

Sandra Passchier, Ph.D.

Professor, Earth and Environmental Studies
Montclair State University
Center for Environmental & Life Sciences 220
Montclair NJ 07043, U.S.A.

Work Phone: (973)-655-3185
Work Fax: (973)-655-4072
Work E-mail: passchiers@montclair.edu

Languages: Dutch (native), English and German

ACADEMIC POSITIONS

2014-	Professor, Montclair State University, Montclair, New Jersey, U.S.A.
2022-2024	Adjunct Senior Research Scientist, Lamont-Doherty Earth Obs., Columbia Univ.
2014-2022	Adjunct Research Scientist, Lamont-Doherty Earth Observatory, Columbia Univ.
2010-2014	Associate professor, Montclair State University, Montclair, New Jersey, U.S.A.
2005-2010	Assistant professor, Montclair State University, Montclair, New Jersey, U.S.A.
2001-2005	Research geologist, TNO-Nat. Geol. Survey, Geo-Marine Division, Utrecht, Netherlands
1996-2000	Graduate research/teaching assist./instructor, The Ohio State University, U.S.A.
1992-1996	Graduate research/field assistant, Free University Amsterdam, TNO-National Geological Survey, University of Amsterdam, The Netherlands, and Irish Geological Survey, Ireland

EDUCATIONAL BACKGROUND

2000	Ph.D. in Geological Sciences, The Ohio State University, Columbus, Ohio, U.S.A.
1994	M.S. (Doctorandus) in Physical Geography, University of Amsterdam, The Netherlands

PROFESSIONAL DEVELOPMENT

2023	Inclusive Teaching in Classrooms, Research Labs, and Practical Training Settings, MSU Office for Faculty Excellence
2021	ADVANCE-Geo Implicit Bias Workshop, Geological Society of America
2007	ADVANCE Geoscience Academics In The Northeast (GAIN) Writing Retreat, Boston

SHIPBOARD AND FIELD SCIENCE TEAM EXPERIENCE

2023	Sedimentologist, IODP Exp. 400, NW Greenland
2022-2024	Beach sampling, Sandy Hook New Jersey, Permit #: GATE-2022-SCI-0041 and Edwin B. Forsythe NWR, Holgate, Permits # 2022-026, 2024-012
2019	Sedimentologist, IODP Exp. 379, Amundsen Sea, Antarctica
2014	MSP On-shore Science Party, Bremen, Germany, IODP Exp. 347 Baltic Sea
2010	Sedimentologist (coordinator), IODP Exp. 318, Wilkes Land, Antarctica
2007	Miers Valley, Royal Society Range, day trip from McMurdo Station, Antarctica
2007	Sedimentologist, Antarctic Drilling Program (ANDRILL), McMurdo Station
2007	Field geology, sedimentology, Boston Bay Group, Squantum MA
2001-2002	Sedimentologist/co-chief scientist (four 2-week surveys, vessels Zirfea and Arca), North Sea, Delft Cluster (Dutch National Research Program)
2000	Sedimentologist, Ocean Drilling Program Leg 188, Prydz Bay, Antarctica
1998	McMurdo Erratics, Mt. Discovery, Antarctica, 1 day (with David Harwood)
1997-1998	Wright Valley, Victoria Valley, Taylor Valley, Suess Glacier, Transantarctic Mountains (several 1-day helicopter drops out of McMurdo Station)

- 1998 Cape Roberts Drilling Project, McMurdo Station, Antarctica
1997 McMurdo Ice Shelf, Ross Sea, Antarctica, 1 day (with Richard Aronson)
1997 Cape Roberts Drilling Project, McMurdo Station, Antarctica
1992 Field team member, GIMEX-92, Greenland Ice Margin Experiment (with F. van Tatenhove, M. van den Broeke, University of Amsterdam, Utrecht University)

EXTERNAL GRANTS (\$ 2 Million total to Montclair State University)

