

ELIZABETH 'LILY' C. THOMPSON

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EDUCATION

- 2018 Ph.D. in Geophysical Sciences, University of Chicago
Mineral physics of hydrogen-bearing phases in the deep Earth
Advisor: Andrew J. Campbell
- 2015 M.S. in Geophysical Sciences, University of Chicago
In situ infrared spectroscopic studies of hydroxyl in amphiboles at high pressure
Advisor: Andrew J. Campbell
- 2013 B.S. in Earth and Environmental Sciences, *magna cum laude*,
University of New Orleans

PROFESSIONAL EXPERIENCE

- 2019-present Assistant Professor, University of the South
- 2018-2019 NSF EAR Postdoctoral Fellow, Northwestern University and Ehime University
Advisors: Steven D. Jacobsen and Jun Tsuchiya
- 2013-2018 Graduate Researcher, University of Chicago
Advisor: Andrew J. Campbell
- 2016-2017 Visiting Fellow, Geodynamic Research Center, Ehime University
Advisor: Jun Tsuchiya
- 2012-2013 DEVELOP Researcher, NASA John C. Stennis Space Center
- 2012 SULI Researcher, Oak Ridge National Laboratory, High Temperature Materials Lab
Advisor: Edgar Lara-Cuzio
- 2011 NSF REU Researcher, University of Minnesota, Rock and Mineral Physics Lab
Advisor: David L. Kohlstedt

AWARDS

- 2018 NSF Division of Earth Sciences Postdoctoral Fellowship
- 2017 William Rainey Harper Dissertation Fellowship, University of Chicago
- 2017 Student Poster Award, COMPRES Annual Meeting
- 2017 Association for Women Geoscientists (AWG) Takken Award
- 2016 NSF Graduate Research Opportunities Worldwide (GROW) Fellowship
- 2016 NSF East Asian & Pacific Summer Institute (EAPSI) Fellowship
- 2015 Sigma Xi Grants-in-Aid of Research
- 2014-2017 NSF Graduate Research Fellowship Program (GRFP)
- 2014 Geological Society of America On To the Future Travel Fund
- 2013-2015 McCormick Fellowship, University of Chicago

PUBLICATIONS (* indicates mentored student)

- 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 (2018), Equations of state and phase boundary for stishovite and CaCl₂-type SiO₂. *American Mineralogist*, 103, 792-802. DOI: 10.2138/am-2018-6267.
- B.A. Chidester, O.S. Pardo*, R.A. Fischer, E.C. Thompson, D.L. Heinz, C. Prescher, V.B. Prakapenka, and A.J. Campbell (2018), High-pressure phase behavior and equations of state of ThO₂ polymorphs. *American Mineralogist*, 103, 749-756. DOI: 10.2138/am-2018-6212.
- E.C. Thompson, A.H. Davis*, W. Bi, J. Zhao, E.E. Alp, D. Zhang, E. Greenberg, V.B. Prakapenka, and A.J. Campbell (2018), High-pressure geophysical properties of fcc phase FeH_x. *Geochemistry, Geophysics, Geosystems*, 19(1), 305-314. DOI: 10.1002/2017GC007168.
- 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.

CONFERENCE PRESENTATIONS (* indicates mentored student)

- E.C. Thompson, F. Wang, Z. Liu, and S. D. Jacobsen (2019), Changes in hydrogen bonding in wadsleyite at concurrent *P-T* conditions relevant to encapsulation as inclusion in diamond, *AGU Fall Meeting*.
- J. R. Smyth, F. Wang, E.C. Thompson, and S. D. Jacobsen (2019), Crystal structure and compressibility of Fe-Mg Jeffbenite synthesized at 15 GPa and 1200 °C, *AGU Fall Meeting*.
- E.C. Thompson, E. Bredow, N. Creasy, K.E. Godfrey, J.K. Muller, M. Xu, C. Wang, M.D. Ballmer, S. Huang, G. Morra, and S. Mukhopadhyay (2019), Thermochemical evolution of mantle plumes observed spatially, *EGU General Assembly*.
- E.C. Thompson, A.H. Davies*, H.J. Bausch*, Z. Liu, A.J. Campbell, J. Tsuchiya, and S.D. Jacobsen (2018), The influence of hydrogen bonding on the material properties of hydrous phases, *AGU Fall Meeting*. (Invited talk)
- E.C. Thompson, E. Bredow, N. Creasy, K.E. Godfrey, J.K. Muller, M. Xu, C. Wang, M.D. Ballmer, S. Huang, G. Morra, and S. Mukhopadhyay (2018), Thermochemical evolution of mantle plumes observed spatially (TEMPOS), *AGU Fall Meeting*.
- 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 (2018), Equations of state and phase diagram of SiO₂ to lower mantle conditions, *AGU Fall Meeting*. (Invited talk)

