring the Deep Ocean with Earthquakes and Sound* - April 30<sup>th</sup> 2009.

American Museum of Natural History – **Invited Speaker** – *Exploring the Deep Ocean with Earthquakes and Sound* - April 29<sup>th</sup> 2009.

Virginia Polytechnic Institute and State University – **Invited Speaker** – *Seismological constraints on hydrothermal circulation at 9°50'N on the East Pacific Rise*, November 14<sup>th</sup>, 2008. (cancelled due to illness).

Lamont-Doherty Earth Observatory, LDEO Board – **Invited Speaker** – *Mid-Ocean Ridge earthquakes as fuel for life*, May 15<sup>th</sup> 2008.

Columbia University, Earth Microbiology Initiative Workshop – **Invited Speaker** – *Mid-Ocean Ridge earthquakes as fuel for life*, March 10<sup>th</sup> 2008.

Lamont-Doherty Earth Observatory, Marie Tharp Symposium – **Invited Speaker** – *The seismic life cycle of mid-ocean ridge: Using earthquakes to map changes*, October 15<sup>th</sup> 2007.

Princeton University – **Invited Speaker** – *The Seismic Life Cycle of 9°50'N on the East Pacific Rise: From Robust Hydrothermal Venting to Eruption*, September 28<sup>th</sup> 2007.

Café Science – Columbia University – **Invited Speaker** - *Earthquakes as life support on the seafloor*. May 14<sup>th</sup>, 2007.

Channel 13 Celebration of Teaching and Learning – **Invited Featured Speaker** – *Sounds of the Sea: From Whales to Plate Tectonics*, March 24<sup>th</sup>, 2007.

Southern Connecticut State University – **Invited Speaker** – educational program for training teachers – *Listening to the Ocean: Updates from a recent eruption*, March 9<sup>th</sup>, 2007.

British Geophysical Association – **Keynote Speaker** – *New insights into geophysical processes from hydroacoustic monitoring*, February 8<sup>th</sup> 2007.

American Geophysical Union – **Invited Speaker** – Forecasting and characterizing the recent eruption at 9°50'N on the East Pacific Rise using Ocean Bottom Seismometers, December 2006.

Acoustical Society of America – **Invited Speaker** - *Use of Low frequency marine seismo-acoustics in understanding earthquake processes: Applications to the Great Sumatra-Andaman earthquake* – June 2006.

Ridge 2000 Theoretical Institute – **Keynote Speaker** – *Seismic constraints on hydrothermal systems* – June 2006.

Lamont-Doherty Earth Observatory – **Invited Speaker** for Trustee Gerry Lenfest visit – *Science of the R.V. Marcus G. Langseth*, June 1<sup>st</sup> 2006.

Southern Connecticut State University – **Invited Speaker** – educational program for training teachers – *Exploring the Deep Ocean: Using Sound to Learn about the Deep Depths*, May 4<sup>th</sup>, 2006. (R2K Distinguished Lecturer).

Hofstra University - IDEAS Featured Speaker - **Invited Public Speaker** – *The Science Behind Aliens of the Deep* March 16<sup>th</sup> 2006.

Queens College – **Invited Speaker** – *Exploring the Deep Ocean: Using Sound to Learn about the Deep Depths* March 15<sup>th</sup> 2006. (R2K Distinguished Lecturer).

Columbia University – Earth Microbiology Interest Group – **Invited Speaker** – *Earthquakes and Life on the seafloor* - February 16<sup>th</sup> 2006.

Ridge 2000 Program Distinguished Lecturer Series – **Distinguished Lecturer** – Series of 8 talks at 4 different institutions over the course of academic year 2005-2006.

Ridge 2000 Planning Meeting, Vancouver – **Keynote Speaker** – *Interdisciplinary progress at the EPR 9-N Integrated Study Site*, November 2005.

Fermi National Accelerator Laboratory – **Invited Speaker** – *Applications of Ocean Acoustic Monitoring to Understand our Planet*, October 26<sup>th</sup> 2005.

Lamont-Doherty Earth Observatory – **MG&G Seminar** – *Applications of Ocean Acoustic Monitoring: Earthquakes and Life*, September 7<sup>th</sup> 2005.

