

# Clay Emerson Wood

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Ph.D. Candidate

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## Education

2016 **Emory University**  
B.S., Applied Physics

## Professional Appointments

2017-present Research Assistant, Penn State Rock and Sediment Mechanics Lab  
2016-2017 Research Technician, Penn State Rock and Sediment Mechanics Lab

## Publications & talks

### JOURNAL ARTICLES

- 2021 **C. Wood**, P. Shokouhi, P. Manogharan, J. Rivière, D. Elsworth, C. Marone. (2021) Imaging Elastodynamic and Hydraulic Properties of In Situ Fractured Rock: An Experimental Investigation Exploring Effects of Dynamic Stressing and Shearing. *Journal of Geophysical Research: Solid Earth* 2020JB021521. [\[DOI\]](#)
- S. Shreedharan, M. Ikari, **C. Wood**, D. Saffer, L. Wallace, C. Marone. (2021) Frictional and Lithological Controls on Shallow Slow Slip at the Northern Hikurangi Margin. *Geochemistry, Geophysics, Geosystems*. [\[DOI\]](#)
- P. Manogharan, **C. Wood**, C. Marone, D. Elsworth, J. Rivière, P. Shokouhi. (2021) Nonlinear elastodynamic behavior of intact and fractured rock under in-situ stress and saturation conditions. *Journal of the Mechanics and Physics of Solids* 153, 104491. [\[DOI\]](#)
- P. Manogharan, **C. Wood**, C. Marone, D. Elsworth, J. Rivière, P. Shokouhi. (2021) Experimental Investigation of Elastodynamic Nonlinear Response of Dry Intact, Fractured and Saturated Rock. *Rock Mech Rock Eng*, 125. [\[DOI\]](#)
- 2020 A. Mouat, **C. Wood**, J. Pye, J. Burton. (2020) Tuning Contact Line Dynamics and Deposition Patterns in Volatile Liquid Mixtures. *Phys. Rev. Lett*, 124, 064502. [\[DOI\]](#)
- P. Shokouhi, J. Jin, **C. Wood**, J. Rivière, B. Madara, D. Elsworth, C. Marone. (2020). Dynamic stressing of naturally fractured rocks: On the relation between transient changes in permeability and elastic wave velocity. *Geophysical Research Letters*, 47, e2019GL083557. [\[DOI\]](#)
- 2019 A. Mouat, **C. Wood**, J. Pye, J. Burton. (2019) Liquid deposition through evaporation. *Phys. Rev. Fluids*, 4, 100512. [\[DOI\]](#)
- 2018 J. Pye, **C. Wood**, J. Burton. (2018) Precursors to Molecular Slip on Smooth Hydrophobic Surfaces. *Phys. Rev. Lett*, 121, 134501. [\[DOI\]](#)

#### CONFERENCE TALKS & PRESENTATIONS

- 2021 **C. Wood**, P. Manogharan, J. Rivière, D. Ellsworth, C. Marone, P. Shokouhi. Relating fracture aperture to hydraulic and elastodynamic properties of dynamically-stressed rock under true-triaxial stress conditions. *Talk*. American Geophysical Union Fall Meeting. Washington D.C., December 2021.
- 2021 **C. Wood**, P. Manogharan, J. Rivière, D. Ellsworth, C. Marone, P. Shokouhi. Relating fracture aperture to hydraulic and elastodynamic properties of dynamically-stressed rock under true-triaxial stress conditions. *Poster*. The Physics of Earthquake Faulting. Rome, IT., September 2021.
- 2020 **C. Wood**, P. Manogharan, S. Zi, J. Rivière, D. Ellsworth, C. Marone, P. Shokouhi. The Relation Between Fracture Aperture and Hydro-mechanical Properties: An Experimental and Analytical Approach. *Poster*. American Geophysical Union Fall Meeting. Washington D.C., December 2020.
- 2019 **C. Wood**, P. Manogharan, J. Jin, J. Rivière, D. Ellsworth, C. Marone, P. Shokouhi. The Influence of Fracture Aperture on Permeability and Elastic Nonlinearity: An Integrated Analytical and Empirical Investigation. *Talk*. American Geophysical Union Fall Meeting. Washington D.C., December 2019.
- C. Wood**, B. Madera, P. Shokouhi, J. Jin, J. Rivière, D. Ellsworth, C. Marone. The Effect of Roughness on the Elasticity and Permeability of Fractured Media. *Poster*. Schatzalp 3rd Induced Seismicity Workshop. Davos, SW., March 2019.
- 2018 **C. Wood**, B. Madera, P. Shokouhi, J. Jin, J. Rivière, D. Ellsworth, C. Marone. The Effect of Roughness on the Elasticity and Permeability of Fractured Media. *Poster*. American Geophysical Union Fall Meeting. Washington D.C., December 2018.
- C. Wood**, B. Madera, P. Shokouhi, J. Jin, J. Rivière, D. Ellsworth, C. Marone. The Effect of Roughness on the Elasticity and Permeability of Fractured Media. *Poster*. International School of Physics, Enrico Fermi. Verena, It., December 2018.
- 2017 **C. Wood**, J. Pye, J. Burton. Liquid “Coffee Rings” and the Spreading of Volatile Liquid Mixtures. *Talk*. American Physical Society March Meeting. New Orleans, LA, March 2017
- 2016 **C. Wood**, J. Pye, J. Burton. Quantifying stick-slip contact line motion of evaporating sessile droplets. *Talk*. American Physical Society March Meeting. Baltimore, MD, March 2016

#### Honors & awards

Krynine Travel Grant, 2018-21

Shell Geosciences Energy Research Facilitation Award, 2019

## Teaching Experience

- 2021 Geosc597: *Techniques in Geophysical Experimentation*. Co-instructor with Dr. Chris Marone for laboratory skills course.
- 2019 Geosc452: *Hydrogeology*. Teaching Assistant. Instructors: Dr. Byron Parizek, Dr. John Hooker.

## Service

Reviewer for US Department of Energy.

## Outreach

- 2018 Participated in outreach event through PSU Geosciences Department to teach geology to local Cub Scout pack.
- 2017 Shake, Rattle, Rocks geology outreach for State College School District fifth grade.

## Professional Memberships

American Geophysical Union member: 2018-Present  
American Physical Society member: 2016-Present