

Thomas S. Tobin

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### Appointments

- |                                |                                |                |
|--------------------------------|--------------------------------|----------------|
| • Assistant Professor          | University of Alabama          | 2015 – ongoing |
| • Visiting Assistant Professor | Lake Superior State University | 2014 – 2015    |
| • Geoscience Intern            | ExxonMobil                     | 2013           |

### Professional Preparation

- University of Washington 2008-2014
  - Ph.D. in Earth & Space Sciences, Astrobiology
  - Advisor: Dr. Peter Ward
- Macalester College 2004-2008
  - B.A. in Geology, Magna Cum Laude, With Honors
  - Advisor: Dr. Kelly MacGregor

### Graduate Student Advising

- Mohr, Rachel C.; expected 2022 (Ph.D.)
- Murray, Bridget; expected 2020 (M.S.)
- West, Kaydee J.; expected 2021 (Ph.D.)
- Mohr, Rachel C.; 2018 (M.S.). Seasonality across the Cretaceous-Paleogene boundary: a high-resolution ontogenetic study of the Antarctic bivalve, *Labillia larseni*.

### Papers (\*Undergraduate student; †Graduate student; direct supervision)

- Mohr, R. C.†; **T. S. Tobin.**, S. V. Petersen (in prep). Sclerochronological ( $\delta^{18}\text{O}$ ,  $\delta^{13}\text{C}$ ) records from Antarctic bivalves reveal climate warming and variations in seasonal productivity across the K-Pg boundary.
- Ellis, N. M.\*; **T. S. Tobin** (in revision). Evidence for seasonal variation in  $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  profiles of Baculites and implications for growth rate. *Palaeontology*.
- **Tobin, T. S.**; D. M. Flannery, F. J. Sousa. (2018). Stratigraphy, Sedimentology and Paleontology of Day Nunatak, Antarctica. *Cretaceous Research*. 84, 407-419
- **Tobin, T. S.** (2017). Recognition of a likely two phased extinction at the K-Pg boundary in Antarctica. *Scientific Reports*. 7(1)

- Schoepfer, S. D.; **T. S. Tobin.**; J. D. Witts.; R. J. Newton (2017). Intermittent euxinia in the high-latitude James Ross Basin during the latest Cretaceous and earliest Paleocene. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 477, 40-54.
- **Tobin, T. S.**; C. M. Bitz, D. Archer (2016). Modelling Climatic Effects of Carbon Dioxide Emissions from Deccan Traps Flood Volcanism around the Cretaceous - Paleogene Boundary. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 478, 139-148.
- **Tobin, T. S.**; P. D. Ward (2015). Carbon isotope ( $\delta^{13}\text{C}$ ) discrepancies between Late Cretaceous ammonites and benthic mollusks from Antarctica. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 428, 50-57.
- **Tobin, T. S.**; G. P. Wilson, J. M. Eiler, J. H. Hartman (2014). Environmental change across a terrestrial Cretaceous-Paleogene boundary section in eastern Montana, U.S.A., constrained by carbonate clumped isotope paleothermometry. *Geology*. 42(4), 351-354.
- **Tobin, T. S.**; P. D. Ward, E. J. Steig, E. B. Olivero, I. A. Hilburn, R. N. Mitchell, M. R. Diamond, T. D. Raub, J. L. Kirschvink (2012). Extinction patterns,  $\delta^{18}\text{O}$  trends, and magnetostratigraphy from a southern high-latitude Cretaceous - Paleogene section: links with Deccan volcanism. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 350-352, 180-188.
- Ward, P. D.; J. Haggart, R. Mitchell, J. Kirschvink, **T. S. Tobin** (2012). Integration of macrofossil biostratigraphy and magnetostratigraphy for the Pacific Coast Upper Cretaceous (Campanian – Maastrichtian) of North America and implications for correlation with the Western Interior and Tethys. *Geological Society of America Bulletin*. 124, 957-974.
- **Tobin, T. S.**; A. Schauer, E. Lewarch (2011). Alteration of Micromilled Carbonate  $\delta^{18}\text{O}$  During Kiel Device Analysis. *Rapid Communications in Mass Spectrometry*. 25, 2149-2152.

