Curriculum Vitae for Alisha N. Clark

Contact Information

Alisha N. Clark

Office: +1 (303) 492-0372

Email: alisha.clark@colorado.edu

Office Address:
Department of Geological Sciences
University of Colorado Boulder
399 UCB
Boulder, CO 80309

Appointments

Assistant Professor — August 2019
University of Colorado Boulder
Department of Geosciences

NSF EAR Postdoctoral Fellow — June 2017 – June 2019
Northwestern University
Scripps Institute of Oceanography

Postdoctoral Research Fellow (DIM Oxymore) — Jan. 2016 – June 2017
Institut de minéralogie, de physique des matériaux et de cosmochimie
Université Pierre et Marie Curie, Paris, France

Education

Ph.D., Geology — Mar. 2016
University of California, Davis, CA
Dissertation Title: "Geologic Applications for the Anomalous Elastic and Volumetric Properties of Amorphous Silicates"

M.S., Geology — Dec. 2011
University of California, Davis, CA

Thesis Title: "On the Anomalous Compressibility of Vitreous Silica: New Insights from High Pressure X-ray Microtomography and Gigahertz Ultrasonic Interferometry"

B.S., Geology (Geochemistry emphasis) March 2007
University of California, Davis, CA
Thesis Title: "The high pressure viscosity of lithium disilicate and applicability of the Faxén correction for high pressure silicate melts"

Advisor
Charles E. Lesher (B.S./M.S./Ph.D.), University of California, Davis 2005-2015

Grants and Funding

NNSA/DOE Stewardship Science Academic Alliances Center of Excellence 2023-2028
The Wootton Center for Astrophysical Plasma Properties "*Dirty Stars and Broken Planets*"
PI: Don Winget; Co-PI: Alisha Clark

Sandia National Laboratories Laboratory Directed Research and Development 2022-2025
Program Academic Partner
"Falling Sphere Viscometry in the Multi-anvil Press"
PI: Alisha Clark

Sandia National Laboratories & CU College of Engineering and Applied Science 2022-2024
"Composite-Multistate Materials Under Dynamic Compression"
PI: Richard Regueiro; Co-PI: Alisha Clark

NSF Earth Science Grant 2052826 2021-2024
"Collaborative Research: Investigating the Role of Mantle Metasomatism and Melt-Rock Interaction During Evolution of Continental Lithosphere Mantle"
PI: Alisha Clark; Co-PI: G. Lang Farmer

NSF Earth Science Grant 1952641 2020-2022
"Volatiles in silicate melts: From geophysical detection to primordial reservoirs"
PI: Alisha Clark

Z-Fundamental Science Proposal: Sandia National Laboratory 2018-2025
"*Origin of Earth's water: role of hydrous melts at extreme P-T conditions*"
PI: Alisha Clark

NSF Earth Science Postdoctoral Fellowship 2017 - 2019
"Linking elastic and electrical properties to investigate partial melting in the deep mantle"
PI: Alisha Clark

DIM OxyMORE Postdoctoral Fellowship 2016 - 2017

"The anomalous behavior of silicate liquids on densification: A combined X-ray tomography and Raman spectroscopy study at high pressure"

PI: Alisha Clark

Teaching

GEOL 1170 **Our Deadly Planet** (*Sp2020*). Enrollment 164.

GEOL 3010 **Introduction to Mineralogy** (*F2019, F2020*). Enrollment 5-16.

GEOL 3950 **Natural Catastrophes and Geologic Hazards** (*Sp2023, F2023*). Enrollment 36-44.

GEOL 5700 **Principles of Mineral Physics** (*Sp2021*) Enrollment 5.

GEOL 5700 **Trailblazers** (*Sp2021*) Enrollment 7.

