

Bezali Danso, Missouri State University, Springfield, MO, USA, for his project: *Magma Residence and Storage Conditions at Large Silicic Domes Using Sr and Mg Diffusion Andean Central Volcanic Zone, Chile*



I am a second-year master's student in the Department of Geography, Geology, and Planning at Missouri State University, where my research focuses on understanding how silicic magmas are stored and evolve prior to eruption. My current project examines magma residence times and storage conditions at Large silicic Domes in Chile's Andean Central Volcanic Zone (CVZ). My research aims to elucidate magmatic processes such as fractional crystallization, convection, and magma mixing, and link these to the thermal histories of large silicic volcanic systems. My work contributes to understanding the long-term evolution and hazard potential of silicic dome complexes, particularly those in subduction-related volcanic arcs like the Altiplano-Puna Volcanic Complex (APVC).

I was born and raised in a mining community in Ghana, West Africa, where I saw firsthand the devastating impacts of illegal mining and heavy metal contamination—many of my childhood friends suffered serious health effects from exposure. These experiences sparked my initial interest in Environmental and Safety engineering, which I pursued during my undergraduate studies at the University of Mines and Technology with a minor in Mining. As part of my undergraduate research, I analyzed heavy metal contamination in mining-impacted watersheds and worked on predictive models for water conductivity using Python and neural networks. After graduation, I worked with mining companies and came to realize that addressing the region's environmental challenges required a deeper understanding of Earth's systems how rocks, fluids, and human activities are interconnected. That realization led me to geology, and eventually to pursue graduate work in petrology and geochemistry. These early research experiences laid the groundwork for my current interest in geochemistry, petrology and thermodynamic modeling.

At Missouri State University, I integrate high-resolution analytical tools, such as LA-ICP-MS and EPMA, with thermodynamic modeling to quantify magma storage conditions and crystallization timescales. His broader mission is to foster environmental resilience and scientific equity by connecting global geoscience research with the needs of underserved communities.

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