

## **Allyson Tessin**

Assistant Professor, Department of Geology, Kent State University  
Email: atessin@kent.edu Phone: 330-672-3473 Twitter: @allyson\_tessin

### **EDUCATION**

Ph.D.	University of Michigan, Earth and Environmental Sciences, 2016 with Graduate Teaching Certification, CRLT
M.S.	University of Michigan, Geological Sciences, 2013
B.Phil.	University of Pittsburgh, Geology, 2010
B.A.	University of Pittsburgh, Environmental Studies, 2010

### **PROFESSIONAL EXPERIENCE**

2020-	Assistant Professor, Department of Earth Sciences, 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
2007-2010	Undergraduate Researcher, University of Pittsburgh, Paleolimnology and Paleoclimatology Laboratory

### **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

- [19] F.S. Freitas, S. Arndt, K. R. Hendry, J. C. Faust, **A. C. Tessin**, C. März, 2022, Organic Matter Transformation Drives pH and Carbonate Chemistry in Arctic Marine Sediments, *Global Biogeochemical Cycles*.
- [18] J. Ward, K. Hendry, S. Arndt, J. Faust, F. Freitas, S. Henley, J. Krause, C. März, H. Ng, R. Pickering, **A. Tessin**, 2022, Stable Silicon Isotopes Uncover a Mineralogical Control on the Benthic Silicon Cycle in the Arctic Barents Sea, *Geochimica et Cosmochimica Acta*.
- [17] J. Ward, K. Hendry, S. Arndt, J. Faust, F. Freitas, S. Henley, J. Krause, C. Maerz, **A. Tessin**, R. Airs, 2022, Benthic Silicon Cycling in the Arctic Barents Sea: a Reaction-Transport Model Study, *Biogeosciences*.
- [16] C. Marz, F.S. Freitas, J.A. Godbold, S.F. Henley, **A.C. Tessin**, G.D. Abbott, R. Airs, S. Arndt, D.K.A. Barnes, J.C. Faust, L.J. Grange, N.D. Gray, I.M. Head, K.R. Hendry, R.G. Hilton, A.J.Reed, S. Ruhl, M. Solan. T.A. Souster, M.A. Stevenson, K. Tait, J. Ward, S. Widdicombe, 2022, Biogeochemical consequences of a changing Arctic shelf seafloor ecosystem, *Ambio*.
- [15] T. Horner, S.H. Little, T.M. Conway, J.R. Farmer, J.E. Hertzberg, D.J. Janssen, A.J.M Lough, J. McKay, **A. Tessin**, S.J.G. Galer, S.L. Jaccard, F. Lacan, A. Paytan, K. Wuttig, 2021, Bioactive trace metals and their isotopes as paleoproductivity proxies: An assessment using GEOTRACES-era data, *Global Biogeochemical Cycles*.
- [14] 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*.
- [13] 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*.
- [12] **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*.
- [11] **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*.

- [10] 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*.
- [9] 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*.
- [8] 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*.
- [7] **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.
- [6] **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, *GSA Bulletin*, DOI:10.1130/B31982.1.
- [5] **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.
- [4] **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
- [3] **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.
- [2] 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.
- [1] **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 (editorials, cruise reports, and book chapters)**

- [5] G Uenzelmann-Neben, SM Bohaty, LB Childress, and **the Expedition 392 Science Party**, 2022, Expedition 392 Preliminary Report Agulhas Plateau Cretaceous Climate: drilling the Agulhas Plateau and Transkei Basin to reconstruct the Cretaceous–Paleogene tectonic and climatic evolution of the Southern Ocean basin, 5 February–7 April 2022.
- [4] D. Thomas, D. Arevalo-Martinez, K. Crocket, F. Grosse, K. Schulz, R. Suhring, **A. Tessin**, 2022, A changing Arctic Ocean, *Ambio*.
- [3] **A. Tessin**, 2020, Anthropogenic influences on ocean chemistry, *Elsevier Encyclopedia of Geology*, 2<sup>nd</sup> edition.
- [2] 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>.
- [1] K Husum, U Ninnemann, TA Rydningen, E Alve, NEB Altuna, AH Braaten, V Eilertsen, V Gamboa, MR Kjølner, L Orme, S Rutledal, **A Tessin**, M Zindorf, 2018, Paleo Cruise 2018, *Nansen Legacy Report Series*, <https://doi.org/10.7557/nlrs.5502>.

