

VICTORIA L. TODD

Advanced Studies Program (ASP) Postdoctoral Fellow, National Center for Atmospheric Research (NCAR)

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EDUCATION

2026	Ph.D., Earth and Planetary Sciences , The University of Texas at Austin
2020	M.S., Geosciences , Baylor University
2018	B.S., Geology , Baylor University

PUBLICATIONS IN PREPARATION

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1. **Todd, V.L.**, Shanahan, T.M., Fritz, S., Baker, P.A., Seltzer, G.O., Schmitt, A.K., Stockli, D., Forman, S. L., Critical Thresholds and Non-linearities in Tropical Hydroclimate, In preparation to submit to Science.

Link to unpublished manuscripts: [Publications in Preparation](#)

PUBLICATIONS IN REVIEW

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1. **Todd, V.L.**, Shanahan, T.M., DiNezio, P.N., Stroup, J., Sahara Greening Dominates the Atlantic Interhemispheric Monsoon Response to Isolation Forcing, In Review, Nature Geoscience.

PUBLICATIONS

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1. **Todd, V.L.**, Shanahan, T.M., Fritz, S., Baker, P.A., Seltzer, G.O., Schmitt, A.K., Stockli, D., Forman, S. L., Improving the age model for Lake Titicaca, Bolivia to reconstruct tropical climate variability over the past ca. 350 ka, (2026), *Paleoceanography and Paleoclimatology*.
 2. Keenan Early, E.M., Bell, C.J., Collins, M.J., **Todd, V.L.**, Shanahan, T.M., Proteomic taxonomic identification can identify cryptic diversity of Squamata in modern and paleontological specimens, (2026), *Scientific Reports*.
 3. **Todd, V.L.**, Shanahan, T.M., North Pacific response to warming sustains drought in the Southwest US, (2025), *Nature Research Briefing*. [\[link\]](#)
 4. **Todd, V.L.**, Shanahan, T.M., DiNezio, P.N., Klavans, J.M., Fawcett, P.J., Anderson, R.S., Jiménez-Moreno, G., LeGrande, A.N., Pausata, F.S.R., Thompson, A.J., Zhu, J. North Pacific response to warming drives persistent drought in the Southwest US, (2025) *Nature Geoscience*. [\[link\]](#)
 5. **Todd, V.L.**, Shanahan, T.M., Johnson, B.G. Hydroclimate and Ecosystem changes in the Colorado Rocky Mountains since the Last Glacial Maximum, (2025), *Paleoceanography and Paleoclimatology*. [\[link\]](#)
 6. Forman, S. L., **Tew-Todd, V.**, Mayhack, C., Marin, L., Wiest, L.A., Money, G. (2022). Late Quaternary Aeolian Environments, Luminescence Chronology and Climate Change for the Monahans Dune Field, Winkler County, West Texas, USA. *Aeolian Research*, Vol. 58. [\[link\]](#)
 7. Marin, L.C., Forman, S.L., **Todd, V.T.**, Mayhack, C., Gonzalez, A., Liang, P. (2021), Isolation of Quartz Grains for Stimulated Luminescence (OSL) Dating of Quaternary

Sediments for Paleoenvironmental Research. Journal of Visualized Experiments, Vol. 174. [\[link\]](#)

SELECTED MEDIA COVERAGE

1. Zhong, R. (2025, July 16). The West's Megadrought Might Not Let Up for Decades, Study Suggests. *The New York Times*. [\[link\]](#)
2. *Newsweek*. (2025, July 16). Southwest U.S.'s alarming megadrought could last until 2100. [\[link\]](#)
3. Navigating drought. *Nat. Geosci.* **18**, 565 (2025). [\[link\]](#)
4. North Pacific Ocean–atmosphere responses to Holocene and future warming drive Southwest US drought. *Scienmag* (2025). [\[link\]](#)