Lamont-Doherty Earth Observatory – **Invited Speaker** – *Constraining the Rupture Length, Duration and Speed of the December 26<sup>th</sup> Great Sumatra-Andaman Earthquake* – Lecture series for School of International and Public Affairs MPA program in Environmental Science and Policy, July 12<sup>th</sup> 2005.

Association for Women in Science – **Invited Speaker** - Special fund-raiser screening of *Aliens of the Deep* – June 10<sup>th</sup> 2005.

Ridge 2000 & InterRidge Field School: Troodos Ophiolite, Cyprus - **Invited Speaker and Field Trip Leader** – *Declined due to scheduling conflict*, May 2005.

Colorado School of Mines – **Invited Speaker** – *Sound in the Sea and what it can teach us about our planet*, April 27<sup>th</sup> 2005

Lamont-Doherty Earth Observatory – Spring Public Lecture Series – **Invited Speaker** – *The Science Behind Aliens of the Deep* – April 17<sup>th</sup> 2005.

North Carolina School of Science and Mathematics – **Invited Speaker (2 talks)** – *Sound in the Sea & Mid-Ocean Ridge Earthquakes*, March 15-16<sup>th</sup> 2005.

Earth2Class Seminar, Lamont-Doherty Earth Observatory – **Invited Speaker** – program to work with NY school teachers on curriculum development, *Mid-Ocean Ridge Earthquakes*, March 12<sup>th</sup> 2005.

IMAX Theatre, Palisades NY – **Invited Speaker** – ‘Aliens of the Deep’ Screenings, March 6<sup>th</sup> 2005.

Information Transfer Meeting - Sperm Whale Seismic Study (Minerals Management Service), New Orleans – **Invited Speaker** – *Kondor Calibration Using LDEO Spar Buoy*, January 11<sup>th</sup> 2005.

Abraham Lincoln School, New York City – **Invited Speaker** – speaking with students about seafloor exploration, February 25<sup>th</sup> 2005.

Loews IMAX theatre, New York City - **Invited Keynote Speaker** - screening of ‘Aliens of the Deep’ for Caroline Kennedy and her NYC mentoring program (top 300 mentors and their students), January 5<sup>th</sup> 2005.

Numerous **Invited Appearances** at IMAX theatres in New York City and San Francisco, to introduce and answer questions on IMAX film ‘Aliens of the Deep’ for the press and the public, December 2004 – February 2005.

American Geophysical Union – San Francisco – **Invited Presenter** – Special Education Session on ‘Exploring the Potential of the Poster Format’, *Who Cares About Mid-Ocean Ridge Earthquakes? And Why?*, December 17<sup>th</sup> 2004.

American Geophysical Union – San Francisco – **Invited Presenter** – Ridge 2000 poster session, *The East Pacific Rise 8°-11° N Integrated Studies Site (ISS); Update and Opportunities*, December 13<sup>th</sup> 2004.

Wildlife Law Conference, New Orleans – **Invited Speaker and Panelist** – *Declined due to scheduling conflict*, November 20<sup>th</sup> 2004.

Lamont-Doherty Earth Observatory – **Keynote Speaker** – FOLD (Friends of Lamont-Doherty) Dinner, *Listening to the Ocean*, October 8<sup>th</sup> 2004.

26<sup>th</sup> Seismic Research Review, Trends in Nuclear Explosion Monitoring, Orlando, FL – **Invited Presenter** - *Long Range Acoustic Propagation of High Frequency Energy in the Indian Ocean from Icebergs and Earthquakes*, September 22<sup>nd</sup> 2004.

IEE, London, UK– **Invited Speaker** (impromptu) – Presentation at joint meeting of the European Science Foundation Marine Board and the National Science Foundation on Marine Mammals and Acoustic geosurveying techniques, *Calibration of the R/V Ewing*, September 27<sup>th</sup> 2004.

Lamont-Doherty Earth Observatory – **Keynote Speaker** - Presentation to the Members of the Board of the Doherty Foundation, *Listening to the Ocean*, June 18<sup>th</sup> 2004.

