Mikaila Mannello

Bryand Global Science Building · University of Maine · Orono, ME 04469
mikaila.mannello@maine.edu · mikailamannello.weebly.com

Education

2024 – present **Ph.D. Earth and Climate Science (in progress)**
School of Earth and Climate Sciences, University of Maine
Advisor: Seth Campbell

2023 **M.S. Quaternary and Climate Studies**
Climate Change Institute, University of Maine
Thesis: Spatial and Temporal Variations in Snow Properties and Firn Volume across the Juneau Icefield, Southeast Alaska
Advisor: Dr. Seth Campbell

2020 **B.S. Environmental Science,** *summa cum laude*
Department of Geology and Environmental Science, University of Pittsburgh
Advisor: Dr. Kyle Whittinghill

Academic Experience & Outreach

Graduate Research Assistant, Climate Change Institute, University of Maine **2021 – present**
Quantifying uncertainties of snow water equivalent and calculating firn volume change on Juneau Icefield in 2012 and 2021. Processed hundreds of kilometers of ground-penetrating radar data from Alaska, Canada, and Antarctica.

Student Support Services Tutor, University of Maine **2023**
One-on-one tutoring services in ERS 301 Earth and Climate Science Geomatics (3 hr/week).

Graduate Chair, Diversity, Equity, and Inclusion Committee **2022 – 2023**
Hosted microaggression and implicit bias awareness workshops, facilitated inclusive institute meet and greet events, and developed remote fieldwork and on-campus graduate student code of conduct recommendations.

Volunteer Faculty, Upward Bound – Juneau Icefield Research Program **2022**
Provided hands-on learning experiences in Earth Science in Juneau, AK, for Upward Bound high school students from Florida and Washington.

Field Experience

Juneau Icefield, Alaska, research scientist **2023**
Our primary objectives were to (1) determine the spatial and temporal variability of water content in the snow and firn, (2) characterize the bed topography of T'aakú Kwáan Sít'i and its

main tributary branches, and (3) create digital media for science communication on how we study glaciers. For shallow applications we surveyed this area with 400 MHz common-offset ground-penetrating radar and also a 200 MHz hyper-stacking system. For deep applications we used 1 MHz and 100 MHz instruments.

Eclipse Icefield, Yukon, Canada, research scientist **2023**

This research was conducted as a part of Inga Kindstedt and Emma Erwin's Ph.D. research to assess the near-surface variability in melt layers as it applies to ice core analysis and characterize the bed topography to constrain 3D numerical models of ice flow. We drilled several firn cores for density and stratigraphy, recorded borehole temperature profiles, measured the position of 37 velocity stakes deployed a month prior, conducted ApRES measurements at 11 sites, and completed an extensive 5 MHz ice radar survey of the dome.

Upper Sít' Tlein/ Seward Glacier, Yukon, Canada, research scientist **2023**

Our team's objectives were to characterize the bed topography to better quantify the dynamics of the system, determine the spatial variability in annual accumulation, and ground-truth airborne radar surveys. We collected 60+ km for both 1 MHz deep radar and 400 MHz shallow radar. We also dug several shallow snow pits, measuring density and collecting water isotope samples, and used a Kovacs core to drill into the firn to measure density and record stratigraphy. This field season was led by Martin Truffer (University of Alaska Fairbanks) and these data will be used to better understand the future of the Sít' Tlein (Malaspina Glacier).

Quintino Sella and Seward Glacier Traverse, Yukon, Canada, research scientist **2022**

60 km ski traverse from Mt. Logan basecamp (2850 m) down the Quintino Sella Glacier onto the Seward Glacier in Kluane National Park, Canada. Assisted in isotopic and trace element snow pit sampling with Kira Holland (PhD Student, University of Alberta) and collected 400 MHz ground penetrating radar data down-glacier.

