



Dr. Margaret Hiza – Geologist

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Growing up half-Crow Indian in northern Wyoming in the 1950s and 1960s wasn't easy. I lived in a town that bordered a Native American reservation, and though I didn't always understand things that people said or did, now I realize that it was a very unfriendly place and that there was a lot of discrimination. I spent a lot of time on horseback, which was the only real source of peace in my life. I found being outdoors very comforting, and later, when I went back to college, these early experiences inspired me to persevere so that someday I could work to preserve the land I grew up on and help other people learn how to be good caretakers of the planet.

I didn't go to college until I was twenty-eight, after I had married a Navajo man, lived on the Navajo Nation for several years, and had three children.

Life on the reservation was very difficult. I often felt like no one cared about what happened to my family and me, and the standard of living was very poor. But it was these circumstances that propelled me to change the direction of my life. For example, our water on the reservation was sometimes contaminated. I wanted to do something about it, so I entered the geology program at Northern Arizona University (NAU), with an emphasis in hydrogeology. College was a challenge because my pre-college education had not prepared me very well. My math skills were so poor that I had to start at the very basic, lowest math class and work my way up through calculus. Another obstacle was that because I'm a Native American woman, some professors clearly thought that I wasn't going to go very far. But I'm very stubborn, especially when someone treats me like a failure. Whenever a professor thought I couldn't do something, I'd say to myself, "Oh yeah, you don't think I can do this? Well, I'm going to prove you wrong!"

After I finished my degree at NAU, I received a scholarship from the National Science Foundation to study sedimentary discharges from volcanoes in the Earth Sciences program at Montana State University (MSU). I got my master's at MSU, and then did research at the University of Washington (UW) in Seattle. While in Seattle, I met Dr. Anita Grunder, the woman who would eventually become my Ph.D. advisor at Oregon State University (OSU).

Dr. Grunder became a real source of inspiration for me. She's hardworking and intelligent, and she raised kids and worked as a professor at the same time. This was important to me because I was also raising three kids on my own and trying to go to school. Being a single mom in school is difficult in many ways, but it taught me something—family is very important. Moving around so much for school was hard, and often we were poor, but my kids were always a huge source of inspiration. I probably would not have gone so far in school if it hadn't been for them. I felt like I had to do something for their sake—that I had to do something to make the world better for them.

Fourteen years after I started college, I finished my Ph.D. at OSU. I now work for the U.S. Geological Survey, studying climate change on the Navajo Nation, especially the movement of sand dunes and the levels of certain elements in the water. I want to investigate these problems using both the science I learned in graduate school and the Native knowledge that I have an interest in because of my cultural background. I talk with Navajo people about how the climate has changed over time and use that information to help answer questions about how and why it's changing now. I hope that the Navajo people will use the information that I collect to inform the way they want to live in the future in a way that will allow them to keep their cultural traditions and ways of life. But, to maintain these traditions, they're going to need scientists who want to live and work on the reservation. The future generation needs Indian

people to be in the earth sciences, to be ecologists and geologists, so they can do these studies on Indian land across the country.

One of the most important things I learned over the course of my education is that who you are helps define how you look at the world and how you approach a problem. I believe that using traditional Native American knowledge is not just important from a scientific point of view but also from a cultural point of view. Traditional knowledge is what defines Indian people. It really depends on how you live on the land, what you do as a person, and how you treat the planet. We need people who approach problems from this perspective in the sciences so that we can learn—and hopefully teach others—how to be better stewards of the land.