

## Gregory P. Waite, Associate Professor

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### A. Professional Preparation

St. Norbert College	De Pere, WI	Mathematics	BA, 1996
University of Utah	Salt Lake City, UT	Geophysics	MS, 1999
University of Utah	Salt Lake City, UT	Geophysics	PhD, 2004
US Geological Survey	Menlo Park, CA	Mendenhall Postdoctoral Fellow	2004-2007

### B. Appointments

2013-Present	Associate Professor, Michigan Technological University, Houghton MI
2007-2013	Assistant Professor, Michigan Technological University, Houghton MI
2004-2007	Mendenhall Postdoctoral Fellow, US Geological Survey, Menlo Park, CA

### C. Products (bold type indicates student first author)

#### (i) Products Most Closely Related to the Proposed Project

1. Medici, E.F. and G.P. Waite (2016) Experimental laboratory study on the formation of multiple shock waves observed during volcanic eruptions *Geophysical Research Letters*, 43, 85–92, doi:10.1002/2015GL066426.
2. Medici, E.F., J.S. Allen, and G.P. Waite (2014) Modeling shockwaves generated by explosive volcanic eruptions, *Geophysical Research Letters*, 41, 414-421, doi:10.1002/2013GL058340
3. **Nadeau, P. A.**, J. L. Palma, and G. P. Waite (2011), Linking volcanic tremor, degassing, and eruption dynamics via SO<sub>2</sub> imaging, *Geophysical Research Letters*, 38, L01304, doi:10.1029/2010GL045820.
4. **Richardson, J. P.**, G.P. Waite, and J.L. Palma (2014) Varying seismic-acoustic properties of the fluctuating lava lake at Villarrica volcano, Chile, *Journal of Geophysical Research*, 119, doi:10.1002/2014JB011002.
5. Waite, G.P., P.A. Nadeau, and J.J. Lyons (2013), Variability in eruption style and associated very-long-period events at Fuego volcano, Guatemala, *Journal of Geophysical Research*, 118, 1526-1533, doi:10.1002/jgrb.50075.

#### (ii) Other Significant Products

1. **Dalton, M.P.**, G.P. Waite, I.M. Watson, and P.A. Nadeau (2010), Multiparameter quantification of gas release during weak strombolian eruptions at Pacaya Volcano, Guatemala, *Geophysical Research Letters*, 37, L09303, doi:10.1029/2010gl042617.
2. **Lyons, J.J.**, G.P. Waite, M. Ichihara, and J.M. Lees (2012) Tilt prior to explosions and the effect of topography on ultra-long-period seismic records at Fuego volcano, Guatemala, *Geophysical Research Letters*, 39, L08305, doi:10.1029/2012GL051184.
3. Waite, G. P., and S. C. Moran (2009),  $V_p$  Structure of Mount St. Helens, Washington, USA, imaged with local earthquake tomography, *Journal Volcanology and Geothermal Research*, 182(1-2), 113-122, doi:10.1016/j.jvolgeores.2009.02.009.
4. Waite, G.P. and R.B. Smith (2002), Seismic evidence for fluid migration accompanying subsidence of the Yellowstone caldera, *Journal of Geophysical Research*, 107, 2177, doi:10.1029/2001JB000586.
5. Waite, G.P., B.A. Chouet, and P.B. Dawson (2008), Eruption dynamics at Mount St. Helens imaged from broadband seismic waveforms: interaction of the shallow magmatic and hydrothermal systems, *Journal of Geophysical Research*, doi:10.1029/2007JB005259.

### D. Synergistic Activities

1. Recruiting and mentoring undergraduate and graduate summer interns from the University of Puerto Rico Mayagüez and MTU in projects such as: volcanic emission and deformation in Central America; siting Earthscope USArray seismic stations in the Northern Michigan and Wisconsin; seismic and acoustic monitoring of the Bering Glacier and subsequent analysis; analysis of Clintonville, WI seismic swarm; and analysis of Yellowstone geyser tremor.

