D. Sarah Stamps

Virginia Tech   Phone: (+1) 540-231-3651
Department of Geosciences   Fax: (+1) 540-231-3386
4044 Derring Hall   Email: dstamps@vt.edu
Blacksburg, VA 24061   http://www.tectonophysics.geos.vt.edu
                        http://www.nationalgeographic.com/explorers/bios/d-sarah-stamps/

APPOINTMENTS

Assistant Professor, Virginia Tech	2015 – present
NSF Postdoctoral Fellow, UCLA and MIT	2013 – 2015
NSF Graduate Research Fellow, Graduate Research Assistant, Purdue University	2008 – 2013
NSF Undergrad. Research Assistant, The University of Memphis	2005 – 2007

EDUCATION

2008 – 2013	**Purdue University** Ph.D. Geophysics and Geodesy	IN, USA
2004 – 2007	**The University of Memphis** B.S. Earth Sciences, minor in mathematics *magna cum lauda*, *honors thesis*	TN, USA

FUNDED AND PENDING PROPOSALS (selected)

September 1*	Brokered Alignment of Long-Tail Observations (BALTO) **EarthCube Integration**, PI, $1.4 M total, $547,243 (split with BSE)
April 2017 - present	Impending Volcano Eruption Response in Northern Tanzania **National Geographic Society Rapid Grant**, PI, $18,500
Oct. 2016 - present	EarthCube Building Blocks: Collaborative Proposal: An Expanded Implementation of Cloud-Hosted Real-time Data Services for the Geosciences (CHORDS) **NSF EarthCube Program**, co-PI, $87,815
July 2016 - present	Collaborative Research: Quantifying plume-lithosphere interactions with GNSS geodesy, seismology, and geodynamic modeling **NSF GeoPRISMS Program**, PI, $393,047
July 2016–June 2017	Geodetic and Geochemical Constraints on the Hypothesized Lwandle-Somalia Plate Boundary in Northern Madagascar **National Geographic Society Waitt Program**, co-PI, $14,185
February 2016	EarthCube Early Career Award (travel grant), Implementing CHORDS CI at the Ol Doinyo Lengai Volcano GNSS / GPS Network, **NSF EarthCube Program**, PI, $2000
Mar 2014-Mar 2015	An investigation of plate boundary formation in Madagascar **National Geographic Society Committee for Research and Exploration**, PI, $25,056 http://www.nationalgeographic.com/explorers/bios/d-sarah-stamps/

June 2013-Aug 2015   An investigation of continental rift-parallel deformation, PI,
NSF Earth Sciences Postdoctoral Research Fellowship, $170,000

Dec 2011-Apr 2013   Kinematic constraints on the Lwandle-Somalia plate boundary across Madagascar from GPS Geodesy – Is Madagascar Breaking Apart, PI, **National Geographic** Society Waitt Program, $15,000

June 2009–May 2013   Testing rifting models in the East African Rift, PI, **NSF Earth Sciences Graduate Research Fellowship,** $100,000

REFERRED PUBLICATIONS UNDER REVIEW

1. *Jones, J.R.,* **D.S. Stamps**, C. Wauthier, E. Saria (submitted) Stress interactions between the active Ol Doinyo Lengai volcano and adjacent Natron border fault in an incipient rift segment of the East African Rift System, *Geophysical Research Letters*.

2. **Stamps, D.S.**, E. Saria, C. Kreemer, under review, Sub-Saharan Africa Geodetic Strain Rate Model 1.0, *Nature*: Scientific Reports.

3. F. Kolawole, E. A. Atekwana, *S. Malloy*, **D. S. Stamps**, R. Grandin, M. G. Abdelsalam1, K. Leseane and E. M. Shemang, Aeromagnetic and gravity data, and Differential Interferometric Synthetic Aperture Radar (DInSAR) analysis reveal the causative fault of the April 3, 2017 Mw 6.5 Moijabana, Botswana Earthquake, under review, *Geophysical Research Letters*.

REFERRED PUBLICATIONS

1. Muirhead, J.D., S.A. Kattenhorn, H. Lee, S. Mana, B.D. Turrin, T.P. Fischer, G. Kianji, E. Dindi, and **D.S. Stamps,** 2016, Evolution of upper crustal faulting assisted by magmatic volatile release during early-stage continental rift development in the East African Rift: Geosphere, v. 12, doi:10.1130/GES01375.1.