Publications

- **Clark, A. N.,** Lane, J.M., Davis, J.-P., Sarafian, A.R., Cochrane, K.R., Townsend, J.P., & Jacobsen, S.D. (2023) Shock-Ramp of SiO_2 Melt. *AIP Conf. Proc.* 2844, 330002.
- Miozzi, F., Morard. G., Antonangeli, D., Baron, MA., Pakhomova, A., **Clark, A.N.,** Mezouar, M., & Fiquet, G. (2022) The Fe-Si-C system at extreme P-T conditions: A possible core crystallization pathway for reduced planets. *Geochimica et Cosmochemicia Acta*. 322, 129-142.
- King, A., Guignot, N., Henry, L., Morard, G., **Clark, A.N.,** Le Godec, Y., & Itié, J.-P. (2022) Combined angular and energy dispersive data analysis: Optimised data acquisition, normalisation, and reduction. *Journal of Applied Crystallography.* 218-227.
- Boccato, S., Garino, Y., Morard, G., Zhao, B., Xu, F., Sanloup, C., King, A., Guignot, N., **Clark, A.N.,** Garbarino, G., & Antonangeli, D. (2022) Amorpheus: a python-based software for the treatment of x-ray scattering data of amorphous and liquid systems. *High Pressure Research.* 42 (1), 69-93.
- Edmund, E., Miozzi, F., Morard. G., Boulard, E., **Clark, A.N.**, Decremps, F., Garbarino, G., Svitlyk, V., Mezouar, M., & Antonangeli, D. (2020) Axial compressibility and thermal equation of state of hcp Fe-5wt%Ni-5wt%Si. *Minerals.*

- Edmund, E., Antonangeli, D., Decremps, F., Miozzi, F., Morard. G., Boulard, E., **Clark, A.N.**, Ayrinhac, S., Gauthier, M., Morand, M., & Mezouar, M. (2019) Velocity-Density Systematics of Fe-5wt%Si: Constraints on Si Content in the Earth's Inner Core. *Journal of Geophysical Research: Solid Earth,* 124,3436–3447

- Miozzi, F., Morard. G., Antonangeli, D., **Clark, A.N,** Mezouar, M., Dorn, C., Rozel, A., & Fiquet, G. (2018) Equation of state of SiC at extreme conditions: new insight into the interior of carbon rich exoplanets. *Journal of Geophysical Research: Planets.* 123, 2295–2309.

- Boulard, E., King, A., Guignot, N., Deslandes, J.-P., Le Godec, Y., Perrillat, J.-P., **Clark, A.N.**, Morard. G., & Itié, J.-P. (2018) High speed tomography at extreme conditions at the PSICHE Beamline of SOLEIL Synchrotron. *Journal of Synchrotron Radiation.*

- **Clark, A. N**., and Lesher, C. E. (2017) Elastic properties of silicate melts: Implications for low velocity zones at the lithosphere-asthenosphere boundary. *Science Advances*. 3, e1701312.

- Morard, G., Nakajima, Y., Andrault, D., Antonangeli, D., Auzende, A.L., Boulard, E., Cervera, S., **Clark, A.N.**, Lord, O.T., Siebert, J., Svitlyk, V., Garbarino, G., & Mezouar, M. (2017) Structure and density of Fe-C liquid alloys under high pressure. *Journal of Geophysical Research: Solid Earth.* 122(10), 7813-7823.

- Morard, G., Andrault, D., Antonangeli, D., Nakajima, Y., Auzende, A.L., Boulard, E., Cervera, S., **Clark, A.N.**, Lord, O.T., Siebert, J., Svitlyk, V., Garbarino, G., & Mezouar, M. (2017) A volatile-rich Earth's core inferred from melting temperature of core materials. *Earth and Planetary Science Letters*. 437, 94-103.

- **Clark, A. N**., Lesher, C.E., Jacobsen, S.D., & Wang, Y. (2016) Anomalous density and elastic properties of basalt at high pressure: Implications for reduction of seismic velocity in the Earth's crust and upper mantle. *Journal of Geophysical Research: Solid Earth.* 121(6), 4232-4348.

- **Clark, A.N.**, Lesher, C.E., Jacobsen, S.D., & Sen. S. (2014) Mechanisms of anomalous compressibility of vitreous silica. Physical Review B. 90, 174110

- Wang, Y., Lesher, C.E., Fiquet, G., Rivers, M.L., Nishiyama, N., Siebert, J., Roberts, J., Morard, G., Gaudio, J., **Clark, A.N**., Watson, H., Menguy, N., & Guyot, F. (2011) In situ high-pressure and temperature x-ray microtomographic imaging during large deformation: A new technique for studying mechanical behavior of multi-phase composites. *Geosphere*. *7*(1), 40-53.

- Lesher, C.E., Wang, Y.B., Gaudio, S.J., **Clark, A.N.**, Nishiyama, N., and Rivers, M.L. (2009) Volumetric properties of magnesium silicate glasses and supercooled liquids at high pressure by X-ray microtomography. *Physics of the Earth and Planetary Interiors*.174, 292-301.

