Margaret Berta
Graduation Year: Sophomore
College: Science
Major(s): Biochemistry and Political Science
Minors(s): none
Scholar Group Membership: none

Did you received other funding for this project?: First Year of Studies and College of Science
Could you have completed this project without CUSE funding? No
More details on CUSE funding assistance?

Project Title: Distributed Pharmaceutical Analysis Lab (DPAL) Operation Improvement
Project Location: Lieberman Lab, Stepan Hall of Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN, USA
ND Faculty Mentor: Marya Lieberman
Project Type: Research, Creative Endeavor

Why did you undertake this project/experience? Deepen your knowledge of a topic or issue, Prepare for graduate school (MA or PhD), Career discernment and/or preparation

Did your funded experience help you:
[Deepen your understanding of your coursework or field of study]: Yes
[Discern your interests and post-bac goals]: Very Much
[Become confident in your ability to set and achieve your goals]: Very Much
[Gain a more nuanced view of local, national, or global communities]: Very Much
[Improve your written and verbal communications skills]:Very Much

Tell us about your experience.
The goal of my project was to improve the organization of the Distributed Pharmaceutical Analysis Lab (DPAL) at the University of Notre Dame to allow for program expansion. DPAL is a program established by Dr. Marya Lieberman lab that utilizes the analytical power of several schools around the country to analyze questionable pharmaceuticals from Kenya. High performance liquid chromatography (HPLC) is the analytical method used by DPAL. HPLC allows researchers to quantify the amount of active pharmaceutical ingredient and thus identify if the drug is substandard. This summer, I overhauled the program set-up to make it more efficient and secure. I did this by creating an Open Science Framework (OSF) site for the project. The Open Science Framework is a free data sharing platform sponsored by the Center for Open Science. I utilized many features of OSF to safeguard all data and results against accidental or intentional changes and to make the program more efficient and user friendly. The staff in the Center for Digital Scholarship were very helpful in assisting me with OSF. Learning to reach out to resources such as the Center for Digital Scholarship is an important skill that I learned. Once I set up the OSF site, I heavily revised a previous document to become a standard operating procedure (SOP). This serves as a guideline for all DPAL participant

institutions to regulate analytical practices. In conjunction with the new SOP, I created template spreadsheets with locked cells to aid in standardizing data collection and reporting. After finishing the OSF site, I began contacting participant schools and visited to teach them how to use the new program and discuss logistical operations. I travelled to Hamline University and Grand View University to meet with professors in the program.

Describe the impact this project had, both on you as a student-scholar and on the people you worked with.

This project taught me how to view an issue from many perspectives by forcing me to evaluate the effectiveness of an idea from the administrative and participant perspective. DPAL is a program that I intend to continue working on to improve my abilities in a managerial position in science. This project also was very beneficial for those I worked with. My advisor, Dr. Lieberman, now has a more organized program that can be run efficiently and more independently. DPAL participants gained enthusiasm for the project and are more committed to working on the project due to the updates. The project also had a positive impact on other analytical chemistry professors. Since the project is more organized an straightforward, new professors are more interested in joining DPAL. Overall, this project impacts those effected by substandard medications in developing countries.

Describe how this experience is connected to your plans as a student or future professional.

I plan to present this project at various conferences including the American Chemical Society National Meeting. This offers me many networking opportunities. Working on this project has helped me immensely with career discernment. I now am considering a career as an entrepreneur in the science research field. I am also considering a career in program or policy design for applications in developing countries. I thoroughly enjoyed the administrative work that I did in setting up the program and working with professors.

What advice would you give other students who are planning to pursue similar projects?

The best advice would be to set goals for the project. To achieve these goals, set a detailed timeline that explicitly states how you will reach these goals. The summer is short and time will pass quickly so it is important to stay on track.

My other advice is to be flexible. My project was very dependent on other peoples' schedules and did not work out exactly as expected. Therefore, have backup plans of things that you can do when delays arise.

I acknowledge that this form has been filled out truthfully and to the best of my ability. I understand that this information will be shared with many different CUSE constituencies. As such, I have provided as much useful information as I was able. I understand that CUSE will not complete my award disbursement until this form is successfully completed. If I have any questions or concerns, I will contact CUSE before submitting this form. To illustrate that you understand all of these points, please enter your Notre Dame email in the box below.

undefined