

Danielle F. Sumy

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Maiden Name: Danielle F. Stroup
Citizenship: United States of America

EDUCATION:

- 2011 *PhD conferral on 18 May 2011*, Columbia University, New York, NY
Title: The Mechanisms and Triggering of Earthquakes in the Oceanic Setting
Thesis Advisors: James Gaherty, William Menke, and Maya Tolstoy
- 2009 *M.Phil.* Columbia University, New York, NY
Major: Marine Geophysics *Minors:* Seismology, Tectonophysics
- 2007 *M.A.* Columbia University, New York, NY
- 2005 *B.S.* Florida State University, Tallahassee, FL (*magna cum laude*)
Major: Interdisciplinary Physics, with Geology *Minors:* Mathematics, French

PROFESSIONAL HISTORY:

- 9/05 – present Graduate Fellow, Department of Earth and Environmental Sciences
Lamont-Doherty Earth Observatory, Columbia University
- 5/04 – 8/04 Intern, Research Experience for Undergraduates, National Science Foundation
Department of Physics, University of Colorado
Title: Surface Wave Dispersion: Improving the Global Seismic Model and
Observing Hotspots of the Southwest Indian Ridge
Advisor: Michael Ritzwoller
- 1/04 – 12/04 Research Assistant, Department of Geology, Florida State University
- 6/03 – 8/03 Intern, Research Experience for Undergraduates, National Science Foundation
Department of Oceanography, University of Rhode Island
Title: Analyzing Tsunamigenesis Using Relationships Between Seismic Moment
and Spectral Strength
Advisor: Yang Shen

RESEARCH INTERESTS:

- Observational seismology and field deployment of ocean bottom seismometers
- Earthquake characteristics and mechanisms of faulting
- Static and dynamic stress changes that trigger earthquake activity
- Magmatic, tectonic, and hydrothermal interactions at mid-ocean ridges

FIELD AND SEA GOING EXPERIENCE:

- 8/10 Student-led field trip on glaciers and volcanoes, Iceland
2-3/10 Shipboard scientific party, *R/V Roger Revelle*, Ocean bottom seismometer deployment,

- Papua New Guinea
- 6/09 Seismometer installation team, Bermuda.
- 1/08 Shipboard scientific party, *R/V Langseth*, Hydroacoustic calibration of airgun array for marine mammal impact assessment, Gulf of Mexico
- 1/07 Shipboard scientific party, *R/V Atlantis*, Deep-tow camera operations and ocean bottom seismometer recovery, 9°50'N East Pacific Rise
- 7-8/03 Watchstander, *R/V Bjarni Seamundsson*, Deep-tow camera operations, CHIRP surveying, and coring, Tjornes Fracture Zone

AWARDS AND FELLOWSHIPS:

- 2009 American Geophysical Union – Outstanding Student Paper Award
- 2009 Ridge 2000 Featured Paper
- 2005 Graduate Research Fellowship, Columbia University
- 2005 Lynn Shannon Proctor Award – Most Promising Female Student in Physics
Department of Physics, Florida State University
- 2005 Elected Phi Beta Kappa
- 2005 Elected Sigma Pi Sigma
- 2003 Elected National Society of Collegiate Scholars
- 2001 Florida Bright Futures Scholarship
- 2001 Florida State University Tuition Scholarship for Academic Achievement

PROFESSIONAL SOCIETIES:

- American Association of Petroleum Geologists
- American Geophysical Union
- The American Association for the Advancement of Science

UNIVERSITY SOCIETIES:

- Women in Science at Columbia University
- Women in Math, Science, and Engineering at Florida State University

PUBLICATIONS:

Peer-reviewed journal articles

- Crone, T. J., M. Tolstoy, and **D. F. Stroup** (2010), The Permeability Structure of Young Ocean Crust from Poroelastically Triggered Earthquakes, *submitted to Geophysical Research Letters*.
- Stroup, D. F.**, M. Tolstoy, T. J. Crone, A. Malinverno, D. R. Bohnenstiehl, and F. Waldhauser (2009), Systematic Along-Axis Tidal Triggering of Microearthquakes Observed at 9°50'N East Pacific Rise, *Geophys. Res. Lett.*, doi: 10.1029/2009GL039493.
- Stroup, D. F.**, D. R. Bohnenstiehl, M. Tolstoy, F. Waldhauser, and R. T. Weekly (2007), Pulse of the seafloor: Tidal Triggering at 9°50'N East Pacific Rise, *Geophys. Res. Lett.*, doi: 10.1029/2007GL030088.

Published meeting abstracts

- Sumy, D. F.**, J. B. Gaherty, T. Diehl, W.-Y. Kim, F. Waldhauser, and J. A. Collins (2010), The Distribution of Seismic Deformation in the Southern Gulf of California, EarthScope Institute of the Spectrum of Fault Slip Behaviors, Portland, OR, 11-14 October.

