

Taryn E. Black**Assistant Research Scientist**

Earth System Science Interdisciplinary Center, University of Maryland
Cryospheric Sciences Laboratory, NASA Goddard Space Flight Center

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ACADEMIC APPOINTMENTS

2025 – present **Assistant Research Scientist**, Earth System Science Interdisciplinary Center,
University of Maryland (co-op with NASA Goddard Space Flight Center)
2023 – 2025 **Postdoctoral Associate**, Earth System Science Interdisciplinary Center,
University of Maryland (co-op with NASA Goddard Space Flight Center)
2020 **Research Intern**, Kenai Fjords National Park/Ecological Society of America

Affiliate Appointments

2025 – present Earth and Space Research
2024 – present Polar Science Center, Applied Physics Laboratory, University of Washington
2023 – present Cryospheric Sciences Laboratory, NASA Goddard Space Flight Center

EDUCATION

2022 **Ph.D. Earth and Space Sciences**, University of Washington
Investigations of glacier terminus changes on weekly to decadal time scales
Advisor: Ian Joughin
Graduate Certificate in Climate Science, UW Program on Climate Change
2016 **M.S. Earth and Atmospheric Sciences**, Georgia Institute of Technology
2013 **B.S. Earth and Space Sciences, B.S. Physics**, University of Washington

TEACHING

Instructor of Record**College of the Environment, University of Washington**

Winter 2020 Communicating Science to the Public Effectively (*graduate*)

Teaching Assistant**Department of Earth and Space Sciences, University of Washington**

Autumn 2020 Principles of Glaciology (*undergraduate majors*)
Summer 2018 Introduction to Geology and Societal Impacts (*undergraduate non-majors*)
Spring 2018 Evolution of the Earth (*undergraduate majors*)

School of Earth and Atmospheric Sciences, Georgia Institute of Technology

Spring 2014 Earth Processes (*undergraduate non-majors*)

ACADEMIC SERVICE

Service to the Profession**Peer Review Activities****Journals**

Geological Society of Denmark and Greenland (GEUS) Bulletin
Journal of Glaciology
The Cryosphere
Journal of Geophysical Research – Earth Surface
Scientific Reports

Agencies

U.S. Geological Survey

National Science Foundation – Office of Polar Programs

Conference Organization

2023 Northwest Glaciologists Annual Meeting (Seattle, WA)
 2016 Northwest Glaciologists Annual Meeting (Seattle, WA)

Campus Service

University of Washington, Department of Earth and Space Sciences

2021 – present **Field Trip Leader**, Opportunities in Glacier InVEstigation (OGIVE) SURP
 2020 – 2022 **Peer Mentor**, First-Year Mentoring Program
 2018 – 2022 **Graduate Representative**, Curriculum Committee
 2018 – 2020 **Graduate Representative to the Faculty**
 2018 **Organizer**, Annual Student Research Gala
 2017 – 2018 **Coordinator**, Glaciology Lunch (weekly brown bag)
 2017 **Organizer**, Prospective Student Open House

University of Washington, College of the Environment

2019 – 2022 **Board Member**, Engage (science communication program)
 2019 **Panelist**, New Graduate Student Orientation
 2017 – 2018 **Graduate Representative**, Dean's Student Advisory Council

Georgia Institute of Technology, School of Earth and Atmospheric Sciences

2014 – 2016 **Co-Founder**, Women in Geosciences
 2014 – 2015 **Committee Chair**, First-Year Mentoring Program

PUBLIC OUTREACH AND EDUCATION

Community Engagement

Outreach Events

2017 – present **Volunteer**, Polar Science Weekend, Pacific Science Center (Seattle, WA)
 2025 **Volunteer**, Edmonds Heights K-12 Science Fair (Edmonds, WA)
 2020 **Guest Speaker**, GeoFORCE Program, University of Texas at Austin
 2019 – 2020 **Scientist Pen Pal**, Letters to a Pre-Scientist
 2016 – 2020 **Volunteer**, Rockin' Out (UW Earth and Space Sciences outreach program)
 2019 **Panelist**, Winterfest Climate Panel, The Northwest School (Seattle, WA)
 2015 **Guest Scientist**, GeoGirls Summer Camp, Mount St. Helens Institute/USGS

