

D. Sarah Stamps

Virginia Tech
Department of Geosciences
4044 Derring Hall
Blacksburg, VA 24061

Phone: (+1) 540-231-3651
Fax: (+1) 540-231-3386
Email: dstamps@vt.edu

<http://www.tectonophysics.geos.vt.edu>
<http://www.nationalgeographic.com/explorers/bios/d-sarah-stamps/>

APPOINTMENTS

Assistant Professor, Virginia Tech	2015 – present
Assistant Adjunct Professor, Univ. of California, Los Angeles	2014 – present
NSF Postdoctoral Fellow, UCLA and MIT	2013 – 2015
NSF Graduate Research Fellow, Purdue University	2009 – 2013
Graduate Research Assistant, Purdue University	2008 – 2009
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 <i>magna cum lauda, honors thesis</i>	TN, USA

FUNDED AND PENDING PROPOSALS (selected)

Pending	MRI: Developing a near-real-time GNSS-MET network for eastern Africa by enhancing AfricaArray NSF Major Research Instrumentation Program , co-PI
Awarded	EarthCube Building Blocks: Collaborative Proposal: An Expanded Implementation of Cloud-Hosted Real-time Data Services for the Geosciences (CHORDS) NSF EarthCube Program , co-PI
July 2016 - present	Collaborative Research: Quantifying plume-lithosphere interactions with GNSS geodesy, seismology, and geodynamic modeling NSF GeoPRISMS Program , PI, \$393,047
February 2016	EarthCube Visiting Scientist Fellowship, Implementing CHORDS CI at the Ol Doinyo Lengai Volcano GNSS / GPS Network, National Science Foundation , PI, \$1328
March 2014-present	An investigation of plate boundary formation in Madagascar National Geographic Society CRE , PI, \$25,056 http://www.nationalgeographic.com/explorers/bios/d-sarah-stamps/
June 2013-present	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 Graduate Research Fellowship , \$100,000

REFERRED PUBLICATIONS

1. Ji, K.H., **Stamps, D.S.***, Geirsson, H., Mashagiro, N., Syaushwa, 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.
2. Rui, X. and **Stamps, D.S.**, (2016), Present-day kinematics of the eastern Tibetan Plateau and Sichuan Basin: Implications for lower crustal rheology. Journal of Geophysical Research: Solid Earth.
3. 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
4. **Stamps, D.S.**, G. Iaffaldano, E. Calais (2015), Role of mantle flow in Nubia-Somalia divergence, *Geophy. Res. Lett.*, doi: 10.1002/2014GL062515.
5. **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.
6. 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.
7. 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.
8. **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.
9. Calais, E., N. d'Oreye, J. Alberic, A. Deschamps, D. Delvaux, J. Deverchere, C. Ebinger, R.W. Ferdinand, F. Kervyn, A.S. Macheyeke, 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.
10. **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:10.1029/2007GL032781.
11. 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.
12. **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

1. *Stamps, D.S. and G. Rambolamanana, (2015). Madagascar 2014, UNAVCO, GPS Data Set, doi:10.7283/T5WS8RKK*
2. *Stamps, D.S. and F. Tugume, (2015). Uganda 2014, UNAVCO, GPS Data Set, doi:10.7283/T5SN077*
3. *Stamps, D.S. and E. Saria (2015), Tanzania 2014, UNAVCO, GPS Data Set, doi:10.7283/T5XD0ZZG*
4. *Stamps D.S., (2012), Madagascar Uganda 2012: Madagascar 2012, UNAVCO, GPS Data Set, doi:10.7283/T5HX19S6*
5. *Calais E., Stamps D.S., (2012), Madagascar Uganda 2012: Uganda 2012, UNAVCO, GPS Data Set, doi:10.7283/T5HX19S6*
6. *Stamps, D.S., (2010), Tanzania Madagascar Uganda 2010: Madagascar, UNAVCO, GPS Data Set, doi:10.7283/T5000052*

UNREFERRED PUBLICATIONS

1. TECHNICAL REPORT: **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,
2. 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
3. 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.
4. 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.
5. 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.