- 2024 PI, Subaward NSF-OCE “U.S. Science Support Program...IODP” Post-Expedition Activity award: “Pliocene-Pleistocene ice-sheet extent and paleoceanography on the Northwest Greenland continental shelf” \$19,482.00
2023 PI, Subaward NSF-OCE “U.S. Science Support Program...IODP” for participation in IODP Expedition 400, NW Greenland. 08/01/2023-07/31/24 \$65,278.
2023 Co-PI (MSU PI), Subaward NSF-OCE “IODP Exp 393 Post-Expedition Activity Award for Victoria Hojnacki” 04/01/2023 to 03/31/2024 \$20,000 (PI: Ph.D. student Victoria Hojnacki)
2022 Co-PI (MSU PI), Subaward NSF-OCE “U.S. Science Support Program...IODP” for Ph.D. student Victoria Hojnacki’s participation in IODP Expedition 393, South Atlantic Transect. 06/01/2022-02/28/2023 \$11,147. (PI: Ph.D. student Victoria Hojnacki)
2021 PI, NSF-OPP grant: “West Antarctic Ice Sheet change and paleoceanography in the Amundsen Sea across the Pliocene Climatic Optimum” 08/15/2021 to 07/31/2026, Award # 2114839, \$410,572
2019 PI, Subaward NSF-OCE “U.S. Science Support Program...IODP” for IODP Expedition 379, Amundsen Sea, Antarctica. 01/01/2019-11/30/21 \$73,278.
2018 PI, NSF-OPP grant: “Timing and spatial distribution of Antarctic Ice Sheet growth and sea-ice formation across the Eocene-Oligocene Transition”. 06/15/2018-5/31/2021, ANT 1743643 \$323,113.
2015 Co-PI, NSF-MRI grant: “Acquisition of an Inductively Coupled Plasma- Mass Spectrometry (ICP MS) for elemental concentration and speciation analysis at Montclair State University”, (PI: Xiaona Li), 9/1/2015-8/31/2016, EAR 1531719 \$168,245
2015 Co-PI, NJ Council for the Humanities grant for: "Rising Tide: What We can Learn From the Dutch and their Relationship with Water." (PI: Steven Shapiro) \$20,000
2014 PI, Subaward NSF-OCE, Consortium for Ocean Leadership, “Expedition 347 Baltic Sea Onshore Science Party” IODP USSSP Salary Support and PEA award, 01/22/2014-01/21/2016 (no-cost extension) \$32,892
2012 PI, NSF-OPP award: “The Stratigraphic Expression of the Onset of Glaciation in Eocene-Oligocene Successions on the Antarctic Continental Margin”, 6/1/2013-5/31/2018, ANT 1245283 \$118,937
2011 PI, NSF-ODP award: “Early Pliocene record of Antarctic ice rafting and paleoenvironmental conditions, Wilkes Land Margin, Antarctica”, 3/15/2011-2/28/2016, OCE 1060080 \$183,565
2010 PI, NSF-ODP Subaward, Consortium for Ocean Leadership, IODP Exp. 318 USSSP Salary Support and PEA award: “Cenozoic Antarctic ice-sheet dynamics based on ice-rafted debris and bulk geochemical studies”, 1/4/2010-1/4/2013, IUSSP410-T318A72 \$53,485
2010 Co-PI, NSF-IF award: “Upgrade of the Optical ICP at Montclair State University”, (PI: Matt Gorrying), 05/01/10-04/30/12, EAR 0948992 \$28,050.
2009 PI, NSF-OPP award: “Determining Middle Miocene through Pliocene changes in basal ice conditions in East Antarctica through sedimentological analyses of core samples” 07/01/09-08/31/11, ANT 0838842 \$75,817
2008 PI, NSF-OPP subaward: “Recording Middle Miocene through Pliocene Antarctic cryospheric change based on shifts in sedimentary facies, particle size, heavy minerals and SEM analyses of quartz grain surface textures” 06/01/08-02/28/11, ANT 0342484 (25-0550-0001-152) \$71,229
2007 PI, NSF-OPP subaward: “Recording glacier regime and sediment dispersal through the Neogene

- using analysis of sedimentary facies and laser particle size measurements” 06/01/07-02/28/11, ANT 0342484 (25-0550-0001-132) \$46,068
- 2006 Co-PI, NSF-MRI grant: “Acquisition of a Scanning Electron Microscope at Montclair State University”, (PI: S. Brachfeld), EAR 0619402, \$264,579
- 2000 PI, Ocean Drilling Program post-cruise research grant (JOI INc.) #F001171/F001282, 04/10/00-08/31/02, \$6684.00
- 2000 Ocean Drilling Program shipboard salary grant (JOI INc.), (PI: P.N. Webb) 01/13/00-04/14/00, \$7527.90
- 1998 Geological Society of America Student Research Grant #6306-98, 04/27/98-01/30/99 \$793

INTERNAL GRANTS, MONTCLAIR STATE UNIVERSITY

- 2025 Sabbatical Leave, Half-year, \$5920 travel budget
- 2022 Co-PI, Faculty Research Mentoring Award, \$5000
- 2019 PI, Separately Budgeted Research award, Montclair State University: “X-ray fluorescence of sediment cores from Amundsen Sea, Antarctica”, \$4920
- 2018 Sabbatical leave, Full-year
- 2013 PI, Global Education Center, Montclair State University, “Strengthening existing collaborations between Utrecht University, the Netherlands and MSU” \$2000
- 2011 Sabbatical leave, Full-year
- 2007 PI, Sokol Faculty-Student Research award, College of Science and Mathematics, Montclair State University: “Analysis of ice-stream drainage patterns in Antarctica using heavy mineral assemblages from marine sediment cores” 06/01/07-06/30/08, \$1850
- 2007 PI, Separately Budgeted Research award, Montclair State University: “Field geology and inorganic geochemistry of Snowball Earth rocks, Boston Bay Group, Massachusetts” 06/01/07-12/31/08, \$1130
- 2006 PI, Summer Grant Proposal Development Award, Montclair State University: “Laser particle size analyses and SEM analyses of quartz grain surface textures on core samples from Antarctica”, \$4000
- 2006 PI, Global Education Center, Montclair State University, travel award \$800

HONORS / AWARDS / SCHOLARSHIPS / FELLOWSHIPS

- 2022 Fellow, Geological Society of America
- 2018 Gonfalonier, College of Science and Mathematics, Montclair State University, The Graduate School Commencement, January 14
- 2013-2014 Distinguished Lecturer - International Ocean Discovery Program
- 2013 College of Science and Math Faculty Research Award, Montclair State University
- 2011-2012 Visiting scientist (3 months), Department of Earth Sciences, Utrecht University (Sponsored by Netherlands Science Foundation-NWO, PI: Henk Brinkhuis)
- 2003 Gratification for Scientific Input, Internat. Workshop on Land-Sea Stratigraphic Correlation, Utrecht, The Netherlands (TNO-Marine Geology Division) € 500
- 2000 Spieker Award, outstanding graduating PhD student (The Ohio State Univ.) \$100
- 2000 U.S. Antarctic Service Medal (National Science Foundation)
- 1997 Lois M. Jones Fellowship, Dept. of Geological Sciences, The Ohio State University

TEACHING

- 2005-ongoing Instructor of Stratigraphy, Sedimentology, Advanced Marine Geology, Glacial Deposits, Physical Geology, Planet Earth, Earth and Environment, Earth System History, Understanding Weather and Climate, Invertebrate Paleobiology, Montclair State

	University
2022	Instructor, GLASS Glacial Sediment Summer School, Oregon State University
2019	Instructor, PAIS/IODP Antarctic Summer School, Texas A&M University
2002	Instructor, Marine Geology short course for Chinese visiting scientists, TNO-National Geological Survey
1999	Instructor of Historical Geology at the Department of Geological Sciences, The Ohio State University (Winter Quarter)
1996	Teaching assistant of Introductory Geology at the Department of Geological Sciences, The Ohio State University (Fall Quarter)

