

Diana C. Roman

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Current Appointment

2011- **Staff Scientist**, Department of Terrestrial Magnetism, Carnegie Institution of Washington

Previous Academic Appointment

2006-2011 **Assistant Professor**, Department of Geology, University of South Florida

Education and Postdoctoral Training

2004-2006 **NERC Postdoctoral Fellow**, University of Leeds, U.K.

2001-2004 **Ph.D. in Geological Sciences**, University of Oregon

1999-2001 **M.S. in Geological Sciences**, University of Oregon

1994-1997 **B.S. in Applied Economics**, Cornell University

Awards

2008 George Walker Award, International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

2007 University of South Florida Outstanding Research Achievement Award

Articles in Review (* denotes student first author)

29. Rodgers MJ*, Rodgers S, **Roman DC**. 'PeakMatch': A Java program for multiplet analysis of large seismic datasets. In revision, *Seismological Research Letters*.

Published Articles (* denotes student first author)

28. McNutt SR, **Roman DC** (2015). Volcanic Seismicity. Sigurdsson et al. (Eds.) *Encyclopedia of Volcanoes*, 2nd Edition.

27. Johnson JH, Swanson, DA, **Roman DC**, Poland MP, Thelen W (2015). Crustal stress and structure at Kilauea Volcano inferred from seismic anisotropy. In: Carey R, Poland MP, Cayol V, Weis D (Eds.) *Hawaiian Volcanoes: From Source to Surface*, AGU Geophysical Monograph, 251-268.

26. Rodgers MJ*, **Roman DC**, Geirsson H, LaFemina P, McNutt SR, Muñoz A, Tenorio V. (2015) Stable and unstable phases of elevated seismic activity at the persistently restless Telica Volcano, Nicaragua. *Journal of Volcanology and Geothermal Research* 290: 63-74.

25. Geirsson, H*, Rodgers MJ, LaFemina P, Witter M, **Roman DC**, Munoz A, Tenorio V, Alvarez J, Conde Jacobo V, Nilsson D, Galle B, Feineman MD, Furman T, Morales A (2014). Multidisciplinary observations of the 2011 explosive eruption of Telica volcano, Nicaragua: Implications for the dynamics of low-explosivity ash eruptions. *Journal of Volcanology and Geothermal Research* 271: 55-69.
24. Wauthier C, **Roman DC**, Poland MP (2013) Moderate-magnitude earthquakes induced by magma reservoir inflation at Kīlauea Volcano, Hawai‘i. *Geophysical Research Letters* 40: 5366-5370.
23. Bercovici, D, Jellinek AM, Michaut C, **Roman DC**, Morse R (2013) Volcanic tremors and magma wagging: Gas flux interactions and forcing mechanism. *Geophysical Journal International* 195(2): 1001-1022.
22. Rodgers MJ,* **Roman DC**, Geirsson H, LaFemina P, Munoz A, Guzman C, Tenorio V (2013). Seismicity accompanying the 1999 eruptive episode at Telica Volcano, Nicaragua. *Journal of Volcanology and Geophysical Research* 265: 39-51.
21. **Roman DC**, Gardine MD (2013) Seismological evidence for long-term and rapidly accelerating magma pressurization preceding the 2009 eruption of Redoubt Volcano, Alaska. *Earth and Planetary Science Letters* 371: 226-234.
20. Lehto HL*, **Roman DC**, Moran SC (2013) Source processes of persistent shallow seismicity during times of eruption and non-eruption between 1981 and 2010 at Mount St. Helens, Washington. *Journal of Volcanology and Geophysical Research* 256: 1-15.
19. Buurman H*, West ME, **Roman DC** (2013). Tracking a closing volcanic system using repeating earthquakes. *Geology* 41: 511-514.
18. O'Brien J*, **Roman DC**, Dixon J, Power JA, Arnold R. (2012) Source processes and cause of the 2006 seismic swarm at Mt. Martin, Katmai Volcanic Cluster, Alaska. *Journal of Volcanology and Geophysical Research* 229-230: 13-22
17. Kilgore WW*, **Roman DC**, Biggs J, Hansen R. (2011) Seismic and geodetic investigation of the 1996-1998 earthquake swarm at Strandline Lake, Alaska. *Geophysical Journal International* 186: 1365-1379
16. **Roman DC**, Savage MK, Arnold R, Latchman JL, De Angelis S (2011). Analysis and forward modeling of seismic anisotropy during the ongoing eruption of the Soufriere Hills Volcano, Montserrat (1996-2007). *Journal of Geophysical Research* 116: B03201
15. **Roman DC**, Power JA (2011) Mechanism of the 1996-97 non-eruptive VT earthquake swarm at Iliamna Volcano, Alaska. *Bulletin of Volcanology* 73: 143-153.
14. Moran SC, Newhall C, **Roman DC** (2011) Failed magmatic eruptions: Late-stage cessation of magma ascent. *Bulletin of Volcanology* 73: 115-122
13. Lehto HL*, **Roman DC**, Moran SC (2010) Temporal changes in stress preceding the 2004-2008 eruption of Mount St. Helens, Washington. *Journal of Volcanology and Geophysical Research* 198: 129-142

