

ZACHARY T. SICKMANN

Curriculum Vitae

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University of Texas at Austin
Jackson School of Geosciences
Department of Geological Sciences
Austin, TX 78712

AREAS OF EXPERTISE

Source-to-Sink Sediment Dispersal, Provenance Analysis, Basin Analysis, Tectonics, Deep-Water Sedimentology, Sedimentology in the Anthropocene, Field Geology, Petroleum Geology

EDUCATION

Ph.D. Geological Sciences	Stanford University	2013- (September 2018)
B.S. Geoscience (<i>Honors</i>)	Trinity University	2009-2012

RESEARCH EXPERIENCE

2018-Present Postdoctoral Research Affiliate, University of Texas at Austin
Projects: Investigating signal propagation rates in detrital sedimentary systems, tectonic setting and compositional variability of provenance signatures, tectonics of the Andes

2013-2018 Ph.D. Geological Sciences, Stanford University
Advising Committee: Stephan Graham (advisor), Donald Lowe, Martin Grove, Charles Paull
Thesis: Understanding provenance signatures in active margin basins: Modern central California and the Magallanes-Austral Basin of southern Patagonia

2012-2013 Research Assistant
Geosciences and Engineering Division, Southwest Research Institute
Projects: Mechanical stratigraphy, extensional deformation and sedimentology of the Eagle Ford Formation, central and west Texas. Structural characterization of the Edwards Aquifer, central Texas

2010-2012 B.S. Geosciences, Trinity University
Advisor: Kathleen Surpless
Thesis: Provenance analysis of the Winthrop Formation of the Methow Basin, Northern Washington: Evidence for minor post-depositional displacement

PUBLICATIONS

(in-prep or in review)

Sickmann, Z.T., Chheda, T., Paull, C.K., and Graham, S.A., *in-prep*, Using the Anthropocene laboratory: Detrital signal propagation and sediment budgets

Sickmann, Z.T., Schwartz, T.M., Malkowski, M.A., Dobbs, S.C., and Graham, S.A., *in review*, Understanding provenance signatures in retroarc foreland basins, Lithosphere

Lehrmann, D.J., Yang, W., **Sickmann, Z.T.**, Ferrill, D.A., McGinnis, R.N., Morris, A.P., Smart, K.J., and Gulliver, K.D.H., *accepted pending revisions*, Controls on sedimentation and cyclicity of the Eagle Ford and Lower Austin Chalk (and equivalent Boquillas Formation) from detailed outcrop studies of western and central Texas: *Journal of Sedimentary Research*.

(Published)

Sickmann, Z.T., Schwartz, T.M., and Graham, S.A., 2017, Refining stratigraphy and tectonic history using detrital zircon maximum depositional age: An example from the Cerro Fortaleza Formation, Austral Basin, southern Patagonia: Basin Research.

Ferrill, D.A., Evans, M.A., McGinnis, R.N., Morris, A.P., Smart, K.J., Wigginton, S.S., Gulliver, K.D.H., Lehrmann, D., de Zoeten, E., and **Sickmann, Z.** 2017, Fault zone processes in mechanically layered mudrock and chalk: Journal of Structural Geology, v. 97, p. 118-143.

Sharman, G.R., Schwartz, T.M., Shumaker, L.E., Trigg, C.R., Nieminski, N.M., **Sickmann, Z.T.**, Malkowski, M.A., Hourigan, J.K., Schulein, B.J., and Graham, S.A., 2017, Submarine mass failure within the deltaic Domengine Formation (Eocene), California (USA): Geosphere, doi: 10.1130/GES01442.1

Sickmann, Z.T., Paull, C.K., Graham, S.A., 2016, Detrital-zircon mixing and partitioning in fluvial to deep marine systems, central California: Journal of Sedimentary Research, v. 86, p. 1298-1307

Malkowski, M.A., Schwartz, T.M., Sharman, G.R., **Sickmann, Z.T.**, Graham, S.A., 2017, Stratigraphic and provenance variations in the early evolution of the Magallanes-Austral foreland basin: implications for the role of longitudinal vs. transverse sediment dispersal during arc-continent collision: Geological Society of America Bulletin, v. 129, p. 349-371.

