

Christelle Wauthier

Department of Geosciences and Institute for Computational and Data Sciences
The Pennsylvania State University
311 Deike Building, University Park, PA 16802-2714

Education

University of Liege, Liege, Belgium	Engineering	B.S., 2003
University of Liege, Liege, Belgium	Geological Engineering	M.S., 2006
University of Blaise-Pascal, Aubière, France	Volcanology	M.S., 2007
University of Liege, Liege, Belgium	Engineering Sciences	Ph.D., 2011

Professional Experience

2020-present	Associate Professor, The Pennsylvania State University, Dept. of Geosciences & Institute for Computational and Data Sciences (ICDS)
2014-2020	Assistant Professor, The Pennsylvania State University, Dept. of Geosciences & Institute for Computational and Data Sciences (ICDS)
2012-2014	Carnegie Postdoctoral Fellow, Carnegie Institution of Washington, Dept. of Terrestrial Magnetism
2010-2012	Teaching assistant, University of Liege, Georesources and Geo-Imaging Unit
2007-2011	Ph.D. Candidate, Royal Museum for Central Africa, Earth Sciences Department & University of Liege, Georesources and Geo-Imaging Unit

Selected Publications

* denotes author is a student supervised by C. Wauthier

- K. Stephens*, **C. Wauthier** (2022), Spatio-temporal Evolution of the Magma Plumbing System at Masaya Caldera, Nicaragua, *Bulletin of Volcanology Special Issue: Open-vent volcanoes*, DOI: <https://doi.org/10.1007/s00445-022-01533-z>
- J. Leeburn*, **C. Wauthier**, E. Montgomery-Brown (2022), New insights on faulting and intrusion processes during the June, 2007, East Rift Zone eruption of Kīlauea Volcano, Hawai'i, *Journal of Volcanology and Geothermal Research*, DOI: <https://doi.org/10.1016/j.jvolgeores.2021.107425>
- J. Sun*, F. Xu, G. Cervone, M. Gervais, **C. Wauthier**, M. Salvador (2021), Automatic atmospheric correction for shortwave hyperspectral remote sensing data using a time-dependent deep neural network, *ISPRS Journal of Photogrammetry and Remote Sensing*. DOI: <https://doi.org/10.1016/j.isprsjprs.2021.02.007>.
- J. Gonzalez-Santana* and **C. Wauthier** (2021), Unraveling persistent volcano flank instability at Pacaya Volcano, Guatemala, using satellite geodesy, *Journal of Volcanology and Geothermal Research*. DOI: <https://doi.org/10.1016/j.jvolgeores.2020.107147>.
- J. Sun*, **C. Wauthier**, K. Stephens*, M. Gervais, G. Cervone, P. LaFemina, M. Higgins (2020), Automatic detection of surface deformation by volcanic sources using deep learning, *Journal of Geophysical Research: Solid Earth*, DOI: <https://doi.org/10.1029/2020JB019840>.
- K. J. Stephens*, **C. Wauthier**, R. Bussard**, M. Higgins, P. LaFemina (2020), Assessment of mitigation strategies for tropospheric phase contributions to InSAR time-series datasets over two Nicaraguan volcanoes, *Remote Sensing*, DOI: <https://doi.org/10.3390/rs12050782>.
- K. Reath, M. Pritchard, M. Poland, F. Delgado, S. Carn, D. Coppola, S. Ebmeier, E. Rumpf, S. Henderson, S. Baker, P. Lundgren, R. Wright, J. Biggs, T. Lopez, **C. Wauthier**, S. Moruzzi, A. Alcott, R. Wessels, B. Andrews, J. Griswold, S. Ogburn, S. Loughlin, F. Meyer, M. Pavolonis, D. Schnieder, G. Vaughan, M. Bagnardi (2019), Thermal, deformation, and degassing remote sensing time series (A.D. 2000-2017) at the 47 most active volcanoes in Latin America: Implications for Volcanic Systems, *Journal of Geophysical Research*, DOI:10.1029/2018JB016199
- M. E. Pritchard, J. Biggs, **C. Wauthier**, E. Sansosti, D. W. D. Arnold, F. Delgado, S. K. Ebmeier, S. T. Henderson, K. Stephens*, K. Wnuk*, F. Amelung, V. Aguilar, P. Mothes, O. Macedo, L. Lara, M. P. Poland and S. Zoffoli (2018), Towards coordinated regional multi-satellite InSAR volcano

observations: Results from the Latin America pilot project, *Journal of Applied Volcanology*, DOI: 10.1186/s13617-018-0074-0.

- K. Stephens* and C. Wauthier (2018), Satellite geodesy captures offset magma supply associated with lava lake appearance at Masaya volcano, Nicaragua, *Geophysical Research Letters*, DOI: 10.1002/2017GL076769
- C. Wauthier, D. C. Roman, M. P. Poland (2019), Modulation of seismic activity in Kīlauea’s upper East Rift Zone by summit inflation and deflation, *Geology*, DOI: <https://doi.org/10.1130/G46000.1>.
- C. Wauthier, D. C. Roman and M. P. Poland (2016), Joint analysis of InSAR and earthquake fault-plane solution data to constrain magmatic sources: A case study from Kilauea Volcano, *Earth and Planetary Science Letters*, DOI: 10.1016/j.epsl.2016.09.011
- C. Wauthier, D. Roman, M. Poland (2013), Moderate-magnitude earthquakes induced by magma reservoir inflation at Kīlauea Volcano, Hawai‘i, *Geophysical Research Letters*, doi: 10.1002/2013GL058082
- C. Wauthier, V. Cayol, F. Kervyn, and N. d’Oreye (2012), Magma sources involved in the 2002 Nyiragongo eruption, as inferred from an InSAR analysis, *J. Geophys. Res.*, 117, B05411, doi:10.1029/2011JB008257

Previous Scientific, Technical, and Management Performance

1. Service:

- Member of the NSF RCN Community Network for Volcanic Eruption Response (CONVERSE) steering committee: <https://volcanoresponse.org/>
- Contributor to the Committee on Earth Observation Satellites (CEOS) pilot and demonstrator projects to monitor volcanoes: <http://ceos.org/ourwork/workinggroups/disasters/volcanoes/>
- K-SAC/H-SAC: Member of the Kilauea 2020-ongoing eruption Science Advisory Committee that is now the Hawaiian Science Advisory Committee (H-SAC)
- Collaborator for a Geoscientists without border awarded grant for Guatemalan volcanoes (Lead: Lindsey Hernandez, OSU), Geoscientists without border, Contributor. (2021 - Present).
- Co-Director of Remote Sensing GeoVISTA at Penn State (2021-Present).

2. Supervision:

Total Number of Graduate Students Advised: 7

Kendall Wnuk (M.S. 2014-2016, Penn State)
Sarah Conway (M.S. 2015-2017, Penn State)
Jeffrey Leeburn (M.S. 2018-2020, Penn State)
Kirsten Stephens (Ph.D. 2016-2021, Penn State)
Judith Gonzales Santana (Ph.D. 2017-present, Penn State)
Cristy Ho (M.S. 2021-present, Penn State)
Young Cheol Kim (Ph.D. 2021-present, Penn State)

Total Number of Postdoctoral Students Advised: 2

Jian Sun (2019-2020, Penn State)
Damian Walwer (2021-present, Penn State)