2. Ji, K.H., **Stamps, D.S**.*, Geirsson, H., Mashagiro, N., Syauswa, M., Kafudu, B., Subira, J. and d'Oreye, N., (2016), Deep magma accumulation at Nyamulagira volcano in 2011 detected by GNSS observations, Special Pub. on Kivu Rift, Journal of African Earth Sciences. *corresponding author.

3. Rui, X. and **D.S. Stamps**, (2016), Present-day kinematics of the eastern Tibetan Plateau and Sichuan Basin: Implications for lower crustal rheology. Journal of Geophysical Research: Solid Earth.

4. Sachau, T., D. Koehn, **D.S. Stamps**, M. Lindenfield, (2015), Fault kinematics and stress fields in the Rwenzori Mountains, Uganda, *Int. Jrl. Earth Sci.*, doi: 10.1007/s00531-015-1162-6

5. **Stamps, D.S.**, G. Iaffaldano, E. Calais (2015), Role of mantle flow in Nubia-Somalia divergence, *Geophy. Res. Lett.*, doi: 10.1002/2014GL062515.

6. **Stamps, D.S.**, L.M. Flesch, E. Calais, A. Ghosh (2014), Current kinematics and dynamics of Africa and the East African Rift, *Jrl. Geophy. Res.*, doi: 10.1002/2013JB010717.

7. Saria, E., E. Calais, **D.S. Stamps**, D. Delvaux, C.J.H. Hartnady (2014), Present-day kinematics of the East African Rift, *Jrl. Geophy. Res.,* doi: 10.1002/2013JB010901.

8. Fernandes, R., Miranda, J. M., Delvaux, D., **D.S., Stamps**, E. Saria (2013), Re-evaluation of the kinematics of Victoria Plate using continuous GNSS data, *Geophys J Int.*, doi: 10.1093/gji/ggs071.

9. **Stamps, D.S.**, L.M. Flesch, E.Calais (2010), Lithospheric buoyancy stresses in Africa from a thin sheet approach, *Int. Jrl. Earth Sci., Special Publication on Continents in Extension*, 99(7), doi: 10.1007/s00531-010-0533-2.

10. Calais, E., N. d'Oreye, J. Alberic, A. Deschamps, D. Delvaux, J. Deverchere, C. Ebinger, R.W. Ferdinand, F. Kervyn, A.S. Macheyeki, A. Oyen, J. Perror, E. Saria, B. Smets, **D.S. Stamps**, C. Wauthier, (2008) Aseismic strain accommodation by slow slip and dyking in a youthful continental rift, East Africa, *Nature*, doi:10.1038/nature07478.

11. **Stamps, D.S.**, E. Calais, E. Saria, C. Hartnady, J.-M. Nocquet, C.J. Ebinger, and R. Fernandes (2008), A kinematic model for the East African Rift, Geophy. Res. Lett., 35, L05304, doi:10.1029/2007GL0327 81.

12. Smalley, R. Jr., I.W. Dalziel, M.G. Bevis, E. Kendrick, **D.S. Stamps**, E.C. King, F.W. Taylor, E. Lauria, A. Zakrajsek, and H. Parra (2007), Scotia arc kinematics from GPS geodesy, Geophys. Res. Lett., 34, L21308, doi:10.1029/2007GL031699.

13. **Stamps, D.S.**, R. Smalley, Jr. (2006), Strings and Things for Locating Earthquakes, *Seismo. Res. Ltrs*, Vol. 77, No. 6, pp.677-683, doi:10.1785/gssrl.77.6.677.

DATA PRODUCTS AND SOFTWARE

1. Cloud-Hosted Real-time Data Services for the Geosciences (CHORDS). 2017. Version 0.9 [Software]. Boulder, Colorado: UCAR/NCAR. http://dx.doi.org/10.5065/D6V1236Q.