12. **Roman DC**, DeAngelis S, Latchman J, White RA (2008) Patterns of volcanotectonic seismicity and stress during the ongoing eruption of the Soufriere Hills Volcano, Montserrat (1995-2007). *Journal of Volcanology and Geothermal Research* 173: 230-244
11. **Roman DC**, Campisano C, Quade J, DiMaggio E, Arrowsmith R, Feibel C (2008) Composite tephrostratigraphy of the Dikika, Gona, Hadar, and Ledi-Geraru Project Areas, Northern Awash, Ethiopia. In: "The Geology of Early Humans in the Horn of Africa" *Geological Society of America Special Paper* 446: 119-134.
10. Wynn JG, **Roman DC**, Alemseged Z, Reed D, Geraads D, Munro S (2008) Stratigraphy, depositional environments, and basin structure of the Hadar and Busidima Formations at Dikika. In: The Geology of Early Humans in the Horn of Africa (Quade J., Wynn JG, Eds.) *Geological Society of America Special Paper* 446: 10-42.
9. **Roman DC**, Heron P (2007) Effect of regional tectonic setting on local stress field response to magmatic activity. *Geophysical Research Letters* 34, L13310, doi: 10.1029/2007GL030222
8. **Roman DC**, Neuberg J, Luckett RR (2006) Assessing the likelihood of eruption through analysis of VT earthquake fault-plane solutions. *Earth and Planetary Science Letters* 248: 229-237
7. Wynn JG, Alemseged Z, Bobe R, Geraads D, Reed D, **Roman D** (2006) Geology and paleontology of the Pliocene hominin locality at Dikika, Ethiopia. *Nature* 443: 332-336
6. **Roman DC**, Cashman KV (2006) The origin of volcanotectonic earthquake swarms. *Geology* 34: 457-460
5. **Roman DC**, Cashman KV, Gardner CA, Wallace PJ, Donovan JJ (2006) Storage and interaction of compositionally heterogeneous magmas from the 1986 eruption of Augustine Volcano, Alaska. *Bulletin of Volcanology* 68: 240-254
4. **Roman DC** (2005) Numerical models of volcanotectonic earthquake triggering on non-ideally oriented faults. *Geophysical Research Letters* 32: L02304, doi: 10.1029/2004GL021549
3. **Roman DC**, Moran SC, Power JA, Cashman KV (2004) Temporal and spatial variation of local stress fields during the 1992 eruptions of Crater Peak vent, Mount Spurr Volcano, Alaska. *Bulletin of the Seismological Society of America* 94: 2366-2379
2. Geraads D, Alemseged Z, Reed D, Wynn J, **Roman D** (2004) The Pleistocene fauna from Asbole, lower Awash Valley, Ethiopia. *Géobios* 37: 697-718
1. **Roman DC**, Power JA, Moran SC, Cashman KV, Doukas MP, Neal CA, Gerlach TM (2004) Evidence for dike emplacement at Iliamna Volcano, Alaska in 1996. *Journal of Volcanology and Geothermal Research* 130: 265-284

Recent Conference Abstracts (past three years)

Johnson J, White R, **Roman DC** (2015) Layered seismic anisotropy at Icelandic volcanoes: implications for crustal growth and consequences for shear wave splitting monitoring. EGU General Assembly.

Roman DC, Rodgers M, Geirsson H, La Femina PC, Munoz A, Tenorio V (2014) Short-term seismic quiescence immediately preceding explosive eruptions. SSA Annual Meeting, Anchorage, AK.

Roman DC, Behar A, Elkins-Tanton LT, Fouch MJ (2013) Development and field-testing of the BENTO box: A new satellite-linked data collection system for volcano monitoring. AGU Fall Meeting, San Francisco, CA.

Wauthier C, **Roman DC**, Poland MP, Miklius A, Hooper AJ, Fukushima Y, Cayol V (2013). Magma-tectonic interactions at Kilauea volcano revealed by the modeling of geodetic and seismic data. AGU Fall Meeting, San Francisco, CA.

