

## Contact Information

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## Education

- [California Institute of Technology](#), Pasadena, CA USA
  - **Ph.D., Planetary Science**, May 2013
  - Thesis: “Probing the Thermodynamic Properties of Mantle Rocks in Solid and Liquid States”
- [California Institute of Technology](#), Pasadena, CA USA
  - **M.S., Planetary Science**, June 2009
- [University of California, Santa Cruz](#), Santa Cruz, CA USA
  - **B.S., Physics**, June 2006
  - **B.S., Earth Sciences**, June 2006
  - Thesis: “Spin History of the Extrasolar Planetary System HD149026”

## Academic Employment

- Associate Research Scientist, 2021 - **present**, *University of Michigan*
- Assistant Research Scientist, 2015 - 2021, *University of Michigan*
- Turner Postdoctoral Fellow, 2014, *University of Michigan* • Host: Rebecca Lange
- Postdoctoral Scholar, 2013 - 2013, *Caltech* • Advisor: Paul D. Asimow
- Graduate Research Assistant, 2006 - 2013, *Caltech* • Advisors: Jennifer M. Jackson and Paul D. Asimow
- Primary Research Assistant, 2006, *UC Santa Cruz* • Advisor: Gregory P. Laughlin
- Undergraduate Research Assistant, 2003 - 2005, *UC Santa Cruz* • Advisor: Gregory P. Laughlin
- Research Experience for Undergraduates, Summer 2003, *Cornell* • Advisors: Donald Campbell and Lynn Carter

## Teaching Experience

- Seminar Organizer/Leader, *Mineral-Rock-Melts Reading Group*: Winter 2013-4, Fall & Winter 2014-5, Fall & Winter 2015-6, Fall & Winter 2016-7, Fall & Winter 2017-8, Fall 2018-9
- Teaching Assistant/Co-teacher, *Statistics and Bayesian Data Analysis*: Winter 2013
- Teaching Assistant, *Thermodynamics of Geologic Systems*: Spring 2011
- Teaching Assistant, *Planetary Structure and Evolution*: Fall 2008, Winter 2010
- Teaching Assistant, *Mineralogy (Lecture & Lab)*: Fall 2007

## Students Supervised

### Ph.D. Students (co-advisor)

- Sean Hurt, Ph.D., 2018, Assistant Professor of Geology, Del Mar College (co-advised with Rebecca Lange, UM)

### Ph.D. Students (project advisor & committee member)

- Jenna Adams (primary advisor Frank Spera, UCSB), Ph.D. 2020
- Alexander Tye (primary advisor Nathan Niemi, UM), Ph.D. 2019
- Nikita La Cruz (primary advisor Adam Simon, UM), Ph.D. 2019

**Ph.D. Students (committee member)**

- Meredith A. Calogero (primary advisors Eric Hetland & Rebecca Lange, UM), Ph.D. candidate
- Juliana Mesa (primary advisor Rebecca Lange, UM), Ph.D. candidate

**Masters Student Research Assistant (project coadvisor)**

- Erica Cung (South Dakota School of Mines), M.S. 2022

**Undergraduate Research Assistants (project advisor)**

- Arielle Joiner, 2016 - 2018
- Rong Zhou, 2014 - 2015
- Wardah Mohammad Fadil, 2014

