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Before our modern society developed in Colorado, native water-efficient plants and grasses covered the semi-arid desert that we call home. Rivers ran free, snowpack fed our streams and aquifers, and our water system had a natural supply-demand balance. Today, with population growth and new technology enabling human control over the flow of water, we now demand water for an increased number of uses and divert it from its natural watershed. These changes not only shift the physical pathways and uses of water, but also add complexity to our dependence on this limited resource. As a result, water is now vital for power generation, recreation, irrigation, and more; therefore, we must maintain a reliable water supply or our society will crumble. These societal water demands are taking priority, but water is still vital for its original, equally important role for animals, natural beauty, and hydrological systems. Our water use practices need to be continuously revisited and I will work to balance societal water needs and the continued existence of Colorado's natural environmental riches.

I grew up in Arvada, Colorado catching crawdads in Ralston Creek, and sliding down snowy hills on inner tubes. Weekends were for snowshoeing and camping near mountain lakes and as a result, water was the foundation of my childhood and has shaped my identity. I am planning on living in Colorado for the rest of my life and want future Coloradans to have the chance to experience the same joy that water has given to me. My graduate research is focused on increasing water reuse in society in order to leave more natural water untouched and save our environment. Water that is currently contaminated by industry, oil and gas production, mining, and agriculture is not economic to treat, so the water is labeled as waste. This "waste" is then discharged, put in permanent containment, or deep well injected. It is environmentally unsustainable to continuously remove water from the hydrologic system and replace it with fresh water from rivers and aquifers. Instead, by figuring out how to economically treat this contaminated water, we can both maintain water supply for a functioning society and preserve our environment.

I am a part of a team at the Colorado School of Mines and the National Renewable Energy Laboratory working to techno-economically model water treatment and find a path to clean the water that is currently labeled as untreatable. This will open up new water supplies for Coloradans while leaving our natural environment untouched. Once my PhD is complete, I will continue to find water reuse solutions for the state of Colorado. I recognize that once the technologies are developed, water policies need to be implemented to incentivize or require their use. I am devoted to figuring out the policy side of water reuse and will use my scientific background to guide these policies. In these challenging times of water problems exacerbated by population growth and climate change, I will help Colorado be a leader in water reuse and environmental conservation.