- Zhang, P., Navrotsky, A., Guo, B., Kennedy, I., **Clark, A.N.**, Lesher, C., and Liu, Q. (2008), Energetics of Cubic and Monoclinic Yttrium Oxide Polymorphs: Phase Transitions, Surface Enthalpies, and Stability at the Nanoscale. *The Journal of Physical Chemistry C*, 112(4), 932-938.

- Sen, S., Soyer-Uzun, S., Gjersing, E.L., Aitken, B.G., Gaudio, S., **Clark, A.N.**, and Lesher, C.E. (2007) Pressure-induced instabilities of low-dimensional structural units in chalcogenide glasses at ambient temperature. *Journal of Optoelectronics and Advanced Materials*, 9(11), 3553-3557.

Invited Talks

Aarhus University, Aarhus, Denmark – November 2014

Bayerisches Geoinstitut (BGI), Bayreuth, Germany – November 2014

University College London, London, England – May 2016

Northwestern University – November 2017

University of Illinois at Chicago – November 2017

Carnegie Institution for Science (Dept. of Terrestrial Magnetism) – November 2017

University of Colorado Boulder – February 2018

Columbia University – April 2018

Carnegie Institution for Science (Geophysical Laboratory) – May 2018

University of Utah – November 2019

University of Texas at Austin (Astronomy) – November 2022

Conference Presentations

*Graduate Student Presenter

- Bausch, H.J.*, Townsend, J.P., Duwal, S., McCoy, C.A., Davis, J., Abbott, T., **Clark, A.N.**, and Jacobsen, S.D. (Submitted) Shock-ramp compression of (Mg,Fe)O up to Earth's core conditions. *American Geophysical Union Annual Fall Meeting.*

- Kendall, M.S.*, **Clark, A. N.**, Jacobsen, S.D., Gardner, L.L., Sarafian, A.R., Townsend, J.P., Davis, J.-P. & Seagle, C.T. (Submitted) Volatile retention during pebble accretion: a combined shock and spectroscopy study. *American Geophysical Union Annual Fall Meeting.*

- Wickland, T.D.*, **Clark, A.N.**, & Farmer, G. L. (Submitted) Tracking the Late Cretaceous to Early Cenozoic Evolution of Continental Lithospheric Mantle in Southwestern New Mexico Using Combined Volcanic Rock Ta/Th and Nd Isotopic Compositions. *American Geophysical Union Annual Fall Meeting.*

- Rosenfeld, S. L.*, **Clark, A. N.**, Wickland, T., Kendall, M., Sarafian, A., Wang, Y., Yu, T., McCoy, C., Duwal, S., & Townsend, J. P. (2023). Viscosity of SiO2 Melts. *14th Z Fundamental Science with Pulsed Power: Research Opportunities and User Meeting.*

- **[Invited] Clark, A. N**., Lesher, C.E., Yu. T., & Wang, Y. (2023) Density of silicate melts by 3D X-ray absorption microtomography. Goldschmidt 2023 Conference.

- Lane, J.M., Cochrane, K.R., Davis, J.-P., Sarafian, A.R., & **Clark, A. N.** (2023**)** Effect of Water on Dynamic Compression of Silica Glass and Melts Using Molecular Dynamics. *SHOCK23 Meeting of The American Physical Society*.

- Bausch, H.J.*, Townsend, J.P., Duwal, S., McCoy, C.A., Davis, J., Abbott, T., **Clark, A.N.**, and Jacobsen, S.D. (2023) Shock-ramp compression of (Mg,Fe)O up to Earth's core conditions. *APS Shock Compression of Condensed Matter Conference.*

- Kendall, M.S.*, **Clark, A. N.**, Davis, J.P., Specht, P.E., Peterson, N.E., Clarke, A.J., & Regueiro, R.A. (2023) Dynamic Compression of Mock Polymer-Bonded Explosive. *23rd Biennial*
  Conference of the APS Topical Group on Shock Compression of Condensed Matter. G00.00023.

- Bausch, H.J.*, Townsend, J.P., Duwal, S., McCoy, C.A., Davis, J., Abbott, T., **Clark, A.N.**, and Jacobsen, S.D. (2023) Shock-ramp compression of iron-rich (Mg,Fe)O up to Earth's core conditions. *Stewardship Science Academic Programs Symposium.*

- Harrison, L.M.*, **Clark, A. N.,** Jacobsen, S.D., Sarafian, A.R. Davis, J.-P. & Townsend, J.P. (2022) Using shockless ramp compression to investigate melting in the Earth's mantle. *American Geophysical Union Annual Fall Meeting*. MR32A-0054.

