

# Melissa L. Sims

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## EDUCATION

Ph.D. Geosciences, Stony Brook University, Stony Brook, NY 2014-2018

M.S. Geosciences, Stony Brook University, Stony Brook, NY, 2012-2014

B.S. Geophysics, University of South Carolina, Columbia, SC, 2009-2012

B.A. Physics, College of Charleston, Charleston, SC, 2008

## EXPERIENCE

□ Postdoctoral Scholar and Visiting Scientist, Johns Hopkins University and Lawrence Livermore National Laboratory, Livermore, CA 4/2019 – Present  
Working on dynamic experiments; gas-gun and laser shock techniques

□ Graduate Research Assistant, Stony Brook University, Stony Brook, NY 8/2012 – 12/2018  
Completed powder X-ray diffraction experiments using synchrotron facilities; Used multi-anvil and various diamond anvil cell (DAC) techniques

□ Research Intern, University of South Carolina, Columbia, SC 2/2011 – 7/2012  
Processed seismic data for the Earth Sciences and Resources Institute's \$10 million DOE Carbon Sequestration Project

## PUBLICATIONS

□ Johnson, J. R., Jaret, S. J., Glotch, T. D., & Sims, M. (2020). Raman and infrared microspectroscopy of experimentally shocked basalts. *Journal of Geophysical Research: Planets*, 125, e2019JE006240. <https://doi.org/10.1029/2019JE006240>

□ Sims, M., Jaret, S.J., Johnson, J.R. et al. (2020). Unconventional high-pressure Raman spectroscopy study of kinetic and peak pressure effects in plagioclase feldspars. *Phys Chem Minerals* 47, 12 <https://doi.org/10.1007/s00269-020-01080-z>

□ Sims, M., et al. (2019). Pressure-induced amorphization in plagioclase feldspars: A time-resolved powder diffraction study during rapid compression. *Earth and Planetary Science Letters*, 507, 166-174. <https://doi.org/10.1016/j.epsl.2018.11.038>.

□ Jaret, S. J., Johnson, J. R., Sims, M., DiFrancesco, N., Glotch, T. D. (2018). Microspectroscopic and petrographic comparison of experimentally shocked albite, andesine, and bytownite. *Journal of Geophysical Research: Planets*, 123, 1701–1722. <https://doi.org/10.1029/2018JE005523>

□ Dukes, R.J., Bramlett, J., Sims, M., (2009). Comparison of Frequency Determinations of Slowly Pulsating B Stars from Stromgren and Geneva Data, *Stellar Pulsation: Challenges for Theory and Observation: Proceedings of the International Conference*. American Institute of Physics Conference Proceedings, 1170, p. 379-381.

□ Dukes, R.J., Mills, L. Sims, M., (2008). Slowly Pulsating B Stars: A Challenge for Photometrists, *The Journal of the American Association of Variable Star Observers*, 36, 1, p. 141-142.

## **AWARDS AND HONORS**

- NSF Earth Sciences Postdoctoral Fellowship, 8/20
- Highlights Article for Argonne National Laboratory, 2/19
- Highlighted Science Article for Deutsches Elektronen-Synchrotron, 2/19
- AGEP-T Frame Fellowship, Stony Brook University, 4/15
- Turner Summer Research Grant, Stony Brook University, 4/15
- Chosen to Introduce of Department of Energy Secretary Moniz at the Brookhaven National Lab Commencement Ceremony, 2/15:  
<https://www.bnl.gov/newsroom/news.php?a=25545>
- Turner Fellowship, Stony Brook University, 3/14
- Bridge to the Doctorate Fellowship, Stony Brook University, 8/12
- Graduate Research Fellowship, Geosciences Dept., Stony Brook University, 8/12
- Mack Gibson Scholarship, Geology Dept., University of South Carolina, 5/12
- Sigma Xi Physics Award, South Carolina Junior Academy of Science, 3/06
- Horace Byrne Explorers Club Award, South Carolina Junior Academy of Science, 3/06
- South Carolina Alliance for Minority Participation Grant, 8/06 & 8/07
- College of Charleston Academic Year Research Fund Grant, College of Charleston, 8/05
- College of Charleston Summer Undergraduate Research Fund Grant, 4/05
- South Carolina Alliance for Minority Participation Research Conference Presentation Award, 6/05
- Randolph Hearst Calculus Award, College of Charleston, 12/04
- Palmetto Fellows Scholarship, College of Charleston, 8/04

## **SELECTED RESEARCH PRESENTATIONS**

- Invited Talk, Compressing in Multiple Regimes, Caltech, 1/2021
- Invited Talk, Studying meteor impacts using rapid compression, Z Fundamental Science Workshop, Sandia National Laboratory, 8/2020
- Invited Talk, Rapid Compression Experiments in Plagioclase and Olivine, Carnegie Institute for Geophysics, 10/2019
- DeFord Lecture, Simulating Meteor Impact, University of Texas at Austin, 10/2019
- Plenary Talk, Rapid Compression Experiments in Plagioclase and Olivine, APS Users Meeting, 5/2019
- Invited Talk, Simulating Meteorite Impacts in the Diamond Anvil Cell, Princeton University, 2/2018

## **SELECTED TEACHING and SERVICE EXPERIENCE**

- Users' Executive Committee Member (<http://nslsuec.org/>), National Synchrotron Light Source II at Brookhaven National Laboratory, 08/2020
- Diamond Anvil Cell Community Proposal member, European XFEL, 5/2018
- Mentor through Center for Inclusive Education Community for Student Mentoring program, 8/2016-8/2017
- Working Group to rewrite Stony Brook University's Diversity Plan, 8/2016
- Teaching Assistant, Stony Brook University from 8/2014-5/2015