

Written Criteria - Essay

Please attach an essay describing what you would like to do in the environmental field and why.

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Word count: 486

Everyone has a moment that defines the trajectory of their life—an experience that reveals not only who they are but who they are meant to become. Mine came during a research trip in Alaska, where we were documenting housing infrastructure damage caused by permafrost thaw. Standing in present-day Point Lay, a local member pointed towards the old town. Homes, roads, and a way of life once existed there before rising sea levels and melting permafrost forced this native Alaskan community to relocate. 'Once, this place was steady,' he said. ' Now, every year brings a new challenge, and we don't know where it leads.'

I didn't either. But I knew that I wanted to dedicate my life to finding out.

Growing up as an Indian immigrant in New York City, I developed an early appreciation for resilience—how people adapt to change, how infrastructure withstands stress, and how environments evolve under pressure. My love for nature and problem-solving led me to study applied statistics, yet living in this urban jungle, I felt disconnected from the numbers on my screen. This need to work on something tangible, something with direct impact, led me to Alaska where I saw firsthand how climate change disrupts entire ways of life.

My work in Alaska and beyond has centered on the intersection of environmental science, data analysis, and community resilience. I have researched cold-climate renewable energy, analyzed environmental risks using predictive modeling, and engaged with locals to understand the real-world consequences of environmental shifts. Through these experiences, I learned that adaptation isn't just a scientific problem—it's a human one. It requires not only models and predictions but also collaboration with the communities most affected.

My passion for environmental work lies at this intersection: using geospatial analysis and climate modeling to support communities in preparing for the uncertain future. Through risk analysis and predictive modeling, I aim to develop strategies that inform sustainable decision-making in Arctic and glacier-dependent regions. Whether it's designing more resilient infrastructure or identifying at-risk areas for flooding and erosion, I want my research to bridge the gap between science and lived experience.

As an Applied Statistics Ph.D. candidate at Colorado School of Mines, I am working to refine machine learning techniques to predict climate-related vulnerabilities. My goal is to continue collaborating with environmental researchers, policymakers, and local communities to develop data-driven solutions that are not only insightful but also actionable.

Ultimately, I want my career to embody the balance between scientific analysis and the human stories behind the data. Climate change is not an abstract phenomenon—it is reshaping landscapes, cultures, and livelihoods in real time. My work will not only seek to understand these changes but to empower communities with the tools they need to navigate them. I intend to be part of the solution, ensuring that adaptation is not just possible but sustainable, equitable, and rooted in the experiences of those it impacts most.