

Victor (Alex) Bonilla Franco, The University of Texas at Austin, Austin, Texas, USA for their project: *Constraining the Origin and Scale of the Largest Carbon Isotope Excursion in Earth's History*.

Victor (Alex) Bonilla Franco is a 4th year PhD candidate at the University of Texas at Austin and is advised by Dr. John C. Lassiter. Alex received his undergraduate degree in chemistry at Westminster University in Salt Lake City, Utah. Growing up in Utah Alex developed a deep appreciation for geology and the natural processes that shape our planet. His research interest is in the evolution of early Earth's climate and habitability.

Questions remain as to the scale and origin of the Lomagundi-Jatuli Event (LJE) (2.3-2.1 Ga), which is credited as the largest positive $\delta^{13}\text{C}$ excursion in Earth's history. The leading hypothesis for the origin of the LJE is a spike in bioproductivity and enhanced organic carbon burial. Organics preferentially incorporate light C and Zn, therefore $\delta^{13}\text{C}$ and $\delta^{66}\text{Zn}$ should covary during a global spike in bioproductivity.

However, decoupling of these systems may indicate that this $\delta^{13}\text{C}$ excursion occurred in restricted shallow basins, as ocean residence times of C and Zn are not equivalent, with Zn being longer lived. Therefore, local aberrations may result in excursions of $\delta^{13}\text{C}$ and not $\delta^{66}\text{Zn}$. This study looks to conduct joint C and Zn isotope analysis on carbonates from the Nash Fork platform of Wyoming U.S.A., to ascertain the biological origin of the LJE and determine whether this event was global or local in scale.

With support from the Howard and Jean Lipman Foundation Student Research Grant we will fund the analysis of $\delta^{66}\text{Zn}$ measurements, crucial to the understanding of the Paleoproterozoic biosphere.