- Kendall, M.S.*, **Clark, A. N.**, Jacobsen, S.D., Gardner, L.L., Sarafian, A.R., Townsend, J.P., Davis, J.-P. & Seagle, C.T. (2022) Water in Silicates: A Combined Shock and Spectroscopy Study. *American Geophysical Union Annual Fall Meeting*. DI25D-0045.

- Bausch, H.J.*, Townsend, J.P., Jacobsen, S.D., **Clark, A.N.**, Duwal, S., McCoy, C.A., and Davis, J. (2022) Shock and shock-ramp compression of iron-rich (Mg,Fe)O up to Earth's core conditions. *Consortium for Materials Properties Research in Earth Sciences Annual Meeting.*

- **Clark, A. N.,** Jacobsen, S.D., Davis, J.-P., Lane, J.M., Cochrane, K.R., Townsend, J.P., & Sarafian, A.R. (2022) Shock-Ramp of SiO_2 Melt. *SHOCK22 Meeting of The American Physical Society***.**

- Bausch, H.J.*, Townsend, J.P., Jacobsen, S.D., **Clark, A. N.,** Duwal, S., McCoy, C.A., & Davis, J.-P. (2022) Shock and shock-ramp compression of iron-rich (Mg,Fe)O at Earth's core conditions. *SHOCK22 Meeting of The American Physical Society***.**

- Harrison, L.M.*, **Clark, A. N.,** Jacobsen, S.D., Sarafian, A.R. Davis, J.-P. & Townsend, J.P. (2022) Using shockless ramp compression to investigate melting in the Earth's mantle. *SHOCK22 Meeting of The American Physical Society***.**

- Kendall, M.S.*, **Clark, A. N.**, Jacobsen, S.D., Gardner, L.L., Sarafian, A.R., Townsend, J.P., Davis, J.-P. & Seagle, C.T. (2022) Water in Silicates: A Combined Shock and Spectroscopy Study. *22nd Biennial Conference of the APS Topical Group on Shock Compression of Condensed Matter*.

- **Clark, A. N.,** Jacobsen, S.D., Davis, J.-P., Lane, J.M., Cochrane, K.R., Townsend, J.P., & Sarafian, A.R. (2021) Origin of Earth's water: Role of hydrous melts at extreme P-T conditions. *Z-Fundamental Science Program Annual Workshop***.**

- Bausch, H.J.*, Townsend, J.P., Jacobsen, S.D., **Clark, A.N.,** Duwal, S., and Davis, J. (2021) Shock-ramp compression of (Mg,Fe)O on the Z machine: preliminary theory and application to ultra-low velocity zones atop the core-mantle boundary. *Z Fundamental Science Workshop.*

- **Clark, A.N.,** Morard, G., Le Godec, Y., Guignot, N., & King, A. (2020) Densification mechanisms of amorphous silicates: Implications for terrestrial planets. *Eos Trans, AGU*, *Fall Meeting*, Abstract

- **Clark, A. N.,** Jacobsen, S.D., Davis, J.-P., Lane, J.M., Cochrane, K.R., Townsend, J.P., & Sarafian, A.R. (2020) Origin of Earth's water: Role of hydrous melts at extreme P-T conditions. *Z-Fundamental Science Program Annual Workshop***.**

- Sarafian, A.R. **Clark, A. N**., Jacobsen, S.D., Harrison, L., Davis, J.-P., & Tingley, J. (*2020*) Shockless ramp compression of Mg-silicate glasses: geophysical applications of pulsed power using Thor-64 and the Z-machine. *Glass and Optical Materials Division of the American Ceramic Society Annual Meeting*.

- Edmund, E., Antonangeli, D., Decremps, F., Miozzi, F., Morard. G., Boulard, E., **Clark, A.N.**, Ayrinhac, S., Gauthier, M., Morand, M., & Mezouar, M. (2019) Constraints on Inner Core Composition from the High-Pressure Sound Velocities and Thermal Equations of State of Fe-Si and Fe-Ni-Si Alloys. *AGU Annual Meeting*.

- Morard. G., Antonangeli, D., Bureau H., Miozzi, F., Boulard, E., **Clark, A.N.**, Boccato, S., Bouchet, J., Mezouar, M., Prescher, C., & Greenberg E., (2019) Structural transition in liquid FeO. *AGU Annual Meeting*.

- Miozzi, F., Morard. G., Antonangeli, D., **Clark, A.N,** Baron, M.A., Mezouar, M., Pakhomova, A., & Fiquet. G. (2019) Phase relations and melting in a Fe-Si-C core: new constraints from experimental data. *AGU Annual Meeting*.