2. **Stamps, D.S.**, Saria E., Ji K-H, Jones J., Ntambila D., (2017). TZVOLCANO real-time data stream, UNAVCO, GNSS/GPS Data Set, doi: http://dx.doi.org/10.5065/D6P849BM **(first of its kind for GNSS/GPS data)**

3. *Rajaonarison, T.* and **D.S. Stamps** (2016), Adiabatic Boundary, CIG ASPECT plug-in

4. *Rajaonarison (2016),* Cartesian to WGS84 transformation utility, CIG ASPECT plug-in

5. *Stamps, D.S. and G. Rambolamanana, (2015). Madagascar 2014, UNAVCO, GPS Data Set, doi:10.7283/T5WS8RKK*

6. *Stamps, D.S. and F. Tugume, (2015). Uganda 2014, UNAVCO, GPS Data Set, doi:10.7283/T5SN077*

7. *Stamps, D.S. and E. Saria (2015), Tanzania 2014, UNAVCO, GPS Data Set, doi:10.7283/T5XD0ZZG*

8. *Stamps D.S., (2012), Madagascar Uganda 2012: Madagascar 2012, UNAVCO, GPS Data Set, doi:10.7283/T5HX19S6*

9. *Calais E., Stamps D.S., (2012), Madagascar Uganda 2012: Uganda 2012, UNAVCO, GPS Data Set, doi:10.7283/T5HX19S6*

10. *Stamps, D.S., (2010), Tanzania Madagascar Uganda 2010: Madagascar, UNAVCO, GPS Data Set, doi:10.7283/T5000052*

UNREFERRED PUBLICATIONS

1. NSF EARTHCUBE REPORT: AIP Tiger Team Response to ESSP Architecture Implementation Plan (2016): David Arctur, Scott Peckham, D. Sarah Stamps, Bob Arko, Janet Fredericks

2. TECHNICAL REPORT (open access model): **Stamps, D.S**., E. Saria, C. Kreemer, (2015), Geodetic Strain Rate Model for Sub-Saharan Africa, doi: 10.13117/GEM.REG.TR2015.03, Report number: GEM.Project.Report.2015-03.V1.0.0

3. NSF EARTHCUBE SCIENCE COMMITTEE REPORT: Aronson E, Bristol S, Burgess AB, Chandrasekar V, Close H, van Eyken T, Ferrini V, Gomez B, Kinkade D, Kelbert A, Martin RL, Ritterbush K, Rubin K, Schmittner A, Slota S, **Stamps DS**, Stocks K, Tzeng MW, Wiebe P, Wood-Charlson E (2015): Geoscience 2020: Cyberinfrastructure to reveal the past, comprehend the present, and envision the future, EarthCube Working Paper ECWP-2015-1, dx.doi.org/10.7269/P3MG7MDZ

4. WHITE PAPER: Douglas B., R, Bennett, **D.S. Stamps**, N. Niemi, B. Wang, E. Nissan, M, Oskin, A. Duvall, M.Hamburger, (2015), Current directions of field science education with respect to geodetic technologies, White Paper for Workshop on Future Seismic and Geodetic Facility Needs in the Geosciences, May 4-6, 2015.

5. WHITE PAPER: **Stamps D.S**. et al. (2013). An investigation of rift-parallel surface deformation along the East African Rift System, GeoPRISMS Planning Workshop for East African Rift, Morristown, NJ, 10/25/13-10/27/13.

6. WHITE PAPER: **Stamps D.S**. et al. (2013). An investigation of plate boundary formation in Madagascar, GeoPRISMS Planning Workshop for East African Rift, Morristown, NJ, 10/25/13-10/27/13.

AWARDS

2017	NSF EarthCube Community Service and Leadership Award
2017-2018	NSF Computational Infrastructure for Geodynamics Distinguished Lecturer
2013-2015	NSF Postdoctoral Fellowship
2009-2015	NSF Graduate Research Fellowship

PRESS

1. PRESS: Geosciences team to place GPS sensors around Tanzanian volcano in effort to predict eruptions (2016), Virginia Tech News, S. Mackey, https://vtnews.vt.edu/articles/2016/06/science-volvcanotanzaniastudy.html

2. PRESS: Rifting in Eastern Africa: Geodetic data deciphers spreading forces (2014) UNAVCO Geodetic Science Snapshot, written by L. Rowen, http://www.unavco.org/science/snapshots/solid-earth/2014/stamps.html

3. PRESS: Plate tectonics in the East African Rift (2008) UNAVCO Highlight, https://www.unavco.org/highlights/2008/stamps.html