**Awards and Honors**

- Best Reviewer Award (*ICARUS*), 2023
- Outstanding Research Mentor–Honorable Mention (University Undergraduate Research Opportunity Program, UROP, *Univ. of Michigan*), 2017
- Turner Postdoctoral Fellowship (*Univ. of Michigan Earth & Environmental Science fellowship*), 2014
- AGU Outstanding Student Paper Award (*Mineral and Rock Physics*), 2012
- AGU Outstanding Student Paper Award (*Mineral and Rock Physics*), 2008
- NSF Graduate Research Fellowship, 2007-2010
- Moore Fellowship (*Caltech institute fellowship*), 2006-2007
- Steck Award (*UC Santa Cruz award for the finest senior thesis*), 2006
- Chancellor's and Dean's Undergraduate Awards (*UC Santa Cruz awards recognizing outstanding senior theses*), 2006
- Thimann Scholarship (*UC Santa Cruz award for student with highest promise in natural sciences*), 2006
- Fridley Scholarship (*UC Santa Cruz award for outstanding student in physical sciences*), 2005
- Outstanding Senior in Earth Sciences (*UC Santa Cruz department graduation*), 2005
- Barry M. Goldwater Scholarship (*Honorable Mention*), 2004
- UC Regents Scholarship, 2001-2004

**Funding** (Totals include all money raised for institution)**Current PI Funding (Total raised = \$1,419,599)**

- *Birth and Death of Hot Rocky Exoplanets*
  - NASA Exoplanets Research (XRP)
  - Lead PI = Neal J. Turner (co-Is = **Aaron S. Wolf**, Steve Desch, Murthy Gudipati; collabs = Lucia Klarmann, Mario Flock)
  - Total = \$141,687
  - 3.5 months/year (Jan 2022—Dec 2024)
- *EarthChem & SESAR - Data Infrastructure for Geochemistry and Earth Science Samples Communities*
  - subcontract with Columbia University of NSF-sourced funding
  - subcontract PI = **Aaron S. Wolf**
  - Total = \$56,447
  - 4.5 months for 1 year (Dec 2021—Apr 2023) \*\*extended\*\*
- *EarthCube Data Capabilities: A data-driven modeling infrastructure to support research and education in volcanology, geochemistry and petrology*
  - NSF Integrative and Collaborative Education & Research (ICER)- EarthCube
  - Lead PI = Mark S. Ghiorso (co-PIs = **Aaron S. Wolf**, Kerstin A. Lehnert, Paula M. Antoshechkin, Peng Ji) (\*\**acting project lead*)
  - Total = \$121,977

- 3 months/year (Sep 2020—Aug 2023)
- *Alkaline-Earth Carbonate Melts at Deep Earth Conditions*
  - NSF Collaborative Studies of the Earth’s Deep Interior (CSEDI)
  - Lead PI = **Aaron S. Wolf** (co-PIs = Jie Li & Rebecca A. Lange)
  - Total = \$680,031
  - 6 months/year (Apr 2018—Mar 2023) **★★extended★★**
- *Calibration of Thermochemical Models using Bayesian Methods—Building MELTS 2.0*
  - NSF Petrology and Geochemistry
  - Lead PI = **Aaron S. Wolf** (co-PI = Mark S. Ghiorso)
  - Total = \$274,066 (original award = \$248,226)
  - COVID supplement = \$25,840 (awarded 2022)
  - 6 months/year (July 2017—June 2023) **★★extended★★**
- *To integrate modeling of melts and fluids for the 4D Deep Carbon in Earth Model of the Deep Carbon Observatory*
  - subcontract with OFM Research of Alfred P. Sloan Foundation sourced funding
  - Total = \$145,391
  - subcontract PI = **Aaron S. Wolf**
  - 3 months/year (Jan 2017—July 2019)

**Pending PI Funding Submitted (Total pending = \$444,154)**

- *Tracing Rocky Exoplanet Compositions*
  - NASA Interdisciplinary Consortia for Astrobiology Research (ICAR)
  - Lead PI = Steven Desch (co-Is = **Aaron Wolf**, Cayman Unterborn, Alan Jackson, Larry Nittler, Natalie Hinkel, Joseph O’Rourke, Christy Till, Patrick Young, Stephen Kane, Kara Brugman, Hilairy Hartnett, Bradford Foley, Molly Simon; collabs = Zachary Maas, Wendy Panero)
  - subcontract PI = **Aaron S. Wolf**
  - Total = \$444,154
  - 6 months/year (Jul 2023—Jun 2028)

