

# **Bridging Silos: The Power of Collaborative Partnerships in Geoscience Research**

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In our 21st-century world, despite increased connectivity, we remain trapped within silos of expertise, data, and collaboration, hindering progress on pressing global challenges. Within the geosciences, information overload, echo chambers, and a lack of transparency between industry and academia exacerbate these silos. Yet, there exists a straightforward solution: fostering partnerships between industry and academic institutions. Such collaborations promote information exchange, collaboration, and networking, fueling innovation and fostering a more collaborative ecosystem.

My own doctoral research, conducted through a partnership between the University of Texas at Austin and Equinor, exemplifies the benefits of such collaboration. Focused on understanding the paleoredox evolution of the northern North Sea basin via analysis of Jurassic shale intervals, my project utilized a broad range of geochemical proxies. These included: 1) redox-sensitive trace metals (RSTMs; e.g., Mo, V, U), iron speciation, and sulfur isotopes to understand paleoredox changes temporally and spatially; 2) Hg concentrations isotopes to understand Hg sources and decoupling of local versus global volcanic systems; and 3) carbon isotopes and TOC to understand long-term changes in the carbon cycle. Through this research, we uncovered new insights into the influence of the North Sea Dome, challenging established notions regarding the impact of local volcanic systems and the use of mercury as a tracer for Large Igneous Provinces and questioned whether we can decouple local and global volcanic systems.

This work would have been impossible without the collaboration with Equinor scientists, resulting in reciprocal learning that enhanced my research and their industry knowledge. The expertise and extensive network of Equinor collaborators also facilitated access to proprietary data, supported sample collection, and funded laboratory analyses. The UT-Equinor partnership not only helped fund and shape my research but also connected me with a global network of scientists, each contributing insights to my doctoral work. Breaking down the silos within the geosciences requires investment in collaborative partnerships. We need more of these partnerships because they not only drive scientific discovery, but also catalyze a culture of openness, innovation, transparency, and shared expertise, which is what we desperately need to continue addressing the complex challenges facing our world today.