

Allyson Tessin

Assistant Professor, Department of Geology, Kent State University (Starting 08/2020)
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EDUCATION

- Ph.D. University of Michigan, Earth and Environmental Sciences, 2016
Advisors: Ingrid Hendy and Nathan Sheldon
with Graduate Teaching Certification, CRLT
- M.S. University of Michigan, Geological Sciences, 2013
Advisor: David Lund
- B.Phil. University of Pittsburgh, Geology, 2010
- B.A. University of Pittsburgh, Environmental Studies, 2010

PROFESSIONAL EXPERIENCE

- 2020- Assistant Professor, Department of Geology, Kent State University
- 2019-2020 Assistant Professor, School of Ocean Science and Engineering,
University of Southern Mississippi
- 2016-2019 Marie Curie Independent Research Fellow; Visiting Research Fellow,
School of Earth and Environment, University of Leeds, UK
- 2011-2016 Graduate Researcher and Graduate Student Instructor, University of
Michigan, Department of Earth and Environmental Sciences
- 2010-2011 Visiting Researcher, Bjerknes Centre for Climate Research, University
of Bergen, Norway (*supervisor: Ulysses Ninnemann*)
- 2007-2010 Undergraduate Researcher, University of Pittsburgh, Paleolimnology
and Paleoclimatology Laboratory (*supervisor: Michael Rosenmeier*)

AWARDS, HONORS, AND FELLOWSHIPS

- Marie Skłodowska-Curie Independent Research Fellowship (\$191,000)
- National Science Foundation Earth Sciences Postdoctoral Fellowship (*declined by AT*)
- National Science Foundation Graduate Research Fellowship (\$121,500)
- Fulbright Fellowship to Norway (\$24,000)
- Horace H. Rackham Summer Fellowship, University of Michigan (\$7,500)
- Ernest A. Novak Graduate Fellowship, University of Michigan (\$30,000)
- Phi Beta Kappa
- Guy and Susan Molinari Research Fellowship, University of Pittsburgh (\$3500)
- Brackenridge Summer Research Fellowship, University of Pittsburgh (\$3500)

PUBLICATIONS

Peer reviewed

- C. Hayes, K. M. Costa, R. F. Anderson, E. Calvo, Z. Chase, L. L. Demina, J-C. Dutay, C. R. German, L-E Heimbürger-Boavida, S. L. Jaccard, A. Jacobel, K. E. Kohfeld, M. D. Kravchishina, J. Lippold, F. Mekik, L. Missiaen, F. J. Pavia, A. Paytan, R. Pedrosa-Pamies, M. V. Petrova, S. Rahman, L. F. Robinson, M. Roy-Barman, A. Sanchez-Vidal, A. Shiller, A. Tagliabue, **A. C. Tessin**, M. Van Hulten, J. Zhang, 2021, Global Ocean Sediment Composition and Burial Flux in the Deep Sea, *Global Biogeochemical Cycles*.
- J. Faust, **A. Tessin**, B. Fisher, M. Zindorf, S. Papadaki, K. Hendry, K. Doyle, and C. März, 2021, Millennial scale persistence of organic carbon bound to iron in Arctic marine sediments, *Nature Geoscience*.
- Tessin**, A., C. März, M.-A. Blais, H. Brumsack, J. Matthiessen, M. O'Regan, and B. Schnetger, 2020, Arctic continental margin sediments as possible Fe and Mn sources to seawater as sea ice retreats: Insights from the Eurasian Margin, *Global Biogeochemical Cycles*.
- Tessin**, **A.**, C. März, M. Kędra, J. Matthiessen, J. Matthiessen, N. Morata, M. Nairn, M. O'Regan, and I. Peeken. Benthic phosphorus cycling within the Eurasian marginal sea ice zone, *Philosophical Transactions of the Royal Society A*.
- J. Faust, M. Stevenson, G. Abbott, J. Knies, **A. Tessin**, I. Mannion, A. Ford, J. Peakall, and C. März, 2020, Does Arctic warming reduce preservation of organic matter in Barents Sea sediments? *Philosophical Transactions of the Royal Society A*.
- F. Freitas, K. Hendry, S. Henley, J. Faust, **A. Tessin**, M. Stevenson, G. Abbott, C. März, and S. Arndt, 2020, Benthic-pelagic coupling in the Barents Sea: an integrated data-model framework, *Philosophical Transactions of the Royal Society A*.
- M. Stevenson, J. Faust, L. Andrade, F. Freitas, N. Gray, K. Tait, K. Hendry, R. Hilton, S. Henley, **A. Tessin**, P. Leary, S. Papadaki, A. Ford, C. März, and G. Abbott, 2020, Transformation of organic matter in a Barents Sea sediment profile: coupled geochemical and microbiological processes, *Philosophical Transactions of the Royal Society A*.
- Tessin**, **A.**, A. Chappaz, I. Hendy, and N. Sheldon, 2019, Molybdenum speciation as a paleo-redox proxy: a case study from Late Cretaceous Western Interior Seaway black shales, *Geology*, DOI:10.1130/G45785.1.
- Tessin**, **A.**, C. Schroder-Adams, N. Sheldon, I. Hendy, and K. Elderbak, 2019, Local versus seaway-wide trends in deoxygenation in the Late Cretaceous Western Interior Seaway. In press at *GSA Bulletin*, DOI:10.1130/B31982.1.
- Tessin**, **A.**, T. Bianchi, I. Hendy, N. Sheldon, J. Hutchings, and E. Arnold, 2017, Organic matter source and thermal maturity within the Late Cretaceous Niobrara Formation, US Western Interior, *Marine and Petroleum Geology*, 86, DOI: 10.1016/j.marpetgeo.2017.06.041.

