

MATTHEW A. MALKOWSKI

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EDUCATION

Period	Institution	Degree
<i>Sep 2010 – Jun 2016</i>	Stanford University	PhD, Geological Sciences
<i>Aug 2008 – Aug 2010</i>	Michigan State University	MSc, Geological Sciences
<i>Aug 2004 – Aug 2008</i>	Michigan State University	BS, Environmental Geosciences
<i>Jan 2003 – Aug 2004</i>	West Shore Community College	N/A

PROFESSIONAL EXPERIENCE

2021-present	Assistant Professor, Dept. of Geological Sciences, University of Texas at Austin
2018-2021	Acting Assistant Professor, Dept. of Geological Sciences, Stanford University Associate Director, Stanford Project on Deep-water Depositional Systems
2016-2018	Research Geologist – Mendenhall Post-doctoral Fellow, U.S. Geological Survey, Pacific Coastal and Marine Science Center, Santa Cruz, CA Project: Geologic evolution of the Bering Sea and its margins
2010-2016	Research/Teaching Assistant, Stanford University, Dept. of Geological Sciences
2008-2010	Research/Teaching Assistant, Michigan State University, Dept. of Geological Sciences
2009 & 2011	Geoscience summer intern, Shell Oil, Houston, TX 2011 Project: <i>Prospectivity evaluation of an unconventional play in the E. Texas Basin</i> 2009 Project: <i>2-D seismic interpretation of Brookian Orogenesis in the Chukchi Sea</i>

AWARDS & HONORS

2016	Most Outstanding Graduate Student Award, Dept. of Geological Sciences, School of Earth Sciences, Stanford University
2015	Awarded the Mendenhall Post-doctoral Fellowship, U.S. Geological Survey
2011-2012	McGee–Levenson and Chevron Research Grant, School of Earth Sciences, Stanford University
2009	Shell Personal Development Award, Shell Oil
2009	Merril W. Haas Memorial Student Research Grant, AAPG
2009	John T. Dillon Alaska Research Award and Graduate Research Grant, Geological Society of America
2009	Lucile Drake Pringle Scholarship, Michigan State University
2008	Warren W. and Anneliese C. Wood Graduate Fellowship and Research Endowment, Michigan State University
2007	Lucile Drake and Gordon H. Pringle Endowed Fellowship, Michigan State University

INVITED TALKS & PRESENTATIONS

- 2021 Bureau of Economic Geology, Jackson School of Geosciences: Detrital mixing on broad continental shelves: U-Pb detrital zircon provenance of the Pleistocene–Holocene Bering Sea and its margins
- 2020 **University of Texas at Austin:** *Linking the depositional and environmental response to climate and tectonism* (Feb. 2020)
- 2019 **Colorado School of Mines:** *Sediment Transport and Geomorphology along the U.S. Beringian Margin, Bering Sea, Alaska* (Oct. 2019)
Institute of Tibetan Plateau Research, Chinese Academy of Sciences: *The role of tectonic inheritance on convergent margin sedimentary basins*, (Jun. 2019)
University of Nevada, Reno: *The role of tectonic inheritance on convergent margin sedimentary basins* (May 2019)
Sonoma State University: *Mixed signals: Testing the fidelity of sand and mud as recorders of sediment source regions in California* (Mar. 2019)
New Mexico State University: *The role of tectonic inheritance on sedimentary basin evolution: Jurassic-Cretaceous evolution of the Patagonian Andes* (Mar. 2019)
- 2018 **AGU Fall Meeting, Washington DC:** *Dilution and propagation of provenance trends recorded in detrital geochronology and geochemistry, central California, USA* (Dec. 2018)
IODP Workshop, Mt Hood, OR: *Erosion, transport, and deposition along the Beringian Margin: observations, questions, and hypotheses - New science frontiers in the Bering Sea* (Sept. 2018)

UNIVERSITY SERVICE

- 2018-2021 Associate director, Stanford Project on Deep-water Depositional Systems (SPODDS) - organize annual meeting and workshops, plan/lead field trips
- 2019 Stanford coordinator for annual Stanford-KFUPM trilateral field trip and international exchange (Spain)
- 2019-2020 Department seminar committee chair, Dept. of Geol. Sci., Stanford Univ.
- 2019-2020 Graduate program review committee, Dept. of Geol. Sci., Stanford Univ.
- 2018-2019 Department seminar committee, Dept. of Geol. Sci., Stanford Univ.
- 2018-2019 Graduate program review committee, Dept. of Geol. Sci., Stanford Univ.
- 2015 Organized and led 6-day field course on tectonic and basin evolution in the Patagonia Andes for industrial affiliates of SPODDS