2. Developed and delivered a laboratory exercise about the energy radiated from volcanic eruptions for eighth grade Earth science classes in rural Michigan, including underserved populations. The experiment highlights the interdisciplinary nature of Earth science and the utility of quantitative data. By instrumenting a liquid nitrogen volcano with accelerometers and recording the explosion with an array of microbarometers, the students calculate physical parameters related to the explosion.
3. Received NSF CAREER award in 2011 to promote teaching, outreach, and interdisciplinary research on volcano dynamics. The fieldwork is conducted in Guatemala, together with our partner institution, Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología, which is tasked with monitoring Guatemalan volcanoes and assessing hazards. Among the goals of this work is increased hazard mitigation capacity through improved use of existing monitoring equipment.
4. Led week-long workshop for formal and informal educators during summer 2014 on the geology and geophysics of the Mid-continent Rift System. Objective is to embolden educators in Midwest states with skills to teach about geophysics and applications to tectonic history of N. America

#### **E. Collaborators and other Affiliations**

##### **(i) Collaborators and Co-Editors During the Past Four Years (Total=39)**

- Al-Equabi, Ghassan, Washington Univ.
- Allen, Jeffrey, Michigan Tech
- Brewer, Ian D., USGS
- Brown, Eric, Aarhus, Univ.
- Chouet, Bernard A., USGS
- Darbyshire, Fiona, Univ. Québec
- Dawson, Phillip B., USGS
- De Siena, Luca, Aberdeen
- Elias, Tamar, USGS
- Engelmann, Carol, Univ. Neb. Omaha
- Frederiksen, Andrew, Univ. Manitoba
- Haney, M.M., USGS
- Ichihara, M., Earthquake Res. Inst., a
- Johnson, Jeffrey, B., Boise State
- Jurdy, Donna, Northwestern
- Keller, Randy, Univ. Oklahoma
- Kern, Christoph, USGS
- Klemme, Stephan, Univ. Münster
- Kley, Jonas, Georg August Univ.
- Matoza, Robin S. UCSB
- Medici, Ezequiel, Michigan Tech
- Merino, Miguel, Chevron
- Mikesell, T. Dylan, Boise State
- Moran, Seth, USGS
- Moucha, Robert, Syracuse Univ.
- Oommen, Thomas, Michigan Tech
- Palma Lizana, José, U. de Concepcion
- Rooney, Tyrone, Michigan State
- Shearer, Peter, Scripps
- Shen, Weisen, Washington Univ.
- Stein, Seth, Northwestern
- Sutton, Jeff A., USGS
- Thomas, Christine, Münster
- van der Lee, Suzan, Northwestern
- Watson, I. Matthew, Univ. of Bristol
- Werner, Cynthia A, USGS
- Wiens, Douglas, Washington Univ.
- Wolin, Emily, Northwestern
- Wysession, Michael, Washington Univ.

##### **(ii) Investigator's Graduate and Postdoctoral Advisors (Total = 2)**

- Hill, David P., USGS, Menlo Park, CA (principal postdoctoral advisor)
- Smith, Robert B., Univ. of Utah, Salt Lake City, UT (principal graduate advisor)

##### **(iii) Thesis Advisor and Postgraduate-Scholar Sponsor (MS=17; PhD=6; Postdoctoral=1; Total = 20)**

- Alami, Daniele (MS 2013) Tre Esse Eng.
- Avouris, Dulcinea M. (MS 2011) Kent State
- Brill, Kyle A. (MS 2011; PhD *current*)
- Castro, Monica (MS *current*)
- Erdem, Jemile E (MS 2010) USGS
- Gratton, Lorenzo (MS 2015) Unaffiliated
- Guettinger, Maximillian (MS *current*)
- Hetland, Brianna R. (MS 2014) Unaffiliated
- Hopp, Chet J (MS *current*) Victoria Univ.
- Lamur, Anthony (MS 2013) Liverpool
- Lanza, Federica (MS 2012; PhD *current*)
- Lechner, Hans (PhD *current*)
- Lyons, John J (PhD 2011) USGS
- McKee, Kathleen (MS 2013) Alaska-Fairbanks
- McMahan, Nichole D. (MS 2011) Colo. State
- Nadeau, Patricia (PhD 2011) Am. Mus. Nat. Hist.
- Prandi, Carlo (MS *current*)
- Richardson, Joshua (MS 2009; PhD 2013; Postdoc 2014) Chevron
- Russo, Elena (MS 2014) ClassTV
- Wellik, John (MS 2014) USGS