Assessing potential for diagenetic overprinting of climatic signals in benthic foraminifera: Preliminary results.

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Benthic foraminiferal stable isotope records ($\delta^{18}O$, $\delta^{13}C$) are the most common paleoclimate records produced to date, which capture changes in temperature, ice volume, and the global carbon system on orbital to sub-millennial timescales. General relationships between deep sea $\delta^{18}O$ and sea level have long been established, and more recent paired $\delta^{18}O$ and Mg/Ca records seek to disentangle the temperature and ice volume components of corresponding sea level records. However, the extent to which diagenesis may potentially alter the original isotopic signature recorded in tests of benthic foraminifera remains relatively undefined. We present preliminary results of a project focused on constraining the extent to which such diagenetic overprinting might alter sea level estimates based on records produced from modern to mid-Pliocene *Cibicidoides* and *Uvigerina* specimens. These include advanced imaging techniques (SEM, CL-spectroscopy), single shell stable isotope analyses ($\delta^{18}O$, $\delta^{13}C$), and chamber wall trace metal profiles (LA-ICPMS) paired with *in situ* $\delta^{18}O$ analyses (SIMS). In addition, we present strict specimen screening criteria developed based on a new quantitative assessment of visual preservation in both individual foraminiferal tests and whole assemblages.

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Session II: Advances in Foraminiferal Geochemistry
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