

Jan T. M. Lenaerts

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PROFESSIONAL EXPERIENCE

Assistant professor, Department of Atmospheric and Oceanic Sciences, University of Colorado Boulder (<i>parental leave in Spring 2018 and Spring 2021</i>)	Aug 2017 - present
Affiliate scientist, National Center for Atmospheric Research	May 2018 - present
Affiliate scientist, Department of Atmospheric and Oceanic Sciences, University of Colorado Boulder	May 2016 - Jul 2017
Visiting scientist, NCAR	Jan - Feb 2016
NWO Veni granted postdoctoral fellow: <i>Improved modelling of the current and future polar snow cover</i> , Utrecht University (NL)	Jan 2015 - Aug 2017
PI and coordinator of <i>BENEMELT</i> , a multidisciplinary, two-year project involving fieldwork in East Antarctica, Utrecht University (NL)	Sep 2014 - Sep 2016
Postdoctoral researcher and Project Coordinator of <i>Modeling the Global Hydrological Cycle with CESM</i> , Utrecht University (NL)	Nov 2013 - Dec 2016
Research fellow (visiting) at Division of Geography, University of Leuven (BE)	May 2013 - May 2017
Postdoctoral researcher in <i>Polar Climate and Ice Mass Balance</i> , Institute for Marine and Atmospheric research Utrecht, Utrecht University (NL)	Feb - Oct 2013

UNIVERSITY EDUCATION

PhD in <i>Polar Meteorology</i> . Dissertation: <i>Drifting snow climate of the Antarctic and Greenland ice sheets (cum laude)</i> , Utrecht University (NL)	2013
Master of Science <i>Meteorology and Air Quality</i> at Wageningen University (NL) Dissertation: <i>Mesoscale modelling of shallow convection over land: a case study using WRF</i>	2008
Bachelor of Science <i>Soil, Water and Atmosphere</i> . Wageningen University (NL). Specialization: Meteorology	2006

TEACHING

Courses taught at CU Boulder

Professor: ATOC 5050 (<i>Atmospheric Thermodynamics & Dynamics</i>)	Fall 2017, Fall 2019
Professor: ATOC 1050 (<i>Weather & Our Atmosphere</i>)	Spring 2019, Fall 2020
Professor and developer: ATOC 4780/5780 (<i>Ice Sheets and Climate</i>)	Spring 2020, Spring 2022
Professor: ATOC 3600 (<i>Principles of Climate</i>)	Fall 2021

Other teaching

ASP Summer School, <i>Orographic Precipitation on ice sheets</i> (NCAR)	Jun 2017
Guest lecturer, <i>Global Climate Change</i> , Utrecht University (NL)	Jan 2016
Lecturer, <i>Urbino Summer School in Paleoclimatology (Urbino, IT)</i>	Jul 2014
Teaching Assistant, <i>Boundary-Layer Meteorology</i> , IMAU, Utrecht University (NL)	2009 - 2011
Teaching Assistant, <i>Atmospheric Dynamics</i> , IMAU, Utrecht University (NL)	2008 - 2011
Teaching Assistant, <i>Atmospheric Practical course</i> , Wageningen University (NL)	2007

FELLOWSHIPS AND AWARDS

Learning by Design Fellow, CU Boulder	2019
AGU Cryosphere Early Career Award	2017
InBev-Baillet Latour Antarctic Fellowship	2014
NWO Veni Fellowship	2014
PhD cum laude (top ~3% in The Netherlands)	2013

RESEARCH FUNDING

Pending

NASA MAP (\$1M total, \$767K to CU, PI)	2020 - 2024
NASA Studies with ICESat-2 (\$568K, \$451K to CU, co-I)	2020 - 2023
NSF Antarctic Glaciology (\$660K, \$320K to CU, co-PI)	2020 - 2023
NASA FINESST Michelle Maclennan (\$135K, PI)	2020 - 2023
NASA FINESST Megan Thompson-Munson (\$135K, PI)	2020 - 2023

NSF HDR (\$15M, \$1.25M to CU, co-PI) 2021 - 2026

Awarded

NSF Arctic System Sciences (\$100K, PI transfer from L. Koenig) 2020 - 2021
NSF Antarctic Glaciology (\$607K, \$380K to CU, PI) 2020 - 2023
NASA Interdisciplinary Science (\$1.1M, \$252K to CU, co-I) 2020 - 2023
NASA Sea Level Team (\$1.25M to CU, co-I) 2020 - 2024
NASA, Studies with ICESat-2 (\$611K total, \$274K to CU, co-PI) 2020 - 2023
NASA FINESST for Devon Dunmire (\$135K, PI) 2019 - 2022
University of Colorado Seed Grant (\$50K, PI) 2018 - 2020
NASA, Studies with ICESat-2 and Cryosat-2 (\$852K total, \$600K to CU, PI) 2017 - 2020
NASA Cryosphere (\$453K total, \$154K to CU, co-PI) 2019 - 2022
NSF-NERC Thwaites (\$4M total, \$1.1M to CU, co-I) 2018 - 2023
NASA Sea Level Team (\$1.4M total, \$1.1M to CU, co-I) 2017 - 2020
BELSPO-Brain (BE) (~\$850K total, \$90K to CU, co-PI) 2017 - 2021
InBev-Baillet Latour Antarctic Fellowship (~\$175K, PI) 2014 - 2016
NWO Veni Postdoctoral Fellowship (~\$290K, PI) 2014 - 2017