- Davis, J.-P., **Clark, A. N.,** Jacobsen, S.D., Lane, J.M., Cochrane, K.R., Townsend, J.P., & Sarafian, A.R. (2019) Shockless compression of hydrated silicate glasses. *SHOCK19 Meeting of The American Physical Society***.**

- **Clark, A. N**., Jacobsen, S.D., & Lesher, C. E. (2018) Physical properties of volatile-rich silicate melts in the Earth and implications for seismic detection. *AGU Annual Meeting*. DI42A-06.

- Guignot, N., Manthilake, G., Boulard, E., Chantel, J., Xie, L., Yamazaki, D., Yoneda, A., **Clark, A.N.,** Perrillat, J.-P., Le Godec, Y., Xu, F., Morard. G., Prat, A., & Itié, J.-P. (2018) Recent Developments in HP-HT Materials Research Using Synchrotron Radiation at the PSICHE Beamline, Synchrotron SOLEIL. *AGU Annual Meeting*. MR21B-0062.

- Miozzi, F., Morard. G., Antonangeli, D., **Clark, A.N.,** Dorn, C., Rozel, A., Mezouar, M., Baron, M.A., Pakhomova, A., & Fiquet. G. (2017) Characterization of the Fe-Si-C system at extreme conditions and its application to carbon-rich exoplanets interior. *AGU Annual Meeting*. P42A-05.

- Miozzi, F., Morard. G., Antonangeli, D., **Clark, A.N.,** Dorn, C., Rozel, A., Mezouar, M., Baron, M.A., Pakhomova, A., & Fiquet. G. (2018) An experimental approach to investigate carbon rich exoplanets interior. *European Planetary Science Congress 2018.* EPSC2018-541.

- **[Invited] Clark, A. N**., & Lesher, C. E. (2017) Experimental constraints on the degree of melting beneath tectonic plates. *AGU Annual Meeting.* DI21B-01.

- Miozzi, F., Morard. G., Antonangeli, D., **Clark, A.N,** Edmund, E., Fiquet. G., Mezouar, M.A. (2017) On the interior of carbon-rich exoplanets: new insight from Si – C system at ultra-high pressure. *AGU Annual Meeting*. DI23B-07.

- King, A., Guignot, N., Boulard, E., Deslandes, J.-P., **Clark, A.N.**, Morard. G., & Itié, J.-P. (2017). Optimised Combined Angular and Energy Dispersive Diffraction at the PSICHE Beam Line of the SOLEIL Synchrotron for Fast, High Q-range Structure Determination at High Pressure and Temperature. *AGU Annual Meeting*. MR33E-03

- Boulard, E., King, A., Perrillat, J.-P., **Clark, A.N.**, Del Real, P. G., Guignot, N., Le Godec, Y., Morard. G., Deslandes, J.-P., & Itié, J.-P. (2017) High Speed X-ray imaging for studying behavior of liquids at high pressures and high temperatures. *High Pressure Mineral Physics Seminar-9*.

- **Clark, A.N.,** Morard, G., Le Godec, Y., Guignot, N., & King, A. (2017) Densification mechanisms of amorphous silicates at high pressure and temperature. *High Pressure Mineral Physics Seminar-9*.

- Miozzi, F., Morard. G., Antonangeli, D., **Clark, A.N,** Edmund, E., Fiquet. G., Mezouar, M.A. (2017) On the interior of carbon-rich exoplanets: new insight from Si – C system at ultra-high pressure. *High Pressure Mineral Physics Seminar-9.*

- Guignot, N., King, A., **Clark, A.N.**, Perrillat, J.-P., Boulard, E., Sanchez-Valle, C., & Itié, J.-P. (2017) Amorphous and liquid samples structure and density measurements at high pressure – high temperature using diffraction and imaging techniques. *High Pressure Mineral Physics Seminar-9.*

- **Clark, A.N.**, Morard, G., Le Godec, Y., Guignot, N., & King, A. (2017) Densification mechanisms of amorphous silicates at high pressure and temperature. *Goldschmidt Annual Meeting*.

- **Clark, A. N**., Jacobsen, S.D., Lesher, C.E., & Wang, Y. (2017) Decoupling of the elastic and volumetric properties of silicate glasses at high pressure. *COMPRES Annual Meeting*.