## Research Software Products

- **MagmaForge**: Magma evolution simulator for mantle & crustal melting
- **MELTerra**: A crystallizing magma ocean model driven by thermochemical/gravitational equilibrium
- **MagmaTrace**: Predictive trace-element evolution simulator for geologic processes
- **VapoRock**: Thermodynamics of vaporized silicates for modeling volcanic outgassing & magma ocean atmospheres
  - **Wolf**, A. S., Jäggi, N., Sossi, P. A., Bower, D. J., Ghiorso, M. S. (2021), VapoRock: Thermodynamics of vaporized silicate rocks & melts for modeling magma ocean atmospheres and stellar nebula (Version v0.1). *Zenodo*. (<http://doi.org/10.5281/zenodo.4594226>)
- **ThermoEngine**: A universal platform for thermodynamic database models
- **SPIDER**:: Simulating Planetary Interior Dynamics with Extreme Rheology
- **xmeos**: Xtal Melt Equation of State software
- **pvt-tool**: MATLAB software for fitting mineral physics PVT datasets

## Publications

### Citation Metrics (Feb 2023)

- *Google Scholar*: h-index = 18, i10-index = 19, citations = 2288 (858 since 2018)
- *Scopus*: h-index = 16, citations = 1582, (Author ID = 10039345400)

◦ *italics* indicates student author

### In Prep

- **Wolf**, A. S., Ghiorso, M. S., Modeling with Confidence: Bayesian Thermochemical Modeling of Silicate Liquids. *Contributions to Mineralogy & Petrology*.
- **Wolf**, A. S., **Cung**, E., Ustunisik, G. K., Nielsen, R. L., Causal Predictive Modeling for Trace Element Partitioning. *Geochemica et Cosmochimica Acta*.
- **Adams**, J., **Wolf**, A. S., Spera, J., Ghiorso, M., Revival of the ternary garnet solid-solution model: A new calibration of  $Ca_3Al_2Si_3O_{12}$ – $Mg_3Al_2Si_3O_{12}$ – $Fe_3Al_2Si_3O_{12}$  garnets. *Geochimica et Cosmochimica Acta*

### In Review

- **Cung**, E. W., Ustunisik, G. K., **Wolf**, A. S., Nielsen, R. L., The Influence of Database Characteristics on the Internal Consistency of Predictive Models of Trace Element Partitioning for Clinopyroxene, Garnet, and Amphibole. *Geochemistry, Geophysics, Geosystems*.
- **La Cruz**, N., **Wolf**, A. S., Simon, A. C., Hunter, C., Harden, M., Beaudoin, G., Using the chemistry of detrital magnetite as an exploration tool in densely covered terrains: a case study in the greenstone belts of Guyana. *Mineralium Deposita*

### Accepted

1. **Wolf**, A.S., **Jäggi**, N., Sossi, P.A. and Bower, D.J., 2023. VapoRock: Thermodynamics of vaporized silicate melts for modeling volcanic outgassing and magma ocean atmospheres. *The Astrophysical Journal*. (arXiv preprint <https://arxiv.org/abs/2208.09582>)