AWARDS

2026	National Center for Atmospheric Research (NCAR) Advanced Study Program (ASP) Postdoctoral Fellowship	
2025	Proposal Contributions (Funded): National Science Foundation, EAR-P4CLIMATE: Orbital forcing of Andean Hydroclimate from the legacy of Lake Titicaca (assistance). Awarded; project start Aug 1, 2025; 36-month term; UT Austin share \$519,887 (collab total \$703,448).	
drill cores	The University of Texas at Austin University Graduate Continuing Fellowship	
2024	CESM Workshop Graduate Student Travel Grant	\$1,400
	The Jackson School of Geosciences Albert W. and Alice M. Weeks Inaugural Graduate Fellowship in Climate Studies	
2023	NSF-AGeS3 Graduate Student Award	\$8,910
	GSA Continental Scientific Drilling Division Grants	\$2,500
	CSD Facility Visiting Graduate Student Program Travel Grant	\$1,000
	JSG External Research Grant Matching	\$1,000
2019	Baylor University Department of Geosciences Travel Grant	\$1,000

TEACHING EXPERIENCE

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| 2024 | Guest Lecturer , Introduction to Geology (350-400 students), Department of Earth and Planetary Sciences, The University of Texas at Austin <ul style="list-style-type: none">• Delivered two lectures on paleoclimatology and climate science. |
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- 2023 **Lead Teaching Assistant**, Introduction to Geology (350-400 students), Department of Earth and Planetary Sciences, The University of Texas at Austin
- Instructed and managed 7 teaching assistants, maintained the course Canvas site, and standardized laboratory assignments.
 - Responsible for teaching two weekly 2-hour laboratory sessions, which consisted of delivering introductory laboratory lectures, leading laboratory assignments, grading laboratory write-ups, and proctoring lecture exams.
- 2022 **Teaching Assistant**, Introduction to Geology (350-400 students), Department of Earth and Planetary Sciences, The University of Texas at Austin
- Responsible for teaching three weekly two-hour laboratory sessions, which consisted of delivering introductory laboratory lectures, leading laboratory assignments, grading laboratory write-ups, writing the laboratory mid-term, and proctoring lecture exams.
- 2020 **Teaching Assistant**, World Oceans (100 students), Department of Geosciences, Baylor University
- Responsible for teaching two weekly 3-hour laboratory sessions, which consisted of delivering introductory laboratory lectures, leading laboratory assignments, and grading laboratory write-ups.

RESEARCH EXPERIENCE

- 2026-present **Advanced Study Program (ASP) Postdoctoral Fellow**, Climate and Global Dynamic Laboratory (CGD) National Center for Atmospheric Research (NCAR)
- 2022-2026 **Graduate Research Assistant**, Paleoclimatology & Environmental Geochemistry Laboratory (Dr. Timothy M. Shanahan) Department of Earth and Planetary Sciences, The University of Texas at Austin
- Conducted biomarker analysis on >3000 soil samples
 - Trained and mentored 2 graduate students and 1 undergraduate student
 - Developed new software to process LCMS data for the analysis of organic biomarkers, developed a Python-based Bayesian stable isotope mixing model for quantitative evaluation of precipitation changes from leaf wax isotopes, developed multiple scripts for analyzing, plotting, and understanding climate changes from paleoclimate records
 - Learned methods of clumped isotope sample preparation and analysis from visiting scholar Dr. Prosenjit Ghosh
- 2018-2021 **Graduate Research Assistant**, Geoluminescence Dating Research Laboratory (Dr. Steve Forman), Department of Geosciences, Baylor University
- Refined and applied the experimental Thermal Transfer Optically Stimulated Luminescence Dating method
 - Trained and mentored 5 undergraduate students
- 2015-2018 **Undergraduate Research Assistant**, Geoluminescence Dating Research Laboratory (Dr. Steve Forman), Department of Geosciences, Baylor University
- Laboratory safety officer
 - Prepared and conducted luminescence dating on over 1500 samples

INVITED TALKS

- 2026 AGU Annual Meeting, session Advancing Paleoclimatology using Data, Models, and Theory, *North Pacific Response to High-elevation Warming Drives Drought in the Southwest US*.
- 2026 AGU Annual Meeting, session Variability and Impacts in Central and South America, *Andean Glacier Dynamics over the past 350 ka*.
- 2026 NCAR Climate and Global Dynamics (CGD) Seminar, Boulder, CO. *The Green Sahara as a Driver of Holocene Climate Dynamics* [[Youtube Link](#)]
- 2024 Continental Scientific Drilling (CSD) Town Hall and Reception, Geological Society of America (GSA) Connects Meeting, Anaheim, CA. *Lake Titicaca: Extending and Improving Drill Core Age Models*
- 2023 Continental Scientific Drilling (CSD), College of Science and Engineering, The University of Minnesota, Minneapolis, MN. *Lake Titicaca: Extending and Improving Drill Core Age Models*