### Conference Abstracts (Presenter or student presenter)

- **Tobin, T. S.**; C. G. Doughty\*, S. J. White\*. Possible anagenetic evolution within the ammonite genus Gunnarites from the Late Cretaceous of Antarctica. GSA Annual Meeting, 2018.
- Mohr, R. C. †; **T. S. Tobin**, S. V. Petersen, A. Dutton (2018). Sclerochronological records of carbonate isotopes from Antarctic bivalves reveal climate warming and variations in seasonal productivity across the K-Pg boundary. GSA Annual Meeting, 2018.
- Ellis, N. M.\*; **T. S. Tobin** (2017). Testing seasonality of the Late Cretaceous Western Interior Seaway with stable isotope analysis of ammonites (Baculites). AGU Fall Meeting, 2017.
- Mohr, R. C. †; **T.S. Tobin** (2017). Evaluating Microstructure Preservation using Scanning Electron Microscopy in an Extinct Bivalve, *Labillia larseni*. AGU Fall Meeting, 2017.
- Ellis, N. M.\*; **T. S. Tobin** (2017). Using Carbonate Stable Isotopes to Identify Seasonal Trends in Late Cretaceous Ammonites. GSA Southeastern Section Annual Meeting, 2017.
- **Tobin, T. S.**; N. M. Ellis\* (2017). Stable Isotope Sclerochronology Of Baculites Reveals Potential Growth Rate Estimates. GSA Annual Meeting, 2017.

- **Tobin, T. S.** (2016). Comparing Extinction Confidence Intervals from Independent K-Pg Fossil Data Sets from Seymour Island, Antarctica. GSA Annual Meeting, 2016.
- **Tobin, T. S.;** C. M. Bitz (2015). Modelled Climatic Effects from Deccan Traps CO<sub>2</sub> Release. GSA Annual Meeting, 2015.
- **Tobin, T. S.;** P. D. Ward (2014). Using Systematic  $\delta^{13}\text{C}$  Differences Between Ammonites and Benthic Mollusks from Seymour Island, Antarctica to Better Understand Ammonite Lifestyles. GSA Annual Meeting, 2014.
- **Tobin, T. S.,** P. D. Ward, J. L. Kirschvink (2013). Contributions from Deccan Volcanism to the K-Pg Mass Extinction. Volcanism, Impacts and Mass Extinctions: Causes and Effects.
- **Tobin, T. S.;** G. P. Wilson, J. M. Eiler (2011). Reconstructing Paleotemperature Using Clumped Isotope Paleothermometry across the K-Pg Boundary from Garfield County, MT, USA. GSA Annual Meeting, 2011.
- **Tobin, T. S.;** P. D. Ward, J. L. Kirschvink, E. M. Olivero, J. M. Eiler (2010). A High Resolution Paleotemperature Record across the K-Pg Boundary From Seymour Island, Antarctica. GSA Annual Meeting, 2010.
- **Tobin, T. S.;** P. D. Ward, J. L. Kirschvink, E. M. Olivero, J. M. Eiler, B. H. Passey (2009). Carbonate Isotope Chemostratigraphy of the Late Cretaceous – Early Tertiary from Seymour Island, Antarctica. GSA Annual Meeting, 2009.
- **Tobin, T. S.;** K. MacGregor, J. Sanders, K. M. Cuffey (2008). Water Discharge and Cirque Glacier Hydrology at West Washmawapta Glacier, British Columbia, Canada. AGU Fall Meeting, 2008.

