# CARA K. THOMPSON

School of Mathematical and Natural Sciences
ASU West Campus
1701 Thunderbird Rd
Glendale, AZ 85306

**phone:** (865) 556-2806
**email:** cara.k.thompson@gmail.com
**url:** http://www.astrumterra.com/cayro/


## EDUCATION & EXPERIENCE

**Education:**

**Ph.D., Geology:** Carbonate Geochemistry, *Carbon and Sulfur Cycling in Early Paleozoic Oceans*, University of Tennessee (2006-2011)
**M.S., Geology:** Experimental Petrology, University of Tennessee (2002-2005)
**B.A., Environmental Science:** Concentration in Geosciences, University of Virginia (2000-2001)
**A.S.,** Virginia Western Community College, Roanoke, Virginia (1997-1999)

**Employment:**

**Clinical Assistant Professor**, School of Natural and Mathematical Sciences, Arizona State University West Campus (08/2016-present)
**Tenure-Track Faculty**, Earth Science Department, Santa Monica College (08/2012-07/2016; tenure received in June 2016)
**National Science Foundation Postdoctoral Fellow**, Department of Geosciences, Stony Brook University (05/2011-02/2014)
**Ph.D. Candidate (Graduate Teaching/Research Assistant)**, Department of Earth and Planetary Sciences, University of Tennessee (01/2006 – 05/2011)
**M.S. Candidate (Graduate Teaching Assistant)**, Department of Earth and Planetary Sciences, University of Tennessee (08/2002 – 12/2005)

**Teaching:**

**Santa Monica College:**
GEOL 1: Physical Geology
GEOL 4: Physical Geology with Laboratory
GEOL 31: Physical Oceanography
GEOL 35: Field Geology of Southern California
SCI 10: Principles and Practice of Scientific Research

**Stony Brook University:**
GEO 102: The Earth
SSO 102: Climate change in the past & present (Science & Society Undergraduate College)
Opportunities for Enhancing Diversity in the Geosciences/GeoPREP mentor
Mentor for undergraduate independent study projects

**University of Tennessee:**
GEO 101: Introduction to Physical Geology (Laboratory)
GEO 102: Introduction to Historical Geology (Lecture and Laboratory)
GEO 103: Introduction to Environmental Geology (Laboratory)
GEO 493: Mentor for undergraduate independent study projects
GEO 530: Petrogenesis of Crystalline Rocks (Laboratory)

**Curriculum Development:**

GEOL 3: Environmental Geology
GEO 94: Introduction to Geoscience Field Methods
GEOL 10: Exploration of the Solar System

**Laboratory:**

Carbon, oxygen, sulfur, and boron isotope geochemistry; inductively coupled plasma mass spectrometer (ICP-MS), thermal ion mass spectrometer (TIMS), electron microprobe analyses, inductively coupled plasma optical emission spectrometer (ICP-OES), coulometry, cathodoluminescence.

**Other Activities:**

NASA MUREP MC3I Grant Principle Investigator (2015-present)
Ocean Sustainability Module Team Member, Carleton College (2014-present)
Environmental Affairs Committee Chair (08/2015-06/2016)
Earth Science STEM Lead (02/2013-07/2016)
Faculty Summer Institute, Santa Monica College (Summer 2014)
JPL Faculty Intern (Summer 2013)
Santa Monica College Distinguished Scientist Lecturer (2013)
Teaching About Time Workshop Participant and Invited Speaker (2012)
Earth and Planetary Science Letters Reviewer (2012)
NASA Volcanology Workshop (2003)

**Awards:**
NASA Minority University Research and Education Project Community College Curriculum Improvement Grant, Principle Investigator (2015-2018)
National Science Foundation Postdoctoral Fellowship (2011-2013)
Mayo Foundation Scholarship (2010)
Anne Mayhew Graduate Student Travel Fund (2010)
University of Tennessee Alumni Graduate Promise Award (2009)
SEPM: Society for Sedimentary Geology Gerald M. Friedman Fund (2008)
Geological Society of America Graduate Student Grant (2007)
Sigma Xi: The Scientific Research Society Grants-in-Aid of Research (2006)
Geological Society of America Graduate Student Grant (2004)

## RELEVANT GRADUATE COURSEWORK

GEO 370 Earth Structure and Geophysics
GEO 401 Quantitative Methods in Geology
GEO 460 Principles of Geochemistry
GEO 530 Petrogenesis of Crystalline Rocks
GEO 546 Carbonate Sedimentology
GEO 563 Stable Isotope Geochemistry
GEO 565 Chemical Petrology
GEO 568 Geochemical Analysis: Microprobe Techniques
GEO 590 Special Problems in Geology: Organic Geochemistry
GEO 590 Special Problems in Geology: Geochemistry of Global Climate Change
GEO 590 Special Problems in Geology: Mapping the Belmont Pluton, Belmont, Nevada
GEO 590 Special Problems in Geology: Sequence Stratigraphy
GEO 593 Independent Study: Tectonics of the Argentine Precordillera
GEO 630 Seminar in Petrology: Crystallization Programs
GEO 640 Seminar in Sedimentary Geology: C-S-O Isotopes
GEO 660 Seminar in Geochemistry
GEO 640 Seminar in Sedimentary Geology: Planetary Biospheres
GEO 640 Seminar in Sedimentary Geology: Early Life
GEO 675 Seminar in Geophysics
EEB 446 Introduction to Oceanography
LAW 866 Environmental Law and Policy

## PUBLICATIONS

### *I. Journal Articles, In Preparation & Theses*

Kah, L.C., Thompson, C.K., Henderson, M.A., Zhan, R., in press. Behavior of Marine Sulfur in the Ordovician. *Palaeogeography, Palaeoclimatology, Palaeoecology*.