### Published

1. **Jäggi**, N., Gamborino, D., Bower, D.J., Sossi, P.A., **Wolf**, A.S., Oza, A.V., Vorburger, A., Galli, A. and Wurz, P. (2021), Evolution of Mercury's Earliest Atmosphere. *The Planetary Science Journal*. (<https://doi.org/10.3847/PSJ/ac2dfb>)
2. Aleks, R., Saksida, T. and **Wolf**, A.S. (2020), Hero or Villain? A Cohort and Generational Analysis of How Youth Attitudes Towards Unions Have Changed over Time. *British Journal of Industrial Relations*. (<https://doi.org/10.1111/bjir.12571>)
3. **Hurt**, S., **Wolf**, A. S. (2020), Anomalous structure of  $MgCO_3$  liquid and the buoyancy of carbonatite melts. *Earth and Planetary Science Letters*. (<https://doi.org/10.1016/j.epsl.2019.115927>)
4. Bower, D. J., Kitzmann, D., **Wolf**, A. S., Sanan, P., Dorn, C., Oza, A. (2019), Linking the evolution of terrestrial interiors and an early outgassed atmosphere to astrophysical observations. *Astronomy & Astrophysics*. (<https://doi.org/10.1051/0004-6361/201935710>)
5. **Tye**, A. R., **Wolf**, A. S., Niemi, N. A. (2019), Bayesian Population Correlation: A probabilistic approach to inferring and comparing population distributions for detrital zircon ages. *Chemical Geology*. (<https://doi.org/10.1016/j.chemgeo.2019.03.039>)
6. **La Cruz**, N. L., Simon, A. C., **Wolf**, A. S., Reich, M., Barra, F., Gagnon, J. E. (2019), The geochemistry of apatite from the Los Colorados iron oxide – apatite deposit, Chile: Implications for ore genesis. *Mineralium Deposita*. (<https://doi.org/10.1007/s00126-019-00861-z>)
7. **Kim**, Y.J., **Wolf**, A. S., Becker, U. (2019), Thermodynamic mixing properties of alunite supergroup minerals: Quantum-mechanical modeling and statistical thermodynamic analysis of sulfate, chromate,