### Conference Presentations (Other)

- Fendley, I.; C. J. Sprain, M. Marvin-DiPasquale, P. R. Renne, **T. S. Tobin**, L. N. Weaver (2018). Mercury chemostratigraphy as a distal indicator of Deccan volcanism recorded in the Hell Creek Region, Montana. SVP Annual Meeting, 2018.
- Mizrahi, N.; I. Fendley., **T. S. Tobin**. L. N. Weaver., G. P. Wilson (2018). Gsa scale oxygen isotope composition across the Cretaceous-Paleogene boundary in the Hell Creek Region, Montana. SVP Annual Meeting, 2018.
- Fendley, I.; C. J. Sprain, M. Marvin-DiPasquale, P. R. Renne, **T. S. Tobin**, L. N. Weaver (2018). Mercury chemostratigraphy as indicator of Deccan volcanism in Hell Creek, Montana. Goldschmidt, 2018.
- Linzmeier, B. J.; A. D. Jacobson, B.B. Sageman, M. T. Hurtgen, M. E. Ankney, S. V. Petersen, **T. S. Tobin** (2018). Linking Deccan volcanism and the bolide impact with calcium isotope stratigraphy from the Late Maastrichtian of Seymour Island, Antarctica. Goldschmidt, 2018.
- Fendley, I., C. J. Sprain, M. Marvin-DiPasquale, P. R. Renne, **T. S. Tobin**, L. N. Weaver (2017). Mercury Chemostratigraphy through the Cretaceous-Paleogene Boundary in the Hell

Creek Region of Montana and its Relationship to Deccan Volcanism. GSA Annual Meeting, 2017.

- Kirschvink, J. L.; **T. S. Tobin**, P. D. Ward, E. J. Steig, E. M. Olivero, D. J. Smith, M. Bonifacie, R. N. Mitchell, J. M. Eiler, A. Rapalini, I. Hilburn (2010). Integrated, High-Resolution Magneto-, Bio-, and Chemo-stratigraphy of the Cretaceous-Paleogene Sediments of the James Ross Basin, Antarctica. Meeting of the Americas, 2010.
- MacGregor, K.; J. Sanders, K. M. Cuffey, **T. S. Tobin** (2009). Water discharge and glacier hydrology of West Washmawapta Glacier, British Columbia: implications for cirque glacier sediment flux. AGU Fall Meeting, 2009.

## Teaching

- Assistant Professor, University of Alabama:
  - Earth through Time (GEO 102) Fall 2015, 2016, 2017, 2018
  - Sedimentology and Stratigraphy (GEO 367) Spring 2016, 2017
  - Basics of Stable Isotope Geochemistry (GEO 424/525) Spring 2017
  - Diagenesis in Fossil Shells (GEO 424/525) Spring 2017
  - Mass Extinctions Seminar (GEO 424/525) Fall 2018
- Visiting Assistant Professor, Lake Superior State University:
  - Advanced Field Geology (GEOL 490) Summer 2015
  - Carbonate Systems and Invertebrate Paleontology and Labs (GEOL 445) Spring 2015
  - Introduction to Geology and Labs (NSCI 102) Fall 2014, Spring 2015
  - Physical and Historical Geology I and Labs (GEOL 121) Fall 2014
- Co-instructor, University of Washington:
  - Astrobiology Workshop on K-Pg Mass Extinction – Sept. 2013
- Seminar Organizer, University of Washington
  - PaleoLunch – Evolution and Extinction Seminar – Winter 2014
- Teaching Assistant, University of Washington
  - Field Geology (ESS 400) – Summer 2011, 2012, 2013, 2014
  - Stratigraphy (ESS 455) – Winter 2014
  - Depositional Environments (ESS 456) – Spring 2013
  - Geobiology (ESS 313) – Fall 2012
  - Introductory Geology (ESS 102) – Fall 2011
- Writing Assistant, Macalester College:
  - Environmental Geology (GEOL 120) – Fall 2007

## Grants

- NSF-EAR-SGP (#1736792 - Funded) - Collaborative Research: India at the Crossroads--Biotic Change in Continental Vertebrates Across the Cretaceous-Paleogene - \$69,981