GRADUATE STUDENTS

Ph.D. Dissertation Committee Chair (Montclair State University)

2022-	Monika Ghimire (tentative): "Pliocene and Holocene high-resolution paleoclimate archives, Tibetan Plateau and Antarctica"
2019-2024	Victoria M. Hojnacki: "Onset of Antarctic glaciation at the Eocene-Oligocene transition in the Weddell Sea and its impact on ocean circulation"
2012-2016	Melissa A. Hansen: "An assessment of Antarctic ice sheet dynamics from a Pliocene polar paleoclimate archive"

Ph.D. Research Advisor (Montclair State University)

2021-2024	Divomi Balasuriya: "The Effect of Sand Nourishment on Beach Sediment Composition of Sandy Hook and Holgate Beach, New Jersey"
2019-2022	Olga Libman-Roshal: "Fluctuations in the Amundsen Sea sector of the West Antarctic Ice Sheet: a geochemical analysis of early Pliocene sediment record"

M.S./M.A. Students, primary advisor (all Montclair State University)

2024	Celina Flores Garza: Trace and Rare Earth Element (REE) analysis of Oligocene and Miocene diamictites in the Cape Roberts Drilling Project cores, Ross Sea, Antarctica (M.S. Thesis).
2023	Ridley Joseph: Antarctic Peninsula ice sheet dynamics in the Pliocene from sedimentological interpretation of Ocean Drilling Program Site 1097 (M.S. Thesis).
2021	Josie Horowitz: Identification of Ice-rafted Debris in the Weddell Sea to Characterize Glaciation at the Eocene-Oligocene Transition (M.S. Thesis).
2020	Mathew Sandefur: The Behavior of the Baltic Sea Ice Stream during the Deglaciation of the Baltic Ice Lake, recorded in the Particle Size and Geochemistry within Bornholm Basin, IODP Site M0065 (M.S. Thesis).
2019	Abbey States: Glauconite Formation in Upper Eocene ODP Site 696 Sediment in West Antarctica (M.S. Thesis).
2018	Allison Lepp: Geochemical and Sedimentological Analysis of Marine Sediments at ODP Site 696 and the Onset of Antarctic Glaciation (M.S. Thesis)(College Research Award).
2017	Peter Bodor: Teaching Antarctic Marine Geology in High School Curriculum (non-thesis, M.S. Geoscience Research Seminar and Comp. Exam)
2017	Jennifer Light: Geochemical and Particle Size Analysis of East Antarctic Shelf Sediments Through the Eocene Oligocene Transition (M.S. Thesis).
2017	April L. Kelly: Determining Late Pleistocene to Early Holocene deglaciation of the Baltic Ice Lake through sedimentological and geochemical analysis of IODP Site M0064 (M.S. Thesis)(GSA student research award \$1875).
2016	Taylor A. Krolik: Grain Size and Organic Geochemistry of Kattegat Sediment to Determine

- Paleoenvironments of the Last Interglacial-Glacial Cycle (M.S. Thesis).
- 2015 Vicky Sekkas: Bedform morphodynamics and environmental implications in the New York Bight apex (M.A. Thesis).
- 2014 Jessica Rosenberg: Late Pliocene ice-rafted debris mass accumulation rates from IODP Site U1359, Wilkes Land continental rise, Antarctica (M.S. Thesis).
- 2014 Daniel J. Ciarletta: Characterization of Eocene-Oligocene depocenters in Prydz Bay, East Antarctica: a lithostratigraphic correlation of Sites 739, 742, and 1166 (M.S. Thesis).
- 2011 Melissa A. Hansen: Middle Miocene basal ice conditions in southern McMurdo Sound, Montclair State University (M.S. Thesis).
- 2010 Daniel Hauptvogel: Ice dynamics in the past 17 Myr in Southern McMurdo Sound: a heavy mineral analysis (M.S. Thesis).
- 2010 Audrey Burns: Quartz surface microtextures in AND-2A (non-thesis, M.S. Geoscience Research Seminar and Comp. Exam).
- 2009 Candice J. Falk: Paleoenvironment and paleoclimate of coastal East Antarctica during the middle Miocene: Particle size results of the ANDRILL Southern McMurdo Sound Project (M.S. Thesis).
- 2009 Efe J. Erukanure: Stratigraphy and geochemistry of the Squantum Tillite, Boston Bay Group, using field log and ICP analysis (M.S. Thesis).

Dissertation or thesis committee member or external reviewer

Qingting Wu, Montclair State University (Ph.D. in progress), Hermann Bermudez, Montclair State University (Ph.D. 2025), Shane Nichols-O'Neill (M.S. 2023), Bhagyashree Vaidya, Montclair State University (Ph.D. 2022), Maura DePalma (M.S. 2022), Norjmaa Khosbaatar, Madeline Kollegger (M.S. 2021), Christopher Tenebruso, Liliana Calderon, (M.S., 2020), Daniel J. Ciarletta, Montclair State University (Ph.D. 2019), Ashley Cirone, (M.S., 2017), David Sharpe, (M.S., 2015), Diane Hagmann, (M.A., 2015), Rocio Duchesne-Onorio, Montclair State University (Ph.D. 2015), Nina Immonen, University of Oulu, Finland (Ph.D. 2014), Kevin Olsen, Montclair State University (Ph.D. 2014), Rachel Darley (Perez), (M.S., 2014), Brendan Reilly, (M.S., 2012), Carl Natter, Jaroslav Slusarczyk, (M.S., 2011), David Cuomo, (M.S., 2010), Ken Kacperowski, Cathleen L. Dale, (M.S., 2009), Matthew Hill, University of Otago, NZ (M.S., 2006), Rik Wemmenhove, Twente Univ., The Netherlands (M.S., 2004), Mark T. Lloyd Davies, Univ. of Amsterdam, The Netherlands (Ph.D. 2004).