Proposals not funded

NSF Antarctic Atmospheric and Oceanic Sciences (\$450K, co-I) 2017
NSF Arctic Natural Sciences (\$322K, co-PI) 2017
NSF-NERC Thwaites (\$4M, co-I) 2017
NSF Antarctic Glaciology (\$460K to CU, PI) 2018, 2019
DOE Office of Science (\$600K, co-PI) 2018
DOE Office of Science (\$1M, PI) 2018
NSF Mid-scale infrastructure (\$8M, co-I) 2019
NSF Navigating the New Arctic (\$5.7M, co-I) 2019
NSF JPL SURP (\$59K, co-PI) 2019, 2020

MENTORING

Graduate Student mentoring (9 at CU Boulder; 2 at other institutes)

2017-2019: Marissa Dattler

Graduated with a Masters in Spring 2019

Lead-author paper in Geophysical Research Letters resulting from Masters thesis (2019)

Currently PhD student at University of Maryland

2018-2019: Michael 'Drew' Camron

Graduated with a Masters in Spring 2019

Make Our Planet Great Again visiting fellowship (France, Summer 2018)

Masters research culminated in co-led paper in The Cryosphere (Lenaerts, Camron, et al., 2020)

Currently software engineer at UniData (UCAR)

2017-2020: Lynn (Nicki) Montgomery

Graduated with a PhD in Fall 2020

Three lead author papers in Earth System Science Data (2018), Geophysical Research Letters (2020),

Annals of Glaciology (2020)

Currently Senior Scientist at Lockheed Martin

2017-present: Tessa Gorte

One lead author paper in The Cryosphere (2020)

AGU Outstanding Student Presentation Award (2019)

2018-present: Devon Dunmire

Two lead author papers in Geophysical Research Letters (2020), The Cryosphere (2021)

NASA Future Investigators award (FINESST, 2019-2022)

AGU Outstanding Student Presentation Award (2018)

2018-present: Eric Keenan

One lead author paper in The Cryosphere (2020)

IASC best student poster award (IUGG, 2019)

2020-present: Megan Thompson-Munson
Submitted FINESST proposal (2021)

2020-present: Rebecca 'Becca' Baiman
Co-advised by Dr. Andrew Winters (ATOC)

2020-present: Michelle MacLennan
Submitted Fullbright application (2020) and FINESST proposal (2021)

2015-2020: Leo van Kampenhout (co-promotor at Utrecht University (NL))
Graduated with a PhD in Fall 2020
I acted as 'daily supervisor' until 2017, and as co-promotor until 2020
Four lead-author publications in JAMES (2017), The Cryosphere (2019), Journal of Geophysical Research-
Earth Surface (2020), and Geophysical Research Letters (2021)
Currently postdoctoral researcher and software engineer at Utrecht University (UU)

2016-2019: Alex Gossart (co-promotor at University of Leuven (BE))
Graduated with a PhD in Fall 2019
Three lead-author publications in The Cryosphere (2017), Journal of Climate (2019), Frontiers in Earth
Science (2020)
Currently postdoctoral researcher at University of Wellington (NZ)

Postdoc mentoring (2 at CU Boulder)

2017-present: Nander Wever
SNSF postdoctoral fellow (2017-2019)

2020-present: Rajashree Tri Datta
Co-wrote proposals to NASA and NSF

Undergraduate student mentoring (3 at CU Boulder)

2018-2019: Michelle MacLennan
Honor's thesis *summa cum laude* (Fall 2019)

2019-2020: Pimmbhattra Maydhisudhiwongs
UROP fellow Academic Year 2019-2020

2020-2021: Yasmin Sid-Ahmed
NSF REU Student AY 2020-2021

Master's Thesis co-supervisor

2016: Thomas Antheunis (University of Leuven (BE))
2015: Marco Stoffelen (Utrecht University (NL))
2013: Ward Gorter (Utrecht University (NL))
2012: Alexander Haumann (Utrecht University (NL))
2019: Maaïke Izeboud (TU Delft (NL))

Committee Member

2017-2020: Kelly Kochanski (Geology, CU Boulder)
2018-2019: Willam Skorski (Geology, CU Boulder)
2017-2021: Quentin Dalaiden (UC Louvain (BE))
2017-2021: Raymond Sellevold (TU Delft (NL))
2018-2020: Matt Cann (ATOC)
2018-present: Elina Valkonen (ATOC)
2018-present: Jasmine Hansen (Geology, CU Boulder)
2021-present: Mckenzie Dice (ATOC)
2021-present: Chris Wyburn Powell (ATOC)

Visitors

Alexandra Gossart (Spring 2018)
Rajashree Tri Datta (Summer 2018)
Brice Noël (Spring 2020)
Raymond Sellevold (Spring 2020)

REFEREED PUBLICATIONS

108 total (54 since joining CU in 2017)

5 in review

21 first authored by Lenaerts (7 since joining CU in 2017)

6 first authored by CU mentees, 10 first authored by external mentees

ORCID: 0000-0003-4309-4011

Web of Science: h-index 42, 6705 citations

Google Scholar: h-index 49, 8479 citations

* denotes first author publications by CU mentees (Lenaerts primary advisor)

** denotes first author publication by external mentee (Lenaerts secondary advisor)

In preparation

N. Wever, E. Keenan, M. Lehning, and J. T. M. Lenaerts. New snow density in the drifting snow dominated environment of Antarctica. *The Cryosphere*, in prep.