Ferrill, D.A., McGinnis, R.N., Morris, A.P., Smart, K.J., **Sickmann, Z.T.**, Bentz, M., Lehrmann, D., Evans, M.A., 2014, Control of mechanical stratigraphy on bed-restricted jointing and normal faulting: Eagle Ford Formation, south-central Texas: American Association of Petroleum Geologists Bulletin, v. 98, p. 2477-2506.

Surpless, K.D., **Sickmann, Z.T.**, Koplitz, T.A., 2014, East-derived strata in the Methow basin record rapid mid-Cretaceous uplift of the southern Coast Mountains batholith: Canadian Journal of Earth Sciences, v. 51, p. 339-357.

RECENT CONFERENCE ABSTRACTS

Sickmann, Z.T., Paull, C.K., and Graham, S.A., 2017, Record of anthropogenic influence on sediment budgets in Monterey Submarine Canyon: GSA Annual Meeting, Seattle. *Talk*

Sickmann, Z.T., Paull, C.K., and Graham, S.A., 2016, Detrital-zircon mixing and partitioning in fluvial to deep marine systems, Central California, U.S.A.: AGU Fall Meeting, San Francisco. *Talk*

TEACHING

Interim Lecturer: Introductory Sedimentology - Spring 2018 (*undergraduate*)
(Sonoma State University)

Graduate Teaching Assistant: Introductory Geology - Spring 2014 (*undergraduate*)
(Stanford University) Sedimentary Basins - Fall 2015 (*graduate*)
Introductory Sedimentology - Spring 2016 (*undergraduate*)
Sedimentary Basins - Fall 2017 (*graduate*)

Community Outreach: Geology of Oil - Spring 2017, Fall 2017 (*high school*)
(Stanford SPLASH program) Geology of Patagonia - Fall 2016 (*high school*)

FIELD WORK

Patagonia (Chile and Argentina): Sedimentological, stratigraphic, and structural analysis, mapping, geochronology and provenance sample collection. *5 Field Seasons, 30 weeks*

New Zealand: Sedimentological, stratigraphic, and structural analysis, mapping, geochronology, thermochronology and provenance sample collection. *4+ weeks*

South Africa: Sedimentological, stratigraphic, and structural analysis, mapping, geochronology and provenance sample collection. *6+ weeks*

West Texas: Sedimentological, stratigraphic, and structural analysis. *4+ weeks*

Northern Washington/British Columbia: Sedimentology, provenance analysis. *2 seasons 8 weeks*

APPOINTMENTS

Postdoc. Research Affiliate	University of Texas	Fall 2018
Teaching Assistant	Stanford University	Fall 2017
Research Assistant	Stanford University	Summer 2016 – Summer 2017
Teaching Assistant	Stanford University	Fall 2015 – Spring 2016
Research Assistant	Stanford University	Summer 2014 – Summer 2015
Teaching Assistant	Stanford University	Spring 2014
Research Assistant	Stanford University	Fall 2013 – Winter 2014

AWARDS AND FUNDING

SPODDS	2013-2018
<small>(Stanford Project on Deep-water Depositional Systems: funded by industry affiliates)</small>	
McGee-Levorsen Grant	2015-2016
McGee-Levorsen Grant	2016-2017
Chevron Graduate Student Fellowship	2016-2017

PROFESSIONAL ACTIVITIES

Professional Development

Stanford-KFUPM joint field course	Bahamas	Winter 2017
Shell: Deep Water Depositional Concepts	St. Anthony Falls Laboratory, Stanford, Houston	Summer 2014
Stanford-KFUPM joint field course	west Texas	Spring 2014

Session Chair

AGU Fall Meeting 2018: Integrated application of detrital mineral techniques to sedimentary archives across timescales

AGU Fall Meeting 2017: Detrital Records of Climate-Driven Changes in Erosion, Sediment Flux, and Deposition from Source to Sink

Member

American Association of Petroleum Geologists (*AAPG*)
American Geophysical Union (*AGU*)
Geological Society of America (*GSA*)

Journal Reviewer

Tectonophysics: *2016-present*
Journal of Geology: *2017-present*
Geosphere: *2018-present*
Geoscience Frontiers: *2018-present*