

Cow Manure and a Liberal Arts
Education: the Road to Success for
Students.

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Students who choose to pursue study in the liberal arts and sciences enjoy opportunities and success in their lives because of the diverse skills and knowledge obtained from such an education. These students contribute greatly to their communities and to society in general. I make these statements because I have experienced the benefits of a liberal arts education firsthand. By utilizing a working knowledge of many disciplines I have identified a problem, understood the issue within my community, and used a multidisciplinary approach to solve the problem. While I am certain that many of my peers have had similar experiences, few of them chose to work with the same materials. I owe credit to the fascinating organic substance that has helped me contribute to my field of study, build working relationships with professionals, and help my neighbors in the community: cow manure.

In a state such as Wisconsin where land usage is devoted to agriculture, it is important to recognize the significant role that farming has on our state. The status of the agriculture and livestock industries influences our economy and food costs. Social issues such as health care, wealth distribution, and immigration are closely associated with Wisconsin farming. Because of these facts, I hope to pursue a career that can help small dairy farmers. If I can make small contributions to the success of dairy farming, I consequently help my neighbors enjoy a greater quality of life. To apply my liberal arts education in this way sets ambitious, yet attainable goals.

As a biology major, I have taken an interest in parasitology. During this past summer my advisor and I began a research project. We decided to study a small intestinal parasite called *Cryptosporidium* that infects animals all over the world and is very common in Wisconsin dairy cattle. A human outbreak of this parasite was experienced in Milwaukee in 1993 with 400,000 cases diagnosed and over 100 deaths.

While humans are usually protected from infection through water sanitation, cattle experience high infection rates. The parasite mostly causes clinical sickness in calves and in some instances can be fatal. In any case, the presence of *Cryptosporidium* results in economic loss for farms. Since there is no vaccine or cure, veterinarians can only treat symptoms. At the present time, facility management may be the key to eliminating losses produced by *Cryptosporidium*.

This research project introduced me to the way that science works outside of the classroom. Simply knowing biology factoids and being good with a microscope would not be enough to complete the project, nor would these things give me the passion I have for my work. I began by authoring a proposal which was accepted by an internal grant program at UW-Eau Claire. Having secured funding, I proceeded to contact local farms, collect samples, and analyze data about the calves we had tested. I have had the opportunity to communicate with local veterinarians, veterinary professors, and experts in the field of parasitology. Our data gives suggestions about how calves may acquire the infection from their mother. This summer we will present our results at a parasitology conference. Our findings have created new interesting questions that we will research in the future.

While my small undergraduate research project did not cure the disease, we've generated important data that will help farmers as well as other research scientists. Additionally, this study has generated working relationships with area farms that will no doubt be beneficial to future research at UW-Eau Claire. This project has turned into an effort that will produce two years of student-faculty collaborative research. Our data helps us make recommendations regarding maternity pen management that will decrease the frequency of infection with *Cryptosporidium*. If followed correctly, these suggestions

may greatly reduce the amount of loss incurred by local dairies due to cryptosporidial infections.

This research took place within my field of study, however, I was required to think outside of my own discipline and interests in order to succeed. This is exactly the way that a liberal arts education furnishes fantastic achievement. I first had to understand the economic and social importance of farming in Wisconsin, and then had to decide how my specific interests and abilities could be applied to the problem. I was required to identify an issue that interests me, while contextualizing it in terms of how it affects other people.

The application of my liberal arts education did not end with me seeing things from another perspective to solve a problem. I was required to use a working knowledge of things I had studied in school, and I don't mean all the science courses that I've taken. I was required to be a good writer, apply statistics, and more. In some cases, the people working on the farms were from other countries and they did not speak the same language as I do. This project forced me to draw from many areas of my education, not just what I have learned in my major. I was able to do all of these things proficiently because of the liberal arts education that I have received.

Studying a wide range of disciplines is advantageous in the professional world. Because of my education, I can apply a working knowledge of economics, social issues, foreign culture, and the sciences. Having realized these things, I predict that my peers will experience similar achievements. Few students are interested in parasitology and even fewer would like to sift through manure as a research project. In my case, I have utilized multidisciplinary knowledge to solve a problem, and enjoyed success while doing it. A liberal arts education made the smell of my research much less offensive.