Leah M Courtland — Curriculum Vitae

Earth and Atmospheric Sciences
Georgia Institute of Technology
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Date of Birth: December 6, 1983
Citizenship: United States
Previous Name: Leah Knapton

Professional Preparation

2007-2013 PhD in Geophysics and Volcanology
Department of Geology, University of South Florida, Tampa, FL
Advisors: Charles Connor and Sarah Kruse

2002-2006 BSc with honors in Physics with minors in Astronomy, Mathematics, and Geology
Physics and Astronomy Department, Western Washington University, Bellingham, WA
Advisor: Kristen Larson

Appointments

Georgia Institute of Technology, Atlanta, GA
National Science Foundation Postdoctoral Fellow, June 2013 - present

University of South Florida, Tampa, FL
Research Assistant: Vhub.org Project, Winter 2010-2013.
Instructor: GLY2030 Natural Hazards, Spring 2012
Instructor: GLY2010 Introduction to Physical Geology, Spring 2009
Teaching Assistant: GLY6475C Principals of Applied Geophysics, Fall 2008
Teaching Assistant: Field Mapping Techniques, Summer 2008
Teaching Assistant: OCE2001 Introduction to Oceanography, Summer 2008
Recitation Instructor: GLY2030 Hazards of the Earth, Fall 2007, Spring 2008

Western Washington University, Bellingham, WA
Teaching Assistant: Rewrote PHYS133 E&M Labs, Fall 2006, Spring 2007
Instructor: Extended Ed Summer Program: Space Camp, Summer 2006
Lab Assistant: PHYS100 Series, 2003- 2006

University of Wisconsin, Madison, WI
Summer internship (REU) in astrophysics, Summer 2005

Research Interests

Near surface geophysics, scoria cone morphology, explosive eruption dynamics, geophysical archeology, cyberinfrastructure, geoscience education, and quantitative literacy.

Service

Reviewer for *GSA Bulletin*, *Geomorphology*, *Encyclopedia of Natural Hazards*
Vhub Cyberinfrastructure Development Team member and workshop leader (2010-present)
PASI instructor (2013)
Panelist, Graduate School Information Luncheon, Geology and Physics Departments, WWU (2011)
Seismology Workshop Leader: USF STEM Girls Summit (2010)
USF Geology Graduate Student Association treasurer (2009), president (2010, 2011)

Honors and Awards

2013	NSF Earth and Environmental Sciences Postdoctoral Fellowship
2012	USF Richard A. Davis, Jr. Endowed Fellowship Award
2010, 2011	Supercomputing Student Travel Grant
2011	USF Geology Department Graduate Award for Outstanding Graduate Service
2009	GSA Geophysics Division Student Research Award
2008, 2009	USF Graduate and Professional Student Council Travel Grant
2007	USF Graduate Fellowship
2007	WWU Physics Department Graduate of the Year
2005, 2006	Women in Science Scholarship
2005	WWU Brown Astronomy Scholarship

Publications

Peer-Reviewed Papers

2014 La Palma J**, Courtland L**, Charbonnier S, Tortini R, Valentine G (2014) Vhub: a knowledge management system to facilitate online collaborative volcano modeling and research. *Journal of Applied Volcanology*, Vol. 3: Iss. 2, DOI: 10.1186/2191-5040-3-2

2013 **Courtland L**, Kruse S, Connor C (2013) Violent Strombolian or not? Using ground-penetrating radar to distinguish deposits of low- and high-energy scoria cone eruptions. *Bulletin of Volcanology*, Vol. 75, Number 12, 1-13. DOI: 10.1007/s00445-013-0760-z

2012 **Courtland L**, Connor C, Connor L, Bonadonna C (2012) Introducing Geoscience Students to Numerical Modeling of Volcanic Hazards: The example of Tephra2 on VHub.org. *Numeracy*, Vol. 5: Iss. 2, Article 6. DOI: http://dx.doi.org/10.5038/1936-4660.5.2.6

Courtland L, Kruse S, Connor C, Connor L, Savov I, Martin K (2012) GPR investigation of tephra fallout, Cerro Negro, Nicaragua: A method for constraining parameters in tephra sedimentation models. *Bulletin of Volcanology*, Vol. 74, Number 6, 1409-1424. DOI: 10.1007/s00445-012-0603-3

Presentations

2013 **Courtland L**, Taddeucci J, Weinhart T, Thornton A (2013) Collisions on the Fly: pairing numerical modelling with high speed imagery to explore pyroclast-pyroclast interactions. AGU, Eos Trans. AGU, Fall Meet. Suppl., Abstract V33F-06

Courtland L, Weinhart T, Thornton A (2013) Fly By Numbers: Using Mercury-DPM to explore the in-?ight particle-particle interactions of 'ballistic' volcanic blocks. IAVCEI Scientific Assembly, Kagoshima, Japan, Abstract 1P1_3B-O20

Courtland L (2013) Cyberinfrastructure in Volcanology: Vhub and Beyond. Invited Talk, Earthcube workshop for Petrology & Geochemistry. Washington, DC

2012 **Courtland L**, Thornton A, Connor C, Bokhove O (2012) Discrete Element Modeling of Volcanic Pyroclasts: Cone Construction and Impact Sags. AGU, Eos Trans. AGU, Fall Meet. Suppl., Abstract V53C-2843

Courtland L, Kruse S, Connor C (2012) Investigating Tephra Fallout and Cone Building Models: Insights from Ground Penetrating Radar. Invited Talk, Georgia Institute of Technology, Atlanta, GA. May 2012.