C. Stokes, N. Abram, M. Bentley, T. Edwards, M. England, S. Jamieson, R. Jones, M. King, J. T. M. Lenaerts, B. Medley, B. Miles, G. Paxman, C. Ritz, T. van de Flierdt, P. Whitehouse. What is happening to the East Antarctic ice sheet? *Nature*, in prep.

* M. Maclennan and J. T. M. Lenaerts. Large-Scale Atmospheric Drivers of Snowfall over Thwaites Glacier, Antarctica. *Geophys. Res. Lett.*, in prep.

Palm, S.P., J. T. M. Lenaerts. Blowing snow detection and characteristics from ICESat-2 photon cloud measurements. In prep.

B. P. Y. Noël, J. T. M. Lenaerts, and M. R. van den Broeke. 22nd century tipping point in refreezing accelerates Greenland ice sheet mass loss. In prep.

B. Medley, J. T. M. Lenaerts et al. Resolving fine-scale snow accumulation patterns on Antarctica. In prep.
J. T. M. Lenaerts, M. Maclennan, C. Shields, and J. D. Wille. Contribution of atmospheric rivers to Antarctic Ice Sheet snowfall. In prep.

K. Alley, C. Wild, A. Luckman, S. Child, C. Hulen, E. Pettit, A. Muto, T. A. Scambos, M. Truffer, B. Wallin, M. Klinger, T. Sutterley, L. Girod, J. T. M. Lenaerts, M. Maclennan, E. Keenan, D. Dunmire. Two decades of dynamic change and progressive destabilization on the Thwaites Eastern Ice Shelf. In prep.

In review

* 113. D. Dunmire, A. Banwell, J. T. M. Lenaerts, and R. T. Datta. Contrasting regional variability of buried meltwater extent over two years across the Greenland Ice Sheet. *The Cryosphere*, in review.

112. R. Sellevold, J. T. M. Lenaerts, and M. Vizcaino. Influence of Arctic sea-ice loss on the Greenland ice sheet climate. *Clim. Dyn.*, in review.

111. L. Muntjewerf, W. J. Sacks, M. Lofverstrom, J. Fyke, W. H. Lipscomb, C. Ernani da Silva, M. Vizcaino, K. Thayer-Calder, J. T. M. Lenaerts, and R. Sellevold. Description and demonstration of the coupled Community Earth System Model v2 - Community Ice Sheet Model v2 (CESM2-CISM2). *JAMES*, in review.

110. J. D. Wille, V. Favier, I. V. Gorodetskaya, C. Agosta, C. Kittel, J. C. Beeman, N. Jourdain, J. T. M. Lenaerts, F. Codron. Antarctic atmospheric river climatology and precipitation impacts. *J. Geophys. Res.-Atmospheres*, in review.

* 109. N. Wever, K. Leonard, T. Maksym, S. White, and J. T. M. Lenaerts. Spatially explicit simulations of the mass balance effect of snow covering sea ice. *J. Glac.*, in review.

Published

2021

- * 108. E. Keenan, N. Wever, M. Dattler, J. T. M. Lenaerts, B. Medley, P. Kuipers Munneke, and C. Reijmer. Physics-based modeling of Antarctic snow and firn density. *The Cryosphere*, accepted.
107. M. L. Ghiz, R. C. Scott, A. M. Vogelmann, J. T. M. Lenaerts, M. Lazzara, and D. Lubin. Energetics of Surface Melt in West Antarctica. *The Cryosphere*, accepted.
- ** 106. L. van Kampenhout, B. Noël, M. R. van den Broeke, W. J. van de Berg, and J. T. M. Lenaerts. A 21st century warming threshold for irreversible Greenland ice sheet mass loss. *GRL*, accepted.