Juneau Icefield Research Program, Alaska, volunteer town staff **2022**

Assisted in the coordination and execution of in-town logistics to support the 2022 JIRP field season. Responsibilities including leading students up to the first icefield camp, fulfilling camp supply and food orders, and assisting with helicopter logistics.

Juneau Icefield Research Program, Alaska, student **2021**

An 8-week field program on the Juneau Icefield, Alaska, focused on researching glaciers and the cryosphere, learning essential field safety and glacier travel techniques, working with teams in remote field camps, and actively participating in data collection. The research focused on the T'aakú Kwáan Sít'i and its main tributaries through glacier mass balance, collection isotopic composition and stratigraphic density measurements, surface albedo measurements, and ground-penetrating radar surveys.

Oral Presentations

Climate Change Institute Borns Symposium, Presentation, April 2023, "Snow Properties and Observations on the Quintino Sella and Seward Glaciers, Kluane National Park & Reserve, Yukon Territory, Canada," Mikaila Mannello, Jonathan Maurer, Seth Campbell.

Colby College for JP153j – Meteorology, Invited Online Lecture, January 2023, "Glaciers and

Methods," Mikaila Mannello and Renée Clavette.

Penobscot Valley Senior College, Online Lecture, March 2022, "Glaciers and Sea-Level Rise," Ingalise Kindstedt, Mikaila Mannello, Emma Erwin, Moriah Weitman.

International Glaciological Society Global Seminar Series, Webinar, Dec. 2021, "Change in Firn Thickness on the Taku and Matthes Glaciers" Presentation. Alex Motyka, Sabrina Jones, Emily Holt, Jordan Farnsworth, Mikaila Mannello, Rachel Meyne.

Poster Presentations

Northeast Glaciology Meeting, Poster Presentation, April 2023, "Snow Properties and Observations on the Quintino Sella and Seward Glaciers, Kluane National Park & Reserve, Yukon Territory, Canada," Mikaila Mannello, Jonathan Maurer, Seth Campbell.

University of Maine Student Symposium, Poster Presentation, April 2023, "Snow Properties and Observations on the Quintino Sella and Seward Glaciers, Kluane National Park & Reserve, Yukon Territory, Canada," Mikaila Mannello, Jonathan Maurer, Seth Campbell.

International Glaciological Society Symposium on Maritime Glaciers, Poster Presentation, June 2022, "Calculating Firn Volume Change across the Juneau Icefield, Alaska: 2012-2021" Mikaila Mannello, Jonathan Maurer, Seth Campbell, Scott Braddock, Emily Holt, Jordan Farnsworth, Ian Nesbitt, Sabrina Jones, Rachel Meyne, Alex Motyka.

Grants and Scholarships Awarded

2023 Robert & Judith Sturgis Family Foundation Exploration Fund, Climate Change Institute ($2,085) "Constraining Snow and Firn Properties in Southeast Alaska and Western Canada"

Spring Graduate Student Government Grant, University of Maine ($595) "Constraining Snow and Firn Properties in Southeast Alaska and Western Canada"

2022 Summer Maine Space Grant Consortium Graduate Research Fellowship Award ($6,000) "Characterizing the Near-surface Properties of and Improving Snow Water Equivalent Estimates on the Bering Glacier System, Alaska and Canada," advised by Seth Campbell.

Dan & Betty Churchill Exploration Fund, Climate Change Institute ($2,260) "Characterizing the Near-surface Properties of and Improving Snow Water Equivalent Estimates on the Bering Glacier System, Alaska and Canada," advised by Seth Campbell.

Spring Graduate Student Government Grant, University of Maine ($850) "Calculating Firn Volume Change across the Juneau Icefield, Alaska: 2012-2021"

Certifications

2021 –2023 Wilderness First Aid Certification — SOLO Schools (Expiration: 03/2025)

2021 Recreational Level 1 Avalanche Certificate — Alaska Avalanche School

2020 Geographic Information Systems Certificate — University of Pittsburgh