- **Clark, A. N**., & Lesher, C. E. (2017) Elastic properties of silicate melt at high pressure and implications for seismic low velocity zones at the lithosphere-asthenosphere boundary. *Gordon Research Conference – Interior of the Earth.*

- Guignot, N., King, A., **Clark, A.N.**, Perrillat, J.-P., Boulard, E., Morard, G., Deslandes, J.-P., Itié, J.-P., Ritter, X., & Sanchez-Valle, C. (2016) Amorphous and liquid samples structure and density measurements at high pressure – high temperature using diffraction and imaging techniques. *Eos Trans, AGU*, *Fall Meeting*, Abstract MR23B.

- Morard, G., Andrault, D., Antonangeli, D., Nakajima, Y., Auzende, A.L., Boulard, E., Cervera, S., **Clark, A.N.**, Lord, O.T., Siebert, J., Svitlyk, V., Garbarino, G., & Mezouar, M. (2016) A volatile-rich Earth's core inferred from melting temperature of core materials. *Eos Trans, AGU*, Fall Meeting, Abstract MR34A.

- Boulard, E., King, A., Guignot, N., Le Godec, Y., **Clark, A.N.**, & Itié, J.-P. (2016) Tomographie-X ultra-rapid à haute pression et temperature. *10 ème forum de technologie des hautes pression.*

- **Clark, A.N.**, Morard, G., Le Godec, Y., Guignot, N., & King, A. (2016) The anomalous behavior of silicate glasses and liquids on densification: A combined X-ray tomography and diffraction study at high pressure. *15ème Journées de la Matière Condensée*.

- **Clark, A.N.**, Morard, G., Le Godec, Y., Guignot, N., & King, A. (2016) The anomalous behavior of silicate glasses and liquids on densification: A combined X-ray tomography and diffraction study at high pressure. *COMPRES Annual Meeting*.

- **Clark, A. N**., & Lesher, C.E. (2015) Elastic properties of silicate melts at high pressure and implications for low velocity anomalies in the crust and mantle. AGU Annual Meeting.

- Lesher, C.E., Gaudio, S., **Clark, A.N.**, & O'Dwyer-Brown, L. (2015) The supercooled liquid at high pressure – the missing link? *Goldschmidt Annual Meeting*.

- **Clark, A. N**., Lesher, C.E., Jacobsen, S.D., Yu. T., & Wang, Y. (2015) Pressure dependent elastic properties of amorphous silicates by GHz frequency ultrasonic interferometry and high pressure X-ray microtomography. *COMPRES Annual Meeting*.

- **Clark, A. N**., Lesher, C.E., Jacobsen, S.D., & Wang, Y. (2015) Anomalous density and elastic properties of basalt at high pressure: Implications for reduction of seismic velocity in the Earth's crust and upper mantle. *Gordon Research Conference – Interior of the Earth.*

- **Clark, A. N**., Lesher, C.E., Jacobsen, S.D., Yu, T., & Wang, Y. (2014) Volumetric and elastic properties of basalt at high pressure by X-ray microtomography and GHz-ultrasonic interferometry. *Eos Trans, AGU*, *Fall Meeting*, Abstract MR33A-4368.

- **Clark, A. N**., Lesher, C.E., Jacobsen, S.D., & Wang, Y. (2014) Pressure dependent elastic properties of basalt by GHz frequency ultrasonic interferometry and high pressure X-ray microtomography. *COMPRES Annual Meeting*.

- **Clark, A. N.**, Jacobsen, S.D., & Lesher, C.E. (2014) Pressure Dependent Elastic Properties of Basalt by GHz Frequency Ultrasonic Interferometry. *Goldschmidt Annual Meeting*.

- **Clark, A. N**., Jacobsen, S.D., Sen, S., Wang, Y., & Lesher, C.E., (2013) The physical and elastic properties of silicate melts at high pressure: New insights from high pressure X-ray microtomography and gigahertz ultrasonic interferometry, *CIDER 2013 Summer Program*

- **Clark, A. N**., Jacobsen, S.D., Sen, S., Wang, Y., & Lesher, C.E., (2012) Time-dependent elastic relaxation in vitreous silica: Combined synchrotron microtomography and diamond anvil cell ultrasonic measurements, *Eos Trans, AGU*, *Fall Meeting*, Abstract DI13D-2445.