TEACHING EXPERIENCE

Fall 2017*	**Virginia Tech** Assistant Professor Hazards: Geosciences in the Cinema	Blacksburg, VA
June 2017	**AfricaArray Annual Meeting** **University of Witswatersand** Instructor and developer Hazards: Experiment Design and Implementation with GNSS	Johannesburg, S. Africa
Spring 2017	**Virginia Tech** Assistant Professor, co-led by J. Spotila Active Tectonics Seminar	Blacksburg, VA
Fall 2016	**Virginia Tech** Assistant Professor Tectonic Geodesy	Blacksburg, VA
Spring 2016	**Virginia Tech** Assistant Professor Tectonics	Blacksburg, VA
Fall 2015	**Virginia Tech** Assistant Professor, co-taught with S. King Geodynamics and ASPECT	Blacksburg, VA
Winter 2015	**University of California, Los Angeles** Assistant Adjunct Professor Geologic Maps	CA, USA
July 2014	**University of Antananarivo** Lead Instructor and Developer *Introduction to GPS Geodesy and High Precision Observations* http://www.unavco.org/education/advancing-geodetic-skills/short-courses/2014/gps/gps.html	Madagascar

March 2013	**University of Bukavu**	Dem. Rep. of Congo
	Instructor and Developer	
	GPS Geodesy and Applications in Geodynamics Short-Course	

Sum 2010 –	**Purdue University**	IN, USA
Spring 2012	Teaching Assistant, Laboratory Instructor, or Guest Lecturer	
	Physical Geology, Geosciences in the Cinema, Dynamics Earth	

Fall 2013	**Boston University**	MA, USA
	Guest Lecturer	
	Introductory Geophysics	

June 2013	**University of Antananarivo**	Madagascar
	Instructor and Developer	
	GPS Training Program	

Spr 2007 -	**Center for Earthquake Research and Information**	TN, USA
Fall 2007	Student Teacher	

Spring 2005	**The University of Memphis**	TN, USA
	Instructor	
	Environmental Geology Laboratory	

STUDENTS

Emmanuel Njinju, PhD student, August 2017*, Virginia Tech
Tahiry Rajaonarison, PhD student, August 2015 - present, Virginia Tech
Joshua R. Jones, Masters student, January 2016 - present, Virginia Tech
Jessica Pentecost, Masters student, August 2016 - present, Virginia Tech
Codi Wiersma, Undergraduate researcher, January 2017 – present, Virginia Tech
Sean Malloy, Undergraduate researcher, February 2017 – present, Virginia Tech
ThaoVy Nguyen, Undergraduate researcher, April 2017 – present, Virginia Tech
Previous
Greg Jesmok, undergraduate researcher, 2016, University of California, Los Angeles
Raul Carrillo, undergraduate researcher, 2016, University of California, Los Angeles
Herimitsinjo Nia, Masters II, November 2015, University of Antananarivo, Madagascar
Tahiry Rajaonarison, Masters II, August 2013, University of Antananarivo, Madagascar

DEPARTMENTAL SEMINARS AND INVITED PRESENTATIONS (selected)

July 2017	University of Witswatersand, AfricaArray Annual Meeting (Keynote + 1)
	Advances in the Kinematics and Dynamics of Africa
April 2017	University of Kentucky
	Present-day kinematics of the eastern Tibetan Plateau and Sichuan Basin: Implications for lower crustal rheology

January 2017	University of Michigan, Smith Lecture *Continental Rift Initiation: Top Down and Bottom Up Perspectives*
June 2016	Ardhi University, Tanzania, Departmental Special Seminar *Crustal Deformation and Volcano-Tectonic Interactions in East Africa*
Apr 2016	Princeton University *Dynamics of Lithosphere-Asthenosphere Interactions Along the East African Rift*
Mar 2016	UNAVCO Science Workshop (opening talk) *Implications of Lithosphere-Asthenosphere Interactions on Rift-Parallel Deformation*
Mar 2016	Office of Foreign Disaster Assistance, USAID TZVOLCANO project introduction
Mar 2016	Volcano Disaster Assistance Program, United States Geological Survey TZVOLCANO project introduction
Mar 2016	Global Volcanism Program, Smithsonian Institute TZVOLCANO project introduction
Feb 2016	National Geographic Headquarters, Washington, D.C. *Is Madagascar Breaking Apart?*
Dec 2015	American Geophysical Union Fall Meeting, San Francisco, CA *Continental Deformation in Madagascar from GNSS Observations*
Mar 2015	Virginia Tech, Blacksburg, VA, Departmental Colloquium *Continental Rift-Parallel Surface Motions in Africa*
Jan 2014	Harvard University, Cambridge, MA *Evidence of Rift-Parallel Deformation Along the Western Branch and Main Ethiopian Rift?*
Dec 2013	University of California, Los Angeles, CA *Evidence of Rift-Parallel Deformation Along the Western Branch and Main Ethiopian Rift?*
Nov 2013	Massachusetts Institute of Technology, Cambridge, MA *Rift-Parallel Deformation Along the East African Rift*
Nov 2013	Active Volcanism and Continental Rifting Conference, Rwanda **Keynote:** *Kinematics and Dynamics of the East African Rift*
Oct 2012	NSF GeoPRISMS East African Rift Planning Workshop, New Jersey *Role of Mantle Flow on Rifting in East Africa*
June 2012	Queen Elizabeth National Park 2012 Research Symposium, Uganda *GPS Experiments in the East African Rift*
Nov 2011	University of Memphis – Memphis, TN *The East African Rift: kinematics and dynamics*
Aug 2010	University of Antananarivo, Madagascar *Kinematics of the Lwandle-Somalia Plate Boundary from GPS Geodesy: Is Madagascar Breaking Apart?*

