Co-Op Work Assignment

I worked in the Advanced Modeling and Analysis (AMA) group within Corning Inc’s Manufacturing Technology & Engineering (MT&E) division. The AMA group works with many of Corning’s departments in providing modeling and simulation support on various different projects throughout the company.

I was involved with one major project and two minor projects. My major project involved analyzing the fluid flow of impinging jets in a special “push-pull” nozzle to clean glass surfaces for displays. For this project, I extensively used FLUENT, a computational fluid dynamics simulation package within ANSYS Workbench. One of the minor projects that I worked on was tracing the path of particles that could form after cutting glass sheets. This project also involved FLUENT simulations. My other minor project was an analysis of heat transfer effects of a moving temperature boundary condition on the surface of a semi-infinite object in either discrete or continuous motion. This project involved a bit of analytical analysis and some numerical analysis with the software COMSOL.

Training was provided very informally. I learned the software by following tutorials made by the software’s developers, and I would supplement this by asking my mentors for help. My mentors would also give me background reading relevant to my project. Generally, I could set up a meeting with my mentors if I had any specific questions. I was assigned one mentor for the co-op and had another mentor for my project.
Assessment of Learning and Development

I was assigned to my projects due to my coursework, since I had already taken fluid mechanics and heat transfer courses. However, the problems that I had dealt with generally required more thought than examples you would find in a textbook. For example, on my main cleaning project, I had a lot more difficulty trying to effectively formulate the geometry of the design so that it would be easily manipulated than understanding the fluid mechanics taking place within the simulation.

I had wanted to do the co-op program so that it would help me to decide what I would do after I graduated, and this semester of Corning has really helped me in my decision by showing me what engineers do at industrial companies.

Life Outside of Co-op

Co-ops at Corning generally carpool with a group of Corning employees who live in Ithaca. Unfortunately for me, the carpool group had just filled up when I started, but as I had my own car so it was not a big issue. This was nice for me since it meant that I could still see my friends after work. I also spent a good amount of my free time helping out with ChemE Car, a project team that I have been involved in since freshman year.