Tessin, A., N. Sheldon, I. Hendy, and A. Chappaz, 2016, Iron limitation in the Western Interior Seaway during the Late Cretaceous OAE 3 and its role in phosphorus recycling and enhanced organic matter preservation, *Earth and Planetary Science Letters*, 449, DOI: 10.1016/j.epsl.2016.05.043

Tessin, A., I. Hendy, N. Sheldon, and B. Sageman, 2015, Redox controlled preservation of organic matter during “OAE 3” within the Western Interior Seaway, *Paleoceanography*, DOI: 10.1002/2014PA002729.

Lund, D. C., **A. C. Tessin**, J. L. Hoffman, and A. Schmittner, 2015, Southwest Atlantic watermass evolution during the last deglaciation, *Paleoceanography*, DOI: 10.1002/2014PA00265.

Tessin, A. C. and D. C. Lund, 2013, Isotopically depleted carbon in the mid-depth South Atlantic during the last deglaciation, *Paleoceanography*, 28, DOI: 10.1002/palo.20026.
Featured in Science Editor's Choice (May 30, 2013)

Other (editor reviewed)

A. Tessin, 2020, Anthropogenic influences on ocean chemistry, *Elsevier Encyclopedia of Geology*, 2nd edition.

Hendry, K and **A. Tessin**, 2019, Why we're looking for chemicals in the seabed to help predict climate change, *The Conversation*, <https://theconversation.com/why-were-looking-for-chemicals-in-the-seabed-to-help-predict-climate-change-110452>.

INVITED TALKS

University of Puerto Rico, Department of Geology, October 2020

Kent State University, Department of Geology, October 2020

University of Rhode Island, Graduate School of Oceanography, April 2019

University of Florida, Department of Geological Sciences, April 2019

University of Southern Mississippi, Division of Marine Science, April 2019

Kent State University, Department of Geology, February 2019

University of Texas, Bureau of Economic Geology, November 2018

University of Alaska Fairbanks, College of Fisheries and Ocean Sciences, September 2018

University of Bristol, School of Geography, April 2018

Pennsylvania State University, Department of Geosciences, October 2017

University of Florida, Department of Geological Sciences, October 2015

University of Pittsburgh, Radiogenic Isotope Group, January 2015

Central Michigan University, Department of Earth and Atmospheric Sciences, October 2014

PRESENTATIONS (previous 5 years)

Hendry, K., et al., Benthic cycling of silicon in Arctic and subarctic shelf sediments: insights from silicon isotopes. Ocean Sciences Meeting 2020.

März, C., et al., Sucking up the silica: Extensive authigenic clay mineral formation in Arctic shelf sediments? Ocean Sciences Meeting 2020.

Tessin, A., et al., Effects of sea ice coverage on sedimentary iron and manganese cycling at the Eurasian Arctic Margin. Ocean Sciences Meeting 2020.

Freitas, F., et al., Integrated data-model assessment of organic matter reactivity in the changing Barents Sea sediments. 29th International Meeting on Organic Geochemistry.