Thompson, C.K., Kah, L.C., 2012. Sulfur isotope evidence for widespread euxinia and fluctuating oxycline in the Early to Middle Ordovician greenhouse ocean. *Palaeogeography, Palaeoclimatology, Palaeoecology* 313-314, 189-214.

Thompson, C.K., Kah, L.C., Astini, R., Bowring, S.A., Buchwaldt, R., 2012. Bentonite geochronology, marine geochemistry, and the Great Ordovician Biodiversification Event (GOBE). *Palaeogeography, Palaeoclimatology, Palaeoecology* 321-322, 88-101.

Thompson, C.K., Kah, L.C., Kaufman, A.J., *in preparation*. Sulphur isotopes mark end of Ordovician greenhouse climate in Darriwilian. *Nature Geoscience*.

Thompson, C.K., 2011. Carbon and sulfur cycling in early Paleozoic oceans. University of Tennessee, Ph.D. Dissertation.

Thompson, C.K., 2005. High-temperature, high-pressure HDAC study of the Mg-carbonate mineral, nesquehonite: University of Tennessee, M.S. Thesis.

### *II. Sessions Chaired*

Geochemical proxies for ancient ocean chemistry: Implications for links between ocean chemistry, plate tectonics, sea level and climate throughout the Late Precambrian and Phanerozoic. Chairs: Cara Thompson and Troy Rasbury. 2012 GSA Annual Meeting and Exposition, Charlotte, NC.

### *III. Abstracts*

Thompson, C.K., Rasbury, E.T., Hemming, N.G., 2014. Boron isotope record of end-Ordovician climate change. 2014 Goldschmidt Annual Conference.

Kah, L.C., Thompson, C.K., Henderson, M., 2014. Behavior of marine sulfur in the Ordovician. GSA Abstracts with Programs, 2014 Joint Annual Meeting.

Kah, L.C., Thompson, C.K., 2011. Investigating the origin of marine Sr-isotope change in the Ordovician: Evidence from partitioning of magnesium and strontium into marine calcite. GSA Abstracts with Programs, 2011 Joint Annual Meeting.

Thompson, C.K., Kah, L.C., Kaufman, A.J., 2010. Sulfur cycling in the late Middle Ordovician: implications for ocean circulation and the onset of Late Ordovician glaciation. GSA Abstracts with Programs, 2010 Joint Annual Meeting.

Thompson, C.K., Kah, L.C., 2010. Sulfur cycling in the Early-Middle Ordovician Argentine Precordillera: implications for a fluctuating oxycline in a greenhouse ocean. 18th International Sedimentological Congress: Sedimentology at the foot of the Andes. Mendoza, Argentina.

Thompson, C.K., Kah, L.C., Harrelson, K. 2010. Sulfur cycling in an Ordovician greenhouse climate. Abstract for 2010 Goldschmidt Annual Conference.

Thompson, C.K., Kah, L.C., 2008. Redox cycling in the greenhouse ocean: exploring rapid sulfur isotope variation in the Middle Ordovician. GSA Abstracts with Programs, 2008 Joint Annual Meeting, Abstract 230-9.

Thompson, C.K., Kah, L.C., 2007. S-isotope analysis of the Mid-Ordovician San Juan and Table Head Formations, Argentina and Newfoundland: evidence for high-resolution redox cycling in the early Paleozoic. GSA Abstracts with Programs, 2007 Joint Annual Meeting, Abstract 54-3.

Thompson, C.K., Taylor, L.A., and Goodrich, C.A., 2004. A comparison of textural and chemical features of spinel within lunar mare basalts. LPSC XXXV, Lunar and Planetary Institute, Houston, Abstract 1131.

Thompson, C.K., Taylor, L.A., and Goodrich, C.A., 2003, The role of spinel in the petrogenesis of lunar mare basalts. GSA Abstracts with Programs 35, 6, 266.

Slater, V.P., Thompson, C.K., Nettles, J., Milam, K., Stockstill, K.R., Cahill, J., Anad, M., and Taylor, L.A., 2003. An Evaluation of the Igneous Crystallization Programs – MELTS, MAGPOX, and COMAGMAT Part II: Importance of Magmatic $fO_2$. LPSC XXXIV, Lunar and Planetary Institute, Houston, Abstract 1881.

Thompson, C.K., Slater, V.P., Stockstill, K.R., Anand, M., Nettles, J., Milam, K., Cahill, J., and Taylor, L.A., 2003. An Evaluation of the Igneous Crystallization Programs – MELTS, MAGPOX, and COMAGMAT Part I: Does One Size Fit All? LPSC XXXIV, Lunar and Planetary Institute, Houston, Abstract 1881.