

Using More From the Neck Up: Improving the Organic Chemistry Laboratory Manual



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Service Site:

The site I chose for my practicum was the Organic Chemistry Lab Department at the University of Maryland. At this site, I was under the supervision of Dr. Dan Steffek. The purpose of the laboratories at the University is to teach students about the properties of organic chemistry through experimentation and hands-on experiences that might otherwise be difficult to understand.

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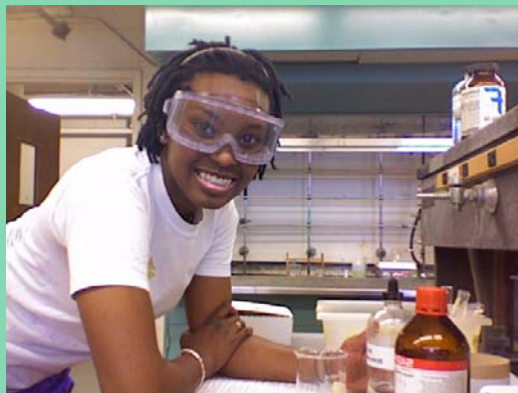
“It could fail, it could be the greatest thing since sliced bread... We need to get these students using their heads.”

– Dr. Dan Steffek

Issue Confronting Site:

The main issue confronting the site that was being addressed was the lab manual. At the moment, there is concern that the labs performed by students in Organic I and II labs are not as intellectually challenging as they could be. To address these problems, Dr. Steffek and I worked to modify the labs so that they would include more data collection for student analysis. This would not only give the students a more realistic scientific setting but would also get the students thinking or “working more from the neck up,” as Dr. Steffek would say.

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Hard at work in the Organic Chemistry Lab.

Activities:

- Performing Existing Lab Experiments (For example: Oxidation of Acetophenone and Bromination at Room Temperature)
- Rewording Lab Protocol
- Running New and Revised Experiments
- Testing lab results with Infrared Spectroscopy
- Testing Boiling Point Determination
- Playing the role of “Test Student”



Impacts:

In addition to my project having an impact on the site, the project also had a great impact on me. I had no idea that running a chemistry lab had so much work behind it. Prior to this project, I had an interest in medical school to become a medical researcher, but now I am seriously considering the education side of science and chemistry.

“If you are not part of the solution, you are part of the precipitate.”

- Unknown Author

Future Work:

In the future, my work at this site should enable students in organic chemistry labs to learn more from their laboratory experience. Not only will they be able to work through more challenging problems, but hopefully it will get students better equipped for the future when it comes to problem solving, science related or otherwise.

Acknowledgements:

Dr. Dan, thank you for allowing me to work with you over the past few months. Not only have you taught me a great deal but also always kept things interesting. I learned far more from you than I could ever learn in any science textbook.

Dr. Holtz and Dr. Merck, thank you not only for the opportunity to become involved in this practicum project but also for the two years of adventures I have had in ELT. You are fantastic and I would not trade my experiences I have had in this program for anything.