PROFESSIONAL SERVICE

- 2016-Present Peer-Reviewing Service: *Elsevier Special Publication, Tectonophysics, Sedimentology, Geosphere, Journal of Geophysical Research, Basin Research, Journal of Sedimentary Research, The Depositional Record, Geoscience Frontiers, Journal of South American Earth Sciences, Geology*
- 2020 SEPM Session Chair/Co-convener – *The Stratigraphic Record of Foreland Basin Systems*, SEPM International Sedimentary Geosciences Congress, Flagstaff, AZ
- 2019 GSA Session Chair/Co-convener – T83: *Advances in Using Sedimentary Data to Constrain the Timing and Rates of Geologic Events and Processes*, GSA Annual Meeting, Phoenix, AZ

PROFESSIONAL AFFILIATIONS & MEMBERSHIPS

- Geological Society of America (GSA) American Geophysical Union (AGU)
 Society for Sedimentary Geology (SEPM) Mountain Rescue Association (MRA)
 American Association of Petroleum Geologists (AAPG)

FIELDWORK

2021 California, modern systems analysis and coast ranges
2019 Tibet, China
2019 Alaska
2011-2019 7 field seasons in southern Patagonia (Chile and Argentina)
2010-2018 Numerous field trips and fieldwork projects in California
2012 Namibia (Zeressene Complex) and
2012 South Africa (Barberton Greenstone Belt)
2008-2009 2 field seasons in the Alaska Range, SW Alaska (Chulitna and Farewell Terranes)

OTHER SKILLS & AFFILIATIONS

Outdoor/Backcountry skills: Mountaineering, climbing, technical rescue, self-rescue
Wilderness Search and Rescue
2013-2020 Field Member with the Bay Area Mountain Rescue Unit

TEACHING EXPERIENCE

2020 **Instructor** (co-instructor with M. Grove), Interpretive Methods in Detrital Geochronology (GEOLSCI 282), Dept. of Geological Sciences, Stanford University. Advanced course in detrital geochronology interpretation
Instructor (co-instructor with D. Lowe), Sediments: The Book of Earth History (GEOLSCI 106), Dept. of Geological Sciences, Stanford University. Introductory undergraduate course in sedimentary geology.

2019 **Instructor** (co-instructor with S. Graham), Petroleum Geology and Exploration (GEOLSCI 253), Dept. of Geological Sciences, Stanford University. Graduate level course in Spring quarter.
Instructor, Sedimentary Basins (GEOLSCI 251), Dept. of Geological Sciences, Stanford University. Graduate level course in Fall quarter

2018 **Instructor** (co-instructor with D. Lowe), Introduction to Sedimentary Geology (GS-106), Dept. of Geological Sciences, Stanford University. Undergraduate level course in Winter quarter.
Instructor (co-instructor with S. Klemperer), Seismic Reflection Interpretation (GS-223), Dept. of Geological Sciences cross-listed with Dept. of Geophysics, Stanford University. Spring quarter.
Instructor (co-instructor with E. Miller), Advanced Mapping in the Field (GEOLSCI-293), Dept. of Geological Sciences, Stanford University. Co-led a 10-day field trip across the U.S. Cordillera that transects the foreland fold-and-thrust belt of Utah, the basin and range province of Nevada, and the convergent margin of California. Graduate level field course in Summer quarter.
Instructor (co-instructor with T. Mukerji), Quantitative Dynamic Stratigraphy (GEOLSCI-293), Dept. of Geological Sciences, Stanford University. Graduate level in Fall quarter.

2013-2014 **Teaching Assistant**, Reservoir Characterization, Dept. of Geological Sciences, Stanford University. Planned and instructed course field trip, assisted students with class report, graded assignments and presentations.

2011-2013 **Teaching Assistant**, Petroleum Geology, Dept. of Geological Sciences, Stanford University. Organizing and planning course field trip, occasional lecture duties, and lab instruction and grading.

