

119 - T112. Halo-Dash: The Deep and Shallow History of Aquatic Life's Passages between Marine and Freshwater Habitats

Monday, 10 October 2022

1:30 PM - 5:30 PM

119-11: LAST INTERGLACIAL CLIMATE IN THE COASTAL WESTERN ATLANTIC USING OXYGEN AND CLUMPED ISOTOPES IN FOSSIL MOLLUSKS **PETERSEN, Sierra¹**, WINKELSTERN, Ian Z.²,

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Abstract

The Last Interglacial (LIG) period (Marine Isotope Stage 5e, MIS 5e, 130-116 ka) is often thought to be a key analogue to better understand near-future global warming due to slightly warmer average global temperatures and an abundance of well-preserved paleoclimate archives. However, paleoclimatic data from the Western Atlantic (U.S. East Coast, Bermuda, Caribbean) are especially lacking for this time interval, with few quantitative sea surface temperatures (SST) estimates available from anywhere along the U.S. East Coast to as far as 1000km offshore. Here we present a summary of multiple projects targeting LIG-aged fossil mollusks from this understudied region. SSTs are reconstructed using oxygen isotope sclerochronology ($\delta^{18}\text{O}$) and clumped isotope paleothermometry (Δ_{47}), applied to multiple species of fossil mollusk (oysters, clams, gastropods) from multiple localities. Together, these isotopic methods allow the calculation of past seawater $\delta^{18}\text{O}_{\text{sw}}$, which, like salinity, is controlled by evaporation/precipitation balances, local riverine and subterranean freshwater discharge, and ocean circulation patterns. We will primarily present reconstructions of paleo seawater temperatures, but also shed light on paleohydrology and regional ocean circulation in the coastal environments where these mollusks lived.

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