2020

- * 105. T. Gorte, J. T. M. Lenaerts, B. Medley. Scoring Antarctic surface mass balance in climate models to refine future projections. *The Cryosphere*, 14, 4719–4733, <https://doi.org/10.5194/tc-14-4719-2020>.
104. M. G. P. Cavitte, Q. Dalaiden, H. Goosse, J. T. M. Lenaerts, and E. Thomas. Reconciling the surface temperature–surface mass balance relationship in models and ice cores in Antarctica over the last two centuries. *The Cryosphere*, 14, 4083–4102, 2020, <https://doi.org/10.5194/tc-14-4083-2020>
103. Q. Dalaiden, H. Goosse, J. T. M. Lenaerts, M. Cavitte, and N. Henderson. Mean state and future trends of Antarctic snow accumulation dominated by atmospheric synoptic-scale events. *Commun. Earth Environ.*, 1, 62. <https://doi.org/10.1038/s43247-020-00062-x>
102. T. Kausch, S. Lhermitte, J. T. M. Lenaerts, N. Wever, M. Inoue, F. Pattyn, S. Sun, S. Wauthy, J.-L. Tison, W. J. van de Berg. Impact of coastal East Antarctic ice rises on surface mass balance: insights from observations and modeling. *The Cryosphere*, 14, 3367–3380, <https://doi.org/10.5194/tc-14-3367-2020>
101. X. Fettweis, S. Hofer, J. T. M. Lenaerts, and others. GrSMBMIP: Intercomparison of modelled 1980–2012 surface mass balance over the Greenland Ice sheet. *The Cryosphere*, 14, 3935–3958, <https://doi.org/10.5194/tc-14-3935-2020>
- * 100. J. T. M. Lenaerts, D. Camron, C. Wyburn-Powell, and J. E. Kay. Present-day and future Greenland Ice Sheet precipitation frequency from CloudSat observations and the Community Earth System Model. *The Cryosphere*, 14, 2253–2265, 2020, <https://doi.org/10.5194/tc-14-2253-2020> (*Lenaerts and Camron shared first author*)
99. D. Schneider, J. Kay, J. T. M. Lenaerts, and C. Deser. Improved clouds over Southern Ocean amplify Antarctic precipitation response to ozone depletion in an Earth system model. *Climate Dynamics*, 55, 1665–1684. doi:10.1007/s00382-020-05346-8
- * 98. D. Dunmire, J. T. M. Lenaerts, A. F. Banwell, N. Wever, J. Shragge, S. Lhermitte, R. Drews, F. Pattyn, I. C. Willis, J. Miller, and E. Keenan. Observations of subsurface lake drainage on the Antarctic Ice Sheet. *Geophysical Research Letters*, 47, e2020GL087970. <https://doi.org/10.1029/2020GL087970>
97. Scambos, T. and S. Stammerjohn, Eds., 2020: Antarctica and the Southern Ocean [in “State of the Climate in 2019”]. *Bull. Amer. Meteor. Soc.*, 101 (8), S287–S320, <https://doi.org/10.1175/BAMS-D-20-0090.1>. (authors include J. T. M. Lenaerts, E. Keenan, T. Gorte, and M. Maclennan)
- ** 96. A. Gossart, N. Souverijns, S. P. Palm, J. T. M. Lenaerts, S. Lhermitte, I. V. Gorodetskaya, and N. P. M. van Lipzig. Importance of Blowing Snow During Cloudy Conditions in East Antarctica: Comparison of Ground-Based and Space-Borne Retrievals Over Ice-Shelf and Mountain Regions. *Front. Earth Sci.*, 08 July 2020 | <https://doi.org/10.3389/feart.2020.00240>
- ** 95. M. Izeboud, S. Lhermitte, K. van Tricht, J. T. M. Lenaerts, N. van Lipzig and N. Wever. Spatiotemporal variability of cloud radiative effects on the Greenland Ice Sheet surface mass balance. *Geophys. Res. Lett.*, 47, e2020GL087315. <https://doi.org/10.1029/2020GL087315>
94. L. Muntjewerf, M. Petrini, M. Vizcaino, C. Ernani da Silva, R. Sellevold, M. Scherrenberg, K. Thayer-Calder, S. L. Bradley, J. T. M. Lenaerts, W. Lipscomb, M. Lofverstrom. Greenland Ice Sheet contribution to 21st century sea level rise as simulated by the coupled CESM2.1-CISM2.1. *Geophys. Res. Lett.*, <https://doi.org/10.1029/2019GL086836>