- selenate, phosphate, and arsenate solid solutions, as well as uranyl incorporation. *Geochimica et Cosmochimica Acta*. (<https://doi.org/10.1016/j.gca.2018.11.017>)
8. **Hurt, S., Wolf, A. S.** (2018), Thermodynamic properties of  $\text{CaCO}_3\text{-SrCO}_3\text{-BaCO}_3$  liquids: a molecular dynamics study using new empirical atomic potentials for alkaline earth carbonates. *Physics and Chemistry of Minerals*, 1–16. (<https://doi.org/10.1007/s00269-018-0995-5>)
  9. **Wolf, A. S., Bower, D. J.** (2018), An equation of state for high pressure-temperature liquids (RTpress) with application to  $\text{MgSiO}_3$  melt. *Physics of the Earth and Planetary Interiors*, 278: 59–74. (<https://doi.org/10.1016/j.pepi.2018.02.004>)
  10. Jackson, A., Parker, R. L., Sambridge, M., Constable, C., **Wolf, A. S.**, (2018), The inverse problem of unpolarized infrared spectroscopy of geological materials: Estimation from noisy random sampling of a quadratic form. *American Mineralogist*, 103 (8): 1176–1184. (<https://doi.org/10.2138/am-2018-6152>)
  11. Bower, D. J., Sanan, P. D., **Wolf, A. S.** (2018), Numerical solution of a non-linear conservation law applicable to the interior dynamics of partially molten planets. *Physics of the Earth and Planetary Interiors*, 274: 49–62. (<https://doi.org/10.1016/j.pepi.2017.11.004>)
  12. **Wolf, A. S., Asimow, P. D., Stevenson, D. J.** (2015), Coordinated Hard Sphere Mixture (CHaSM): A simplified model for oxide and silicate melts at mantle pressures and temperatures. *Geochimica et Cosmochimica Acta*, 163:40–58. (<https://doi.org/10.1016/j.gca.2015.04.018>)
  13. **Wolf, A. S., Jackson, J. M., Dera, P., Prakapenka, V. B.** (2015), The thermal equation of state of (Mg, Fe) $\text{SiO}_3$  bridgmanite (perovskite) and implications for lower mantle structures. *J. Geophys. Res. Solid Earth*, 120:7460–7489. (<https://doi.org/10.1002/2015JB012108>)
  14. Keppel-Aleks, G., **Wolf, A. S., Mu, M., Doney, S. C., Morton, D. C., Kasibhatla, P. S., Miller, J. B., Dlugokencky, E. J., Randerson, J. T.** (2014), Separating the influence of temperature, drought, and fire on interannual variability in atmospheric  $\text{CO}_2$ . *Global Biogeochem. Cycles*, 28:1295–1310. (<https://doi.org/10.1002/2014GB004890>)
  15. Line, M. R., Knutson, H., **Wolf, A. S., Yung, Y. L.** (2014), A Systematic Retrieval Analysis of Secondary Eclipse Spectra. II. A Uniform Analysis of Nine Planets and their C to O Ratios. *The Astrophysical Journal*, 783:70. (<https://doi.org/10.1088/0004-637X/783/2/70>)
  16. O’Rourke, J. G., **Wolf, A. S., Ehlmann, B. L.** (2014), Venus: Interpreting the spatial distribution of volcanically modified craters. *Geophys. Res. Lett.*, 41:8252–8260. (<https://doi.org/10.1002/2014GL062121>)
  17. Line, M. R., **Wolf, A. S., Zhang, X., Knutson, H., Kammer, J. A., Ellison, E., Deroo, P., Crisp, D., Yung, Y. L.** (2013), A Systematic Retrieval Analysis of Secondary Eclipse Spectra. I. A Comparison of Atmospheric Retrieval Techniques. *The Astrophysical Journal*, 775:137. (<https://doi.org/10.1088/0004-637X/775/2/137>)
  18. Hayes, A. G., **Wolf, A. S., Aharonson, O., Zebker, H., Lorenz, R., Kirk, R. L., Paillou, P., Lunine, J., Wye, L., Callahan, P., Wall, S., Elachi, C.** (2010), Bathymetry and absorptivity of Titan’s Ontario Lacus. *J. Geophys. Res.*, 115:E09009. (<https://doi.org/10.1029/2009JE003557>)
  19. Zhuravlev, K., Jackson, J., **Wolf, A., Wicks, J., Yan, J., Clark, S.** (2010), Isothermal compression behavior of (Mg,Fe)O using neon as a pressure medium. *Physics and Chemistry of Minerals*, 37:465–474. (<https://doi.org/10.1007/s00269-009-0347-6>)
  20. Meschiari, S., **Wolf, A. S., Rivera, E., Laughlin, G., Vogt, S., Butler, P.** (2009), Systemic: A Testbed for Characterizing the Detection of Extrasolar Planets. I. The Systemic Console Package. *Publications of the Astronomical Society of the Pacific*, 121:1016–1027. (<https://doi.org/10.1086/605730>)
  21. Ragozzine, D., **Wolf, A. S.** (2009) [**authors contributed equally**], Probing the Interiors of very Hot Jupiters Using Transit Light Curves. *The Astrophysical Journal*, 698:1778. (<https://doi.org/10.1088/0004-637X/698/2/1778>)
  22. **Wolf, A. S., Laughlin, G., Henry, G. W., Fischer, D. A., Marcy, G., Butler, P., Vogt, S.** (2007), A Determination of the Spin-Orbit Alignment of the Anomalously Dense Planet Orbiting HD 149026. *The Astrophysical Journal*, 667:549. (<https://doi.org/10.1086/503354>)
  23. Ammons, S. M., Robinson, S. E., Strader, J., Laughlin, G., Fischer, D., **Wolf, A.** (2006), The N2K Consortium. IV. New Temperatures and Metallicities for More than 100,000 FGK Dwarfs. *The Astrophysical Journal*, 638:1004. (<https://doi.org/10.1086/498490>)
  24. Shankland, P. D., Rivera, E. J., Laughlin, G., Blank, D. L., Price, A., Gary, B., Bissinger, R., Ringwald, F., White, G., Henry, G. W., McGee, P., **Wolf, A. S., Carter, B., Lee, S., Biggs, J., Monard, B., Ashley,**