CONFERENCE ABSTRACTS

1. **Todd, V. L.**, T. M. Shanahan, P. N. DiNezio, J. Zhu, and B. L. Otto-Bliesner. (2026). Evaluating atmospheric mechanisms of the “Green Sahara” in high-resolution CESM (iCESM1.3). *Broadening Earth System Research Across Scales with High-Resolution Modeling Workshop*, U.S. CLIVAR, Boulder, Colorado, 14–17 September 2026.
2. **Todd, V.**, Shanahan, T., & DiNezio, P. (2026). Remote vegetation feedbacks drive the Holocene evolution of the South American Monsoon. CMIP Workshop 2026.
3. **Todd, V.**, Shanahan, T., DiNezio, P., Klavans, J., Fawcett, P., Anderson, S., Jimenez-Moreno, G., LeGrande, A., Pausata, F., Thompson, A., & Zhu, J. (2026). North Pacific Ocean–atmosphere responses to Holocene and future warming drive Southwest US drought. CMIP Workshop 2026.
4. **Todd, V.**, Shanahan, T. M., & DiNezio, P. (2025, December). Saharan greening as a driver of South American Monsoon drought. AGU Fall Meeting 2025, American Geophysical Union.
5. **Todd, V.**, T. M. Shanahan, S. Fritz, P. A. Baker, A. K. Schmitt, D. Stockli, and S. L. Forman, 2024, Improving the Age Model for Lake Titicaca, Bolivia to Reconstruct Climate Variability over the past ca. 350 ka: Geological Society of America Abstracts with Programs.
6. Bautista, S., **V. Todd**, T.M. Shanahan, R.S. Anderson, G.J. Moreno, P. Fawcett, 2024 A hydroclimate history from the Southwestern United States: Reconstructions from Rocky Mountain deglacial lake records: Geological Society of America Abstracts with Programs. Anaheim, CA.
7. Shanahan, T.M., N. Piatrunia, P. Augustinus, **V. Todd**, 2024, Orbital to millennial variability in the Southern Hemisphere westerlies: Geological Society of America Abstracts with Programs. Anaheim, CA.
8. **Todd, V.**, T. M. Shanahan, P. DiNezio, J. M. Klavans, P. Fawcett, R. S. Anderson, G. Jimenez-Moreno, A. LeGrande, F. S. R. Pausata, and A. J. Thompson, 2024, North Pacific Response to Hemispheric Warming Forces Holocene Drought in the Southwestern United States: Geological Society of America Abstracts with Programs.