2010 **Teaching Assistant**, Introduction to Geology, Dept. of Geological Sciences,

- Stanford University. Assisted with logistics and teaching on course field trips, weekly lab instruction, and helping students with homework assignments.
- 2010 **Co-instructor**, Natural Science of Michigan, Study Abroad Program, Michigan State University. Provided field lectures on the geology of Michigan, assisted students with assignments, graded tests and assignments, and coordinated planning and logistics with co-instructor.
- 2009-2010 **Teaching Assistant**, Sedimentology and Stratigraphy, Dept. of Geological Sciences, Michigan State University. Plan, organize and instruct weekly labs and grade course/lab assignments.
- 2008-2009 **Teaching Assistant**, Structural Geology, Dept. of Geological Sciences, Michigan State University. Plan, organize and instruct weekly labs and grade course/lab assignments.
- 2007-2008 **Teaching Assistant**, Natural Science in the Canadian Rockies, Study Abroad Program, Michigan State University. Assisted with daily field trip planning/logistics, instruction in the field, and helping students prepare for course assessments and assignments.

PUBLICATIONS

Submitted (available on request)

- Malkowski, M.A.**, Steelquist, A.T., Hilley, G.E., **submitted**, Geodynamic constraints on the magnitude and timing of erosion of continental margins: An example from the Bering Sea, USA, *Geophysical Research Letters*
- Dobbs, S.C., **Malkowski, M.A.**, Schwartz, T.M., Sickmann, Z.T., Graham, S.A., **submitted**, Shore to slope systematic variation in detrital zircon provenance signatures: An example from the Upper Cretaceous La Anita Formation, southern Patagonia, *Frontiers in Earth Science*
- Daniels, B.G., Romans, B.W., Fosdick, J.C., **Malkowski, M.A.**, Matthews, W.A., Hubbard, S.M., **in-revision**, Andean orogenesis during arc-continent collision and its impact on the stratigraphic architecture of the Cretaceous Magallanes–Austral foreland basin, southern Patagonia (50.6-52 S), *GSA Lithosphere*.
- Malkowski, M.A.**, Johnstone, S.A., Sharman, G.R., White, C.J., Barth, G., Scheirer, D., **in revision**, Continental shelves as detrital mixers: U-Pb and Lu-Hf detrital zircon provenance of the Pleistocene–Holocene Bering Sea and its margins, *The Depositional Record*
- VanderLeest, R., Fosdick, J.C., **Malkowski, M.A.**, Romans, B.W., Ghiglione, M., Schwartz, T., and Sickmann, Z., **in revision**, Tectonic subsidence modeling of diachronous transition from backarc to retroarc basin development and uplift during Cordilleran orogenesis, Patagonian Andes. *Tectonics*

Published

14. Sharman, G.R., Covault, J., Stockli, D., Sickmann, Z., **Malkowski, M.A.**, Johnstone, S.A., **2021**, Detrital signals of coastal erosion and fluvial sediment supply during glacio-eustatic sea level rise, southern California, U.S.A., *Geology*
13. Browne, T.N., Hofmann, M.H., **Malkowski, M.A.**, Wei, J., Sperling E.A., **2020**, Redox and paleoenvironmental conditions of the Devonian–Carboniferous Sappington Formation, Southwest Montana, and Comparison to the Bakken Formation, Williston Basin, *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 560.