Ph.D. Qualifying/M.S. Comprehensive exam, examiner or moderator, Montclair State University

Divomi Balasuriya (Ph.D. 2023), Cassie Southard (M.S. 2022), Olga Libman-Roshal (Ph.D. 2021), Jessica Purpura (M.S. 2019), Peter Bodor (M.S. 2018), Renee Rehfuß (M.S. 2017), Melissa McCrink (M.S. 2017), Sean Rittinger (M.S. 2016), Hayley Rosado (M.S. 2016), Sam Spangler (M.S. 2016), Jeff Olivieri (M.S. 2015)

INDEPENDENT STUDIES AND LABORATORY TRAINING

Sponsorship/mentorship of undergraduate/first-year graduate students

- 2024-2025 Madison Braswell, LSAMP Mentor, paleoclimate research
- 2022 Jessica Scheinbaum, LSAMP Scholar
- 2021-2022 Lisbeth Mino-Moreira, LSAMP Scholar
- 2021-2022 Ronald Leon, LSAMP Scholar
- 2019 Adrienne Novack, laboratory student worker: grain-size analysis of IODP Exp 347 Baltic Sea/Kattegat sediment drillcore samples
- 2018 Ridley Joseph, laboratory student worker: ICP geochemical analyses of ODP Site 696, Antarctica (B.S. Earth and Environmental Science student)
- 2017 Dylan Cone: particle size analyses of Eocene sediments at ODP Site 696, Antarctica (B.S. Geoscience Indep. Study)
- 2016 Tim Maravegias: particle size and depositional environments of the Cloudmaker

	Formation, Transantarctic Mountains (B.S. Geoscience Indep. Study)
2015-2016	Christina Verhagen: ICP analysis of Antarctic core samples from DVDP-11. (B.S. Geoscience Indep. Study)(TechLaunch Future Scientist 1 st place \$1000)
2014-2015	Rose Miriagos: ICP analysis of Antarctic core samples from across the Eocene-Oligocene boundary (B.S. Geoscience Indep. Study)
2014	Chemin Bushman: Comparing Grain Size Based on Differences in Obscuration (B.S. Geoscience Indep. Study)
2013	Vicky Sekkas: The record of Late Oligocene ice growth at IODP Site U1356, Wilkes Land margin Antarctica (B.S. Geoscience Honors Project)
2012-2013	J. Patel: How far south does the Chon Aike igneous province extend into Antarctica? (M.S. Geoscience Independent Study)
2010-2012	Nadine Orejola: Pliocene ice dynamics from IODP Site U1358 (B.S. Geoscience Honors Project)(Science Honors Internship Program -SHIP- fellowship).
2011	Victor Henao: Ice dynamics and productivity during the Miocene Climatic Optimum from ICP-OES of IODP Site U1356 (B.S. Geoscience Indep. Study).
2009-2010	R. Linda Martin: particle size and bulk geochemistry of CRP cores, Antarctica (M.S. Graduate Research Assistant).
2008	Ian Johnson: Particle size record for the Plio-Pleistocene of AND-2A (B.S. Geoscience Honors Project).
2008	Jason Darley and Dan Hauptvogel, laboratory student workers, Sokol Faculty-Student research project: Heavy Minerals in Antarctic Sediment Cores from Prydz Bay, East Antarctica (B.S. Geoscience students).
2007	Ryan Ippolito: Carbon dioxide and climate studies based on Eocene paleotemperature records (B.A. Geography Senior Project).
2006	Sarah E. Busch: Particle Size Analysis of Eocene-Oligocene Antarctic Core Samples, ODP Site 1166, (B.A. Geography Senior Project).
2005	Bas Berdee (Univ. Utrecht): Ice-contact fluvioglacial sediments near Werpeloh and Balderhaar (Germany) M.S. Physical Geography field research project.

Other students and visitors hosted in Sedimentology Lab

2019	Bhagyashree Vaidya, Ph.D. Environmental Science & Mgt, MSU
2019	Anastasia Figueroa, M.S. Earth & Environmental Science, MSU
2014-2017	Diane Hagmann, M.A./Ph.D. Environmental Management, MSU
2016	Adam Fernandez, M.S. Geoscience, MSU
2014	Abhishek RoyChowdhury, Ph.D. Env. Management, MSU
2014	Dr. Peter K. Bijl, Utrecht University, The Netherlands
2013	Samantha Berger (undergrad.), Rutgers University
2013	Carolyn Mathieu, B.S. Chemistry, SHIP honors program, MSU
2012	Francesco Iacoviello (Ph.D.), University of Siena, Italy
2012	Linda Martin (M.S.), Rutgers University
2011	Elena Noonan, Kiara Jones, REU: "Environmental Research on Forest Lakes", MSU
2010	Jhon J. Gonzalez (Ph.D.), University of Granada, Spain
2009	Dr. Jennifer Callanan (nee Reynard), William Paterson University, N.J.
2010	Nicole Bujalski, M.S. Geoscience, MSU
2009	Barbara D. Soares, M.S. Biology, MSU
2009	Jennifer LaPoma, M.S. Geoscience, MSU
2007	Jennifer Callanan (nee Reynard), Ph.D. Env. Management, MSU
2006	Molly Rosig, M.S. Geoscience, MSU
2006	Rachel Darley (nee Perez), MSU