Rodgers M, **Roman DC**, Geirsson H, La Femina PC, Munoz A, Tenorio V (2013) Short-term seismic quiescence immediately preceding explosions during the 2011 eruption of Telica Volcano, Nicaragua. AGU Fall Meeting, San Francisco, CA.

Roman DC (2013) Detection and interpretation of stress changes at restless volcanoes through analysis of VT earthquake fault-plane solutions (invited talk). IAVCEI General Assembly, Kagoshima, Japan.

Roman DC, Behar A, Fouch M, Elkins-Tanton L (2013) The BENTO Box: Development and field-testing of a new satellite-linked data collection system for volcano monitoring. IAVCEI General Assembly, Kagoshima, Japan.

Wauthier C, **Roman DC** (2013) Geodetic and seismic models of the 2007 May 24 earthquakes at Kilauea Volcano, Hawai'i. IAVCEI General Assembly, Kagoshima, Japan.

Wauthier C, **Roman DC**, Poland MP (2013) Dynamics of Kilauea's magmatic system imaged using a joint analysis of geodetic and seismic data. IAVCEI General Assembly, Kagoshima, Japan.

Rodgers M, Geirsson H, Witter M, **Roman DC**, La Femina PC (2013) Precursors to explosive eruptions at the persistently restless Telica Volcano, Nicaragua. IAVCEI General Assembly, Kagoshima, Japan.

Rodgers M, Geirsson H, Witter MR, **Roman DC**, La Femina PC, Munoz A, Tenorio V (2012) Decreases in LP seismicity before the May 2011 eruption of the persistently restless Telica Volcano, Nicaragua. AGU Fall Meeting, San Francisco, CA.

Roman DC, Wauthier C, Poland MP (2012) Intermediate-term seismic precursors to the 2007 Father's Day intrusion and eruption at Kilauea Volcano, Hawai'i. AGU Fall Meeting, San Francisco, CA

Roman DC (2012) Intermediate-term seismic precursors to the 2007 Father's Day intrusion and eruption at Kilauea Volcano, Hawai'i. AGU Chapman Conference on Hawaiian Volcanism, Kona, Hawai'i.

O'Brien JF, Jolly AD, Fournier N, Cole-Baker J, Hurst T, **Roman DC** (2011) Seismic tremor and gravity measurements at Inferno Crater Lake, Waimangu Geothermal Field, New Zealand. American Geophysical Union Fall Meeting, San Francisco, CA

Roman DC, Vogfjord KS, Geirsson H, LaFemina PC (2011) Spatial variations in stress from shear-wave splitting analysis at Hekla Volcano, Iceland. American Geophysical Union Fall Meeting, San Francisco, CA

Witter MR, Geirsson H, LaFemina PC, **Roman DC**, Rodgers M, Munoz A, Morales A, Tenorio V, Chavarria D, Feineman MD, Furman T, Longley A (2011) May 2011 eruption of Telica Volcano,

Nicaragua: Multidisciplinary observations. American Geophysical Union Fall Meeting, San Francisco, CA

Rodgers M, **Roman DC**, Geirsson H, LaFemina PC, Witter MR, Munoz A, Tenorio V (2011) Seismicity associated with the May 2011 eruption of Telica Volcano, Nicaragua. American Geophysical Union Fall Meeting, San Francisco, CA

Roman DC, Power JA (2011) Mechanisms of VT earthquakes during the 2002-2006 volcano-seismic unrest at Mt. Spurr, Alaska, USA. IUGG General Assembly, Melbourne, Australia.

Other Academic Publications

Roman DC, Power JA (2014) Grand Challenges in U.S. Volcano Seismology. White paper, Carnegie Institution of Washington, 5 pp. IAVCEI newsletter 2014 no. 3-4.

Roman DC (2004) Changes in local stress field orientation in response to magmatic activity. Ph.D. Dissertation, University of Oregon, 188 pp.

Roman DC (2001) The 1986 eruption of Augustine Volcano, Alaska: Magma storage and ascent. M.S. Thesis, University of Oregon, 129 pp.