K-12 Classroom Visits

2019 – 2020 Skype a Scientist, various virtual classroom visits
 2019 Honors Earth Science, Timbercrest Middle School (Woodinville, WA)
 2019 Freshman Earth Science, Monroe High School (Monroe, WA)

Community Presentations

2025 **Ilulissat Icefjord Centre** (Ilulissat, Greenland)
 Science from Space: What satellites reveal about Earth's ice
 2020 **Wetland Workshop Series**, Delridge Neighborhood Development Association
 (remote/Seattle, WA)
 Geology and paleoecology of the Puget Sound
[\(recording\)](#)
 2020 **Rockin' Out Speaker Series**, UW Earth and Space Sciences (remote/Seattle, WA)
 The 440-mile view: Monitoring glacier change from space

- 2020 **PechaKucha Series**, Future Park Leaders of Emerging Change (remote)
400 miles high and 1400 miles away: Studying glacier change in Kenai Fjords National Park
- 2020 **No Time Like the Presentation Speaker Series**, Skype a Scientist (remote)
Watching glacier change in Greenland
([recording](#); [video abstract](#))
- 2019 **Association for Women in Science, Seattle Chapter** (Seattle, WA)
Rapid Changes: The evolution of ice sheets and how we study them
- 2019 **Engage Science Speaker Series**, Town Hall Seattle (Seattle, WA)
How much, how fast? Deciphering a record of glacier change in Greenland
([recording](#))

Blog Posts

- 2022-08-19 **University of Washington Program on Climate Change**
Effectiveness of a multimedia StoryMap for communicating rapid glacier change in Kenai Fjords National Park, Alaska
<https://pcc.uw.edu/blog/2022/08/19/effectiveness-of-a-multimedia-storymap-for-communicating-rapid-glacier-change-in-kenai-fjords-national-park-alaska/>
- 2018-03-02 **Union of Concerned Scientists USA**
Building Relationships to Promote Science-Based Decision Making
With M. Diamond and E. Kahle
<https://blog.ucsusa.org/science-blogger/building-relationships-to-promote-science-based-decision-making>

Media Engagement

- 2024 **Eos**, Glaciers near active volcanoes flow faster
<https://eos.org/articles/glaciers-near-active-volcanoes-flow-faster>
- 2023 **Knowable Magazine**, As glaciers retreat, new streams for salmon
<https://knowablemagazine.org/content/article/living-world/2023/glaciers-climate-change-salmon>
- 2022 **Eos**, Alaskan glaciers advance and retreat in satellite imagery
<https://eos.org/articles/alaskan-glaciers-advance-and-retreat-in-satellite-imagery>
- 2022 **National Parks Traveler blog**, Glacial studies point to retreat, and advance, of Kenai Fjords National Park glaciers
<https://www.nationalparkstraveler.org/2022/09/glacial-studies-point-retreat-and-advance-kenai-fjords-national-park-glaciers>
- 2022 **National Parks Traveler podcast**, Kenai Fjords' glaciers
<https://www.nationalparkstraveler.org/podcast/2022-09-11-national-parks-traveler-episode-187-kenai-fjords-glaciers>
- 2022 **KDLL – Kenai Public Radio**, New study charts changes at glaciers in Kenai Fjords National Park
<https://www.kdll.org/local-news/2022-08-08/new-study-charts-changes-at-glaciers-in-kenai-fjords-national-park>
- 2022 **University of Washington News**, New study calculates retreat of glacier edges in Alaska's Kenai Fjords National Park
<https://www.washington.edu/news/2022/08/05/kenai-fjords>
- 2021 **KING 5 Evening**, You don't have to be a climber to explore the Cascades' mightiest glaciers

- <https://www.king5.com/video/entertainment/television/programs/evening/you-dont-have-to-be-a-climber-to-explore-the-cascades-mightiest-glaciers/281-aa1b3865-0350-432e-9cf1-c1b298b162d4>
- 2021 **University of Washington News**, A visit to Mt. Baker's Easton Glacier
<https://www.washington.edu/news/2021/07/30/a-visit-to-mt-bakers-easton-glacier>