- **Clark, A. N.**, Jacobsen, S.D., Sen. S., & Lesher, C.E. (2012) The time-dependent volume relaxation in vitreous silica characterized by Gigahertz ultrasonic interferometry. *COMPRES Annual Meeting*

- **Clark, A. N.**, Lesher, C.E., Sen, S., Jacobsen, S.D., & Wang, Y. (2012) Anomalous compressibility of *v*-SiO_2 illuminated: Polyamorphism and the effect of hydration. *Glass and Optical Materials Division of the American Ceramic Society Annual Meeting*.

- **Clark, A.N.**, Lesher, C.E., Sen, S., Jacobsen, S.D., & Wang, Y., (2011) The effect of hydration on the anomalous compressibility of vitreous silica characterized by high pressure X-ray microtomography and GHz ultrasonic interferometry. *AGU* Fall Meeting

- Gleason, A.E., **Clark, A.N.,** Mao, W.L., & Lesher, C.E. (2011) Effect of hydration on elasticity of vitreous silica, *AGU Fall Meeting* Abstracts 1, 03

- **Clark, A. N**., Lesher, C.E., Sen, S., Jacobsen, S.D., & Wang, Y. (2011) Anomalous compressibility of vitreous silica characterized by high pressure X-ray microtomography and GHz ultrasonic interferometry. *COMPRES Annual Meeting*.

- **Clark, A. N**., Lesher, C.E., Sen, S., Gaudio, S.J., & Wang, Y. (2010) Compressibility of

vitreous silica by high pressure X-ray microtomography, *Eos Trans, AGU*, *Fall Meeting*, Abstract MR31A-1975

- Lesher, C.E., Gaudio, S., Brown, L. O., **Clark, A.**, Sen, S., Yamada, A., & Wang, Y. (2010) On the transport properties of silicate melts at high pressure, *Eos Trans, AGU*, 91 (26), *West. Pac. Geophys*. Meet. Suppl., Abstract V33C-06

- **Clark, A. N.**, Lesher, C.E., Gaudio, S.J., & Wang, Y. (2010) Compressibility of Vitreous Silica by High Pressure X-ray Microtomography. *COMPRES Annual Meeting*

- **Clark, A. N.**, Lesher, C.E., Gaudio, S.J., Yamada, A., & Wang, Y. (2009) Density of BCR-2 basalt glass at high pressure by X-ray Absorption Microtomography, *EosTrans, AGU*, 90 (52), Fall Meet. Suppl., Abstract MR13A-1669

- **Clark, A. N.**, Lesher, C.E., Gaudio, S.J., & Wang, Y. (2009) Density determinations using high pressure X-ray microtomography. *COMPRES Annual Meeting*.

- Yamada, A., Lesher, C.E., Wang, Y., Gaudio, S.J., **Clark, A**., & Sanehira, T. (2009) Volumetric property of $MgSiO_3$ glass with pressure. *AIRAPT Conference*.

- Lesher, C.E., Wang, Y., Gaudio, S., **Clark, A.,** Yamada, A., Sanehira, T. & Rivers, M. (2009) X-ray microtomography at high pressure. *AGU Spring Meeting* Abstracts 1, 04.

- Watson, H.C., Roberts, J.J., Wang, Y., Lesher, C.E., **Clark, A.,** Hilairet, N., & Sanehira, T. (2009) Rapid segregation of core-forming melts; X-ray tomographic imaging of melt geometry. *AGU Spring Meeting* Abstracts 1, 03.

- Lesher, C.E., **Clark, A.,** Walker, R., Egbert, H., Wang, Y., Zhang, J., & Zhao Y. (2009) Opportunities for neutron radiography and tomography in the Earth Sciences. *AGU Spring Meeting* Abstracts 1, 03.

- Wang, Y., Lesher, C.E., Gaudio, S., Clark, A., Roberts, J., Sanehira, T., & Watson, H. (2008) High pressure tomography in studies of core formation mechanisms. *AGU Fall Meeting* Abstracts 1, 1800.

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- Condron, C.L., Varga, T., **Clark, A.,** Lesher, C.E., Navrotsky, A., Kauzlarich, S.M. (2006) INOR 361-Thermodynamics of the silicon type I clathrates: Ba8Si46 and Na8Si46. Abstract of the papers of the *American Chemical Society.* 232.