12. Sharman, G.R., and **Malkowski, M.A., 2020**, Needles in a Haystack: Detrital Zircon U-Pb Ages and the Maximum Depositional Age of Modern Global Sediment, *Earth Science Reviews (invited submission)*
11. **Malkowski, M.A.,** G.R. Sharman, S. Johnstone, M.J. Grove, D.L. Kimbrough, and S.A. Graham, **2019**, Dilution and propagation of provenance trends in sand and mud: Geochemistry and detrital zircon geochronology of modern sediment from central California (U.S.A.), *American Journal of Science*.
10. Dobbs S., McHargue, T., **Malkowski, M.,** Gooley, J., Jaikla, C., White, C., Hilley, G., **2019**, Are submarine and subaerial drainages morphologically distinct?, *Geology*.
9. Sickmann, Z.T., Schwartz, T.M., **Malkowski, M.A.,** Dobbs, S.C. and Graham, S.A., **2019**, Interpreting large detrital provenance datasets in retroarc foreland basins: An example from the Magallanes Austral Basin, southernmost Patagonia, submitted to *GSA Lithosphere*.
8. Daniels, B.G., Hubbard, S.M., Romans, B.W., **Malkowski, M.A.,** Matthews, W.A., Bernhardt, A., Kaempfe, S.A., Jobe, Z.R., Fosdick, J.C., Schwartz, T.M., Fildani, A., Graham, S.A., **2019**, Revised chronostratigraphic framework for the Cretaceous Magallanes-Austral Basin, Última Esperanza Province, Chile, submitted to *Journal of South American Earth Sciences*.
7. Lowe, D.R., Graham, S.A., ***Malkowski, M.A.,** Das, B, **2019**, The role of avulsion and splay development in deep-water channel systems: sedimentology, architecture, and evolution of the deep-water Pliocene Godavari channel complex, India, *Marine and Petroleum Geology*.
*Corresponding author
6. **Malkowski, M.A.,** Jobe, Z.R., Sharman, G.R., and Graham, S.A., **2018**, Down-slope facies variability within deep-water channel systems: insights from the Upper Cretaceous Cerro Toro Formation, southern Patagonia: *Sedimentology*, v. 65, p. 1918-1946.
Sedimentology editors' pick, 2018
5. Sharman, G.R., Schwartz, T.M., Shumaker, L.E., Trigg, C.R., Nieminski, N.N., Sickmann, Z.T., **Malkowski, M.A.,** Hourigan, J.K., Schulein, B.J., Graham, S.A., **2017**, Submarine Mass Failure within the Shelfal-Deltaic Domengine Formation (Eocene), California (U.S.A.). *Geosphere*, v. 13(3), p. 950-973.
4. **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 versus transverse sediment dispersal during arc-continent collision, *Geological Society of America Bulletin*, v. 129, p. 349-371.
3. **Malkowski, M.A.,** Grove, M., and Graham, S.A., **2016**, Unzipping the Patagonian Andes–Long-lived influence of rifting history on foreland basin evolution: *Lithosphere*, v. 8, no. 1, p. 23–28.
2. **Malkowski, M.A.,** Sharman, G.R., Graham, S.A., Fildani, A., **2015**, Characterization and diachronous initiation of coarse clastic deposition in the Magallanes–Austral retroarc foreland basin, Patagonian Andes, *Basin Research*, v. 29, p. 298-326.
1. **Malkowski, M.A.,** and Hampton, B.A., **2014**, Sedimentology, U-Pb detrital geochronology, and Hf isotopic analyses from Mississippian–Permian stratigraphy of the Mystic subterranean, Farewell terrane, Alaska. *Lithosphere*, v. 6(5), p. 383-398.

CONFERENCE ABSTRACTS

- Malkowski, M.A.,** Steelquist, A.T., Barth, G.A., Scheirer, D.S., and Hilley, G.E., **2020**, Eustatic and tectonic controls on shaping the Beringian continental margin, Bering Sea, USA, *Geological Society of America Abstracts with Programs*, Vol. 52, No. 6.
- Martin, K.M., Barth, G.A., **Malkowski, M.A.,** Stern, R.J., Scholl, D.W., Scheirer, D.S., Barron, J.A., and Wood, W.T., **2020**, The case for scientific drilling in the Aleutian Basin, *Geological Society of America Abstracts with Programs*, Vol. 52, No. 6.
- Martin, K.M., **Malkowski, M.A.,** Barth, G.A., Barron, J.A., Wood, W.T., School, D.W., Scheirer, D.S., & Stern, R.J., **2019**, Aleutian Basin Stratigraphy: What we know, what we think we know, and what we don't know, AGU Fall Meeting, T41I-0235
- VanderLeest, R.A., Fosdick, J.C., Schwartz, T.M., **Malkowski, M.A.,** Rsmc, A., **2019**, Along-

