

University of Chicago, Dept. of the Geophysical Sciences
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Education

Ph.D. Candidate in Geophysical Sciences	University of Chicago
M.S. in Geophysical Sciences	University of Chicago, 2015
B.S. in Earth Sciences, <i>magna cum laude</i>	University of New Orleans, 2013

Research & Teaching Appointments

Research Assistant	2013-2017	University of Chicago, Laboratory for Mineral Physics
Visiting Fellow	2016-2017	Ehime University, Geodynamics Research Center
Teaching Assistant	2017	Mineralogy
Teaching Assistant	2016	Physics of the Earth
Teaching Assistant	2014	Physical Geology
Teaching Assistant	2013	Energy: Science, Technology and Human Usage
DEVELOP Intern	2012-2013	NASA John C. Stennis Space Center
SULI Program Intern	2012	Oak Ridge High Temperature Materials Lab
NSF REU Researcher	2011	University of Minnesota, Dept. of Earth Sciences

Awards & Grants

2018-2020	NSF Earth Sciences Postdoctoral Fellowship
2017	William Rainey Harper Dissertation Fellowship, University of Chicago
2017	Student Poster Award, COMPRES Annual Meeting
2016	NSF Graduate Research Opportunities Worldwide (GROW) Fellowship
2016	NSF East Asian & Pacific Summer Institute (EAPSI) Fellowship
2015	Sigma Xi Grants-in-aide of Research
2014-2017	NSF Graduate Research Fellowship Program (GRFP)
2013-2015	McCormick Fellowship, University of Chicago
2013	Phi Beta Kappa Club Award, University of New Orleans
2013	Olga Braunstein Scholarship, University of New Orleans
2011, 2012	Shell Women and Minorities in Science Scholarship

Travel Grants: Association for Women Geoscientists Foundation Takken Student Research Presentation Travel Award (2017); University of Chicago Graduate Council Travel Award (2016); Goldschmidt Conference NASA-funded Grant (2016); Geological Society of America On To the Future Travel Fund (2014)

Publications

- E.C. Thompson, A.H. Davis, W. Bi, J. Zhao, E.E. Alp, D. Zhang, E. Greenberg, V.B. Prakapenka, and A.J. Campbell (*In Review*) High-pressure geophysical properties of *fcc* phase FeH_x.
- B.A. Chidester, O.S. Pardo, R.A. Fischer, E.C. Thompson, D.L. Heinz, C. Prescher, V.B. Prakapenka, and A.J. Campbell (*In Review*) High-pressure phase behavior and equations of state of ThO₂ polymorphs.
- R.A. Fischer, A.J. Campbell, B.A. Chidester, D.M. Reaman, E.C. Thompson, J.S. Pigott, V.B. Prakapenka, and J.S. Smith (*In Review*) Equations of state and phase boundary for stishovite and CaCl₂-type SiO₂.
- E.C. Thompson, A.J. Campbell, and J. Tsuchiya (2017) Elasticity of ϵ -FeOOH: Seismic implications for Earth's lower mantle. *Journal of Geophysical Research*, 122(7), 5038-5047. DOI: 10.1002/2017JB014168.
- E.C. Thompson, B.A. Chidester, R.A. Fischer, G.I. Myers, D.L. Heinz, V.B. Prakapenka, and A.J. Campbell (2016) Equation of state of pyrite to 80 GPa and 2400 K. *American Mineralogist*, 101, 1046-1051. DOI: 10.2138/am-2016-5527.
- E.C. Thompson, A.J. Campbell, and Z. Liu (2016) In-situ infrared spectroscopic studies of hydroxyl in amphiboles at high pressure. *American Mineralogist*, 101, 706-712. DOI: 10.2138/am-2016-5465.

User Facility Proposals

- FTIR spectroscopic investigation of the effect of Al-substitution on high-pressure dense hydrous magnesium silicates, off-line infrared spectroscopy, NSLS-II (301717).
- In-situ infrared spectroscopic studies of hydroxyl in mantle phases at high pressure, off-line infrared spectroscopy, NSLS-II (300993).
- In-situ infrared spectroscopic studies of hydroxyl in hydrous mantle phases at high pressure, synchrotron-based infrared spectroscopy, ALS 1.4 (07830, 300056).
- The high-pressure phonon density of states of *fcc* iron hydride, nuclear resonant X-ray scattering and synchrotron Mossbauer spectroscopy, APS 3-ID (40453, 49664).

Scientific & University Service

- Reviewer:** Journal of Geophysical Research: Solid Earth, American Mineralogist, European Journal of Mineralogy, High Temperatures-High Pressures
- 2017 Session chair, American Geophysical Union Fall Meeting, *Carbon and Other Volatiles in Earth and Planetary Interiors (MR028)*
- 2017 Session chair, Goldschmidt Conference, *Fluids and Melts Inside Planets: Observations, Models and Experiments (04f)*
- 2016-17 Program Committee member and session chair, COMPRES Meeting
- 2016 Session chair, American Geophysical Union Fall Meeting, *Planetary Ices and Volatiles from Surface to Deep Interior (MR021)*
- 2016 Session chair, Goldschmidt Conference, *“Water”: The Role and Influence of Hydrogen-Bearing Phases in Planetary Interiors (04c)*
- 2015-17 COMPRES Student and Postdoc Committee, chair 2016-2017
- 2015-16 Dept. of the Geophysical Sciences student seminar series, President
- 2013-16 Museum of Science and Industry, Microscope Facilitator, Volunteer
- 2014-15 Dept. of the Geophysical Sciences student seminar series, Vice President
- 2011-13 Society for Earth & Environmental Science, President 2012-2013