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

- | | | |
|-------------|---|--------------------|
| Spring 2016 | Virginia Tech
Assistant Professor
Tectonics | Blacksburg, VA |
| | <ul style="list-style-type: none">• Instruct graduate and undergraduate students in modern tectonic theory and the use of Coulomb 3.4• Mixed traditional lecturing and flipped classroom pedagogy | |
| Fall 2015 | Virginia Tech
Assistant Professor
Geodynamics and ASPECT | Blacksburg, VA |
| | <ul style="list-style-type: none">• Instruct students in geodynamics modeling with the mantle convection and lithospheric dynamics code ASPECT | |
| Winter 2015 | University of California, Los Angeles
Assistant Adjunct Professor
Geologic Maps | CA, USA |
| | <ul style="list-style-type: none">• Instructed 31 upper-level undergraduates in geologic mapping• Implemented a range of instructional techniques including lecturing, group laboratory exercises, and 2 field mapping trips to Rainbow Basin | |
| July 2014 | University of Antananarivo
Lead Instructor and Developer
<i>Introduction to GPS Geodesy and High Precision Observations</i>
http://www.unavco.org/education/advancing-geodetic-skills/short-courses/2014/gps/gps.html | Madagascar |
| March 2013 | University of Bukavu
Instructor and Developer
<i>GPS Geodesy and Applications in Geodynamics Short-Course</i> | Dem. Rep. of Congo |

Sum 2010 –	Purdue University	IN, USA
Spring 2012	Teaching Assistant, Laboratory Instructor, or Guest Lecturer <i>Physical Geology, Geosciences in the Cinema, Dynamics Earth</i>	
Fall 2013	Boston University Guest Lecturer <i>Introductory Geophysics</i>	MA, USA
June 2013	University of Antananarivo Instructor and Developer <i>GPS Training Program</i>	Madagascar
Spr 2007 – Fall 2007	Center for Earthquake Research and Information Student Teacher	TN, USA
Spring 2005	The University of Memphis Instructor Environmental Geology Laboratory	TN, USA

STUDENTS

Current

Tahiry Rajaonarison, PhD student, August 2015 - present, Virginia Tech
Joshua R. Jones, Masters student, January 2016 - present, Virginia Tech
Jessica Pentecost, Masters student, incoming August 2016, 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)

June 2016	Ardhi University, Tanzania, Departmental Special Seminar <i>Crustal Deformation and Volcano-Tectonic Interactions in East Africa</i>
Mar 2016	UNAVCO Science Workshop (opening talk) <i>Implications of Lithosphere-Asthenosphere Interactions on Rift-Parallel Deformation</i>
Feb 2016	National Geographic Headquarters, Washington, D.C. <i>Is Madagascar Breaking Apart?</i>

- 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 2015 Virginia Tech, Blacksburg, VA
Crustal Deformation Studies with GPS and Numerical Modeling: examples from East Africa
- Oct 2014 University of California, Los Angeles, CA Departmental Colloquium
Neotectonics of the East African Rift System
- Mar 2014 UNAVCO Science Workshop, Denver, CO
Haiti 2010 Education and Community Engagement from a Young Investigator's Perspective
- 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*
- Aug 2013 deal.ii 4th Workshop, Texas A&M, College Station, TX
Kinematics and Dynamics of the East African Rift: system-wide results and research outlook for rift-scale processes
- 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)

U.S. Collaborators: Mike Daniels (UCAR), Dave Mencin (UNAVCO), Andy Nyblade (Penn State), Brad Hager (MIT), Wolfgang Bangerth (Texas A&M)

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

Major Postdoctoral Advisor: Brad Hager, Massachusetts Institute of Technology

SERVICE

UNAVCO Education and Community Engagement Committee	Member, 2009-2012, present
American Geophysical Union Fall Meeting Session	Co-chair, 2014
EarthCube Science Standing Committee, +3 working groups	2014-present
Publication Reviewer	2010-present
NSF Proposal Reviewer	2013-present
American Geophysical Union Geodesy Executive Committee	Member, 2008-2010

COMPUTATIONAL SKILLS

GAMIT-GLOBK GMT Matlab (T)DEFNODE LaTeX
SHELLS (Kong and Bird, 1995) spline codes in Fortran (Holt and Haines, 1993; Flesch et al., 2001)
ASPECT AWK Coulomb 3.3 *Basics*: C++, Fortran, deal.ii, Pylith

PROFESSIONAL SOCIETY MEMBERSHIPS

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