- M. C. B. (2006), On the Search for Transits of the Planets Orbiting Gliese 876. *The Astrophysical Journal*, 653:700. (<https://doi.org/10.1086/508562>)
25. Laughlin, G., Butler, R. P., Fischer, D. A., Marcy, G. W., Vogt, S. S., **Wolf**, A. S. (2005), The GJ 876 Planetary System: A Progress Report. *The Astrophysical Journal*, 622:1182. (<https://doi.org/10.1086/424686>)
  26. Laughlin, G., **Wolf**, A., Vanmunster, T., Bodenheimer, P., Fischer, D., Marcy, G., Butler, P., Vogt, S. (2005), A Comparison of Observationally Determined Radii with Theoretical Radius Predictions for Short-Period Transiting Extrasolar Planets. *The Astrophysical Journal*, 621:1072. (<https://doi.org/10.1086/427689>)
  27. Sato, B., Fischer, D. A., Henry, G. W., Laughlin, G., Butler, R. P., Marcy, G. W., Vogt, S. S., Bodenheimer, P., Ida, S., Toyota, E., **Wolf**, A., Valenti, J. A., Boyd, L. J., Johnson, J. A., Wright, J. T., Ammons, M., Robinson, S., Strader, J., McCarthy, C., Tah, K. L., Minniti, D. (2005), The N2K Consortium. II. A Transiting Hot Saturn around HD 149026 with a Large Dense Core. *The Astrophysical Journal*, 633:465. (<https://doi.org/10.1086/449306>)

## Invited Talks

- Southwest Research Institute (SwRI), Boulder CO. February 2023.
- Fall AGU, San Francisco CA. December 2019.
- Oxford University, Dept. of Earth Sciences, Oxford UK. May 2019.
- Fall AGU, Washington D.C.. December 2018.
- Fall AGU, New Orleans LA. December 2017.
- Extreme Physics and Chemistry, Deep Carbon Observatory (EPC/DCO) Meeting, Tempe AZ. November 2017.
- Lamont-Doherty Earth Observatory, Seismology, Dept. of Earth and Environmental Sciences. October 2017.
- High-Pressure Mineral Physics Seminar (HPMPS-9). September 2017.
- University of California Santa Barbara, Earth Science. September 2017.
- University of Bern, Center for Space and Habitability. August 2017.
- American Physical Society March Meeting, New Orleans LA. March 2017.
- CIDER Thermo/Fluid Dynamics Workshop, Honolulu HI. January 2017.
- High Pressure Gordon Research Seminar, Holderness NH. July 2016.
- Fall AGU, San Francisco CA. December 2015.
- Southwest Research Institute (SWRI), Boulder CO. April 2013.
- Washington University in Saint Louis - Earth and Planetary Sciences, Saint Louis MO. March 2013.
- University of Michigan - Earth and Environmental Sciences, Ann Arbor MI. March 2013.

## Courses and Workshops

- Educational and Tutorial Video Series on Geo-thermodynamics, Statistical Modeling, & Software Development (published on ENKI-portal YouTube channel). 2022-present.
- Modeling Silicate Planet Phase Equilibria with the ENKI Software Portal (Pre-Goldschmidt Workshop), Barcelona, Spain. Aug 2019 (**organizer**).
- Computational thermodynamics and fluid dynamics with the ENKI software portal (Pre-Goldschmidt Workshop), Boston MA. Aug 2018 (**organizer**).
- ENKI Thermo/Fluid Dynamics User Workshop (Year 2), Santa Ana Pueblo NM. Jul 2018 (**organizer**).
- ENKI Thermodynamic Datathon Workshop, Tempe AZ. Nov 2017 (**lead organizer**).
- EPC/DCO Data Workshop, Tempe AZ. Nov 2017 (**organizer**).
- ENKI Thermo/Fluid Dynamics User Workshop (Year 1), Seattle WA. May 2017 (**organizer**).
- CIDER Thermo/Fluid Dynamics Workshop, Honolulu HI. January 2017.
- Dynamical, Dielectric and Magnetic Properties of Solids with Abinit, Lyon FR, May 2014
- Deform & COMPRES EarthCube Workshop, Washington DC, Nov 2013
- Keck Institute for Space Studies, Innovative Approaches to Planetary Seismology, Pasadena CA, March 2010