PROFESSIONAL SERVICE

International and national committee service, reviews, editorial

2025-	American Geophysical Union, Cryosphere Section, Fellow Nominations Committee
2023-	Editorial board Marine Geology
2021-2024	Member, Research Grants Committee, Geological Society of America
2020-2023	Member, Science Evaluation Panel of the International Ocean Discovery Program
2020-2022	Associate Editor (geological and physical science) for The Holocene
2019-2020	Member, international Science Framework Working Group “Exploring Earth By Scientific Ocean Drilling”
2018-2019	Member, Steering Committee Scientific Ocean Drilling beyond 2023 (SOD 23+)
2017	Participant, watchdog, JOIDES Resolution drillship Assessment Workshop, Denver
2017	Panelist, Schlanger Fellowship (USSSP-IODP)
2013-2016	Member, U.S. Advisory Committee for Scientific Ocean Drilling (USAC)
2012-2014	Curatorial Advisory Board, Polar Rock Repository, The Ohio State University
2005-2013	Member, International Steering Committee, Antarctic Climate Evolution, Scientific Committee of Antarctic Research (SCAR-ACE)
2012	Expert Reviewer, Second Order Draft of the WGI contribution to the IPCC Fifth Assessment Report (AR5) Climate Change 2013: The Physical Science Basis
2007	Co-editor of – “Antarctica: A Keystone in a Changing World” – Online Proceedings of the 10th ISAES, USGS Open-File Report 2007-1047
2004	Guest editor, Netherlands Journal of Geosciences
2009-present	Panelist, National Science Foundation (Polar Research, Post-Doctoral Fellowship)
2002-present	Proposal ad-hoc reviewer, National Science Foundation, National Environmental Research Council (NERC), U.K., Australian Antarctic Science program, Geschäftsstelle des Gutachterpanels Forschungsschiffe (GPF)(Germany), The Netherlands Science Foundation (NWO), Swiss National Science Foundation (SNSF), ACS Petroleum Research Fund, NERC-IODP and U.S. Science Support Program (USSSP-IODP)
1999-present	Journal reviewer: Nature, Nature Geoscience, Nature Communications, Scientific Reports, Earth and Planetary Science Letters, Geology, GSA Bulletin, Quaternary Science Reviews, Paleoceanography, Int. Assoc. Sedimentologists Special Publication, Sedimentology, Marine Geology, Palaeogeography/ Palaeoclimatology/Palaeoecology, Global and Planetary Change, Journal of Quaternary Science, Geo-Marine Letters, Netherlands Journal of Geosciences, Antarctic Science, Journal of Asian Earth Sciences, Terra Antarctica.

Conference session convener or chair

2026	Co-Convener GSA Northeastern Meeting “High latitude paleoceanographic discoveries from Scientific Ocean Drilling (IODP, ODP, DSDP)”
2024	Co-Convener AGU Fall Meeting Session “Arctic Marine Processes and Ice Sheet-Ocean Interactions in the Cenozoic: Insights from Marine Sediment Records”
2020	Primary Convener and Session Chair GSA Annual Meeting (virtual) “Ice-Sheet and Sea-Ice Paleo-Reconstructions from the Arctic, Antarctica, and the Southern Ocean”
2018	Primary Convener and Session Chair AGU Fall Meeting (oral, poster) “Development of the cryosphere: evidence from sedimentary records in the high latitudes”
2017	Oral session chair, Past Antarctic Ice Sheet Dynamics symposium, Trieste, Italy
2012	Primary Session Chair AGU Fall Meeting (oral, poster) “Antarctica and the Southern Ocean During Past Warm Episodes of the Icehouse”
2008	Poster session chair, Antarctic Climate Evolution, GSA Northeastern, Buffalo NY
2007	Oral session chair, 10 th Internat. Symposium on Antarctic Earth Sciences
2004	Co-organizer (with K.F. Rijdsdijk) of 3-day field trip for the Sedimentology Section of the

2003-2005 Netherlands Geoscience and Mining Society (KNGMG)
Co-organizer, session chair, international symposium “Integrated Land-Sea Stratigraphic Correlation”, w/ field trip (TNO-Nat. Geol. Survey, Netherlands)

UNIVERSITY/COLLEGE OF SCIENCE AND MATH (CSAM) SERVICE

2025 CSAM rep. Carnegie Community-Engagement classification team
2024-2025 Search Committee CSAM Associate Dean for Research & Partnerships
2024-2025 CSAM Research Committee, EAES Rep.
2019-2023 Admissions Committee, Ph.D. Environmental Science & Management
2019-2020 CSAM Mentoring and Student Research Oversight Committee
2017-2018 Elected CSAM rep. University General Education Committee
2013-2017 CSAM Safety Committee
2014-2016 Invited member, University Honorary Degree Committee
2014-2016 Elected member, Ph.D. Environmental Management, Executive Council
2015 Search Committee CSAM Budget Manager
2015 CSAM Awards of Excellence committee
2010-2014 Team leader “Geodynamics” lab cluster development for CELS
2013-2014 Invited member, Canvas Review Committee and Canvas Early Adopter
2013-2015 Academic Technology Committee-Learning Management Systems
2007-2011 Academic Computing Committee-Learning Management Systems
2013 Panelist and moderator, MSU Student Research Symposium
2012-2013 Chair and Member, Search “Director Institute for Sustainability Studies”
2011-2012 Volunteer, Moodle Pilot
2010-2012 Provost’s working group Learning Management Systems
2010-2011 Provost’s Appointee on University’s Graduate Council
2010 Institute for Sustainability Studies Strategic Planning Committee
2009 Moderator, MSU Student Research Symposium
2008 Elected CSAM rep. University Research Committee
2008-2011 CSAM Research Committee, EAES Rep.