Columbia University – **Invited Expert/Speaker** – Presentation to subcommittee of the Columbia University Trustees, *Physical properties of sound propagation in water*, April 15<sup>th</sup> 2004.

Marine Mammal Commission Meeting - Baltimore, MD - **Invited Speaker** (impromptu) – Presentation at MMC Beaked Whale Conference, *Calibration of the R/V Ewing*, April 12<sup>th</sup> 2004.

Woods Hole Oceanographic Institution – **Invited Keynote Speaker** – *Background of T-phase Observations*, March 23<sup>rd</sup> 2004.

Lamont-Doherty Earth Observatory – **MG&G Seminar** (Senior Promotion Talk) - *Listening to the Ocean: Mid-Ocean Ridge Earthquakes and other acoustic signals*, February 4<sup>th</sup> 2004. (Promotion approved June 2004).

American Association of Physics Teachers – **Invited Keynote Speaker** - *Listening to the Ocean*, Jan. 27<sup>th</sup> 2004.

## FUNDING HISTORY

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### CURRENT SUPPORT:

*Collaborative Research: Caldera Dynamics and Eruption Cycles at Axial Seamount*, Recommended for funding 12/19, \$476,453, **Co-PI**.

*EAGER: Testing the Observation of Annual Seismic Velocity Variations at Axial Volcano*, Award: \$74,076 Dates: 6/1/18 – 5/31/20, **Lead PI (sole)**.

### PAST SUPPORT:

*Operation of the LDEO Ocean Bottom Seismometer Institutional Center*, IRIS, 10/12-9/19, Award: \$8,681,386, **Co-PI**.

*Collaborative Research: Understanding the Spatio-Temporal Characteristics of Earthquakes at Axial Seamount Late in an Eruptive Cycle*, National Science Foundation, Dates: 9/1/15 – 8/31/18, Award: \$345,458, **Co-PI**.

*Accomplishment Based Renewal: Temporal Evolution of Hydrothermal and Volcanic Processes at the East Pacific Rise From Microearthquake Data*, National Science Foundation, Dates: 4/1/10 – 3/31/16, Award: \$448,163, **Lead PI (sole)**.

*Support for the Cascadia Initiative Expedition Team*, National Science Foundation, Dates: 7/1/11-7/31/15, Award: \$205,126, **Lead LDEO PI**.

*RAPID: Development and Deployment of a Prototype Full Ocean Depth OBS*, National Science Foundation, Dates: 11/1/12-10/31/14, Award: \$49,573, **Lead PI**.

*Operation and Management of the LDEO instrument center of the National Ocean Bottom Seismometer Pool – Baseline*, National Science Foundation, Dates: 1/06 – 3/14, Award: \$9,162,221, **Co-PI**.

*Analysis of 9°50'N East Pacific Rise Seismicity: Insight into Hydrothermal and Magmatic Processes*, National Science Foundation, Dates: 9/07-8/11, Award, \$315,563, **Lead PI**.

*Calibration of the R/V Langseth Seismic Sources.*, National Science Foundation, Dates: 8/06-7/09, Award: \$898,837, **Lead PI**.

*Supplement to: Calibration of the R/V Langseth Seismic Sources*, National Science Foundation, Dates: 8/09-7/10, Award: \$103,173, **Lead PI**.

*Post-eruption seismic monitoring at 9N: Toward capturing a full volcanic cycle*, National Science Foundation, Dates: 2/07-2/09, Award, \$99,981, **Lead PI**.

*Seismic Monitoring of East Pacific Rise Ridge 2000 Integrated Studies Site*, National Science Foundation, Dates: 9/03-8/08, Award: \$481,656, **Lead PI**.

*Toward a Better Understand of Man-Made Acoustic Sources and Whales*, National Science Foundation, Dates: 3/03-2/06, Award: \$278,065, **Lead PI**.

*Collaborative Research: The effects of Changes in Mantle Temperature on Melt Supply and Crustal Accretion: An MCS reflection and OBH refraction study of the South East Indian Ridge*, National Science Foundation, Dates: 8/01-3/06, Award: \$864,448, **Co-PI**.