93. J. T. M. Lenaerts, A. Gettelman, L. van Kampenhout, K. van Tricht, and N. Miller. Impact of cloud physics on the Greenland Ice Sheet surface climate: a study with the Community Atmosphere Model. *J. Geophys. Res. - Atmospheres*, 125, e2019JD031470, <https://doi.org/10.1029/2019JD031470>
92. B. Noël, L. van Kampenhout, W. J. van de Berg, J. T. M. Lenaerts, W. J. van de Berg, B. Wouters, M. R. van den Broeke. Brief communication: CESM2 climate forcing (1950-2014) yields realistic Greenland ice sheet surface mass balance and recent trends. *The Cryosphere*, 14, 1425–1435, 2020, <https://doi.org/10.5194/tc-14-1425-2020>
91. B. Hamlington, ..., J. T. M. Lenaerts, and others. Understanding of Contemporary Regional Sea Level Change and the Implications for the Future. *Rev. Geophys.*, <https://doi.org/10.1029/2019RG000672>.
90. Q. Dalaiden, H. Goosse, F. Klein, J. T. M. Lenaerts, M. Holloway, L. Sime and E. Thomas. Surface Mass Balance of the Antarctic Ice Sheet and its link with surface temperature change in model simulations and reconstructions. *The Cryosphere*, 14, 1187–1207, <https://doi.org/10.5194/tc-14-1187-2020>.
89. S. Tilmes, D. E. MacMartin, J. T. M. Lenaerts, L. van Kampenhout, L. Muntjewerf, L. Xia, C. S. Harrison, K. M. Krumhardt, M. M. Mills, B. Kravitz, and A. Robock. Stratospheric aerosol geoengineering experiments reaching 1.5°C and 2.0°C temperature targets. *Earth Syst. Dynam.*, 11, 579–601, 2020. <https://doi.org/10.5194/esd-11-579-2020>
- * 88. N. Montgomery, L. Koenig, J. T. M. Lenaerts, P. Kuipers Munneke. Annual accumulation rates (2009-2017) in Southeast Greenland derived from airborne snow radar and comparison with regional climate models. *Ann. Glac.*, <https://doi.org/10.1017/aog.2020.8>
87. H. Wang, J. Fyke, J. T. M. Lenaerts, J. M. Nusbaumer, H. Singh, D. Noone, and P. J. Rasch. Influence of Sea Ice Anomalies on Antarctic Precipitation and its Source Attribution in the Community Earth System Model. *The Cryosphere*, 14, 429–444, <https://doi.org/10.5194/tc-14-429-2020>
86. G. Danabasoglu, J.-F. Lamarque, ..., J. T. M. Lenaerts, and others. The Community Earth System Model version 2. *JAMES*, <https://doi.org/10.1029/2019MS001916>
- ** 85. L. van Kampenhout, J. T. M. Lenaerts, W. Lipscomb, M. Vizcaino, S. Lhermitte, W. Sacks and M. R. van den Broeke. Greenland ice sheet climate and surface mass balance in CESM2. *J. Geophys. Res. - Earth Surface*, <https://doi.org/10.1029/2019JF005318>
- 2019**
- * 84. M. Dattler, J. T. M. Lenaerts, B. Medley. Significant spatial variability in radar-derived West Antarctic accumulation linked to surface winds and topography. *Geophys. Res. Lett.*, <https://doi.org/10.1029/2019GL085363>
83. R. Sellevold, L. van Kampenhout, J. T. M. Lenaerts, B. Noël, W. H. Lipscomb, and M. Vizcaino. Ice sheet surface mass balance downscaling through elevation classes in an Earth System Model. *The Cryosphere*, 13, 3193–3208, <https://doi.org/10.5194/tc-13-3193-2019>
82. D. Lawrence, ..., J. T. M. Lenaerts, and 50 others. The Community Land Model version 5: Description of new features, benchmarking, and impact of forcing uncertainty. *JAMES*, <https://doi.org/10.1029/2018MS001583>
- ** 81. A. Gossart, S. Helsen, J. T. M. Lenaerts, S. Vanden Broucke, N. van Lipzig and N. Souverijns. An evaluation of surface climatology in state-of-the-art reanalyses over the Antarctic Ice Sheet. *J. Clim.*, 32, 6899–6915, <https://doi.org/10.1175/JCLI-D-19-0030.1>
80. J. T. M. Lenaerts, B. Medley, M. R. van den Broeke and B. Wouters, 2019. Observing and modeling past, present and future ice sheet surface mass balance. *Reviews of Geophysics*, 57, <https://doi.org/10.1029/2018RG000622>.
- ** 79. L. van Kampenhout, A. M. Rhoades, C. M. Zarzycki, A. R. Herrington, W. J. Sacks, J. T. M. Lenaerts, and M. R. van den Broeke, 2019. Regional Grid Refinement in an Earth System Model: Impacts on the Simulated Greenland Surface Mass Balance. *The Cryosphere*, 13, 1547–1564, <https://doi.org/10.5194/tc-13-1547-2019>.

78. N. Souverijns, A. Gossart, M. Demuzere, J. T. M. Lenaerts, I. V. Gorodetskaya, S. Vanden Broucke, N. P. M. Van Lipzig, 2019. A New Regional Climate Model for POLAR - CORDEX: Evaluation of a 30 - Year Hindcast with COSMO - CLM2 Over Antarctica. *Journal of Geophysical Research: Atmospheres*, 124, 1405– 1427. <https://doi.org/10.1029/2018JD028862>

77. R. T. Datta, M. Tedesco, X. Fettweis, C. Agosta, S. Lhermitte, J. T. M. Lenaerts and N. Wever. The Effect of Foehn-Induced Surface Melt on Firn Evolution over the Northeast Antarctic Peninsula, *Geophys. Res. Lett.*, 46, 3822– 3831. <https://doi.org/10.1029/2018GL080845> (work partly performed during Datta's research visit to our group in Summer '18)

76. H. Zekollari, S. Goderis, M. van Ginneken, J. Gattacceca, ASTER Team, A. J. T. Jull, A. Yamaguchi, P. Huybrechts, V. Debaille, J. T. M. Lenaerts, and P. Claeys, 2019. Unravelling the high-altitude Nansen blue ice field meteorite trap (East Antarctica) and implications for regional palaeo-conditions. *Geochimica et Cosmochimica Acta*, 248, 289-310, doi: <https://doi.org/10.1016/j.gca.2018.12.035>

75. C. Agosta, X. Fettweis, A. Orsi, C. Kittel, C. Amory, H. Gallee, V. Favier, M. R. van den Broeke, J. T. M. Lenaerts, J. M. van Wessem, 2019. Estimation of the Antarctic surface mass balance using MAR (1979-2015) and identification of dominant processes. *The Cryosphere*, 13, 281-296, <https://doi.org/10.5194/tc-13-281-2019>.

