Emma Shipley, a senior Biochemistry major, is near the end of her education at the University of Northern Iowa. She has had many challenges and adventures at UNI and will soon be on a new adventure. The question of *what do you want to be when you grow up* is one of the most common questions asked. The answer to this question impacts the decision of where a student wants to go to college. Emma made the decision to come to UNI because she wanted to be a social studies/history teacher.

Emma decided to change her major after three semesters because her dream job, she decided, would need to allow her to travel and to collect samples or analyze data outside or someplace other than behind a desk. She had always thought “science was really cool.” Once she realized that she really enjoyed science and wanted to do more, she made the leap to pursue an education in Biochemistry.

Challenges, adventure, excitement, and opportunities have all been a part of her experience at UNI. Emma has always liked a challenge as it gives “you the opportunity to stretch yourself to see how much you can learn.” Physical chemistry, biochemistry, and organic chemistry have all been courses that have challenged her but she has found them to be valuable to her education. Through taking these courses, she was able to find out which ones she clicked with and what area of science she truly enjoys. Some of the best courses she has taken at UNI have taught her how to problem solve.

Another course that challenged Emma was Evolution, Ecology, and the Nature of Science taught by Dr. O’Kane in the Biology Department. This course was outside Emma’s comfort zone as it was based on class discussion of topics. This had Emma terrified. She does not like to speak publically and really does not like being wrong, especially in front of others! Dr. O’Kane helped Emma change her perspective and approach to failure. Unexpected answers are important too. Dr. O’Kane gives high-fives for wrong answers because that shows the student is trying. In science, wrong answers teach the researcher more about the right answer. Bad results or data are also ok because this is part of the learning process. Success is ruling out wrong answers and discovering what will not work, lead to new ideas and discoveries. Emma now appreciates when she is wrong and see this as one step closer to being right.

Adventure and excitement were rolled into one when Emma made the decision to spend a semester abroad. This is something that she had wanted to do since Kindergarten, when someone came to her classroom and told of her own adventures in another country. Emma’s mother encouraged her to wait until college to pursue this 6 year old’s dream so that she did not miss
out on any of her childhood. Her mother also reasoned that it would be easier because many college students do this.

In the fall of her junior year, Emma boarded a plane and headed to the southern coast of the United Kingdom to the town of Chichester. During this semester she traveled and made new friends, in addition to her studies. Inside the classroom, Emma went back to studying history. It is often difficult to study science abroad due to the different order and the way concepts are taught. Each class was held once a week, so she only went to 4 classes a week. Students are expected to do more outside of class.

Studying was not the only thing Emma did outside the classroom. She traveled as much as she could. She is thankful for the weekly blog assignment she had to complete for her honors course because she can go back, read, and relive her adventures and funny stories. Her favorite day in the UK was hiking the white cliffs of Seven Sisters near Dover. She had perfect weather for a perfect day on the southern coast. Emma felt that this was a very valuable experience learning about herself and obtaining a deeper understanding of her own culture as well as other cultures, places, people, etc.

Back on the UNI campus, Emma had to buckle down with her coursework and got involved with some undergraduate research on campus. She had the opportunity to work on the BioGeoChemical Evolution of the Atmosphere (BETA) project. The three mentors on the project are Dr. Sebree of the Chemistry & Biochemistry department, Dr. Sedlacek and Dr. Shen, both of the Earth and Environmental Sciences department. Together they are researching what compounds and elements were in the atmosphere at different time periods; early earth (4 billion years ago), the Devonian period (400 million years ago) and the present day. Other questions include: What kind of compounds could have been food for early life? What kind of plants were available? The method in which they are using to answer these questions has never been done used before, which made the research that much more exciting for Emma to be a part.

Emma’s undergraduate honors thesis branched off the BETA Project and was titled Pre-Biotic Potential of Aerosols. Another research project in which Emma was involved looked at the lead content in a Mastodon Tusk found in Iowa. She found that lead was present, however, the source was unable to be determined. She said “that may be a project for a future student.”

Conducting research will continue after she graduates in May because Emma is headed for Connecticut. She will be joining the PhD program at the University of Connecticut Avery Point Oceanography Department. She is very excited to be near the ocean and to learn and do research about something she loves. She believes that important and small contributions are made to science everyday, impacting all of us, even if we do not realize it. She is looking forward to being apart of the scientific world and making her own contributions.