Oct 2010	IGCP 565 Workshop on separating hydrologic and tectonic signals in geodetic data: GPS Experiments in the East African Rift – Reno, NV *GPS Experiments in the East African Rift*
Aug 2009	Advanced Workshop on Monitoring, Evaluating, and Communicating Seismic and Volcanic Hazards in East Africa *Present-day Strain Rates and Large-scale Dynamics of the East African Rift*
Apr 2009	European Geosciences Union – Vienna, Austria *Present-day Strain Rates and Dynamics of the East African Rift*

COLLABORATORS AND OTHER AFFILIATIONS

International Collaborators: Kang-Hyeun Ji (Korea Institute for Geosciences and Mineral Resources), Xu Rui (Sichuan Earthquake Bureau), Nicolas D'Oreye (European Center for Geodynamics and Seismology, Luxembourg), Daniel Koehn (University of Glasgow, Scotland), Elifuraha Saria (Ardhi University, Tanzania), Gerard Rambolamanana (University of Antananarivo, Madagascar), Fred Tugume (Geological Survey and Mines, Department Ministry of Natural Resources of Uganda), Gladys Kianji (University of Nairobi), Stewart Fishwick (University of Leicester)

U.S. Collaborators: Mike Daniels (UCAR), Dave Mencin (UNAVCO), Andy Nyblade (Penn State), Wolfgang Bangerth (Colorado State University), Christelle Wauthier (Penn State), Esteban Gazel (Virginia Tech), Estella Akewana (Oklahoma State University), Scott Peckham (University of Colorado), Anne Sheehan (University of Colorado)

Graduate Advisor: Eric Calais, Ecole Normale Supérieure (formerly Purdue University)

Major Postdoctoral Advisor: Brad Hager, Massachusetts Institute of Technology

SERVICE

EarthCube Leadership council (elected)	2017 - present
EarthCube 2017 All-Hands Meeting Organizing Committee	2017
EarthCube Science Committee	2015 - present
EarthCube Architecture and Implementation Plan	2016
Tiger Team Science Committee representative	
UNAVCO Virginia Tech Institutional member representative	2015 - present
UNAVCO Education and Community Engagement Committee	Member, 2009-2012, present
American Geophysical Union Fall Meeting Session	Co-chair, 2014, 2016, 2017
Publication Reviewer	2010-present
NSF Proposal Reviewer	2013-present
American Geophysical Union Geodesy Executive Committee	Member, 2008-2010

COMPUTATIONAL SKILLS

- GitHub community code development and contributions ASPECT (Computational Infrastructure for Geodynamics Community Code) in C++

- GAMIT-GLOBK GNSS/GPS processing software maintained at MIT (requires knowledge of RINEX and BINEX geoscience data standards for GNSS/GPS data)
- Generic Mapping Tools
- Matlab
- (T)DEFNODE
- LaTeX / Overleaf
- SHELLS (Kong and Bird, 1995)
- spline codes in Fortran (Holt and Haines, 1993; Flesch et al., 2001; Stamps et al., 2014, JGR)
- (n)awk
- Coulomb 3.4
- CHORDS (knowledge of real-time data streams)
- *Functional skill level:* C++, Fortran, deal.ii, Pylith
- Familiarity with OPeNDAP

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union
Geological Society of America
Seismological Society of America
Sigma Xi – The Scientific Research Society