Grants in Support of Research

- 2015 National Science Foundation GeoPRISMS Program, “From the Slab to the Surface: Origin, Storage, Ascent, and Eruption of Volatile-Bearing Magmas” \$212,081
- 2014 The Brinson Foundation, “Development and field-testing of the BENTO box: A new satellite-linked data collection system for volcano monitoring” \$50,000
- 2014 National Science Foundation Geophysics Program, “2014 U.S. Volcano Seismology Workshop” \$3,000
- 2013 Carnegie Institution of Canada, “Seismic Tremors and Wagging Magma: A key field test of a potentially powerful eruption forecasting tool” \$17,000
- 2013 The Brinson Foundation, “Development and field-testing of the BENTO box: A new satellite-linked data collection system for volcano monitoring” \$50,000
- 2012 Richard Lounsbery Foundation, “Development and field-testing of the BENTO box: A new satellite-linked data collection system for volcano monitoring” \$84,862
- 2009 United States Geological Survey Volcano Hazards Program, “Development of an interpretive framework and computational tools for stress field monitoring at Redoubt Volcano, Alaska, and other Aleutian volcanoes” \$159,781
- 2009 National Science Foundation Geophysics Program, “Collaborative Research: Toward an Understanding of Magmatic and Seismogenic Processes Beneath Quiescently Active Volcanoes” \$168,202
- 2008 National Science Foundation Geophysics Program, “Development of a new method for

- determining the proximal cause of cryptovolcanic earthquake swarms” \$83,584
- 2007 ACS Petroleum Research Fund Type G Grant, “Shear-wave splitting analysis of stress field perturbations around an active magmatic conduit” \$40,000
- 2007 University of South Florida New Researcher Grant, “Exploratory analog models of stress and strain during the early stages of volcanic conduit development” \$7,600
- 2005 Nuffield Foundation (UK) in support of undergraduate research, “The effect of regional tectonic setting on local stress field response to episodes of magmatic activity” £1,350
- 2004 NERC (UK) Postdoctoral Fellowship Grant, “Development of a new volcano monitoring technique: The relationship of stress field orientation to magmatic processes at Soufriere Hills Volcano, Montserrat” £87,030
- 2002 National Science Foundation Geophysics Program (EAR-0229655 to K. Cashman/J. Power, coauthored by D. Roman), “Conduit evolution during the 1992 eruptive sequence at Mt. Spurr, Alaska” \$99,536

Student and Postdoc Advisees

- Amanda Lough (current Postdoctoral Fellow, Carnegie Institution of Washington)
- Christelle Wauthier (Postdoctoral Fellow, Carnegie Institution of Washington; Now Assistant Professor at Penn State University)
- Mel Rodgers (Ph.D., University of South Florida). Now postdoctoral fellow at Oxford University, England.
- Heather Lehto (Ph.D., University of South Florida). Now Assistant Professor at Angelo State University.
- Matt Gardine (Postdoctoral Fellow, University of South Florida). Project: Development of an interpretive framework and computational tools for stress field monitoring at Redoubt Volcano, Alaska, and other Aleutian volcanoes. Now at University of Alaska Fairbanks
- Wayne Kilgore (M.S., University of South Florida, defended April 2010). Thesis: Seismic and Geodetic Investigation of the 1996-1998 Earthquake Swarm at Strandline Lake, Alaska. Now in Officer Candidate School, U.S. Navy.
- Philip Heron (MGeophys (honors), University of Leeds, graduated 2006). Undergraduate summer research: The effect of regional tectonic setting on local fault response to magmatic activity. Now at the University of Toronto (Ph.D. Program in geophysics).

Student Committee Membership

- Kathi Unglert (Ph.D. candidate, University of British Columbia, in progress)
- Federica Lanza (Ph.D. candidate, Michigan Tech, in progress)

- Joel Brann (M.S. student, Western Washington University, in progress)
- Mike Callahan (Ph.D. candidate, University of South Florida, defended October 2011)
- Zelalem Bedaso (Ph.D. candidate, University of South Florida, defended April 2011)
- Sophie Pearson (Ph.D. candidate, University of South Florida, defended May 2010)
- Stuart Bancroft (M.S. student, University of South Florida, defended April 2010)
- Meghan Lindsey (M.S. student, University of South Florida, defended October 2009)
- Amanda Hintz (M.S. student, University of South Florida, defended July 2008)
- Heather Lehto (M.S. student, University of South Florida, defended July 2007)
- John Petriello (M.S. student, University of South Florida, defended July 2007)
- Alain Volentik (Ph.D. candidate, University of South Florida, defended May 2009)