DEPARTMENTAL SERVICE

2024- Member, Departmental Personnel Assessment Committee (DPAC)
2022- Advisor, Climate Science Certificate
2022-2023 Graduate Program Coordinator M.S. Earth and Environmental Science
2020-2022 Chair (elected), Departmental Personnel Assessment Committee (DPAC)
2020-2022 Member, Departmental Sabbatical Review Committee
Fall 2019 Member, Departmental Personnel Assessment Committee (DPAC)
2017-2018 Chair (elected), Search Committee “Paleoclimatology” faculty position
2015-2018 Graduate Program Coordinator M.S. Geoscience/Earth and Environmental Science
2014-2015 Graduate Application Reviewer M.S. Geoscience (9 applications, GPC request)
2016-2017 Chair (elected), Departmental Curriculum Committee
2014-2017 Member, Departmental Curriculum Committee
2012-2014 Member, Departmental Personnel Assessment Committee (DPAC)
2012-2013 Member, Search Committee “Analytical Instrumentation Specialist” (EAES)
2011-2012 Member, Search Committee “Geodynamics” faculty position
2010-2011 Chair (elected), Search Committee “Earth Systems Modeler” faculty position
2009-2011 Program Coordinator B.S. Geoscience
2006-2007 Member, Search Committee “Surface hydrologist” faculty position
2006 Member, Departmental Laboratory Facilities Committee

2005 Member, Departmental Laboratory Safety Committee

PUBLICATIONS

Refereed journal publications (*denotes MSU student author, ^ other student author)

- 1 Horikawa, K., Iwai, M., Hillenbrand, C.-D., Siddoway, C.S., Halberstadt, A.R., Cowan, E.A., Penkrot, M.L., Gohl, K., Wellner, J.S., Asahara, Y., Shin, K.-C., Noda, M., Fujimoto, M., and Expedition 379 Science Party (includes **Passchier, S.**), in press. Repeated major inland retreat of Thwaites and Pine Island glaciers (West Antarctica) during the Pliocene. *Proceedings of the National Academy of Sciences*
- 2 **Passchier, S.**, Hillenbrand, C.-D., Hemming, S., Ehrmann, W., Frederichs, T., Bohaty, S.M., *Leon, R., *Libman-Roshal, O., *Mino-Moreira, L., Gohl, K., Wellner, J., 2025. West Antarctic ice retreat and deepwater formation in the Amundsen Sea in the warm early Pliocene. *Nature Communications* 16, 5609 (2025). doi:10.1038/s41467-025-60772-8
- 3 *Hojnacki, V., **Passchier, S.**, 2024. Early Oligocene record of an Iceberg Alley in the Weddell Sea from quartz sand microtextural analysis at ODP Site 696. *Geosphere* 20 (4): 1054–1065 doi:10.1130/GES02686.1
- 4 *Light, J.J., **Passchier, S.**, 2023. Eocene to Oligocene cooling and ice growth based on the geochemistry of interglacial mudstones from the East Antarctic continental shelf. *Antarctic Science*, 35(4), 270–282. doi:10.1017/S0954102023000159
- 5 *Hojnacki, V., *Lepp, A., *Horowitz Castaldo, J., *States, A., Li, X., & **Passchier, S.**, 2022. Impact of Eocene-Oligocene Antarctic glaciation on the paleoceanography of the Weddell Sea. *Paleoceanography and Paleoclimatology*, 37, e2022PA004440. doi: 10.1029/2022PA004440
- 6 ^Gille-Petzoldt, J., Gohl, K., Uenzelmann-Neben, G., Grützner, J., Klages, J. P. & the Expedition 379 Scientists (**S. Passchier**), 2022. West Antarctic Ice Sheet Dynamics in the Amundsen Sea Sector since the Late Miocene—Tying IODP Expedition 379 Results to Seismic Data. *Frontiers in Earth Science*, 10, 976703.
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17. **Passchier, S.**, 2002. Provenance and depositional environments of Neogene Sirius Group deposits from the Shackleton and Beardmore Glacier areas, central Transantarctic Mountains. In: J.A. Gamble, D.N.B. Skinner, S. Henrys (eds.), Antarctica at the close of a millenium-Proceedings of the 8th International Symposium on Antarctic Earth Sciences, Wellington, New Zealand, 1999, *The Royal Society of New Zealand Bulletin*, 35, 309-318.
18. **Passchier, S.**, 2000. Soft-sediment deformation features in core from CRP-2/2A, Victoria Land Basin, Antarctica. *Terra Antartica*, 7(3), 401-412.
19. Cape Roberts Science Team (**S. Passchier**), 1999. Studies from the Cape Roberts Project, Ross Sea, Antarctica-Initial Report on CRP-2/2A. *Terra Antartica*, 6(1/2), 1-173.
20. **Passchier, S.**, Verbers, A.L.L.M., Van der Wateren, F.M. and Vermeulen, F.J.M., 1998. Provenance, geochemistry, and grain-sizes of glaciogene sediments, including the Sirius Group, and Late Cenozoic glacial history of the southern Prince Albert Mountains, Victoria Land. *Annals of Glaciology*, 27, 290-296.
21. **Passchier, S.**, Wilson, T.J. and Paulsen, T.S., 1998. Origin of breccias in the CRP-1 core. *Terra Antartica*, 5(3), 401-409.
22. Cape Roberts Science Team (**S. Passchier**), 1998. Initial Report on CRP-1, Cape Roberts Project, Antarctica. *Terra Antartica*, 5(1), 1-187.
23. **Passchier, S.**, Uscinowicz, S. and Laban, C., 1997. Sediment supply and transport directions in the Gulf of Gdańsk as observed from SEM analysis of quartz grain surface textures. *Special Publication of the Polish Geological Institute (Prace Państwowego Instytutu Geologicznego)*, 158, 5-27.