CONTINUING EDUCATION

- 2024 **GHub Tool Development Workshop**, University at Buffalo
- 2023 **GeoSMART Hackweek: Application of Machine Learning in Hydrology and Cryosphere Science**, University of Washington eScience Institute
- 2023 **CryoCloud Workshop**, National Snow and Ice Data Center
- 2019 **Summer Institute: Climate Change Impacts on 21st Century Food and Water Security**, University of Washington Program on Climate Change
- 2019 **ICESat-2 Hackweek**, University of Washington eScience Institute
- 2018 **Summer Institute: Sources of Uncertainty in Long-Term Climate Predictions**, University of Washington Program on Climate Change
- 2017 **Geohackweek**, University of Washington eScience Institute

RESEARCH MENTORSHIP

Undergraduate

- 2025 – present Sofia Suhinin – University of Washington OGIVE SURP
- 2018 – 2019 Courtney Shafer (postbaccalaureate) – University of Washington APL

High School

- 2025 Ada C., Varun C., Alex L., Srivishnu S. – Earth & Space Research Summer Institute

HONORS AND AWARDS

- 2022 **Julian D. Barksdale Distinguished Service Award**, UW Earth & Space Sciences
- 2021 **Best Glaciology Talk**, UW Earth and Space Sciences Research Gala
- 2013 **Undergraduate Dean's Medalist**, UW College of the Environment

GRANTS AND FELLOWSHIPS

- 2025 – 2028 **NASA ROSES-2024 Decadal Survey Incubation**
 “Advancing surface topography science over land ice masses with a hybrid data fusion and modeling approach.” Co-I, with B. Medley (PI, NASA GSFC), D. Felikson, and C.M. Stevens.
- 2025 – 2028 **NASA ROSES-2024 Cryospheric Sciences**
 * *“selectable” pending federal budget allocation*
 “Greenland Ice Sheet Melt (GrISMelt) Toolbox: Understanding the temporal evolution of Greenland surface melt at high resolution using satellite and airborne laser altimetry.” Co-I, with S. Bhushan (PI, Univ. Maryland), B. Medley, D. Shean, B. Smith, and T. Sutterley.
- 2014 – 2017 **NSF Graduate Research Fellowship**
 Georgia Institute of Technology; transferred to University of Washington in 2016.
- 2013 – 2016 **Georgia Institute of Technology President's Fellowship**

PUBLISHED DATASETS

- [5] Cohen, B., Moon, T., and **Black, T.** (2024) Glacial and fast ice distributions in southeast Greenland fjords (NSIDC-0796, Version 1). Boulder, Colorado, USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. [doi:10.5067/GWJ0PLI2UF6E](https://doi.org/10.5067/GWJ0PLI2UF6E)
- [4] **Black, T.** and Joughin, I. (2022) MEaSUREs Weekly-to-monthly Greenland outlet glacier terminus positions from Sentinel-1 mosaics (NSIDC-0781, Version 1). Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. [doi:10.5067/DGBOSSIULSTD](https://doi.org/10.5067/DGBOSSIULSTD)
- [3] **Black, T.** and Kurtz, D. (2022) Satellite observations of maritime glacier terminus positions at Kenai Fjords National Park. NPS Integrated Resource Management Applications DataStore. Geospatial Dataset Code 2293309. <https://irma.nps.gov/Datastore/Reference/Profile/2293309>
- [2] Goliber, S. and **Black, T.** (2021) TermPicks: A century of Greenland glacier terminus data for use in machine learning applications, Version 1. Zenodo. [doi:10.5281/zenodo.6557981](https://doi.org/10.5281/zenodo.6557981)
- [1] Joughin, I., Moon, T., Joughin, J., and **Black, T.** (2021) MEaSUREs Annual Greenland outlet glacier terminus positions from SAR mosaics (NSIDC-0642, Version 2). Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. [doi:10.5067/ESFWE11AVFKW](https://doi.org/10.5067/ESFWE11AVFKW)

