

Personal Statement

Grad Admissions _CU Boulder

[Name]

Geological Sciences Department, University of Colorado at Boulder

As a child, I did not exactly exhibit some of the telltale signs of a geologist in the making; I did not have a personal mineral collection and I did not make baking soda volcanoes for science fairs. However, I had other encounters that formed the platform for my love of the earth and its processes. My childhood was spent outside absorbing environments that I could see being shaped by time, the elements, and my own presence in those natural surroundings. Through these experiences, my relationship with the earth grew, evolved and eventually transformed into a life-long commitment to study its systems and intricacies. Now, the passion for geology that I have developed through my undergraduate studies has left me wanting to continue to study the earth in a more focused and intentional way.

Thus, I have selected University of Colorado at Boulder as a top choice for graduate school as it embodies innovative, collaborative and exceptional academic approaches within a community where I could see myself growing and contributing in the years to come. As a prospective student looking to delve into a project focused on paleoclimatology, I am excited to have discovered Dr. S and Dr. T, who are looking to take on a student for work on the [Formation]. My personal research interests focus on terrestrial paleoclimatology and the mechanisms and conditions of global climate change on geologic time scales. Through my studies as a geology major, I have become fascinated in the relationship between paleoclimatological periods and the effect that these epochs had on the earth and its systems. Developing more resolved understandings of temperature, ecosystem diversity and other paleoclimate proxies allows geologists to create a clearer picture of climatic conditions in geologic history. These investigations can also provide crucial information into the future of present-day ecosystem and environmental changes and declines. Inquiries like these are where my geologic passion lies. Given my personal research interests, Dr. S's and Dr. T's presence at CU Boulder is one of the main reasons why I am so thrilled to be applying to the Ph.D. program. A project combining sedimentology and stable isotope geochemistry to understand paleoclimate change in the [Formation] would surely be challenging. However, given the geologic overprinting that has occurred within the formation, as well as the span of rock ages coinciding with different tectonic and volcanic events, an in-depth look at this sequence through geochemical and sedimentological investigations would bring new understandings of paleoenvironment and paleoclimate change in

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this location. Further, I feel confident that my research objectives in paleoclimate change and my previous experience would have a place to expand and develop in a synergetic research environment under Dr. T and Dr. S's guidance.

I have a rich and diverse background in geology, which includes field work with the Archean and Early Proterozoic rocks of the Lake Superior region, the paleotopography of the Baraboo region, as well as the glacial morphology of the Wisconsin Glacial Episode. My undergraduate studies in geology included over 100 field hours participating in coursework at rock outcrops and field locations throughout the Midwest.

I also closely studied the geologic history of the Italian Apennines in an intensive geology term abroad. My studies in central and northern Italy included field work looking at long term environmental change and upheavals over Italy's geologic formation. I spent over a week mapping a synclinal structure of the Marche-Umbria region in the Frasassi Gorge of Genga, Italy, practicing large-scale tectonic thinking while characterizing units on a sedimentological level. My program also included over two weeks of study looking at stratigraphic transitions in outcrops recording mass extinction events, specifically between the Permian-Triassic boundary and the Cretaceous-Paleogene boundary. In this work, we gained valuable skills in careful stratigraphic observations, identifying particular benthic foraminifera and their stratigraphic presence as a proxy for changing ecosystem and climatic conditions. These studies, in turn, shed light on the challenges of interpreting the high-resolution record of the K-Pg boundary in Gubbio.

Lastly, I had the opportunity to experience the research and scientific writing process through a senior research thesis that I started in the spring term of my Junior year. I spent eight months completing an initial proposal, sample collection, bedrock drill core logging, and macro- and micro-scale analyses. I presented my findings at the Institute on Lake Superior Geology in May of 2018. Specifically, my research was on an anomalous topographic high in Wisconsin, previously believed to be a deeply eroded impact structure. My work and subsequent results on the over 200 feet of bedrock drill core suggest that the localized deformation observed may be better explained by the release of high pressured gases from the subsurface, possibly derived from a kimberlite or another intrusive source.

In addition to my field experience, I have held positions serving as a geology tutor and laboratory teaching assistant for students in Introductory Geology. Further, I am currently

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-serving as an AmeriCorps member through the program City Year, providing full-time support to 7th graders in math. These experiences have helped me recognize my passion for teaching and communicating concepts and knowledge, as well as sharing my love for learning with others.

In the future, I want to use scientific research and collaboration skills from a graduate degree to continue to refine societal and scientific understandings of the earth and its climate system. I envision a Ph.D. through CU Boulder as the first step in providing me with the tools to do exceptional research, all while communicating my results to a global community. I have a goal of incorporating my love for geology, my dedication to global perspectives, and my desire to confront climate change into a career that will allow me to continue to understand the earth and its complex climate systems. Whether my studies lead me to focus on research, academia, or a public-sector position, I feel that CU Boulder is where I will contribute, and where I think that I could make an impact, and conversely, be impacted by my peers.

From conversations I have had with current and past graduate students, as well as Dr. S and Dr. T, I am sure that I will find my place in the CU Boulder Geological Sciences Department, which has found a way to balance a high-quality research and learning environment framed within a supportive and compassionate group of scientists. I, therefore, hope to become a part of the hardworking and collaborative community that is the CU Boulder Geological Sciences Department.