- Theoretical and Computational Methods in Mineral Physics (Pre-AGU shortcourse), San Francisco CA, December 2009
- Summer School in Statistics for Astronomers, Penn State PA, June 2009

## Community Service

- Open Source software developer for mineral physics and geological thermodynamics research (see selected projects above): [ENKI-Portal Projects](#), [github.com/aswolf](https://github.com/aswolf), [gitlab.com/aswolf](https://gitlab.com/aswolf)
- Citizens for Racial Equity in Washtenaw (CREW) volunteer: Lead role in data collection, processing, and preliminary analysis for public sentencing data in Washtenaw county, quantifying major racial disparities in criminal justice system at local level.
- Pre-Goldschmidt Workshop Organizer: Computational thermodynamics and fluid dynamics with the ENKI software portal (Boston, 2018).
- Guest Lecturer for Determinative Methods in Mineralogical Materials (UMich, 2016)
- Guest Lecturer for Atmospheric Thermodynamics (UMich, 2015, 2016)
- Guest Lecturer for Geology (Grade 1-3, Go Like the Wind Montessori School, 2016)
- Judge for the Michigan Geophysical Union (2015)
- Judge for AGU Outstanding Student Paper award (2015)
- Mentor for the Undergraduate Research Opportunity Program, UROP (2015)
- Reviewer for: NSF (Petrology & Geochemistry, Geophysics, Earthscope), Nature, Nature Scientific Reports, PNAS, Icarus, the American Journal of Science, the American Mineralogist, Frontiers in Earth Science, & Progress in Earth and Planetary Science

## Conference Presentations

- **Wolf, A.S., Jäggi, N., Sossi, P.A. and Bower, D.J. (2023)**, VapoRock: Thermodynamics of vaporized silicate melts for modeling volcanic outgassing and magma ocean atmospheres. *AAS Winter Meeting*.
- **Wolf, A. S., Cunniff, E., Ustunisik, G. K., Nielsen, R. L. (2022)**, Causal Predictive Modeling for Trace Element Partitioning. *Goldschmidt*.
- **Wolf, A. S., Cunniff, E., Ustunisik, G. K., Nielsen, R. L., Antoshechkina, P., Lehnert, K. A., Ji, P., Cao, S., Profeta, L. R. (2022)**, Toward Causal Predictive Models of Trace Element Partitioning. *EarthCube Annual Meeting*.
- **Wolf, A. S., Ghiorso, M. S. (2019)**, Thermodynamic Modeling Using ENKI. *AGU Fall Meeting*. (invited talk)
- **Wolf, A. S., Ghiorso, M. S., Till, C., Unterborn, C. (2019)**, Redox Model for Silicate Melts at Mantle Conditions. *Goldschmidt*.
- **Wolf, A. S., Bower, D. J., Seclaman, A. C. (2018)**, Constraining the Mantle Liquidus and the impact on Magma Ocean Crystallization. *AGU Fall Meeting*, (invited talk).
- **Wolf, A. S., Hurt, S. (2018)**, Anomalous structure of MgCO<sub>3</sub> liquid and the buoyancy of carbonatite melts. *AGU Fall Meeting*.
- **Wolf, A. S. (2017)**, Bayesian Calibration of Thermodynamic Databases and the Role of Kinetics. *AGU Fall Meeting*, (invited talk).
- **Wolf, A. S., Bower, D. J. (2017)**, Modeling thermodynamics of high-pressure liquids with application to MgSiO<sub>3</sub> for understanding magma ocean evolution. *APS March Meeting*, (invited talk).
- **Wolf, A. S., Bower, D. J. (2017)**, Thermodynamic constraints on mantle melting and magma ocean crystallization. *Goldschmidt Meeting*, (poster).
- **Wolf, A. S. (2017)**, The high-pressure structure of silicate melts and the impact on magma ocean evolution. *High Pressure Mineral Physics Seminar 9*, (invited talk).
- **Wolf, A. S. (2017)**, Incorporating kinetics in thermodynamic model building. *Extreme Physics and Chemistry of carbon, Deep Carbon Observatory Meeting*, (invited talk).
- **Wolf, A. S., Bower, D. J. (2016)**, A new thermodynamic model for high pressure melts and the impact on magma ocean crystallization. *AGU Fall Meeting*, (poster).
- **Wolf, A. S., Dan (2016)**, Coordinated hard sphere mixture (chasm): Approximate modeling of oxide and silicate melts at extreme pt conditions. *High Pressure Gordon Research Seminar*, (invited talk).