9. **Todd, V.**, T. M. Shanahan, P. DiNezio, P. J. Fawcett, B. G. Johnson, R. S. Anderson, and G. J. Moreno, 2024, North Pacific response to hemispheric warming forces Holocene drought: CESM Workshop.
10. **Todd, V.**, T. M. Shanahan, P. DiNezio, J. M. Klavans, P. J. Fawcett, R. S. Anderson, G. Jimenez-Moreno, A. N. LeGrande, F. S. Pausata, and A. J. Thompson, 2023, North Pacific response to hemispheric warming forces Holocene drought in the southwestern United States: AGU Fall Meeting Abstracts, p. PP11A-06.
11. **Todd, V.**, T. M. Shanahan, P. DiNezio, J. M. Klavans, P. J. Fawcett, R. S. Anderson, G. Jimenez-Moreno, A. N. LeGrande, F. S. Pausata, and A. J. Thompson, 2023, North Pacific response to hemispheric warming forces Holocene drought in the southwestern United States: AGU Fall Meeting Abstracts, p. PP11A-06.
12. Bautista, S., T. M. Shanahan, **V. Todd**, R. S. Anderson, G. Jimenez-Moreno, and P. J. Fawcett, 2023, Reconstructing the Hydroclimatic History of the Southwestern United States: Insights from Rocky Mountain Deglacial Lake Records: AGU Fall Meeting Abstracts, p. PP24C-03.
13. **Todd, V.**, Shanahan, T. M., DiNezio, P., Fawcett, P. J., Johnson, B. G., Anderson, R. S., and Moreno, G. J., 2022, Insolation Forcing of mid-Holocene drought in the Southwestern US, AGU Abstracts Volume 2022, p. PP15F-0719.
14. **Tew-Todd, V.**, Mayhack, C., Marin, L., Forman, S.L., (2020) Late Quaternary Eolian Stratigraphy and Chronology by Thermal Transfer Luminescence Dating of Quartz Grains for the Monahans Eolian System. Abstracts of the SAA 85th Annual Meeting.
15. Forman, S.L., Wiest, L.A., Mayhack, C., **Tew, V.**, Liang, P., Wu, Z., Money, G., (2019) GSA Quaternary Geology and Geomorphology Division Farouk El-Baz Award for Desert Research: fourth dimensional understanding of Late Pleistocene eolian depositional environments for the Monahans dune field, Texas U.S.A., Geological Society of America Abstracts with Programs. Vol. 51, No. 5.
16. Mayhack, C., Forman, S.L., Wiest, L.A., **Tew, V.**, Marin, L., Money, G., (2019), Late Quaternary eolian stratigraphy and changing environments of the Monahans dune field, TX. Geological Society of America Abstracts with Programs. Vol. 51, No. 5.
17. Wiest, L.A., Forman, S.L., Kocurek, G.A., Mayhack, C., **Tew, T.**, Marin, L., and Money, G., 2018, New insights of an ancestral Pecos (?) River valley below Monahans dunes, Ward and Winkler counties, west Texas. GSA Abstracts with Programs, Indianapolis Indiana, v. 50, n. 6, doi: 10.1130/abs/2018AM-322500

SERVICE

2026	Manuscript Reviewer , <i>Quaternary Science Reviews</i> , <i>Communications Earth & Environment</i>
2024	Search Committee Member , Department of Earth and Planetary Sciences (EPS) Postdoctoral Excellence Search • Selected to be the graduate student representative, as a full voting member, on the EPS Postdoctoral Excellence Search Committee. Evaluated 75 applicants and interviewed 7 candidates, leading to the successful hiring of two postdoctoral researchers.
2023	President , Graduate Student Executive Committee (GSEC)

- Responsible for the operations of GSEC with an annual budget of more than \$40,000. The committee is composed of 15 officers who serve a graduate student population of more than 250.
<https://www.jsug.utexas.edu/gsec/>
 - Organized activities for new graduate student recruitment weekend, hosted dinners to honor speakers for the Deford lecture series, represented graduate student needs to administration.
- 2022 **Survey Chair, GSEC**
- Conducted the annual graduate student survey to assess graduate student needs and the success of newly implemented programs. Wrote and edited the Annual Survey Report and presented findings to the faculty counsel.
- Symposium Chair, GSEC**
- The symposium goals include providing an opportunity for cross-disciplinary collaboration among graduate/undergraduate students and faculty/research scientists through presentation of current research as well as aiding in industry recruitment. The symposium included 105 participants and had a budget of \$25,000.
 - Initiated changes to the format of the event as well as function to improve the equity of the event and promote an inclusive environment.
 - Led the solicitation of funding, recruitment of judges within industry, acquiring and reserving facilities, catering, disbursing funds, organizing and conducting day of operations, accommodating distinguished guests and university administrators, and returning feedback to participants.
 - Encouraged high school student participation in the Symposium through the GeoFORCE program- a youth education outreach program for students across Texas.
- 2022 **Seminar Chair, Water, Climate, and Environment (WCE)**
- Invited and chaperoned distinguished professors from around the country to present their work to the WCE.

PLATFORM AND CODING PROFICIENCIES

Fluent	Python, Matlab, C, Microsoft, Adobe suites, Eclipse
Proficient	R, ArcGIS, Seismic Explorer, LaTeX, Fortran