INVITED PRESENTATIONS

- 2025 “Antarctic glacial and climate history from marine sediment records” University of Delaware (postponed)
- 2023 “Orbitally Forced Cyclicity in Stratigraphic Records of Antarctic Plio-Pleistocene Marine Ice Sheets” by Sandra Passchier and Melissa Hansen, American Geophysical Union, PP002-1275819 (Invited)
- 2022 “Eocene-Oligocene onset of glaciation and cooling”. Glacial Sedimentation Summer School (GLASS), Oregon State University.
- 2022 “Antarctica’s deep connections in the Earth System”, Saint Peter University, Jersey City, New Jersey (online talk).
- 2020 “The Pliocene sedimentary record offshore the Amundsen Sea, West Antarctica: initial results from IODP Expedition 379” by Passchier, S., Hillenbrand, C.D., Frederichs, T., Libman-Roshal, O., Gohl, K., Wellner J. and Expedition 379 Scientists, American Geophysical Union, C037-0008 (Invited)
- 2020 “Detecting glacial sediment using scanning electron microscopy of quartz sand surface textures” (online seminar) – IODP Expedition 382 Iceberg Alley IRD research group (Hemming/O’Connell/Siddoway/Warnock/Kaplan/Thomson and students)
- 2019 “Antarctic sedimentary systems under different climate states in the Miocene and Pliocene” and “The Eocene-Oligocene transition in Antarctica” PAIS-IODP Antarctic Summer School, Texas A&M University, College Station TX.
- 2018 “Detrital and authigenic sediment recorders of past meltwater production and ice retreat” Lamont Doherty Earth Observatory Geochemistry seminar.
- 2017 “Sedimentological proxies of Antarctic continental aridity, melt supply, iceberg concentrations, and ocean circulation under different mean climate states.” Ice-shelves: Models and Observations Workshop, PAIS conference, Trieste, Italy.
- 2017 “The geological archive of polar ice behavior in a warmer climate extracted from ocean drillcores on Antarctica’s continental margin” Wesleyan University, CT.
- 2016 “An Antarctic stratigraphic record of step-wise ice growth through the Eocene-Oligocene

- greenhouse-icehouse transition” University of Wisconsin, Milwaukee.
- 2015 “Neogene sedimentation in onshore to offshore transects off East Antarctica and paleoclimatic interpretations” Interdisciplinary Antarctic Earth Sciences Meeting, Loveland, Colorado.
- 2015 “Dynamic ice sheets in a warmer world: unraveling the sedimentary paleo-archive within the Antarctic continental margin”, MARUM Lecture Series, Univ. of Bremen.
- 2014 “Building high-latitude sequence stratigraphic models, with examples from Eocene through Miocene successions on the Antarctic continental margin”. AAPG/SEPM Hedberg research conference “Latitudinal Controls on Stratigraphic Models and Sedimentary Concepts” 9/28– 10/1 2014, Banff, Canada.
- 2014 “The sedimentary record of Antarctic ice dynamics during past warm periods”, Geoscience Colloquium, University of Pennsylvania.
- 2013- “The footprint of an ice sheet on the Antarctic continental margin” (IODP Distinguished
2014 Lecturer) University of Kentucky, University of Cincinnati, Coastal Carolina University, University of South Carolina, Texas A&M University Corpus Christi, Texas State Aquarium, Appalachian State University, California State University Fresno.
- 2013 “The sedimentary signature of the Antarctic ice sheet during the Miocene Climatic Optimum”, Department of Earth and Planetary Sciences, Rutgers University.
- 2012 “Orbitally-paced shifts in the paleobathymetry of the Antarctic continental shelf in response to ice dynamics during the Miocene climatic optimum”, Institute for Marine and Atmospheric research Utrecht, Utrecht University, The Netherlands.
- 2012 “High-latitude drillsites record Antarctic ice dynamics during Miocene and Pliocene climatic optima”, MARUM-Center for Marine Environmental Sciences, University of Bremen, Germany.
- 2011 “Linkages between ice dynamics and ocean temperatures in sediment records on the Antarctic continental margin”, IPPU, Department of Earth Sciences, Utrecht University, The Netherlands.
- 2011 “Reconstruction of Eocene to Miocene Antarctic surface temperature, aridity, and paleoceanography from bulk sediment geochemistry of continental margin drillholes”, Lamont Doherty Earth Observatory, Columbia University, Geochemistry seminar.
- 2011 “The challenge of climate change and sea level prediction: the role of the Antarctic ice sheets”, LaSalle University, Philadelphia, Geology department seminar.
- 2010 “The challenge of sea level and climate change prediction: a progress report on the sustainability of the cryosphere”, MSU Sustainability Symposium.
- 2009 “Glacial extent from lithofacies distribution and terrigenous supply in cores from the Antarctic margin”, Workshop: Marine Proxies for Antarctic Ice Volume: Continental Shelf Sequence Stratigraphy and delta¹⁸O Records from High and Low Latitudes, Granada, Spain.
- 2007 “High Latitude Sedimentology and Stratigraphy”, Workshop: Marine Proxies for Antarctic Ice Volume: Continental Shelf Sequence Stratigraphy and delta¹⁸O Records from High and Low Latitudes, Santa Barbara CA. (Invited speaker with C. Fielding and R. Powell)
- 2006 “Antarctic Climate Evolution”, II Simposio Latinoamericano Sobre Investigaciones Antárticas y VI Reunion Chilena de Investigacion Antartica, Concepcion, Chile.
- 2004 “Dynamic or stable East Antarctic Ice Sheet in the Neogene: an update on the Sirius Group debate”, Antarctic Earth Science Symposium, University of Amsterdam, The Netherlands.
- 2000 “First results of ODP Leg 188”, Cape Roberts Project Meeting, Columbus, Ohio.
- 1999 “Cenozoic Antarctic glacial history: the stratigraphic record from the continent and the continental margin”, Dept. of Earth Sciences, Free University, Amsterdam, the Netherlands.