2011 **Courtland L**, Connor C (2011) Proximal Tephra Fallout: Inverting Near-Vent Thickness Data. Geological Society of London William Smith Meeting: Remote sensing of volcanoes & volcanic processes: integrating observation & modeling. London, England.

Courtland L, Thornton A (2011) Modeling Cone Building Eruptions Using Mercury MD. Invited Talk, University of Twente, Netherlands. September 2011.

Courtland L, Kruse S, Connor C (2011) Applying Cone-Building Models to an Actual Cinder Cone: Insights from a Ground Penetrating Radar Study of Cerro Negro Volcano, Nicaragua. IUGG General Assembly, Melbourne. July 2011.

2009 **Courtland L**, Kruse S, Connor C (2009) Into the Cone: A Ground Penetrating Radar Investigation of Near Vent Processes at Cerro Negro Volcano. Invited talk, Department of Physics and Astronomy, Western Washington University. June 2009.

Courtland L, Kruse S, and Connor C (2009) Near Vent Processes at Cerro Negro Volcano. Southeastern GSA, St. Petersburg, FL. March 2009.

Posters

2013 Kruse S, McNiff C, Marshall A, **Courtland L**, Connor C, Farrell A, Harburger A, Kiflu H, Malservisi R, Njoroge M, Nushart N, Richardson J, Rookey K (2013) Scoria Cone and Tuff Ring Stratigraphy Interpreted from Ground Penetrating Radar, Rattlesnake Crater, Arizona. American Geophysical Union, December, 2013.

2012 **Courtland L**, Kruse S, Connor C (2012) Into the cone, a ground penetrating radar study of Cerro Negro Volcano, Nicaragua. Volcanism in the American Southwest, October 2012.

Courtland L, Thornton A, Weinhart T Bokhove O, Connor C (2012) Tephra Flows on Cinder Cones: A Numerical Approach. American Geophysical Union. December, 2011.

2011 **Courtland L** (2011) Vhub.org. Geological Society of London William Smith Meeting: Remote sensing of volcanoes & volcanic processes: integrating observation & modeling, London. October 2011.

2010 **Courtland L**, Connor C (2010) Simulating the Formation and Growth of Volcanic Edifices with CUDA. Early Adopters PhD Workshop at SC2010.

2009 **Courtland L**, Kruse S, Connor C (2009) Into the Cone: A Ground Penetrating Radar Investigation of Near Vent Processes at Cerro Negro Volcano. Eos Trans. AGU, 90(52), Fall Meet. Suppl., Abstract V21C-2013.

2008 **Courtland L,** Kruse S, Connor C (2008) Remarkably Gaussian Tephra Fallout from Basaltic Eruptions. Eos Trans. AGU, Fall Meet. Suppl., Abstract V11C-2059.

2006 **Courtland L**, Wilcots E (2006) Mapping the Distribution and Kinematics of the Interstellar Medium of IC5332. American Astronomical Society Annual Meeting, Washington, DC.

2004 **Courtland L** and Larson K (2004) Searching the Stars: Photometric Variability in T Tauri Stars. WWU Student Poster Presentation, May, 2005.

Research Grants

2013 Constraining tephra aggregation efficiency with laboratory experiments and numerical modeling, NSF Earth and Environmental Sciences Postdoctoral Fellowship ($170,000)

2009 GPR imaging of cinder cone morphology, GSA Student Research Grant ($2,800)

2006 Translating Stellar Images, NASA Space Grant for Future Science Teachers ($3,200)

2004 Searching the Stars: Photometric Variability in T-Tauri Stars, NASA Space Grant for Future Science Teachers ($3,200)

Field Work

(campaigns lasting 3 days or more)

October 2012	Graduate geophysics field excursion, Rattlesnake Maar, Arizona Technician and Instructor's Aid, GPR, magnetics, gravity
October 2010	Geophysical Study of Blanding Cemetery, FL Contractor, FL State, GPR
January 2010	GPR Field Excursion to Cerro Negro Volcano, Nicaragua Principal investigator, GSA Research Grant, GPR
November 2009	Geophysical Study of Florida Sugar Mills Contractor, FL State, GPR
Summer 2008	Ground Penetrating Radar Study of Damaged Wetlands, FL Contractor/Project Manager, USGS, GPR
Fall 2007	Geophysical investigation of Nicaraguan volcanoes: Cerro Negro , Concepcion, Masaya Graduate Student, GPR, magnetics, gravity, CO_2, SP, temperature, resistivity

Programming Languages

Perl	CudaC
Matlab	Rappture
IDL	JavaScript
C	

Synergistic Activities

November 2013-Present	Consultant, Vhub and Servicio Geológico Colombiano collaboration
2004-2007	Planetarium Guide, Western Washington University

Collaborators & Other Affiliations

Connor, Chuck. University of South Florida. PhD Advisor
Kruse, Sarah. University of South Florida. PhD Advisor
Dufek, Joe. Georgia Institute of Technology. Postdoctoral Advisor
Valentine, Greg. Vhub Team Leader

IAVCEI Tephra Hazard Modeling Commission Member, 2012-present
Vhub Development Team Member, 2010-present
AGU Member, Near Surface Geophysics Focus Group, 2007 – present

Servicio Geológico Colombiano, collaborator
INETER: Nicaragüense de Estudios Territoriales, collaborator