

LDEO Climate Center Pilot Study Proposal: Development of ICP-MS techniques to measure trace and minor elements in foraminiferal calcite

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Abstract. Various trace and minor element ratios in foraminifera offer important paleoclimatic information. Cd/Ca, Ba/Ca, Zn/Ca, Mg/Ca, Sr/Ca, and U/Ca reflect past nutrient distributions, temperature, pH, and “vital effects”. Measuring all of these proxies in each sample is clearly advantageous, but impossible given foraminiferal methods currently employed at LDEO (AAS and ICP-AES). I propose to develop methods for measuring multiple elemental ratios by sector field ICP-MS, thus compounding the amount of paleoceanographic information derived from each sample.