REFEREED JOURNAL ARTICLES

- [7] (*in review*) Smith, B., Sutterley, T.C., Fricker, H.A., Padman, L., Siegfried, M.R., **Black, T.**, Felikson, D., Freer, B.I.D., Gibbons, A., Howard, S.L., Jelley, B., King, M., Medley, B., Morlighem, M., Sadlik, C., and Sauthoff, W. (2025) ICESat-2 land ice products resolve Greenland and Antarctic ice-sheet height changes on seasonal to multiyear time scales. *Journal of Glaciology*.
- [6] Moon, T., Cohen, B., **Black, T.E.**, Laidre, K., Stern, H., and Joughin, I. (2024) Characterizing Southeast Greenland fjord surface ice and freshwater flux to support biological applications. *The Cryosphere*, 18, 4845-4872, [doi:10.5194/tc-18-4845-2024](https://doi.org/10.5194/tc-18-4845-2024).
- [5] **Black, T.E.** and Joughin, I. (2023) Weekly to monthly terminus variability of Greenland's marine-terminating outlet glaciers. *The Cryosphere*, 17, 1-13, [doi:10.5194/tc-17-1-2023](https://doi.org/10.5194/tc-17-1-2023).
- [4] **Black, T.** and Kurtz, D. (2023) Maritime glacier retreat and terminus area change in Kenai Fjords National Park, Alaska, between 1984 and 2021. *Journal of Glaciology*, 69 (274), 251-265, [doi:10.1017/jog.2022.55](https://doi.org/10.1017/jog.2022.55).
- [3] Goliber, S., **Black, T.**, Catania, G., Lea, J., Olsen, H., Cheng, D., Bevan, S., Bjørk, A., Bunce, C., Brough, S., Carr, J.R., Cowton, T., Gardner, A., Fahrner, D., Hill, E., Joughin, I., Korsgaard, N., Luckman, A., Moon, T., Murray, T., Sole, A., Wood, M., and Zhang, E. (2022) TermPicks: a century of Greenland glacier terminus data for use in scientific and machine learning applications. *The Cryosphere*, 16, 3215-3233, [doi:10.5194/tc-16-3215-2022](https://doi.org/10.5194/tc-16-3215-2022).
- [2] **Black, T.E.** and Joughin, I. (2022) Multi-decadal retreat of marine-terminating outlet glaciers in northwest and central-west Greenland. *The Cryosphere*, 16, 807-824, [doi:10.5194/tc-16-807-2022](https://doi.org/10.5194/tc-16-807-2022).
- [1] Spector, P., Stone, J., Balco, G., Hillebrand, T., Thompson, M., and **Black, T.** (2020) Miocene to Pleistocene glacial history of West Antarctica inferred from nunatak geomorphology and cosmogenic-nuclide measurements on bedrock surfaces. *American Journal of Science*, 320 (8) 637-676, [doi:10.2475/10.2020.01](https://doi.org/10.2475/10.2020.01).

SCIENTIFIC PRESENTATIONS

Seminars and Guest Lectures

- 2022 Environmental Speaker Series, Western Washington University
2019 Arctic and Environmental Change, Seattle University

Conference Presentations

** invited*

- * **Black, T.** and Medley, B. (2024) Estimating Antarctic surface mass balance from ICESat-2 surface height observations. *American Geophysical Union Annual Meeting*, [C21B-01](#).
- Black, T.** and Kurtz, D. (2022) Maritime glacier change in Kenai Fjords National Park between 1984 and 2021. *International Glaciological Society Symposium on Maritime Glaciers*, [89A3714](#).
- Black, T.E.** and Joughin, I. (2021) Weekly to monthly terminus variability of Greenland's marine-terminating outlet glaciers. *American Geophysical Union Fall Meeting*, [C31A-05](#).
- Black, T.** and Joughin, I. (2021) Climatic drivers of outlet glacier retreat in northwestern and west-central Greenland. *University of Washington Earth and Space Sciences Research Gala*.
- Black, T.** and Kurtz, D. (2020) Satellite observations of coastal glacier change at Kenai Fjords National Park. *Northwest Glaciologists Annual Meeting*.
- Black, T.** and Joughin, I. (2019) An annual record of outlet glacier termini in northwestern Greenland from 1972 – 2018. *Northwest Glaciologists Annual Meeting*.
- Black, T.** and Joughin, I. (2019) A multidecadal record of outlet glaciers in northwestern Greenland. *University of Washington Earth and Space Sciences Research Gala*.
- * **Black, T.** (2019) Observations of Greenlandic marine-terminating outlet glaciers on multiple time scales. *University of Washington School of Oceanography Graduate and Postdoc Symposium*.
- Black, T.E.,** Dufek, J., and Benage, M.C. (2015) The effects of pulsating flow on eruption column dynamics. *American Geophysical Union Fall Meeting*, [V44B-06](#).