- Antoshechkina, P. M., **Wolf**, A. S., Hamecher, E. A., Asimow, P. D., Ghiorso, M. S. (2015), Improved Thermodynamic Model Calibration with Bayesian Methods. (poster).
- **Wolf**, A. S., Asimow, P. D., Stevenson, D. J. (2015), Coordinated Hard Sphere Mixture (CHaSM): A fast approximate model for oxide and silicate melts at extreme conditions. *AGU Fall Meeting*, (talk).
- **Wolf**, A. S., Bower, D. J. (2015), Crystallization and Cooling of a Deep Silicate Magma Ocean. *AGU Fall Meeting*, (poster).
- **Wolf**, A. S., Asimow, P. D., Caracas, R. (2014), Cation Ordering in Fe-bearing Silicate Perovskite (Bridgmanite) and its Role in Disproportionation. *AGU Fall Meeting*, (talk).
- Antoshechkina, P. M., **Wolf**, A. S., Hamecher, E. A., Asimow, P. D., Ghiorso, M. S. (2013), Simultaneous calibration of end-member thermodynamic data and solution properties with correlated uncertainties. *AGU Fall Meeting*, (poster & presenter).
- **Wolf**, A. S., Asimow, P. D., Stevenson, D. J. (2013), Coordinated HARD Sphere Model (CHASM): A Simplified Model for Silicate and Oxide Liquids at Mantle Conditions. *AGU Fall Meeting*, (poster).
- **Wolf**, A. S., Jackson, J. M., Dera, P., Prakapenka, V. (2013), The Thermal Properties of Iron-bearing Mg-Silicate Perovskite and the Implications for Lower Mantle Structures. *COMPRES Meeting*, (talk & poster).
- **Wolf**, A. S., Jackson, J. M., Dera, P., Prakapenka, V. (2013), The Thermal Properties of Iron-bearing Mg-Silicate Perovskite and the Implications for Lower Mantle Structures. *Gordon Research Conference*, (poster).
- **Wolf**, A. S., Asimow, P. D., Stevenson, D. J. (2012), A Simplified Cation Speciation Model for Silicate Liquids at Mantle Pressures and Temperatures. *AGU Fall Meeting*, (poster).
- **Wolf**, Aaron S., Asimow, Paul D., Caracas, R. (2012), A Simplified Cation Speciation Model for Silicate Liquids at High Pressures. *Goldschmidt Meeting*, (talk).
- **Wolf**, A. S., Jackson, J. M., Dera, P. K., Prakapenka, V. (2010), Thermal Equation of State of (Mg,Fe)SiO<sub>3</sub> Perovskite in a Ne Pressure Medium. *AGU Fall Meeting Abstracts*, (poster).
- **Wolf**, A. S., Asimow, P. D., Caracas, R. (2008), Thermodynamic phase relations of the MgO-FeO-SiO<sub>2</sub> system in the lower mantle. *Goldschmidt Conference Abstracts*, (poster).
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