2018

74. F. Pattyn, C. Ritz, X. Asay-Davis, R. DeConto, G. Durand, L. Favier, X. Fettweis, H. Goelzer, N. Golledge, E. Hanna, P. Kuipers Munneke, J. T. M. Lenaerts, S. Nowicki, A. Payne, A. Robinson, H. Seroussi, L. Trusel, M. van den Broeke, 2018. Greenland and Antarctic ice sheets under 1.5°C global warming. *Nature Climate Change*, 8, 1053–1061, <https://doi.org/10.1038/s41558-018-0305-8>

73. J. T. M. Lenaerts, J. Fyke, B. Medley. The signature of ozone depletion in recent Antarctic precipitation change: a study with the Community Earth System Model, 2018. *Geophys. Res. Lett.*, 45, 23, <https://doi.org/10.1029/2018GL078608>

72. J. Fyke, O. Sergienko, M. Löfverström, S. Price and J. T. M. Lenaerts, 2018. An overview of interactions and feedbacks between ice sheets and the Earth system. *Rev. Geophys.*, 56, 2, 361-408, doi: 10.1029/2018RG000600

71. L. Woelders, J. T. M. Lenaerts, K. Hagemans, K. Akkerman, T. van Hoof, W. Hoek, 2018. Drastic ecological response to recent rapid Arctic climate change: evidence from a remote high-Arctic lake. *Nature Scientific Reports*, 8, 6858, doi: 10.1038/s41598-018-25148-7

70. N. Miller, M. Shupe, J. T. M. Lenaerts, J. Kay, G. De Boer, and R. Bennartz. Process-based evaluation of ERA-Interim, CFS version 2, and CESM in central Greenland, *JGR-Atmospheres*, 123, 10, 4777-4796, doi: 10.1029/2017JD027377

69. B. Noël, W. J. van de Berg, J. M. van Wessem, E. van Meijgaard, D. van As, J. T. M. Lenaerts, S. Lhermitte, P. Kuipers Munneke, C. J. P. P. Smeets, L. H. van Ulf, R. S. W. van de Wal, and M. R. van den Broeke. Modelling the climate and surface mass balance of polar ice sheets using RACMO2, Part 1: Greenland (1958-2016). *The Cryosphere*, in press.

68. J. M. van Wessem, W. J. van de Berg, B. P. Y. Noël, E. van Meijgaard, G. Birnbaum, C. L. Jacobs, K. Krüger, J. T. M. Lenaerts, S. Lhermitte, S. R. M. Ligtenberg, B. Medley, C. H. Reijmer, K. van Tricht, L. D. Trusel, L. H. van Ulf, B. Wouters, J. Wuite, and M. R. van den Broeke. Modelling the climate and surface mass balance of polar ice sheets using RACMO2, Part 2: Antarctica (1979-2016). *The Cryosphere*, in press.

2017

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CONFERENCE TALKS AND SEMINARS

(first author only)

2019

Frozen No More: The Role of Water Above, in, and Around Earth's Ice Sheets in Their Present and Future Demise (Gordon Climate Conference, Bates College, ME, July 22 2019; oral presentation/invited)

Frozen No More: The Role of Water Above, In, and Around Earth's Ice Sheets in Their Present and Future Demise (Frontiers in Geoscience Seminar, Los Alamos National Lab, Los Alamos NM, October 28 2019; oral presentation/invited)

Ice Sheet SMB Trends and Variability in a Firm-Enabled Earth System Model (Polar AMS, Boulder CO, May 23 2019; oral presentation)

Surface melt on Antarctic ice shelves (1850-2100): a study with the Community Earth System Model (IUGG 2019, Montréal (Canada), July 11 2019; oral presentation)

Greenland ice sheet SMB trends and variability in CESM2 and RACMO2 (CESM workshop, Boulder CO, June 18 2019; oral presentation)

Are we saturated yet? Assessing future surface melt on Antarctic ice shelves using the Community Earth System Model (AGU Fall Meeting, San Francisco CA, December 12 2019; poster presentation)

2018

NSF Antarctic meltwater workshop (Lamont, USA): "Exploring the fate of meltwater on Antarctic ice shelves: the need of an interdisciplinary approach"

University of California Irvine (Irvine, USA): "Combining models and observations to unravel past, present and future changes in ice sheet surface mass balance." (invited)

Workshop on polar snow and precipitation (Davos, Switzerland): "Towards a high-resolution SMB map of Antarctica using SNOWPACK"

POLAR 2018 (Davos, Switzerland): "The Signature of Ozone Depletion in Recent Antarctic Precipitation Change"

WAIS workshop (Stony Point, USA): "Snowfall on Thwaites glacier: climatology, variability, and drivers"

Radiation Budget Workshop (Boulder, USA): "Greenland Ice Sheet surface radiation" (invited-declined)

AGU Fall Meeting (Washington DC, USA): "Evaluating and improving ice sheet clouds, radiation, and precipitation in the Community Earth System Model" (invited)

AGU Fall Meeting (Washington DC, USA): "Surface melt on Antarctic ice shelves (1850-2100): a study with the Community Earth System Model"

2017

CESM workshop (Boulder, USA): "Antarctic mass loss mitigated by ozone depletion"

NSIDC (Boulder, USA): "Wet 'n' Wild Antarctica: mapping small-scale climate processes in coastal Antarctica combining climate models and observations" (invited)

INSTAAR (Boulder, USA): "Wet 'n' Wild Antarctica: mapping small-scale climate processes in coastal Antarctica combining climate models and observations" (invited)

AGU Fall Meeting (New Orleans, USA): "Ice sheet climate modelling: past achievements, current progress, and future challenges" (invited)

2016

PARCA, NASA Goddard (Greenbelt, USA): "Greenland change in global perspective: coupled climate modeling with CESM"

CESM winter meeting (Boulder, USA): "Ice sheet surface climate in CESM1.5" (invited)