*Collaborative Research: Mantle Flow at Rifts: Analysis of a Natural Laboratory at the Gulf of Suez Using a Passcal Seismic Array and Numerical Modeling – (Relocated due to security concerns) – CATSCAN – Calabria-Apennine-Tyrrhenian Subduction-Collision-Accretion Network: A joint American-Italian project to monitor earthquakes on the most active seismic belt in Italy*, National Science Foundation, Dates: 6/01-5/06, Award: \$1,199,021, **Co-PI**.

*Operation of an Ocean Bottom Seismic Instrument Pool at LDEO for the Benefit of the Community*, National Science Foundation, Dates: 7/00-12/05, Award: \$2,775,752, **Co-PI**.

*Seismicity and Airgun Sources as tools for hydroacoustic calibration in the Indian Ocean*, Comprehensive Test Ban Treaty Organization, Dates: 11/03-3/05, Award: \$60,676, **Lead PI**.

*Location, Characterization and Quantification of hydroacoustic signals in the Indian Ocean*, Defense Threat Reduction Agency, Dates: 9/01-8/04, Award: \$396,717, **Lead PI**.

*Development of an Ocean Bottom Seismometer Instrument Pool for Imaging the Earths Interior and Monitoring its dynamics*, National Science Foundation, Dates: 7/00-6/02, Award: \$1,100,611, **Co-PI**.

*Provision of data from arrays in the Pacific and Atlantic oceans and their utilization for ground-truthing errors in the REB*, Comprehensive Test Ban Treaty Organization, Dates: 1/02-12/02, Award: \$156,885, **Lead PI**.

*Basic Seafloor Reconnaissance of T-phase data from the NOAA Autonomous Hydrophone Array: Assessing the Nature of Magmatic/Volcanic events on the East Pacific Rise, 20 degrees North to 25 degrees South*, National Science Foundation, Dates: 10/98-9/01, Award: \$86,419, **Lead LDEO PI**.

*Long-term monitoring of seismicity at the Mid-Atlantic Ridge using Autonomous Underwater hydrophones*, National Science Foundation, Dates: 11/98-10/03, Award: \$179,897, **Lead LDEO PI**.

*Active Seismic Imaging of Axial Volcano*, National Science Foundation, Dates: 12/98-5/01, Award: \$217,959, **Co-PI**.

*Analysis and Interpretation of Axial Seamount Tiltmeter and OBS data*, National Science Foundation, Dates: 02/97-10/97, Award: \$15,000, **Co-PI**.

*A seismic refraction investigation of crustal thickness variations between the Australian-Antarctic Discordance and the neighboring southeast Indian Ridge: Data Analysis*, National Science Foundation, Dates: 11/95-10/97, Award: \$50,278, **Lead PI**.

**Total External Funding as Lead PI: \$3,886,009**

**Total External Funding as Co-PI: \$24,125,673**

## SEA-GOING EXPERIENCE

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EXPERIMENT: June 23<sup>rd</sup>- July 3<sup>rd</sup> 2014; 11 days; TN312 – Cascadia Initiative *R/V Thompson*  
*Purpose:* Recover 30 OBSs for the Cascadia Experiment, utilizing *ROV Jason*  
*Responsibilities:* Co-Chief Scientist  
*Chief Scientist:* Allen, Tolstoy

EXPERIMENT: July 10<sup>th</sup> - July 23<sup>rd</sup> 2012; 14 days; TN283 – Cascadia Initiative *R/V Thompson*  
*Purpose:* Recover 24 and deploy 6 OBSs for the Cascadia Experiment, utilizing *ROV Jason*  
*Responsibilities:* Chief Scientist  
*Chief Scientist:* Tolstoy, Allen

EXPERIMENT: July 23<sup>rd</sup>-August 2<sup>nd</sup> 2011; 10 days; W1107A– Cascadia Initiative *R/V Wecoma*  
*Purpose:* Deploy 15 trawl-resistant OBSs for the Cascadia Experiment  
*Responsibilities:* Chief Scientist  
*Chief Scientist:* Tolstoy, Trehu

