Ralph J. Archuleta

Distinguished Alumni

by Julianne Couch

Alumni Editor

Growing up in Reliance, Wyo., Ralph Archuleta became interested in studying earthquakes. He holds an undergraduate degree from the University of Wyoming and a graduate magna cum laude degree from Wyoming. It turned out to be the right choice since those days, but still recalls his days in Laramie (in addition to the snow) is not necessarily the science he learned.

While he remembers most are the people. Classes weren't so large especially in science and I met some people early on who also came from small towns like Reliance. At UW you could meet people who shared similar values to your self and at the same time were very different from you. UW allowed people to excel - it was the kind of place where a friend of mine from a town of 30 people could go on to study law. It was a chance to be successful. It gave people a chance to excel, but of course you had to take advantage of opportunities when they arrived.

He also remembers being incredibly naive when he started UW, and now isn't sure if he knew then how naive he really was. One thing he's pretty sure of - his classmates were just as naive, and so they fit in well together. Although he never joined a social fraternity he was involved in several academic organizations such as Iron Skull. Even so, he remembers many old friends from UW, some of whom were in physics but just as many from other academic disciplines. High school is still his study hall.

In addition to excelling academically, his science courses, Archuleta was enrolled in the Honors program, giving him an opportunity to study additional professors, and interact with students outside the regular science curriculum. He was so happy I was in Honors because I learned so much. When I travel around internationally now I get to see firsthand the things I learned about. You get so wrapped up in science that it is all you do and you forget there are really great pieces of art in the world. Students in science should take humanities classes so they can see the thing from another person. When you go to Pompeii it doesn't have to be just to study ash flows.

Archuleta says his UW education prepared him well for a successful career. He began his studies in physics under Professor Hoffmann at UW, then earned his master's at UC-San Diego. When he completed that training he spent some time working to gain experience. Then he decided to pursue his Ph.D. in Earth Sciences at UC-San Diego because the people there had asked him to solve a certain fundamental problem in geophysics. Although he never took a geology class in his life, he knew that "geophysics is physics applied to the earth." As Archuleta puts it, "It changed my life. All my previous training in math and physics came together and it was like an epiphany.

The National Research Council recognized Archuleta's ability as a geophysicist and awarded a year-long fellowship to support his work with the U.S. Geological Survey in Menlo Park, Calif. It was through his work there that he got involved in predicting ground motion from earthquakes and thinking about the damage they can cause. During that time he became interested in looking at ground motion, which is a central concept of his major research. After completing the fellowship, he continued working for the USGS as a professional researcher until 1984. At that time he took a post as an associate professor of seismology at UC-Santa Barbara.

Working with undergraduate and graduate students has added a whole new dimension to Archuleta the researcher. "Interaction with students is humbling at times - you try to communicate something, but it is a two way street. Even when you think you are doing a good job you get varied results - you can't please everybody, but I like it a lot. Students are in classes because they want to be. It's not like high school where you take advantage of them. The students here are bright, if you can get them to start thinking they do well, but it is a matter of motivating them and asking yourself how will students respond to the material. I use lots of positive reinforcement. They don't respond well to intimidation or punishment. That doesn't work. It is better to reward by acknowledging their effort."

For many years Archuleta's friends asked him if he made the right decision when he left the USGS to go into teaching. In addition to researching, teaching means he has more responsibility for students and finding grant sources to support their education, from gradu­ate school through Ph.D. Training has meant less time actively involved in his own research, and more time writing proposals and seeing his students excel in their own right. According to Archuleta, the more successful he has become as a researcher, the more time he spends caught up in the paperwork it creates. In spite of that, and in spite of the fact that he doesn't consider writ­ing his strongest suit, he feels that going into teaching was the right choice for him. He is now a full professor, and also occasionally lectures at public schools and arranges for earthquake education materials to be incorporated in school curricula.

Of course, teaching doesn't fill all of his time. For example, Archuleta has served as the president of the Seismological Society of America, which is the leading associ­ation of seismologists and earthquake engineers in the world. He has served on the National Research Council's committee for the United States Commission on Earthquake Hazards, and has been a consultant to the Federal Energy Regulatory Commission and U.S. Bureau of Reclamation on seismic designs for major dams throughout the country.

Bruce P. Luyendyk, professor and chair of the Department of Geological Sciences at UC-Santa Barbara, was one of those to support Archuleta's nomination for this award. According to Luyendyk, "The impact of his research on his field is unquestionably great. Dr. Archuleta has been extremely successful in creating a highly active research group in earthquake engineering, par­ticularly focusing on strong ground motion prediction. There is no ques­tion that he is the intellectual leader of this group and is responsible for basic ideas that lead to significant publica­tions."

In spite of all the awards and public recognition Archuleta has received in his career, being named a UW Distinguished Alumni is near the top. "I was overwhelmed. It is one of the nice things that brings such a smile. It was totally unexpected. It was such a shock that I had to dig out my old yearbooks to see what I could remember. Really, this is a distinct honor because I know so many people who made contributions, especially this year's other award recipients.

In terms of advice, Archuleta's success can be summed up by his simple philo­sophy: "Start off in a good place that is nurturing and be ready for what comes."