Conference Presentations

- E.C. Thompson**, A.J. Campbell, and J. Tsuchiya (2017) Elasticity of ϵ -FeOOH: Seismic implications for Earth’s lower mantle, *AGU Fall Meeting*.
- A.H. Davis, N.M. Brauser, **E.C. Thompson**, B.A. Chidester, E. Greenberg, V.B. Prakapenka, and A.J. Campbell (2017) Equation of state of Fe₃C and implications for the carbon content of Earth’s core, *AGU Fall Meeting*.
- B.A. Chidester, O.S. Pardo, W.R. Panero, R.A. Fischer, **E.C. Thompson**, D.L. Heinz, C. Prescher, V.B. Prakapenka, and A.J. Campbell (2017) Phase behavior and equations of state of the actinide oxides, *AGU Fall Meeting*.
- J. Tsuchiya, **E.C. Thompson**, T. Tsuchiya, M. Nishi, and Y. Kuwayama (2017) First principles investigation of the high-pressure behavior of the FeOOH-AlOOH-phase H (MgSiO₄H₂) system, *AGU Fall Meeting* (invited).
- E.C. Thompson**, A.H. Davis, W.Bi, E.E. Alp, D. Zhang, E. Greenberg, V.B. Prakapenka, and A.J. Campbell (2017) High-pressure properties of *fcc* phase FeH_x, *COMPRES Annual Meeting*.

- A.H. Davis, **E.C. Thompson**, Z. Liu, C.C. Zurkowski, and A.J. Campbell (2017) *In-situ* infrared spectroscopic studies of hydroxyl in micas at high pressures, *COMPRES Annual Meeting*.
- J. Tsuchiya, **E.C. Thompson**, T. Tsuchiya, M. Nishi, and Y. Kuwayama (2017) First principles investigation of the high-pressure behavior of the FeOOH-AlOOH-phase H (MgSiO₄H₂) system, *IAG-IASPEI Joint Scientific Assembly* (invited).
- E.C. Thompson**, B.A. Chidester, L.R. Danielson, V.B. Prakapenka, A.J. Campbell, and J. Tsuchiya (2016) Pressure-induced hydrogen bond symmetrization in aluminous phase D, *AGU Fall Meeting*.
- E.C. Thompson**, Z. Liu, M. M. Reagan, and A.J. Campbell (2016) In situ infrared spectroscopic studies of hydroxyl in mantle phases at high pressure, *Goldschmidt Annual Meeting*.
- E.C. Thompson**, B.A. Chidester, R.A. Fischer, V.B. Prakapenka, W.L. Bi, E.E. Alp, and A.J. Campbell (2015) High-pressure behavior of *fcc* phase FeH_x, *AGU Fall Meeting*.
- E.C. Thompson**, A.J. Campbell, and Z. Liu (2015) In-situ infrared spectra of hydroxyl in amphiboles at high pressure, *COMPRES Annual Meeting*.
- E.C. Thompson**, B.A. Chidester, A.J. Campbell, and V.B. Prakapenka (2014) Equation of state of pyrite to 85 GPa and 2400 K, *AGU Fall Meeting*.
- E.C. Thompson**, A.J. Campbell, and Z. Liu (2014) In-situ infrared spectra of hydroxyl in amphiboles at high pressure, *GSA Annual Meeting* (talk).
- A.J. Campbell, R.A. Fischer, B.A. Chidester, **E.C. Thompson**, and V.B. Prakapenka (2014) Melting in the Fe-O-S system at high pressure, *COMPRES Annual Meeting*.
- A.J. Campbell, R.A. Fischer, B.A. Chidester, **E.C. Thompson**, and V.B. Prakapenka (2014) Melting in the Fe-O-S system at high pressure, *Goldschmidt Annual Meeting* (talk).
- B.A. Chidester, A.J. Campbell, R.A. Fischer, D. Reaman, D.L. Heinz, **E.C. Thompson**, and V.B. Prakapenka (2014) High-pressure high-temperature phase changes and equations of state of UO₂ and ThO₂, *COMPRES Annual Meeting*.
- E.C. Thompson**, A. M. Dillman, L. N. Hansen, and D. L. Kohlstedt (2011) Contribution of grain boundary sliding to diffusion creep of forsterite, *AGU Fall Meeting* (talk).

Professional Development

Memberships: American Geophysical Union, Association for Women Geoscientists, Geochemical Society, Geological Society of America, Mineralogical Society of America, Omicron Delta Kappa, Phi Kappa Phi, Sigma Gamma Epsilon, and Sigma Xi

Workshops:

2017 *Ab Initio* Tools for Hypothesis Testing, COMPRES Annual Meeting
2017 MTEX: Electron Backscatter Electron Diffraction, University of Tokyo
2016 Multigrain Crystallography Workshop, Argonne National Laboratory
2016 High Pressure Geochemistry Short Course, Goldschmidt Conference
2014 Nuclear Resonant Scattering Workshop, Argonne National Laboratory
2014 Sixteenth National School on Neutron and X-ray Scattering, jointly held at Argonne National Laboratory and Oak Ridge National Laboratory

Synchrotron Experience

Advanced Light Source	1.4	infrared spectroscopy	18 days
Advanced Photon Source	13-ID-D	X-ray diffraction	16 days
Advanced Photon Source	3-ID-B	nuclear resonance scattering	9 days
National Synchrotron Light Source	U2A	infrared spectroscopy	9 days
Advanced Photon Source	16-ID-B	X-ray diffraction	2 days