Conference Posters

- Black, T.** and Joughin, I. (2019) Controls on multi-decadal variability of marine-terminating outlet glaciers in northwestern Greenland. *American Geophysical Union Fall Meeting*, [C41C-1475](#).
- Black, T.** and Joughin, I. (2018) Multidecadal climate response of outlet glaciers in northwestern and west central Greenland. *American Geophysical Union Fall Meeting*, [C11C-1137](#).
- Black, T.** and Joughin, I. (2018) Multidecadal outlet glacier changes in northwestern and west central Greenland. *Graduate Climate Conference*.

Other Contributions

- Medley, B., Bhushan, S., **Black, T.E.**, Dixon, T.H., Felikson, D., Michaelides, R.J., Milillo, P., Millstein, J.D., Petty, A., Shean, D.E., Siegfried, M., Smith, B.E., Sutterley, T.C., and Teisberg, T. (2024) Cryospheric science activities towards achieving NASA's surface topography and vegetation targeted observable. *American Geophysical Union Annual Meeting*, [GC54E-01](#).
- Berry, J., Pettit, E.C., Rennermalm, A.K., Roth, A., **Black, T.E.**, Abib, N., Waghorn, L., Wanzer, L., Trunz, C. (2023) Historical evolution and future retreat of Bear Glacier, Alaska. *American Geophysical Union Fall Meeting*, [C21F-1308](#).
- King, M.D., Joughin, I., Howat, I.M., and **Black, T.E.** (2022) Constraining the capabilities and limitations of existing satellite observations in resolving subglacial meltwater impacts on outlet glacier dynamics. *American Geophysical Union Fall Meeting*, [C15A-01](#).
- Laidre, K.L., Moon, T., Cohen, B., Stern III, H.L., and **Black, T.E.** (2022) Polar bears, glaciers and fjord ice in southeast Greenland. *American Geophysical Union Fall Meeting*, [B12A-01](#).

- Berry, J., Pettit, E., **Black, T.**, and Kurtz, D. (2022) Historical evolution and possible triggers for the retreat of Bear Glacier Lagoon, Alaska, USA. *International Glaciological Society Symposium on Maritime Glaciers*, [89A3794](#).
- Goliber, S.A., **Black, T.E.**, Catania, G.A., Lea, J.M., and Cheng, D. (2021) Lessons learned from TermPicks: A century of Greenland glacier terminus data. *American Geophysical Union Fall Meeting*, [C51A-05](#).
- King, M.D., Joughin, I.R., Howat, I., and **Black, T.E.** (2021) A recent assessment of variability in rigid mélange coverage and the associated impacts at highly dynamic calving fronts in Greenland. *American Geophysical Union Fall Meeting*, [C34A-03](#).
- Moon, T.A., Cohen, B., Laidre, K.L., Stern, H.L., and **Black, T.E.** (2021) Revealing the Southeast Greenland physical environment to enhance biological knowledge. *American Geophysical Union Fall Meeting*, [B25E-1518](#).
- Goliber, S., **Black, T.**, Lea, J., Cheng, D., and Catania, G. (2020) IcePicks: a collaborative database and toolset for identifying Greenland outlet glacier termini. *American Geophysical Union Fall Meeting*, [C004-0016](#).
- Goliber, S., **Black, T.**, and Catania, G. (2020) IcePicks: a collaborative database of Greenland outlet glacier termini. *European Geosciences Union General Assembly*, EGU2020-11237, [doi:10.5194/egusphere-egu2020-11237](https://doi.org/10.5194/egusphere-egu2020-11237).
- Light, B., Perovich, D.K., Holland, M.M., Dickinson, S., and **Black, T.** (2012) Arctic sea ice albedo through the summer melt cycle: CCSM4 compared with a satellite/empirical record over 1979-2005. *American Geophysical Union Fall Meeting*, C41B-0564.
- Light, B., **Black, T.**, Carns, R., Brandt, R., Dadic, R., and Warren, S. (2012) Albedo of cold sea ice with precipitated salt on the tropical ocean of Snowball Earth: field measurements and laboratory experiments. *European Geosciences Union General Assembly*, [EGU2012-6686](#).