EXPERIMENT: June 23<sup>rd</sup> 2010; 1 day; *R/V Seawolf*  
*Purpose:* Test deployment and recovery of shallow water shielded OBSs  
*Responsibilities:* Participant  
*Chief Scientist:* Barclay

EXPERIMENT: January 27- February 5<sup>th</sup> 2008; 10 days; ML0802, *R/V Marcus Langseth*  
*Purpose:* Calibrated the air-gun arrays of the *R/V Marcus Langseth*.  
*Responsibilities:* Chief Scientist  
*Chief Scientist:* Tolstoy

EXPERIMENT: August 24-27 2005; 4 days; CATSCAN, *R/V Universitatis*  
*Purpose:* Recover array of OBSs off-shore Southern Italy as part of CATSCAN experiment.  
*Responsibilities:* Chief Scientist  
*Chief Scientist:* Tolstoy

EXPERIMENT: October 1-2 2004; 2 days; CATSCAN, *R/V Universitatis*  
*Purpose:* Deploy array of OBSs off shore Southern Italy as part of CATSCAN experiment.  
*Responsibilities:* Chief Scientist  
*Chief Scientist:* Tolstoy

EXPERIMENT: September 25th – October 6<sup>th</sup> 2003; 12 days; XLIFE - Pacific, RV Keldysh  
*Purpose:* Research/Filming cruise in preparation for the 3-D IMAX movie ‘Aliens of the Deep’. Deploy array of OBSs at 9°50’N EPR. Dive in MIR submersibles at 9°50’N.  
*Responsibilities:* Deploy OBS array. Scientific guide and participant.  
*Director:* James Cameron

EXPERIMENT: July 23rd – August 18<sup>th</sup> 2003; 27 days; XLIFE - Atlantic, RV Keldysh  
*Purpose:* Research/Filming cruise in preparation for the 3-D IMAX movie ‘Aliens of the Deep’. Diving in MIR submersibles to Menez Gwen, Lost City and Snake Pit.  
*Responsibilities:* Scientific guide and participant.  
*Director:* James Cameron

EXPERIMENT: March 24 – May 10 2000; 48 days; AHA, RV Melville  
*Purpose:* Seabeam, DSL-120, Argo, dredging, rock core –investigating potential EPR/GR eruption sites.  
*Responsibilities:* Co-Chief Scientist.  
*Chief Scientists:* Fornari, Perfit, Tolstoy

EXPERIMENT: February 23 -March 20 2000; 27 days; MAR-AUH, RV Knorr  
*Purpose:* Recover and re-deploy 6 autonomous hydrophone moorings to monitor Mid-Atlantic Ridge from 15°-35°N. Seabeam survey of ridge axis.  
*Responsibilities:* Co-Chief Scientist.  
*Chief Scientists:* Smith, Tolstoy

EXPERIMENT: April 17 - May 3 1999; 16 days; Axial Volcano, RV Maurice Ewing  
*Purpose:* Active source tomography on Axial Volcano using airguns and OBSs.  
*Responsibilities:* Chief Scientist.  
*Chief Scientists:* Tolstoy, Menke, Webb

EXPERIMENT: January 30 -February 24 1999; 26 days; MAR-AUH, RV Maurice Ewing  
*Purpose:* Deploy 6 autonomous hydrophone moorings to monitor Mid-Atlantic Ridge from 15°-35°N.  
*Responsibilities:* Co-Chief Scientist.  
*Chief Scientists:* Smith, Tolstoy, Fox

EXPERIMENT: June 11, July 30 1997; 2 days (2 x 1 day); LEAP FROG I & II, RV John Martin  
*Purpose:* Deploy and Recover OBH as part of MOISE experiment.  
*Responsibilities:* In charge of deployment & recovery of L-Cheapo OBH. (Chief Scientist)  
*Chief Scientists:* McClain, Tolstoy

EXPERIMENT: May-June 1996; 42 days; MELT-II, RV Thompson  
*Purpose:* Recover OBSs and deployment EM instruments for MELT experiment  
*Responsibilities:* Precruise organization, In charge of recovery of Orcutt OBSs. Preliminary data processing.  
*Chief Scientists:* Chave, Dorman