### **INVITED TALKS**

Kent State University, Department of Earth Sciences, September 2022  
Kent State University, Department of Biological Sciences, September 2021  
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 Sciences, October 2014

### **GRANTS AND FUNDING**

#### **Funded Grants**

US Science Support- Novel Projects Grant, 2023 (\$50,000)  
National Science Foundation Arctic Natural Sciences, 2023 (\$248,140 to KSU)  
US Science Support- Post Expedition Award for IODP Exp. 392, 2022 (\$18,000)  
US Science Support Program- NSF sub-award for IODP Exp. 392, 2022 (\$39,820)

Environmental Science and Design Research Institute, 2021 (\$12,000)  
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**

National Science Foundation, Arctic Natural Sciences, March 2023  
National Science Foundation, Major Research Instrumentation, February 2023  
National Science Foundation, Chemical Oceanography, February 2023

**STUDENT MENTORING**

**Kent State (as primary supervisor)**

Rachael Gray (PhD) 2021-

*Sailing as shipboard inorganic geochemist on IODP 400*

Clare Helmer (MSc) 2021-

*Awarded Ohio Sea Grant student research grant and presented research at the State of Lake Erie Meeting*

Tatiana Fernandez Perez (PhD) 2021-

*Sailed as a shipboard organic geochemist on IODP Expedition 398*

Leah Stanevich (MS) 2022 –

*Co-advised with T. Gallagher*

**Kent State (committee member)**

Kyle Smart (PhD) 2021-

Alyssa Reinhardt (MS) 2021-

Spencer Williams (PhD) 2021-

Emily Mehta (MS) 2021-

Sachini Ranasinghe (MS) 2021-

McKenzie Woodman (MS) 2021-

**University of Southern Mississippi (Committee Member)**

Taylor Brunttil (MS) 2020  
Bryce Melzer (MS) 2020  
Bethany Pertain (MS) 2020

**External Committee Member**

Malin Lunde (University of Bergen; MSc) 2020-2021

**University of Leeds (as primary or co-primary supervisor)**

Sarah Parker (MGeol) 2017-2018  
Isobel Mannion (MGeol) 2017-2018

**University of Michigan (as primary or co-primary supervisor)**

Charlotte Connop (undergrad research) 2015-2016  
Danielle Boshers (undergrad research) 2014-2015  
Hannah Sherman (undergrad research) 2014-2015  
Kori Johnson-Lane (undergrad research) 2014  
Michael Duric (undergrad research) 2013  
Elliot Jackson (undergrad research) 2011-2012  
Zack Durham (undergrad research) 2011-2012  
Alec Washabaugh (undergrad research) 2011-2012

**PRESS COVERAGE**

Kent State Magazine, feature, Summer 2022  
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**

ESCI 4/50380: Biogeochemistry (Spring 2023)  
ESCI 60091: Data Analysis and Presentation (Fall 2022)  
GEOL/ESCI 201080: All about the Oceans (Fall 2020, 2021, 2022)  
GEOL 60084: Graduate Student Orientation (Fall 2021)  
GEOL 11040: How the Earth Works (Summer 2021)  
GEOL 60091: Writing in the Earth Sciences (Spring 2021)  
GEOL 60091: Colloquium (Spring 2021)

**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**

Committee member for two faculty searches, Department of Geology, KSU (2022-2023)

Diversity, equity, and inclusion committee, Department of Geology, KSU (2021- )

Faculty Advisory committee (elected), Department of Geology, KSU (2021- )

Graduate Admissions committee, Department of Geology, KSU (2020-21; 2022-)

Graduate Scholarships and Fellowships reviewer, university wide, KSU (2021)

Student expectations committee, Division of Marine Science, USM (2019-2020)

Sustainability committee, School of Ocean Science and Engineering, USM (2019-2020)

**Scientific Community Service**

Member of US Advisory Committee on Scientific Ocean Drilling  
and staffing sub-committee

Participant in virtual and in-person workshops to determine the Science Mission  
Requirements for a new U.S. Scientific Drillship

Editorial Board Member for Geology, 2022-2024

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, Marine Geo-Letters*

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**

Blog writer for IODP Expedition 392, 2022

Three ship-to-shore tours of the JOIDES Resolution, 2022

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 Revelle to the Oregon Margin in summer 2022  
JOIDES Resolution IODP Expedition 392 to the Agulhas Plateau in spring 2022  
RV Gibraltar III to Lake Erie (5 cruises in 2021-2022)  
RV Erie Monitor to Lake Erie in summer 2021  
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 2013

#### **WORKSHOPS ATTENDED**

MARSSAM Chief Scientist Training Course for coring expeditions, 2022  
Science Mission Requirements for the US Ocean Drillship, 2022  
Remote Teaching, 2020  
GEOTRACES/PAGES Synthesis Workshop on Proxies in Paleoceanography, 2018  
Changing Arctic Ocean Writing Workshop, 2018  
UK-Russia Early Career Scientist Arctic Workshops, 2018  
Arctic in Rapid Transition Executive Committee Meeting, 2018  
National Geographic Young Explorer Meet Up, 2016  
Advanced Practices for Inclusive Teaching, 2016  
Canvas for GSIs: Pedagogies and Practicalities, 2016  
Research-Based Practices for College Teaching, 2015  
Writing and Grading Exams, 2015  
Enriching Scholarship: Getting Started with Digital Media Pedagogies, 2016  
Preparing Future Faculty, 2015  
Advanced Climate Dynamics Course: Dynamics of Past Warm Climates, 2011  
Urbino Summer School in Paleoclimatology, 2011