- O'Dwyer, L., Lesher, C.E., Baxter, G., **Clark, A.,** Fuss, T., Tangeman, J. & Wang, Y. (2005) Rheological Studies of Komatiite Liquids by In-Situ Falling Sphere Viscometry. *AGU* American Fall Meet. Suppl., Abstract MR13A-0062

Graduate Students

Lindsay Harrison (CU Boulder) – Ph.D. Advisor	2019-present
Melia Kendall (CU Boulder) – Ph.D. Advisor	2020-present
Tyler Wickland (CU Boulder) – Ph.D. Advisor	2020-present
Amanda Alexander (CU Boulder) – Ph.D. Committee Chair	2019-present
Elize Chavez (CU Boulder) – M.S. Committee Member	2020-2023
Spencer Zeigler (CU Boulder) – Ph.D. Committee Chair	2020-2022
Helle Skjetne (CU Boulder) – Ph.D. Committee Chair	2022-present
Samantha Rosenfeld (APS – CU Boulder) – Ph.D. *de facto* Advisor	2023-present
Holly Fortner (CU Boulder) – Ph.D. Committee Chair	2023-present

Honors and Awards

NSF Earth Science Postdoctoral Fellowship 2017 - 2019
"Linking elastic and electrical properties to investigate partial melting in the deep mantle"
PI: Alisha Clark

APS Science 2016 (Argonne National Laboratory outstanding research result) 2016

DIM OxyMORE Postdoctoral Fellowship 2016 - 2017
"The anomalous behavior of silicate liquids on densification: A combined X-ray tomography and Raman spectroscopy study at high pressure"
PI: Alisha Clark

Allen G. Marr Distinguished Dissertation Award Nominee 2016
UC Davis Earth and Planetary Sciences Department

COMPRES 2015 Springer Poster Award 2015

AGU Annual Meeting Outstanding Student Paper Award 2014

Professional Development

Learning by Design (Active Learning Academy – CU Boulder)	2019
Follow-up Peer Mentoring (Active Learning Academy – CU Boulder)	2020
Course RE/Design (Active Learning Academy – CU Boulder)	2020-2021
Early Career Geoscience Workshop (SERC and NAGT)	2020
CU Boulder College of Arts & Sciences Faculty Development Program (FDP)	2019-2020

Professional Memberships

Mineralogical Society of America	2007 - present
COMPRES	2009 - present
American Geophysical Union	2009 - present
Geological Society of America	2010 - present
American Ceramic Society	2012 - present
Geochemical Society	2014 - present
American Physics Society	2019 - present

Professional Service

23rd Biennial Conference of the APS Topical Group on Shock Compression of Condensed Matter (SHOCK23) Technical Committee Member	2022-2023
AGU Fall Meeting Primary Convener (MR-21)	2021
NSF EAR Panel Review Member (3 panels)	2020-2022
Funding Agency Grant Reviewer (NSF, DOE)	2020-present
COMPRES Facilitates Committee	2019-2022
Goldschmidt Convener (Session 04f)	2017
Journal Reviewer (*EPSL, PRB, PRL, GRL, JGR, AmMin, NatGeo*)	2016-present
COMPRES Student and Postdoc Committee Chair	2015-2016
COMPRES Student and Postdoc Committee	2014-2016
Member COMPRES Graduate Student and Postdoc Association	2009-2019

Service to the University

CU Boulder (Geological Sciences) Student Awards Committee	2022
CU Boulder (Geological Sciences) Executive Committee	2022-2023
CU Boulder (Geological Sciences) Undergrad Curriculum Committee	2022-2023
Learning by Design (Active Learning Academy – CU Boulder) Course Facilitator	2021
Faculty Development Program - Panel Member CU Boulder College of Arts & Sciences Faculty Development Program (FDP)	2020-2021
CU Boulder (Geological Sciences) Benson Chair Committee	2020-2021
CU Boulder (Geological Sciences) Rock Shop Oversite Committee	2020-present
CU Boulder (Geological Sciences) Space Committee	2019-present
CU Boulder (Geological Sciences) Colloquium Committee	
Northwestern Nemmers' Prize Seminar Coordinator	2018-2019
Northwestern Graduate Student Mentor (Jacobsen Laboratory)	2017-2019
UC Davis Geology Graduate Program Review participant	2010-2011
UC Davis undergraduate student mentor (Lesher Laboratory)	2009-2015
UC Davis "What We Do" Graduate Student Seminar Series Coordinator	2009-2010

Outreach

The UnXplained with William Shatner (Expert) The History Channel (*Yet to be aired) – Mysteries of the Earth*	2023
Scientific American (Expert) *New Classification Reveals Just How Many Ways Minerals Form*	2022
Rock and Gem Magazine (Expert) *What Does a Petrologist Do?*	2022
Science World Magazine (Expert) *Giant Gemstone*	2019