EXPERIMENT: November-December 1994; 19 days; WEST08, RV Melville  
*Purpose:* Seismic Refraction investigation of AAD and SEIR.  
*Responsibilities:* Precruise organization, Design and coordination of seismic experiment. Instrument preparation, deployments and recoveries.  
*Chief Scientist:* Orcutt

EXPERIMENT: September 1994; 5 days; Tilt/Seismic Recovery cruise; RV Wecoma



*Purpose:* Recovery of long-baseline tiltmeters, tilt-OBSs, and magnetometers  
*Responsibilities:* Co-chief scientist, instrument recoveries.  
*Chief Scientists:* Constable, Tolstoy

**EXPERIMENT:** June 1994; 6 days; Tilt/Seismic Deployment Cruise; RV Wecoma  
*Purpose:* Deployment for tiltmeter, tilt-OBS and magnetometer experiment on the Juan De Fuca  
*Responsibilities:* Co-chief scientist, OBS electronics checkout, preparation, deployment  
*Chief Scientists:* Constable, Tolstoy

**EXPERIMENT:** April-May 1994; 42 days; CLASSIC EW9405; RV Maurice Ewing  
*Purpose:* OBS tomography experiment; Clipperton Fracture Zone.  
*Responsibilities:* OBS electronics checkout, preparation, deployment and recovery  
*Chief Scientists:* McClain, Orcutt, Harding

**EXPERIMENT:** Nov. 1992 - Feb. 1994; total of 8 days (4 x 2 days); HURL Legs I-IV; RV Sproul  
*Purpose:* Long term OBS deployment to test instrument teleseismic capabilities and compare OBS tiltmeters with long baseline tilt meters (off San Diego).  
*Responsibilities:* Co-chief scientist, site choice, OBS electronics checkout, preparation, deployment and recovery  
*Chief Scientists:* Constable, Tolstoy

**EXPERIMENT:** May 1992; 12 days; EW9204; RV Maurice Ewing  
*Purpose:* OBS Refraction Experiment across the Marquesas Islands.  
*Responsibilities:* OBS electronics checkout, preparation, deployments, recoveries.  
*Chief Scientists:* McNutt, Detrick

**EXPERIMENT:** April 1991; 35 days; TERA; RV Washington & RV Ewing  
*Purpose:* Two ship multichannel ESP, CDP, WAP, and OBS tomography experiment. EPR 14-17°S.  
*Responsibilities:* OBS electronics checkout, preparation, deployments, recoveries. ESP navigation and airgun watches.  
*Chief Scientists:* Detrick, Orcutt, Harding, Mutter & Vera.

**EXPERIMENT:** October 1990; 7 days; SAMSON; RV Endeavor  
*Purpose:* Deployment of part of Seismic noise array off the coast of North Carolina.  
*Responsibilities:* OBS electronics checkout, preparation, deployments, recoveries.  
*Chief Scientist:* Orcutt

**EXPERIMENT:** March-April 1990; 35 days; PLUME; RV Thomas Washington  
*Purpose:* Multidisciplinary experiment with OBS refraction lines, gravity, magnetic and SeaBeam surveying in the 30-36° S area of the Mid-Atlantic Ridge.  
*Responsibilities:* OBS electronics checkout, preparation, deployments, recoveries. Calling & monitoring shots.  
*Chief Scientists:* Orcutt, Forsyth

**EXPERIMENT:** August 1989; 7 days; LFASE; RV Melville  
*Purpose:* OBS array at DSDP site 534A.  
*Responsibilities:* Extensive testing of modified OBSs prior to cruise, On boards check outs and deployments using Deep Tow vehicle.  
*Chief Scientists:* Orcutt, Bibee, Spiess, Farrell

EXPERIMENT: June 1989; 21 days; CD39/89; RRS Charles Darwin  
*Purpose:* Active Source Electromagnetic Experiment,  
*Responsibilities:* Watchstanding.  
*Chief Scientists:* Constable, Sinha, &. Cox

EXPERIMENT: Sept. 1987; 7 days; RV Sproul  
*Purpose:* OBS bottom shot test cruise  
*Chief Scientist:* Dorman