Department of Atmospheric and Oceanic Sciences, CU Boulder (Boulder, USA): "Bipolar climate change: ice sheets in a warming world" (invited)

BNCGG-BNCAR Antarctica Symposium (Brussels, Belgium): "Combining field measurements, remote sensing, and climate modelling to map surface melt on the Roi Baudouin ice shelf"

WAIS workshop (Washington DC, USA): "Coastal climate of West Antarctica resolved by high-resolution climate modeling"

AGU Fall Meeting (San Francisco, USA): "Meltwater produced by wind-albedo interaction stored in East Antarctic ice shelf"

2015

AGU Fall Meeting (San Francisco, USA): "First synchronous realistic simulations of Antarctic and Greenland SMB in a fully coupled climate model"

CESM annual workshop (Breckenridge, USA): "Impact of CAM cloud microphysics on ice sheet SMB"

EGU General Assembly 2015 (Vienna, AT): "Intensification of the Antarctic hydrological cycle in a future warming climate: a study with CESM"

EGU General Assembly 2015 (Vienna, AT): "Impact of present-day and future (1850-2200) ice sheet melting on regional climate in the fully coupled CESM"

CESM LIWG winter meeting (Boulder, USA): "Intensification of the Antarctic hydrological cycle in a warming climate: a study with CESM"

2014

IGS Symposium (Chamonix, FR): "Extreme precipitation and climate gradients in Patagonia revealed by high-resolution regional atmospheric climate modeling"

IGS Symposium (Chamonix, FR): "Climate and surface mass balance of ice rises in Dronning Maud Land, East Antarctica - results from high-resolution climate modelling and observations"

2013

Arctic mass balance workshop (Obergurgl, AT): "First drifting snow observations on the Greenland ice sheet - framework, results & perspectives"

Department of Geography, KU Leuven (Leuven, BE): "Drifting snow on ice sheets" (invited)

Community Earth System Model (CESM) annual meeting (Breckenridge, USA): "Antarctic ice sheet SMB in CESM"

DACA conference (Davos, CH): "Recent snowfall anomalies in Dronning Maud Land (East Antarctica) in a historical and future climate perspective"

Ice rise workshop (Tromsø, NO): "Accumulation around ice rises: a study with a high-resolution regional atmospheric climate model" (invited)

AGU Fall Meeting (San Francisco, USA): "Extreme precipitation and climate gradients in Patagonia revealed by high-resolution regional atmospheric climate modeling" (Poster presentation)

2012

ESA-CliC workshop (Frascati, IT): "Irreversible mass loss from Canadian Arctic Archipelago" (Oral presentation)

Université Libre de Bruxelles (Brussels, BE): "Regional climate modelling of snowdrift and its impact on the surface mass balance of Greenland and Antarctica" (invited)

AGU Fall Meeting (San Francisco, USA): "Irreversible mass loss from Canadian Arctic Archipelago" (Oral presentation)

AGU Fall Meeting (San Francisco, USA): "Blue-ice areas as an interplay between ice motions and surface mass balance" (Oral presentation)

2011

EGU General Assembly (Vienna, AT): "A new, high-resolution surface mass balance of Antarctica" (Oral presentation)

Blowing snow workshop (Nagoya, JP): "Drifting snow climate of Antarctica and Greenland" (Oral presentation)

AGU Fall meeting (San Francisco, USA): "Drifting snow climate of Antarctica and Greenland" (Oral presentation-invited)

AGU Fall meeting (San Francisco, USA): "Impact of model resolution on wind speed, snowdrift and SMB, Adélie Land, East Antarctica" (Poster)

2010

AGU Fall meeting (San Francisco, USA): "Regional climate modeling of snowdrift in Antarctica and its impact on the SMB" (Poster)

2009

MOCA Conference (Montréal, CAN): "Modeling snowdrift sublimation on Antarctica using RACMO2-SCM" (Poster)

OUTREACH AND MEDIA

(selection)

2021

Clouds on Antarctica, input for NASA Earth Explorer (12/1)

2019

(Virtual) interview with middle schools across the US in the framework of Antarctica Day (12/1)

Greenland melt, live interview with VRT "Terzake", Belgium (8/2)

2018

(Virtual) interview with middle schools across the US in the framework of Antarctica Day (12/1)

"Greenland ice sheet". Seminar for Boulder Audubon Society (9/25)

2017

Presenter and panelist in interactive debate on climate change denial (Utrecht University, 3/28)

2016

Interviewed by several media (Washington Post, New Scientist, EGU communications, IFLS, Climate Central, etc.) regarding paper on meltwater on East Antarctic ice shelf (12/12)

Lecture for high school students: "Research on Antarctica", welcome@science, KU Leuven (1/9)

Early onset of Greenland Melt, Interview on Flemish radio VRT Radio 1 (4/15)

"Ice sheets and sea level rise", Seminar on Health and Climate change, KU Leuven (4/21)

Public lecture "Climate change: where are we at?" (Leuven, 5/5; Leuven, 9/14; Koksijde, 10/17; Waasmunster, 11/8)

TEDx Talk, Utopia 2016, Leuven (11/16)

2015

Presentation regarding past, present and future climate change in preparation for COP21 meeting in Paris (Actueel Denken en Leven (~700 participants), Antwerp (BE), 11/23)