- 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 (2018), Equations of state and phase diagram of SiO₂ to lower mantle conditions, *Goldschmidt Annual Meeting*.
- E.C. Thompson, A.J. Campbell, and J. Tsuchiya (2018), Calculated elastic properties of pyrite-type (Fe,Al)O₂H, *Cooperative Institute for Dynamic Earth Research (CIDER) Summer Program*.
- E.C. Thompson (2018), IR spectroscopy of hydrous minerals at high pressures: Implications for the deep Earth, *NSLS-II & CFN Users' Meeting*. (Invited talk)
- E.C. Thompson, A.H. Davis*, Z. Liu, V.B. Prakapenka, D.L. Heinz, and A.J. Campbell (2018), Material properties of high-pressure iron oxyhydroxide, *Stewardship Science Academic Programs Symposium*.
- E.C. Thompson, A.J. Campbell, and J. Tsuchiya (2017), Elasticity of ϵ -FeOOH: Seismic implications for Earth's lower mantle, *AGU Fall Meeting*. (Talk)
- 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 talk)
- 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 talk)
- 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)

SYNERGISTIC ACTIVITIES

- Reviewer:** Nature Communications, Geophysical Research Letters, Journal of Geophysical Research: Solid Earth, American Mineralogist, Physics and Chemistry of Minerals, European Journal of Mineralogy, High Temperatures-High Pressures
- Current Associate Editor, American Mineralogist, Special Collection ‘Volatile Elements in Differentiated Planetary Interiors’ with co-AE Anne Peslier
- Current Committee member, AGU Mineral and Rock Physics Section, Student Posters and Travel Grants Committee
- 2019 External reviewer, NASA Science Mission Directorate Planetary Science Division
- 2019 Session Chair, AGU Fall Meeting, *Carbon and Hydrogen in the Deep Earth*
- 2018 Session Chair, AGU Fall Meeting, *Planetary Interiors: The Role of Volatile Elements and Assessing Habitability (MR21A, MR22A, MR23B)*
- 2018 Outstanding Student Presentation Award (OSPA) Judge for AGU Fall Meeting
- 2017 Session Chair, AGU Fall Meeting, *Carbon and Other Volatiles in Earth and Planetary Interiors (MR43A, MR51B, MR52A)*
- 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, AGU Fall Meeting, *Planetary Ices and Volatiles from Surface to Deep Interior (MR31A, MR34A)*
- 2016 Session Chair, Goldschmidt Conference, *“Water”: The Role and Influence of Hydrogen-Bearing Phases in Planetary Interiors (04c)*
- 2015-17 Committee member, COMPRES Student and Postdoc Committee
- 2015-16 Chair, Department of the Geophysical Sciences (DoGS) Student Seminar Series
- 2013-16 Volunteer Microscope Facilitator, Museum of Science and Industry

PROFESSIONAL DEVELOPMENT

- 2019 Workshop for Early Career Geoscience Faculty, presented by the Science Education Resource Center at Carleton College (SERC)
- 2018 An Introduction to Evidence-Based Undergraduate STEM Teaching, presented by the Center for the Integration of Research, Teaching and Learning
- 2018 Relating Geochemical and Geophysical Heterogeneity, Cooperative Institute for Dynamic Earth Research (CIDER) Summer Program
- 2018 Synchrotron Infrared Spectroscopy on Materials in Extreme Environments Workshop, NSLS-II & CFN Users' Meeting
- 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

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