- NSF-CAREER (#1842705 - Pending) - CAREER: Coring Seymour Island (CSI) Antarctica: Evaluating Causes and Effects of the End Cretaceous Mass Extinction at High Latitude - \$869,542
- NSF-EAR-IF (#1832350 - Pending) - Acquisition of an Isotope Ratio Mass Spectrometer for Clumped Isotope Analysis to Expand the Alabama Stable Isotope Laboratory - \$354,170
- Student Technology Fee – Repair of a Sample Preparation System for Student Training and Environmental Research (2014) - \$3,390
- Harry Wheeler Fund Fellowship (2013) - Funded RA
- Student Technology Fee – Cathodoluminescence Image Capture Equipment (2012) - \$10,600
- Robert and Nadine Bassett Fund and Chevron Graduate Support Fund (2012) - \$2,500
- John W. Wells Grants-in-Aid of Research Program (2011) - \$500
- Chevron Graduate Support Scholarship (2011) - \$2,200
- Goodspeed Geology Scholarship Award (2009) - \$1,400

### **Professional Service**

- Grant Panelist - NSF
- Proposal Reviewer – NSF, CONICYT (Chile), INACH (Chile)
- Assisted Homeland Security Investigations with ammonite fossil provenance
- Manuscript Reviewer :
  - *Chemical Geology*
  - *American Journal of Science*
  - *Nature Communications*
  - *Geological Society of America Bulletin*
  - *Paleoceanography*
  - *PALAIOS*
  - *Gondwana Research*
  - *Proceeding of the Royal Society B*
  - *Journal of Natural History*

### **University Service**

- UA Service:
  - Evolution Working Group 2015-ongoing
  - Tide Together Faculty Mentor 2016-2017
- UA Geological Sciences Department (faculty):
  - Advisor, Geology Club 2017-ongoing
  - Homecoming Display Coordinator, 2016-ongoing
  - Graduate Program and Curriculum Committee, 2017-ongoing
  - ASIL Committee Chair, 2017-ongoing
  - Social Events and GSAB Meetings Committee, 2017-ongoing
  - Field Course Committee, 2016-ongoing
  - Website Committee, 2016-ongoing
  - Note taker, Fall 2015

- UW Earth and Space Sciences Department (graduate student):
  - Graduate Student Representative to Faculty Search Committee (Glaciology) 2014
  - Co-organizer/chair of ESS Research Gala Committee 2012-2013
  - Graduate Student Representative to Prelim Exam Committee 2012
  - Graduate Student Representative to the Faculty 2011-2012
  - Department Brown Bag Seminar Coordinator 2008-2009

### **Field Work**

- Central India – Spring 2018
- Antarctic Peninsula (Seymour Island area) – Winter 2009, 2010, 2011, 2016
- Northeastern Montana (Hell Creek area) – Summer 2010, 2011, 2012, 2014, 2016, 2017, 2018
- Northwestern Montana (Dillon area) – Summer 2011, 2012, 2013, 2014, 2015
- American Samoa – Spring 2013
- Australian Outback (Kimberly area) – Winter 2009
- British Columbia (alpine glacier) – Summer 2007, 2008

### **Outreach and Talks**

- Instructor with the DIG (Discoveries in Geoscience) Field School 2010-ongoing
- Invited Seminar- NASA Jet Propulsion Laboratory Science Visitor & Colloquium Program 2018
- Invited Seminar- International Workshop cum Field Excursion on Recent developments in the study of Deccan volcanism and tracking environment and biotic changes across Cretaceous-Paleogene 2018
- Outreach Seminar- Birmingham Paleontological Society 2017
- Invited Speaker- University of California Berkeley. K-Pg Symposium 2017.
- Outreach Seminar- Alabama Paleontological Society 2017
- Outreach Seminar- Alabama Geological Society 2017
- Invited Speaker- Macalester College 2017
- Invited Speaker- University of California, Berkeley. Earth and Planetary Sciences Seminar 2016
- Invited Speaker- University of California, Berkeley. K-Pg boundary Seminar 2016
- Outreach Seminar - Alabama Museum of Natural History Fossil Day, October 2016
- Outreach seminar- Onboard R/V Nathaniel B. Palmer, in Antarctica 2016
- Invited Speaker- Appalachian State University Geology Seminar 2015
- Outreach Seminar- Birmingham Paleontological Society 2015
- Invited Speaker- Burke Museum of Natural History “Wondrous Cold” exhibit 2009