

## **Calcification of Foraminifera and the Boron Isotope Paleo-pH Proxy**

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With this goal of better understanding boron uptake and fractionation in marine carbonates, one of the leading scientists in this field is excited about the opportunity of coming to Lamont to learn the theory and analytical techniques for the boron isotope paleo-pH proxy, and to set the groundwork for future collaboration. Howie Spero of the University of California Davis studies the biological and environmental influences that affect the stable isotope and trace metal geochemistry of foraminifera with the goal of reconstructing paleoenvironmental sea surface temperatures, nutrient levels and CO<sub>2</sub> concentrations in the past. The parallels with our research are evident, and his expertise on foraminifera calcification and the behavior of these other geochemical proxies could provide a powerful alliance between our institutions, which we expect will result in significant funding opportunities in the near future. We will concentrate on ways to better understand the boron isotope paleo-pH proxy, where we can combine our respective strengths. This will include:

- 1) Holocene ground-truthing of the paleo-pH proxy, and
- 2) Laboratory culture experiments to determine vital and environmental effects (*ie.* temperature, nutrient level, etc).