From exploring caves in Iowa to studying the Elymi people in the Mediterranean region, Dr. Chad Heinzel has done both. Chad is a professor in the Department of Earth and Environmental Science at the University of Northern Iowa and is involved with some valuable programs.

Chad has always been interested in geology because of the stories the rocks and fossils tell. When he was younger he would talk about soils or the environment with his grandfather, a farmer, on Sunday afternoons. He would explore nearby Maquoketa caves with his cousins and later went on to help build trails for the state park. When he was older, Chad worked for the county engineer’s office where he would survey roads and work with the quarries when obtaining road materials. So it seemed natural for Chad to pursue an education in geology, where he was encouraged and inspired by professors to obtain his master’s and then doctorate.

As a Geoarchaeologist, Chad looks at the Earth’s surface to discover how it has changed over human history to learn about interactions between the people and the land. Historically, humans have interacted with the land wisely and poorly. Geoarchaeologists seek to understand human interactions with the Earth so that people can utilize land wisely and sustainably whether it is for agricultural purposes or for the oil and gas industry. The Iowa Geologic Resources for Teachers and the Italy Capstone are just two of the programs Chad is involved with at UNI.

The Iowa Geologic Resources for Teachers (IGRT) program is offered annually for the last 15 years. The purpose of IGRT is to help teachers across the state to become more knowledgeable in geology, especially local geology, and be able to take this new knowledge and samples back to their classrooms to share with their students. Rachael Woodley was one of the teachers that took part in IGRT this past summer.

Originally from Iowa City, Rachael is starting her 12th year at Waterloo East High as a science teacher. IGRT gave Rachael a feel for how geology impacts our everyday lives, such as in the construction of our roadways. She can encourage her students to consider geology careers. She is interested in how this, now accessible and meaningful information, would impact the futures of her students.

The IGRT participants teach a variety of grade levels and subjects. The teachers study background information online and then come to UNI campus for 3-4 days for hands-on training. They also take tours of Maquoketa Caves, Devonian Fossil Gorge, and the Rockford Fossil Quarry. Rachael enjoys the fact that she now has more experience and knowledge of resources in Iowa. The activities are tailored so that teachers are able to implement Next Generation Science and other subject standards with students. Courtesy of the ILPA and local producers such as Basic Materials, the teachers are able to obtain two graduate credits at a minimal cost.

Chad enjoys interacting with Iowa’s teachers and helping them develop confidence to be able to teach geology. He wants to help them use their existing knowledge to develop new knowledge. With her endorsement, Rachael is more enthusiastic and re-energized about geology. She can now offer geology and earth science classes and feels that she is better qualified teaching this subject. She hopes that the new fossils and rock
samples featured in her classroom will spark interest in her students to understand, become more knowledgeable about, and possibly pursue a career in geology and Earth science.

Spending time and researching in the Mediterranean, particularly studying the ancient Sicilians, known as the Elymi, has led Chad to take students to this area in the summer as part of an Italy Capstone program. Students from UNI spend a week learning how the Romans lived and discuss sustainable practices then and now. Then the students travel to Sicily to follow how the Elymians lived and look for clues as to why their civilization fell. This particular research is interdisciplinary and requires that people from various areas of study work together to decipher the clues.

In the past, lack of knowledge and understanding of people and resources may have led to the fall of various civilizations. For example, political stressors, corruption and the rapid expansion of the empire may have led to the collapse of the Roman Empire. Also, intensive and not sustainable agriculture may have degraded the land so that not as much food could be grown for the increasing population. Then the environment changed when a drought hit the Mediterranean area. Civilizations can typically survive one or two stressors, but all of these problems at the same time likely brought the empire to his knees.

The island of Sicily, like Iowa, is agriculturally based, though the crops are different. Students are able to understand the Sicilian lifestyle as it parallels Iowa life, looking for similarities and differences. The different majors and backgrounds of the students lead to great discussions about these differences and what can be done to improve our civilization.

The last place students visit is a small island between Italy and Sicily with limited resources. It is here that Chad is able to educate students on the fragility of the resources on the island and what would happen if a major event occurred such as an earthquake or a drought. The students brainstorm ideas about how the people on the island would adapt and rebuild.

All of these areas of exploration give students a sense of a different cultures and different ways you can live. We are in a rapidly changing world with environmental stressors becoming more intense. Studying the geology of different areas and the past lives of others can help the world’s population move forward sustainably.

The IGRT and Italy Capstone allow Chad to mix it up locally and abroad. He helps teachers get excited about the landscapes in Iowa and reconnects with friends in Italy, introducing new students to this culture and people every year. His work and these programs have taught Chad to be a teacher; a mentor. He must be flexible and pull the strengths of out of each person’s major or connection to increase social flexibility in how people interact and understand one another. Chad shared that “someone is not going to truly care about a place until a connection is made and the person feels that he/she is a participant in it.

Chad’s advice to students is to “Get interested. Get passionate. Don’t sit along the sidelines. Do as many things as you can, while you can, because it gets harder and harder after you graduate. Look for those opportunities to improve yourself in any way you can... Don’t let road bumps slow you down, inevitably some will. Don’t quit.”