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Inquiry Journal

Undergraduate Research Journal : Spring 2013

Commentaries

Lamb's Blood and Goose Quills: Learning to Research the History of Blood Transfusion Medicine

—Jennifer Allen (Editor: Jennifer Lee)

As a freshman at the University of New Hampshire in 2011, I declared biomedical science as my major with a pre-med focus and a minor in history. In my second semester my advisor suggested I look into finding interesting areas of research as part of my preparation for medical school. This led me to a summer of research that was daunting, difficult, and very rewarding. I discovered the highs and lows of the research process, and I learned how to make my writing tighter and more focused.

Long Distance Research

I contacted several people at UNH involved in the history of medicine to see if they would be interested in a research assistant. Associate Professor Marion Girard Dorsey of the history department was not in need of a research assistant but agreed to meet with me before the semester ended. Through a series of meetings we decided that my best course of action would be to do a fourteen-week Student Research Experience (INCO 590) course over the summer. INCO 590 is a variable-credit undergraduate course that allows students to develop research skills in preparation for more advanced research. I would do independent research on a medical subject of my choice.

Dr. Girard Dorsey teaches a broad range of classes including war and society, and history of medicine in the United States. The pairing of war with medicine greatly intrigued me, and this turned out to be a major factor in my research and final paper. After researching a variety of medical topics, I came across the topic of bloodletting, a procedure in which patients were bled to rid the body of disease. Although the topic piqued my interest, I wanted to research a more modern medical practice and, as a result, found a closely related subject: blood transfusions.

I met a couple more times with Dr. Girard Dorsey to discuss logistics. We decided that it would be valuable for me to write a ten-page research paper at the end of the fourteen-week course in case I wanted to continue the research or publish my work. We mapped out a time frame for my summer, which was composed of eight weeks of research and six weeks of composing an outline and writing rough and final drafts. We decided we would communicate via email or telephone since I would be home in Las Vegas, Nevada, for the summer.



The author and her mentor, Dr. Marion Girard Dorsey, discuss medical research.

Once at home in June, I dove into my research project. Being far from UNH meant I had to gather resources through the UNH online library database and my local library. I found many books and articles that both interested me and were related to blood transfusions. I used several databases including Academic Search Premier, JSTOR, Web of Science, and Historical Abstracts with full-text. At the end of two weeks, I had compiled about twenty-five articles by searching for terms like "blood transfusions" and "bloodletting." Reading and taking notes took about another three weeks. Having a college-level dictionary by my side was useful when I came across technical terms such as *leukoreduction*, a process which removes white blood cells, thereby eliminating the transmission of viruses and bacteria in a transfusion.



An illustration of a mid-seventeenth-century lamb to human blood transfusion (*Science Photo Library*)

I found many interesting articles and much information, such as a video which described an early transfusion technique that used goose quills in place of needles and lamb's blood for the transfusion (*Red gold*, sec.1). I wondered why lamb's blood? Why goose quills? I learned that cadaver blood was used for transfusions in the 1920s by the Soviet Union, and the first mobile blood service was established during the Spanish Civil War (Starr 29; Winner 53). I further found that transfusion medicine was spurred by the many advances in transfusion techniques made during wartime, especially during World War II. Examples were the invention of blood bags and the discovery of plasma. I began to envision how political, societal, and scientific factors like wars, technological innovations, and race influenced blood transfusion medicine.

From all this information, I began to create an outline for my research paper, which touched on subjects such as bloodletting, transfusion techniques, race, and war—especially in the countries involved in World War II. Chronological organization worked best because I had information covering the start of transfusion medicine in ancient Egypt to its modern applications. Exchanges with Dr. Girard Dorsey helped develop my outline. With her advice to focus on a theme for each time period, I created two outlines: one which was concise, and the other which was a more detailed version with citations. Two outlines enabled me to easily compose my thoughts and cite sources when writing my essay.

Putting it all Together

After putting ideas together into an outline, I began to compose a rough draft. The hardest part of the process was putting my thoughts into words. I wanted to present blood transfusion history in a clear and concise manner. I revised sentences to limit the amount of extraneous pieces of information. This was difficult, but created a tighter essay. I also had to remember that my rough draft was not a completed version and that it was subject to change. I sent the rough draft to Dr. Girard Dorsey mid-July and, after looking over her comments, I began the revision process. I highlighted important pieces of information and parts that needed more analysis. Sections that did not pertain to my focus and outline, I cut out. Creating a bibliography in the Chicago style of documentation was daunting but with the aid of Dr. Girard Dorsey, *The Chicago Manual of Style*, and a writing manual, composing the bibliography and end notes proved to be not as difficult as it first appeared.

My final draft was not finished until about two days before the fall semester began. It was more than the agreed upon ten pages, but, after discussion, Dr. Girard Dorsey advised me not to cut information simply because of a page limitation. After weeks of research, writing, and revisions, I had a wonderful end product that was thirteen pages long, twenty pages in total with end notes and a works cited page. The paper was entitled "Transfusion Medicine: Its Origin, Implementation, and Evolution."

After a summer of research, returning to school was a nice change from drafts and outlines, but I missed the process as a whole. I originally wanted to do research as preparation for medical school, but now I wish to continue researching as a way of exploring other areas of interest. If there are any future research hopefuls reading this, here are some important tips: remember to cite your sources, plan time to read, take breaks when writing, know that drafts are not final, and that it is okay to have many revisions. I plan to pursue further research in medicine and public health.

I would like to thank Dr. Girard Dorsey who guided me through my first research experience. I appreciate all of the hours she spent advising me and her patience with my endless emails of questions. I would also like to thank my family and friends for all of their support.



A World War II American soldier performing a blood transfusion using a blood bag filled with plasma (*World War II in Color*).

References

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World War II photo retrieved from and credited to <http://www.nara.gov> target="_blank">National Archives

Author and Mentor Bios

Three New Hampshire cousins convinced **Jennifer Allen** to enroll in the University of New Hampshire as a freshman in 2011. Born in Philadelphia, Jennifer came a long way that fall from her home in Las Vegas, Nevada. "I'm glad I came," she said. In her studies Jennifer is combining her major in the biomedical sciences with minors in English and history. These interests led to her summer's research in the complex development of blood transfusion medicine. Going through seemingly endless entries on the computer screen "made me tired," she confessed. In the end, however, she was hooked: "I love research." Jennifer already has further research lined up and plans on applying for a Summer Undergraduate Research Fellowship (SURF) for 2013.

Dr. **Marion Girard Dorsey** has been an associate professor of history at the University of New Hampshire since 2003. Her specialties are varied and include the history of medicine, legal and diplomatic history, and war and society. She is currently conducting research on chemical warfare and on the history of professionals in the military. Dr. Girard Dorsey has mentored both undergraduate and graduate students for independent studies and research grants. She was delighted to see Jennifer's self-motivation and enthusiasm, and enjoyed watching her design her project and develop her skills and knowledge as the project evolved. Learning to write for a broad audience, Dr. Girard Dorsey feels, is useful for students, and "it is important to be able to communicate and educate, whether one is interacting with generalists or specialists."

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