Stevenson, M., et al., Changes in sedimentary organic matter burial across a retreating sea ice gradient in the Arctic Barents Sea. 29th International Meeting on Organic Geochemistry.

Chappaz, A., et al., **Invited:** Molybdenum and Chromium Molecular Geochemistry: Advancing the Paleo-Redox Proxies. Goldschmidt 2018

Faust, J., **A. Tessin**, et al., Does Sea Ice Reduction Enhance Preservation of Organic Carbon in Arctic Marine Sediments? Goldschmidt 2018.

Henley, S., et al., Macronutrient Cycling in Arctic Sediments and Benthic-Pelagic Coupling. Goldschmidt 2018.

Tessin, A., et al. Pulsed Iron input from Svalbard to the Arctic Ocean over the past 180 ka. Polar 2018.

Peeken, I., et al. ART Initiated TRANSSIZ -Transitions in the Arctic Seasonal Sea Ice Zone – Cruise. Polar 2018.

Pavlov, A., et al. Arctic in Rapid Transition: Pan-Arctic Interdisciplinary & International Network. Polar 2018.

Tessin, A., et al. Iron input from Svalbard to the Yermak Plateau since MIS 6. Past Gateways Meeting, 2018.

März, C., **A. Tessin**, et al. Nutrient recycling from Arctic Ocean pore waters. UK Arctic Science Meeting 2017.

Tessin, A., et al. Biogeochemical cycling on the Yermak Plateau during the last two glacial cycles. Goldschmidt 2017.

März, C., A-K Meinhardt, **A. Tessin**, et al. Understanding diagenetic processes and overprint in Quaternary Arctic Ocean sediments. Goldschmidt 2017.

Degen, R., et al. Arctic in Rapid Transition (ART): A Pan-Arctic Network. The Arctic Science Summit Week 2017.

Tessin, A. et al. Nutrient cycling on the Yermak Plateau over the past 180 ka. Past Gateways Meeting, 2017.

März, C., A-K Meinhardt, **A. Tessin**, et al. New insights into diagenetic processes in Arctic Ocean sediments and impacts on manganese stratigraphy. Past Gateways Meeting, 2017.

Tessin, A., et al. Contrasting Redox Stories from Trace Metal and Iron Proxy Records of the Late Cretaceous Western Interior Seaway. American Geophysical Union Annual Meeting, 2015.

Tessin, A.C., et al. Carbon burial and bottom water redox in the Canadian Basin of the Western Interior Seaway during the Coniacian-Santonian. Geological Society of America Annual Meeting, 2015.

GRANTS AND FUNDING (\$43,950)

Funded Grants

National Geographic Young Explorer's Grant, 2014 (\$5000)
Rackham International Research Award, 2014 (\$6800)
Geological Society of America Research Grant, 2014 (\$1500)
Geochemical Society Travel Grant, 2014 (\$450)
Scott Turner Award in Earth and Environmental Sciences, 2012-2016 (\$9100)
Lewis and Clark Fund for Exploration and Field Research, 2013 (\$4900)
American Association of Petroleum Geologists Grants in Aid, 2013 (\$2500)
Horace H. Rackham Conference Travel Grant, 2013-2014 (\$1800)
Horace H. Rackham Graduate Student Research Grant, 2012, 2015 (\$4500)
European Consortium for Ocean Research Drilling Travel Grant, 2011 (\$1600)

Funded Grants as student co-author

American Chemical Society-Petroleum Research Fund (\$100,000)
PIs: Nathan Sheldon and Ingrid Hendy

Pending Proposals Grants

National Science Foundation, Arctic Natural Sciences, January 2021 (\$287,562)

PRESS COVERAGE

The Altoona Mirror, newspaper profile, January 13, 2019
The Weather Show with Paul Hudson on BBC Yorkshire, May 2018
The Weather Show with Paul Hudson on BBC Yorkshire, June 2017

TEACHING EXPERIENCE

Kent State University

GEOL 60091: Writing in the Earth Sciences (Spring 2021)
GEOL 60091: Colloquium (Spring 2021)
GEOL 201080: All about the Oceans (Fall 2020)

University of Southern Mississippi

MAR 681: Geological Oceanography, co-taught with D. Wallace (Spring 2020)
MAR 642: Isotope Biogeochemistry, guest lecturer (Fall 2019)

