**Jonathan D. Maurer**

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**Education**

**Appalachian State University (Boone, NC) 2020-2021**

**MA Geography,** Physical Geography concentration

**GPA: 4.0/4.0**

**Project:** Precipitation-Climate-Glacier Interactions in the Hindu Kush Karakoram Himalaya

**University of Maine (Orono, ME) 2020**

**BS Marine Sciences,** Oceanography concentration

**BS Earth Sciences**, Climate Science concentration

**Senior Capstone Research Project:** Gulf of Maine Sea-Surface Temperature During the Past 6,000 Years: Is Modern Warming Anomalous?

**Senior Year GPA: 3.72/4.0**

**GPA: 3.45/4.0**

**Relevant Coursework:**

Physical Science

Earth Systems Physics 1&2

Geochemistry Atmospheric Physics

Denali Ice Core Geochemistry Geophysics

Global Environmental Change Paleoceanography

Sedimentology & Stratigraphy Oceanography

Mathematics

Calculus 1 Calculus 2

Calculus 3 Linear Algebra

Differential Equations Dynamical Systems

Computer Science

Data Programming Advanced Quantitative Methods

Ocean Variability and Trends I Ocean Variability and Trends II

**Research & Work Experience**

**Juneau Icefield Glaciology /** Principal Investigator and Researcher

*Spatial Variability in Firn Thickness Across the Juneau Icefield, Alaska*

June 2020-Present, University of Maine, Orono

Research Advisor: Dr. Seth Campbell

* Processed 150 km of ground-penetrating radar data collected across the Juneau Icefield in the summer of 2012.
* Generated measurements of firn depth using combined outputs from Radan and ESRI GIS products.
* Implemented multiple machine learning techniques in high level programming languages to produce a scalable estimating tool for firn depth.
* Prepared findings for publication in Journal of Glaciology (In Preparation**).**

**Graduate Research Assistantship /** Researcher and Technician

*High Mountain Climate-Glacier-Precipitation Interactions*

August 2020-Present, Appalachian State University

Research Advisor: Dr. Baker Perry

* Actively maintained a climate server collecting data from weather stations ranging from local Appalachian Mountains to the summit of Mount Everest.
* Created and maintained automatically updating data visualization programs for multiple regions across the world.
* Developed an automatically sending meteorological forecast for delivery to a satellite phone during scientific expedition to install a new weather station in the Chilean Andes
* Installed and utilized multiple Langrangian moisture source modeling software (HYSPLIT, FLEXPART) for use in high impact research publications.

**Denali Basal Ice Geochemistry /** Research and Laboratory Assistant

*NSF P2C2: Reconstructing North Pacific hydroclimate during the Holocene using the Denali ice core archive*

January 2020-March 2020, University of Maine, Orono

Research Advisor: Dr. Dominic Winski

* Extracted and prepared samples from bottom 20 meters of Mt. Hunter basal ice.
* Processed samples for stable water isotope analysis on ICP-MS.
* Conducted extensive data analysis linking geochemical and climatological data.
* Produced comprehensive manuscript detailing findings of late Holocene Hydroclimate variability in the North Pacific.

**Northeast ECOMON Cruise /** Staff Scientist and Deck Hand

*NOAA Funded Continental Shelf Ecosystem Monitoring Aboard R/V Gordon Gunter*

August 2019

Research Advisor: Harvey Walsh

* Spent 16 days at sea, collecting data for multi-objective climate, ecosystem, and stock assessments.
* Collected salinity, temperature, and chemical data of eastern continental shelf ecosystem.
* Sampled and identified microplankton, mesoplankton and phytoplankton.
* Participated in identifying protected marine mammal, sea bird, and sea turtle populations.

**Gulf of Maine Paleoceanography /** Research and Laboratory Assistant

*Gulf of Maine Temperature for the past 6,000 year: Is Modern Warming Anomalous?*

2018-2019, University of Maine, Orono

Research Advisor: Dr. Katherine Allen

* Extracted samples from various sediment cores at the Woods Hole Oceanographic Institution core repository.
* Processed sediment (hand washing, sieving, weighing) for micropaleontology.
* Sorted foraminiferal samples by species.
* Preformed chemical cleaning of carbonate samples for analysis on ICP-MS.
* Interpreted trace element data for sea surface temperature reconstruction.

**Southwest Pacific Paleoceanography /** Research and Laboratory Assistant

*Pacific Ocean stratification since the last ice age: New constraints from benthic foraminifera*

2016-2019, University of Maine, Orono

Research Advisor: Dr. Katherine Allen

* Delicately processed sediment cores spanning the length of the Holocene.
* Extracted and prepared samples for isotopic and trace element analysis.
* Conducted extensive microscopy work, sorted microfossil samples.
* Prepared and analyzed microprobe data to assist with age model.

**Research Presentations**

**American Geophysical Union Fall Meeting 2020**

* Where Does the World’s Highest Glacier Get its Moisture? (Poster Presentation)
* Co-authors: Baker Perry, Tom Matthews, Arbindra Khadka, Heather Guy, Inka Koch, Paul Mayewski

**American Geophysical Union Fall Meeting 2019**

* Gulf of Maine Sea Surface Temperature During the Past 6,000 Years (Poster Presentation)
* Co-authors: Katherine Allen, Cassandre Stripe, Llyod Keigwin

**School of Marine Science Undergraduate Research Symposium, 2019**

* Gulf of Maine Sea Surface Temperature During the Past 6,000 Years (Poster Presentation)
* Co-authors: Katherine Allen, Cassandre Stripe, Llyod Keigwin

**Geological Society of Maine Annual Meeting, 2019**

* Gulf of Maine Sea Surface Temperature During the Past 6,000 Years (Poster Presentation)
* Co-authors: Katherine Allen, Cassandre Stripe, Llyod Keigwin

**Peer Reviewed Publications**

* **J. Maurer**, K. Mannello, S. Campbell, Z. Courville, C. McNeil, Spatial Variability in Firn Thickness Across the Juneau Icefield*, Alaska.* For submission to *Journal of Glaciology* (Expected March 2021)

**Skills/Qualifications**

Skills gained through research projects involving geochemistry, meteorology, glaciology, machine learning, and comprehensive data analysis to gain perspective on climate change from both historical and contemporary stand points.

**Laboratory Equipment**

Microscope Grinder/Polisher

Microbalance Pipetting/Micropipetting Techniques

ICP-MS Scanning Electron Microscope

Laser Ablation ICP-MS Electron Microprobe

**Computer Software**

Microsoft Office Suite ESRI ArcGIS Pro Python FLEXPART

R Studio HYSPLIT

Matlab Radan

**Awards/Honors**

**Center for Undergraduate Research Fellowship (Summer 2018)**

* Selected as 1 of 10 undergraduates at UMaine to receive $3,000 in funding for individual research from the Maine Space Grant Consortium.

**Activities**

**University of Maine Swimming and Diving**

* Dedicated up to 20 hours a week to the responsibilities of Division I athletics. Prioritized schoolwork and athletics, responsibility, time management, leadership, teamwork, and independence as a result of investing myself in the sport.

**Maine Upward Bound 2019**

* Presented palaeoceanographic research to group of 90 high school students in STEM outreach program.

**Chess Club, Treasurer**

* Member of Executive committee. Attended weekly meetings, organized funding, collected and recorded membership dues.

**Geology Club**

* Member of fundraising committee, raised money for trip to Iceland, attended weekly meetings.

**Marine Science Club**

* Member of Oceans Conservation week planning committee, organized beach clean ups, worked in youth outreach for marine science.