- strike changes in foreland basin responses to tectonics and eustasy in the Magallanes–Austral Basin, Patagonia revealed from basin modeling and geothermochronology, AGU Fall Meeting T13F-0255
- Sharman, G.R., McLaughlin, R.J., Dumitru, T.A., **Malkowski, M.A.**, 2019, Early Paleogene sediment dispersal and paleogeography of the northern California Coast Ranges: new insights from depth-profiled detrital zircon U-Pb ages, GSA Abstracts with Programs, vol. 51, no. 5.
- Browne, T.N., **Malkowski, M.A.**, Hofmann, M.H., Sperling, E.A., 2019, Redox geochemical study of the Devonian–Carboniferous Sappington Formation and comparison to the Bakken Formation, GSA Abstracts with Programs, vol. 51, no. 5.
- McLaughlin, R.J., Sharman, G.R., **Malkowski, M.A.**, Vazquez, J.A., Elder, W.P., Orchard, D.M., Stanley, R.G., Ernst, W.G., and Bawcom, J., 2019, Probable unroofing of the Central Belt of the Franciscan Complex recorded by newly recognized upper Cretaceous to lower Tertiary(?) forearc deposits west of Ukiah Basin, California, GSA Cordilleran section meeting, Abstract No. 329078.
- Malkowski, M.A.**, G.R. Sharman, S. Johnstone, M.J. Grove, D.L. Kimbrough, and S.A. Graham, 2018, Dilution and propagation of provenance trends recorded in detrital geochronology and geochemistry from central California (U.S.A.), AGU Fall Meeting, Washington DC, 447607, **invited**
- Sharman, G.R., and **Malkowski, M.A.**, 2018, Needles in a Haystack: Detrital Zircon U-Pb Ages and the Maximum Depositional Age of Modern Global Sediment, AGU Fall Meeting, Washington DC, 425426
- Dobbs, S.C., McHargue, T., **Malkowski, M.A.**, Gooley, J.T., Jaikla, C., White, C., Hilley, G.E., 2018, Geomorphic controls on submarine canyon evolution: insights from statistical analyses of submarine canyon drainage networks, AGU Fall Meeting, Washington DC
- Malkowski, M.A.**, Barth, G.A., Scheirer, D.S., Sliter, R.W., Scholl, D.W., and Chaytor, J.D., 2017, Detrital zircon geochronology of the Bering Sea, shelf to deep basin: climatic and eustatic influence on sediment transport pathways, *Geological Society of America Abstracts with Programs*, Seattle, Washington, v. 49(6), Paper No. 43-2.
- Scholl, D.W., Stern, R.J., Barth, G.A., Scheirer, D.S., **Malkowski, M.A.**, and Barron, J.A., 2017, Scientific oceanic drilling (IODP) to test contrasting hypotheses for the origin of the Aleutian subduction zone, Aleutian arc, and backarc Aleutian basin, *Geological Society of America Abstracts with Programs*, Seattle, Washington, v. 49(6), Paper No. 294-3.
- Sharman, G.R., Stockli, D.F., Covault, J.A., Sickmann, Z., **Malkowski, M.A.**, Johnstone, S., 2017, Unmixing eustatic and tectonic signals in sedimentary systems from detrital geochronology, GSA Abstracts with Programs, Seattle, WA, v. 49(6), Paper No. 43-1.
- Malkowski, M.A.**, Sharman, G.R., Grove, M.J., Kimbrough, D.L., and Graham, S.A., 2016, The Modern Detrital Record of Northern and Central California: Assessing the Propagation of Geochronological and Geochemical Provenance Signals, AGU Fall Meeting, abstract ID #192768
- Malkowski, M.A.**, Jobe, Z.R., Sharman, G.R., and Graham, S.A., 2015, Facies Variations Along an Ancient Deep-Water Axial Channel Belt: Insights from the Upper Cretaceous Cerro Toro Formation, Magallanes–Austral Basin, Patagonia, AGU Fall Meeting, San Francisco, California.
- Malkowski, M. A.**, Sharman, G. R., Graham, S. A., 2014, Geochronology, Stratigraphy, and Provenance of the Early Fill of the Magallanes–Austral Basin, Southern Patagonia: Diachronous Initiation of a Retroarc Foreland Basin, AGU Fall Meeting, San Francisco, California, abstract ID #26779.
- Malkowski, M.A.**, Schwartz, T.M., Fosdick, J.C., and Graham, S.A., 2012, Provenance of Jurassic–Cretaceous stratigraphy from the Argentinian sector of the Magallanes–Austral Basin, southern Patagonia: AAPG Annual Convention, Long Beach, California.
- Malkowski, M.A.**, Hampton, B.A., Bradley, D.C., and Gehrels, G.E., 2010, New provenance constraint from upper Paleozoic strata of the Farewell terrane, SW Alaska, *Geological Society of America Abstracts with Programs*, Anaheim, California, May 27-29
- Malkowski, M.A.**, and Hampton, B.A., 2009, Late Paleozoic stratigraphic history and

provenance of the Farewell terrane, southwestern Alaska, *Geological Society of America Abstracts with Programs*, Portland, Oregon, October 18-21

Malkowski, M.A., Hampton, B.A., and Bradley, D.C., **2009**, New provenance findings from the Farewell terrane, SW Alaska, GSA Abstracts with Programs, *GSA Penrose Meeting*, Tectonic Development of the Amerasia Basin, Banff, Alberta, Canada, October 4-9

Hampton, B.A., **Malkowski, M.A.**, and Deloge, J., **2009**, Comparison and tentative correlation of Devonian–Triassic strata across tectonic terrane boundaries along the Denali fault, Alaska Range, southern Alaska, *Geological Society of America Abstracts with Programs*, Portland, Oregon, October 18-21