University of Leeds

Nutrients and Redox reading seminar (developed and led for 3 terms in 2017-2018)

University of Michigan

Earth 446: Paleoclimatology, guest lecturer (Spring 2016)

Earth 202: Ecosystem Science of the Rockies at Camp Davis, GSI (Summer 2014)

Earth 222/223: Introduction to Oceanography, GSI (Fall 2014; Spring 2015)

University of Pittsburgh

Honors 1540: Wyoming Field Studies, guest lecturer (2014, 2015)

Geol 055: Introduction to Geology Laboratory, student instructor (Spring 2009)

SERVICE AND OUTREACH

Department and University Service

Graduate Admissions committee, Department of Geology, Kent State

Student expectations committee, Division of Marine Science, USM

Sustainability committee, School of Ocean Science and Engineering, USM

Diversity committee, School of Ocean Science and Engineering, USM

Student committee member (Taylor Brunttil, Bryce Melzer, Bethany Pertain), USM

Scientific Community Service

Global Biogeochemical Cycles Editor in Chief Search committee member, 2021

Guest Editor for Ambio Special Issue on the Changing Arctic Ocean

Manuscript Reviewer: *Nature Geoscience, Geology, Paleoceanography and Paleoclimatology, Proceedings of the National Academy of Sciences, Earth and Planetary Science Letters, Progress in Oceanography, Journal of African Earth Sciences*

Grant and Fellowship Reviewer/Panelist: National Science Foundation, National Geographic

Arctic in Rapid Transition Network, executive committee member, 2016-2020

Michigan Geophysical Union Meeting planning committee, 2012-2014; chair 2013-2014

Focus the Nation Lecture Series planning committee, 2009

Public Outreach

Christwood Retirement Home, Covington, LA, speaker, 2019

Cosmic Cocktails, Hollidaysburg, PA, speaker, 2019

Pint of Science Leeds, speaker, 2018

Yorkshire Fossil Festival, demonstrator, 2017

Environmental Education Intern at Canoe Creek State Park with the Pennsylvania Department of Conservation and Natural Resources, 2008

CRUISE EXPERIENCE

RV Kronprins Håkon to the Barents Sea in fall 2018

RRS James Clark Ross to the Barents Sea in summers 2017 and 2018

RV Laurentian to Lake Michigan in fall 2012

RV Håkon Mosby to Hardangerfjord in fall 2010

GEOLOGICAL FIELD EXPEDITION LEADERSHIP

Utah 2015; Southern Alberta 2015; Southern Alberta 2014, Southeastern Wyoming 2014; Western Kansas 2013; Kansas, New Mexico, and Wyoming 2013; Southern Colorado

WORKSHOPS ATTENDED

GEOTRACES/PAGES Synthesis Workshop on Proxies in Paleooceanography, December 2018

Changing Arctic Ocean Writing Workshop, April 2018

UK-Russia Early Career Scientist Arctic Workshop, February and March 2018

Arctic in Rapid Transition Executive Committee Meeting, February 2018

National Geographic Young Explorer Meet Up, July 2016

Advanced Practices for Inclusive Teaching, March 2016

Canvas for GSIs: Pedagogies and Practicalities, January 2016

Research-Based Practices for College Teaching, July 2015

Writing and Grading Exams, July 2015

Enriching Scholarship: Getting Started with Digital Media Pedagogies, May 2016

Preparing Future Faculty, May 2015

Advanced Climate Dynamics Course: Dynamics of Past Warm Climates, August 2011

Urbino Summer School in Paleoclimatology, July 2011

STUDENT MENTORING

Malin Lunde	MSc, 2020-
Sarah Parker	MGeol, 2017-2018
Isobel Mannion	MGeol, 2017-2018
Charlotte Connop	EES Undergraduate, 2015-2016
Danielle Boshers	EES Undergraduate, 2014-2015
Hannah Sherman	EES Undergraduate, 2014-2015
Kori Johnson-Lane	UROP student, 2014
Michael Duric	UROP student, 2013
Elliot Jackson	EES Undergraduate, 2011-2012
Zack Durham	EES Undergraduate, 2011-2012
Alec Washabaugh	EES Undergraduate, 2011-2012

MSc- Masters of Science, University of Bergen

MGeol- Masters of Geology, University of Leeds

EES- Earth and Environmental Sciences Department Major, University of Michigan

UROP- Undergraduate Research Opportunities Program, University of Michigan