Invited Departmental Seminars

2015	University of Bristol (UK) Department of Earth Sciences
2015	The Pennsylvania State University, Dept. of Geosciences
2014	University of Alaska Fairbanks, Geophysical Institute
2013	University of British Columbia, School of Earth, Ocean, and Atmospheric Sciences
2013	UNC Chapel Hill, Department of Geology
2013	IRIS Webinar Series
2012	Columbia University, Lamont-Doherty Earth Observatory
2012	Smithsonian Institution
2012	Cornell University, Dept. of Earth and Atmospheric Sciences
2011	USGS Hawaiian Volcanoes Observatory
2011	NASA Goddard Space Flight Center
2010	Carnegie Institution of Washington, Department of Terrestrial Magnetism
2009	University of Miami, Rosentiel School of Marine and Atmospheric Sciences
2008	Michigan Technological University
2008	University of Oregon
2008	USGS Alaska Volcano Observatory
2008	University of Colima (Mexico)
2007	USGS Cascades Volcano Observatory
2006	University of South Florida Department of Geology
2006	University of Leeds (UK) School of Earth and Environment
2006	Observatoire Volcanologique Piton de la Fournaise (La Reunion)
2006	University of Bristol (UK) Department of Earth Sciences
2006	Cambridge University (UK) Bullard Seismological Labs
2005	University of Edinburgh (UK) School of Geosciences
2005	University of St. Andrews (UK) School of Geography and Geosciences
2005	British Geological Survey, Edinburgh (UK)
2005	INGV Catania (Italy)
2004	Montserrat Volcano Observatory (Montserrat)
2004	University of Leeds (UK) School of Earth and Environment
2004	USGS Cascades Volcano Observatory
2003	USGS Menlo Park
2001	University of Alaska Fairbanks Geophysical Institute

Professional Service Activities

- 2014 Co-convener (with Matt Haney, Stephanie Prejean, and Rick Aster), AGU Fall Meeting special session, “Outstanding Challenges in the Seismological Study of Volcanic Processes”
- 2014 Co-convener (with John Power), 2014 U.S. Volcano Seismology Workshop, Anchorage, Alaska
- 2014 Co-convener (with John Lyons, Helena Buurman, and David Fee), SSA Annual Meeting special session, “Tracking Fluid Movement in Volcanic Systems”
- 2014-present AGU VGP Nominations Committee
- 2014-present IRIS Internship committee
- 2013 Co-convener (with Martha Savage, Yosuke Aoki, and Maurizio Battaglia), AGU Fall Meeting special session, “Stress, strain and Mass Changes at Volcanoes, Using Geodesy and Seismology to Interpret Volcanic Unrest”
- 2013 Lecturer, Pan-American Studies Institute on Volcano-Tectonic Interactions, Leon, Nicaragua
- 2012 Lecturer, Pan-American Studies Institute on Open-Vent Volcanoes, San Jose, Costa Rica
- 2011 Co-convener (with Martha Savage, Yosuke Aoki, and Florent Brenguier), AGU Fall Meeting special session, “Geophysical observations of stress-strain changes at active volcanoes”
- 2011 Guest editor (with co-editors Seth Moran, Chris Newhall), Bulletin of Volcanology special volume on “failed” eruptions.
- 2010-2013 Webmaster, AGU VGP section
- 2009 Co-convener (with Martha Savage, Victoria Univ. NZ, Matt Pritchard, Cornell University, Matt Haney, Univ. Idaho), AGU Fall Meeting special session, “Volcano Dynamics: Temporal changes of physical properties at volcanoes with and without surficial activity”
- 2008 Co-convener (with Seth Moran, USGS, Chris Newhall, Earth Obs. of Singapore), AGU Fall Meeting special session, ““Failed” eruptions: When unrest leads to quiescence”
- 2007-present Editorial Board, Journal of Volcanology and Geothermal Research
- 2007-present Member, IAVCEI
- 2006 Co-convener (with Chris Kilburn, UCL), AGU Fall Meeting special session, “Breaking the container: The role of solid rock surrounding volcanic systems”
- 2006-present Member, Seismological Society of America
- 2003-present Reviewer, National Science Foundation, USGS, Journal of Geophysical Research, Geophysical Research Letters, Journal of Volcanology and Geothermal Research, Bulletin of Volcanology, Tectonophysics, Geology, New Zealand Journal of Geology and Geophysics, Physics of the Earth and Planetary Interiors, Nature
- 1999-present Member, American Geophysical Union

Previous Employment

- 2002-2004 **Graduate Research Fellow**
University of Oregon, Department of Geological Sciences
- 1999-2002 **Graduate Teaching Fellow**
University of Oregon, Department of Geological Sciences
- 2002-2003 **Physical Science Technician**
(*summers*) United States Geological Survey, Alaska Volcano Observatory
- 1997-1999 **Financial Analyst**
Barclays Global Investors, N.A.

1996-1997 **Research Assistant**
Cornell University, S.C. Johnson Graduate School of Management

1996-1997 **Teaching Assistant**
Cornell University, Dept. of Agricultural, Resource, and Managerial Economics

1995-1996 **Teaching Assistant**
Cornell University, S.C. Johnson Graduate School of Management