



Scientist of the Month



Michael Martins

Michael Martins, a Brazilian and American citizen, is a fourth-year BLaST Scholar and a senior at UAF. Martins graduates in May 2024 with a B.S. in mathematics and a minor in Arctic skills and will join the R/V Thomas G. Thompson as part of the Arabian Sea Transition Layer (ASTRaL) Departmental Research Initiative in Goa, India. He plans to pursue an Alaska-based fellowship and serve in the NOAA Corps, one of the nation's eight uniformed services. Martins enjoys ski-mountaineering and playing chess in his free time.

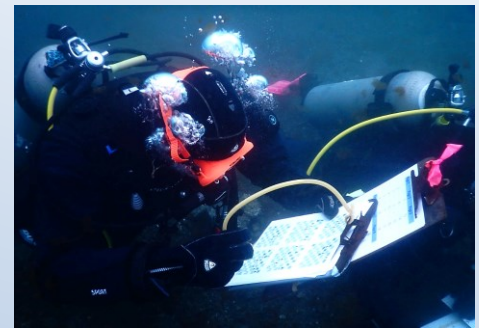
Research

Martins' current research investigates a new method to derive wind and temperature readings within the ionosphere using artificial airglow, which can be created by ionospheric heaters at UAF's High Frequency Active Auroral Research Program (HAARP). He shared, "This place is the heart of my research, and they have the biggest ionosphere heater in the world." Martins plans to present his findings

at the 2024 Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR) Workshop in June 2024 at San Diego, California. Martins' previous research started with the Nearshore Ecology Field Course (MSLF 421) where he developed a research question investigating the effect of cold water in scuba diving on cognitive performance while engaged in chess puzzle-solving. He tested his hypothesis during spring break of 2023 with the UAF College of Fisheries and Ocean Sciences' American Academy of Underwater Sciences (AAUS) dive program at the Kasitsna Bay Laboratory, a NOAA field station located near Seldovia, Alaska. His findings were published in May 2023 by the Chessable Science team through a Chessable Research Award, a competitively selected chess research project from university-based researchers. Martins also participated in May 2019 in the STEMSEAS program for undergraduates aboard UAF's R/V Sikuliaq on a nine-day transit from San Diego, CA to Seward, AK where he helped conduct research ranging from Next-Generation Sequencing using the Oxford Nanopore MiniON, examined lead contamination using an XRF for elemental analysis, and collected and analyzed data from CTD casts. Martins received an American Geophysical Union (AGU) travel grant and presented on his experience at the 2019 AGU Annual Conference in San Francisco, CA.

Mentoring

Martins credits his success to his mentors who invest tirelessly into him. He feels fortunate to work on his dream research project under the mentorship of Dr. Mark Conde who previously worked with Martins through another UAF program, Undergraduate Research and Scholarly Activity (URSA). Martins appreciates the advocacy of his many Research, Advising, and Mentoring Professionals (RAMPs), Nikola Nikolic, Emily Sousa, and especially Dr. Andrew Cyr. Martins also appreciates the mentorship of JR Ancheta, Heidi Shepard, and Evita Maniatopoulou in earning the 2023 Gold Congressional Award, a national award by the United States Congress' only non-profit and highest honor for youth civilians. Martins considers himself extremely privileged to be also mentored by Eduardo Jany, Dr. Benjamin Keisling, Dr. Brenda Konar, and peer-mentor, Torin Hooge.



Top left: BLaST Scholar Michael Martins at the Permafrost Tunnels in Fairbanks, Alaska, May 2023. Photo credit: UAF/GI Daniel Walker.

Left: Martins (r) with former BLaST postdoc Dr. Anne-Lise Ducluzeau (l) and classmate aboard the R/V Sikuliaq, May 2019.

Above Right: Martins took this photo underwater of classmates playing chess in cold water in the AAUS dive program at the NOAA Kasitsna Bay Laboratory, March 2023.