After-movie presentation and discussion regarding *Chasing Ice* (Studium Generale Utrecht University, 10/5)

2014

Studio interview at Flemish VRT Radio 1 (Brussels, BE) about fieldwork in Antarctica and InBev-Baillet Latour Antarctica Fellowship (11/7)

Several articles (Metro, Het Laatste Nieuws, De Standaard, Le Métro,...) in Belgian newspapers concerning InBev-Baillet Latour Antarctica Fellowship (9/17)

Presentation at Naturalis Museum (Leiden, NL): “Zwarte zwanen en het smeltend landijs (Black swans and melting land ice)”. Radio interview with Dutch national radio (Academisch uurtje, NTR 5) related to this presentation (2/9)

2013

Interviews regarding GRL paper on Canadian Arctic Archipelago with e.g. BBC, Reuters press office, Utrecht University press office, Washington Post, ANP and de Volkskrant (3/7)

PROFESSIONAL DEVELOPMENT

Learning by Design, University of Colorado Boulder	Fall 2019
PI Academy participant, CU Boulder (attended four workshops geared towards professional development)	2018 - <i>present</i>
Denial101x: <i>Making Sense of Climate Science Denial</i>	May 2015
Media training, Utrecht University	Nov 2014
International Summer school in <i>Glaciology</i> (McCarthy AK, USA)	Jun 2010
Language course <i>Writing in English for Publication</i> , James Boswellinstituut, Utrecht	Mar - May 2009
Karthus Summer School on <i>Ice Sheets and Glaciers in the Climate System</i> (Karthus, IT)	Sep 2008
Internship at CNRM, Météo-France (Toulouse, FR) on <i>Improving air-sea interactions in ARPEGE-Climate global climate model</i>	Feb - Jun 2008
Advanced courses in <i>Meteorology, Oceanography and Climate</i> at University of Reading (UK). Courses: Global Circulation of Atmosphere and Oceans, Tropical Weather Systems, Extra-tropical Weather Systems, Remote Sensing, Climate Change	Jan - Apr 2007

SERVICE AT CU BOULDER

Poster conference committee (ATOC)	Fall 2017
Admissions committee (ATOC)	Spring 2018
Colloquium committee (ATOC, chair)	Fall 2018 - <i>present</i>
Search committee Synoptic Meteorology (ATOC)	Fall 2018, Spring 2019
PUEC Derek Brown	Fall 2019
Social committee (ATOC)	Fall 2019 - <i>present</i>
Events neighborhood lead	Fall 2019, Spring 2020
BFA Climate Science & Education Committee (CSEC)	Fall 2020 - <i>present</i>

EXTERNAL SERVICE

External editor, Nature Communications Earth & Environment	2020 - <i>present</i>
Co-chair, <i>Land Ice Working Group</i> , Community Earth System Model	2016 - <i>present</i>
Steering committee member, SCAR Scientific Research Programme <i>AntClimNow</i>	2020 - <i>present</i>
Scientific reviewer of climate change articles in popular media at <i>Climate Feedback</i> (climatefeedback.org)	2015 - <i>present</i>
External reviewer of scientific project proposals for ANR (France), IPEV (France), NSF (USA), CSCS (CH), Marsden Fund (NZ)	2014 - <i>present</i>
Contributing author of Chapter 13 of the <i>IPCC Fifth Assessment Report</i> on present-day and future sea level rise	Sept 2013
Scientific editor, <i>Annals of Glaciology Volume 55, Issue 66</i>	Jun - Oct 2013
Conference session/workshop convener: <i>The changing cryosphere</i> (2012, AGU Fall Meeting), <i>Reducing the uncertainties in glacier mass balance: combining remote sensing with modeling of firn and surface processes</i> (2013, AGU Fall Meeting), <i>Atmospheric drivers of recent and future changes in the cryosphere</i> (2015, AGU Fall Meeting), <i>Scratching the surface: discoveries and challenges in constraining surface processes over ice sheets, glaciers, and sea ice</i> (AGU Fall Meeting), <i>Ice sheet and ice shelf surface mass balance</i> (2018-2019, AGU Fall Meeting), <i>Snow and firn</i> (WAIS workshop, 2020)	2012 - <i>present</i>
Peer reviewing of scientific papers for <i>Nature</i> , <i>Science</i> , <i>Nature Climate Change</i> , <i>Nature Geoscience</i> , <i>Nature Communications</i> , <i>Cold Regions Hydrology</i> , <i>The Cryosphere</i> , <i>Journal of Glaciology</i> , <i>Annals of Glaciology</i> , <i>Climate Dynamics</i> , <i>Journal of Climate</i> , <i>Geophysical Research Letters</i> , <i>Weather</i> , <i>Hydrological Processes</i> , <i>Environmental Research Letters</i> , <i>Journal of Geophysical Research</i>	2010 - <i>present</i>

Member, *American Geophysical Union, European Geophysical Union, American Meteorological Society*

2009 - present

FIELDWORK

Nov – Dec 2014

Fieldwork on Roi Baudoin ice shelf for BENEMELT project. Installation of iWS, firn coring, GPR (East Antarctica, PI)

Aug 2012

Fieldwork for installment of drifting snow setup (S10, West Greenland, PI)

Sept 2011

Fieldwork assistant for detachment of meteorological mast (Kronebreen, Svalbard)