- Sumy, D. F.**, J. B. Gaherty, T. Diehl, J. A. Collins, C. Huerta, and R. R. Castro (2010), Seismicity and Faulting in the Southern Gulf of California, 2010 IRIS Annual Workshop, Snowbird, UT, 9-11 June.
- Sumy, D. F.**, J. B. Gaherty, J. A. Collins, C. Huerta, and R. R. Castro (2009), Seismicity and Faulting in the Southern Gulf of California, *Eos Trans. AGU*, 90(54), *Fall Meet. Suppl.*, Abstract T31A-1779.
- Stroup, D.F.**, M. Tolstoy, T. J. Crone, A. Malinverno, D. R. Bohnenstiehl, and F. Waldhauser (2009), Systematic variations in along-axis tidal triggering of microearthquakes observed at 9°50'N East Pacific Rise, RIDGE2000 Integration and Synthesis Workshop: Developing a holistic view of oceanic spreading center processes, St. Louis, MO, 1-3 October.
- Crone, T. J., M. Tolstoy, and **D. F. Stroup Sumy** (2009), Using two-dimensional models of poroelastic fluid flow to constrain the permeability structure of young oceanic crust, RIDGE2000 Integration and Synthesis Workshop: Developing a holistic view of oceanic spreading center processes, St. Louis, MO, 1-3 October.
- Gaherty, J., **D. Stroup**, J. Collins, C. Huerta, and R. Castro (2009), Seismicity and Faulting in the Southern Gulf of California from the Sea of Cortez Ocean-Bottom Array (SCOOBA) seismic experiment, MARGINS Rupturing Continental Lithosphere: Synthesis and New Perspectives, Charleston, SC, 30 April – 2 May.
- Gaherty, J., **D. Stroup**, J. Collins, C. Huerta, and R. Castro (2008), Seismicity and Faulting in the Southern Gulf of California from the Sea of Cortez Ocean-Bottom Array (SCOOBA) experiment, *Eos Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract T13E-01.
- Crone, T. J., M. Tolstoy, and **D. F. Stroup** (2008), Two-dimensional Models of Poroelastically-Controlled Earthquake Triggering at the East Pacific Rise, *Eos Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract B23F-06.
- Stroup, D. F.**, M. Tolstoy, T. J. Crone, A. Malinverno, D. R. Bohnenstiehl, and F. Waldhauser (2008), Tidal Triggering of Microearthquakes Constrains Permeability at 9°50'N East Pacific Rise, *Eos Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract B21A-0324.
- Stroup, D. F.**, M. Tolstoy, T. J. Crone, A. Malinverno, D. R. Bohnenstiehl, and F. Waldhauser (2008), The Relationship between Poroelastic Effects and Tidal Triggering of Microearthquake Activity at 9°50'N East Pacific Rise , RIDGE 2000 Community Meeting, Mantle to Microbe: Integrated Studies at Oceanic Spreading Centers, Portland, OR, 24-26 March.
- Stroup, D. F.**, D. R. Bohnenstiehl, M. Tolstoy, F. Waldhauser, and R. T. Weekly (2007), Variability in Tidal Triggering of Microearthquake Activity at 9°50'N East Pacific Rise, *Eos Trans. AGU*, 88(52), *Fall Meet. Suppl.*, Abstract T33B-1377.
- Stroup, D. F.**, D. R. Bohnenstiehl, M. Tolstoy, F. Waldhauser, and R. T. Weekly (2006), Tidal Triggering of Microearthquakes at 9°50'N on the East Pacific Rise, *Eos Trans. AGU*, 87, *Fall Meet. Suppl.*, Abstract B318-1102.
- Stroup, D. F.**, M. Tolstoy, D. R. Bohnenstiehl, and F. Waldhauser (2006), Tidal Triggering of Microseismicity at 9°50'N on the East Pacific Rise, RIDGE 2000 sponsored Ridge Theoretical Institute, Modeling Hydrothermal Processes at Oceanic Spreading Centers: Magma to Microbe, Mammoth Lakes, CA, 25-30 June.
- Stroup, D. F.**, and J. E. Georgen (2004), Inferred Variations in Crustal Accretion Processes Along the Southwest Indian Ridge Near the Marion Hotspot, *Eos Trans. AGU*, 85, *Fall Meet. Suppl.*, Abstract T41D-1245.

INVITED TALKS:

- “*Tidal Triggering of Microearthquakes at 9°50’N East Pacific Rise*”, Rutgers University, Department of Earth and Planetary Science Weekly Colloquium Series, Fall 2009.
- “*Pulse of the seafloor: Tidal Triggering of Microearthquakes at 9°50’N East Pacific Rise*”, Lamont-Doherty Earth Observatory’s Division of Seismology, Geology, and Tectonophysics Seminar Series, Fall 2007.

EDUCATION AND OUTREACH ACTIVITIES:

Fall 2008, 2010: *Participant*, Lamont-Doherty Earth Observatory Open House
(prepared ‘Bathtub Science’ experiment and led tours of the campus)

Fall 2009: *Committee Chairperson*, Chevron Student Initiative Fund Panel

Spring 2009: *Lab Instructor*, Solid Earth Systems
Prof. Steve Goldstein and Sidney Hemming

Spring 2009: *Committee Member*, Chevron Student Initiative Fund Panel

Summer 2008: *Panelist*, Women in Science at Columbia, REU graduate school panel

Spring 2008: *Teaching Assistant*, Introduction to Geophysics, Prof. Dennis Hayes

Fall 2006: *Lab Instructor*, Solid Earth Systems, Prof. William Menke

B. S. Advisor: J. E. Georgen

M. A. Advisors: D. R. Bohnenstiehl, W. Menke, and M. Tolstoy

Ph.D. Committee/Advisors: J. B. Gaherty, W. Menke, and M. Tolstoy