COMMUNITY SERVICE, OUTREACH AND MEDIA COVERAGE

- 2023 **High School Professional Development, Bergen County Technical Schools**, “Antarctica’s ice sheet and climate history from scientific ocean drilling” (online lecture and discussion).
- 2022 **Montclair State University Sustainability Seminar Series**, “Sustainability challenges produced by melting ice sheets: insights from the sediment archives” (in-person lecture)

- 2022 **Earth Day Awareness Week**, Montclair State University “Antarctica’s deep connections in the Earth System” (online lecture).
- 2019 **Climate debate and panel**, organized by Sussex County Community College, Dec. 14
- 2019 **Four Seasons at Great Notch retirement community**, “Antarctic Ice & Climate Change”, October 2.
- 2019 **Montclair Public Library**, Adult School, Lecture: “Antarctic Ice & Climate Change”. April 30.
- 2019 **Web conference with Robert Fulton School, North Bergen, NJ**. 6th grade. From Punta Arenas, Chile, March 18.
- 2019 **Web conference with Redwood Elementary School, West Orange, NJ**. 5th grade (2 classes, ~50 students) from JOIDES Resolution drillship in transit to Antarctica. January 25.
- 2019 **Classroom visit at Redwood Elementary School, West Orange, NJ**. 5th grade (2 classes, ~50 students) Antarctic and polar science module (1 hour). January 11.
- 2017 **K-12 Visiting Scientists Program**: “Antarctic ice, climate, and sea level” Eastern Christian High School, North Haledon, NJ
- 2016 **American Museum of Natural History**, invited scientist/Milstein Lecturer “Wild Antarctica” day: “When Antarctica’s coast changed from subtropical to deep freeze”, 4/10/16 (~8000 museum visitors)
- 2016 **Duke Farms** (dukefarms.org), invited scientist/lecturer in short course on climate change and sustainability; presented: “Climate change, the global perspective: the science of past warm periods and what to expect towards the end of the century” 3/16/16
- 2014 **Montclair Society of Engineers**, public lecture: “Greenland ice mass loss: the role of an efficient plumbing system” article in **Montclair Times** (based on phone interview)
http://www.northjersey.com/news/241482871_Ice_sheets_and_Montclair.html
- 2013 **The Christian Science Monitor**, 7/24/2013 and **Alaska Dispatch**, 7/25/2013: “Parts of East Antarctic ice sheet have melted before and could again”, (based on phone interview)
<http://www.csmonitor.com/Science/2013/0724/Parts-of-East-Antarctic-ice-sheet-have-melted-before-and-could-again>
- 2013 **Somerset County Environmental Education Center**: “The Challenges of Climate Change & Building Resilient Communities”, presenter and panelist, Basking Ridge NJ, 5/13/2013
- 2013 **Phys.org**: The Antarctic polar icecap is 33.6 million years old, research finds,
<http://phys.org/news/2013-05-antarctic-polar-icecap-million-years.html>
- 2013 **Ocean Leadership Press Release**: “Development of Antarctic Ice Sheet Triggered a Unique Marine Ecosystem” <http://www.oceanleadership.org/2013/development-of-antarctic-ice-sheet-triggered-a-unique-marine-ecosystem/>
- 2012 **New Zealand Science Media Centre** “In The News”:
<http://www.sciencemediacentre.co.nz/2012/08/02/antarcticas-near-tropical-past/>
- 2012 **Radio 1, National Public Radio, The Netherlands, TROS Nieuwsshow**: invited news commentary on drilling of Antarctic subglacial lakes.
- 2011 **Discovery News online**: “Under the Ice, Antarctic Land Comes Into Focus”
<http://news.discovery.com/earth/under-the-ice-the-land-of-antarctica-comes-into-focus-110603.html>
- 2011 **Science News online**: “How Antarctica got its ice”
http://www.sciencenews.org/view/generic/id/73759/title/News_in_Brief_EarthEnvironment
- 2010 **Fox/My9 News**: “Montclair Univ professor joins Antarctica expedition”
http://www.my9tv.com/dpp/news/going_green/Antarctica-Expedition (includes TV footage and interview)
- 2009 **Star Ledger**: “Montclair University professors heading up Antarctica trips to study global warming effects” (based on phone interview)
http://www.nj.com/news/index.ssf/2009/12/montclair_university_professor.html
- 2009 **Science Daily online**: “Major Arctic Sea-Ice Formed Earlier Than Thought”
<http://www.sciencedaily.com/releases/2009/07/090715131435.htm>
- 2009 **Association of Polar Early Career Scientists (APECS)** “Careers in the Field of Polar Research”

- ACE Symposium, Granada, Spain (Panel Member)
- 2008 **NJN News Sounds of Science** with Patrick Regan: interview in Episode 4 “Antarctic Perspectives” together with Michael Bender, Princeton University - <http://www.njn.net/radio/programs/soundsofscience.html> (radio interview)
- 2008 **COMMERCE: The Business of New Jersey**, March 2008 “One of the frozen chosen studying global warming on Antarctica’s ice sheet: meet Dr. Sandra Passchier” (based on phone interview) – print only
- 2008 **WMBC News**: “Focus the nation on Climate Change- PV/MSU Congressman Bill Pascrell” <http://video.google.com/videoplay?docid=-6830645042575927105>
- 2008 **The Record, Bergen**: “Students Get Cold Facts From Experts On Climate”, The Record, Bergen County, NJ, February 16, 2008, <http://record-bergen.vlex.com/vid/students-cold-facts-experts-climate-62980561>
- 2008 **The Christian Science Monitor**; “Scientists read Antarctic Mud for climate change insight: <http://www.csmonitor.com/Environment/Global-Warming/2008/0220/scientists-read-antarctic-mud-for-climate-change-insight/%28page%29/2>
- 2007 **Star Ledger**: “Blogging from the Bottom of the World” http://blog.nj.com/jerseyblogs/2007/11/blogging_from_the_bottom_of_th.html (interview).
- 2007 **The Record, Bergen**: “Studying Warming in Earth's Icebox ; Professor Digs Into Antarctica's History” The Record, Bergen County, NJ, December 04, 2007 - <http://record-bergen.vlex.com/vid/studying-warming-icebox-digs-antarctica-62951749>
- 2006 **Northern New Jersey Science Olympiad**, Preparer and judge, at MSU