American Governor Company is located in suburban Warminster, PA, 30 minutes north of Philadelphia. It is a small company in the hydroelectric power industry which provides custom-engineered solutions for plant control systems and digital governor upgrades, as well as parts, service and support. My first few days involved learning as much as I could about what AGC actually does, and its role in the hydro-power industry. I spent time reading a handbook on what governors do, which is to provide speed regulation for turbines in order to control power output, frequency, and adjust to power grid frequency swings and changes. My supervisor was very helpful in this regard, as he took the time to explain the systems thoroughly to me, and answered all my questions as I came up with them.

I worked mostly on the custom digital governor upgrade projects, helping engineers on seven different projects during my term. One of the first projects I worked on involved the mechanical design of a bracket to support an LVDT, used for providing positional feedback through a -10 - +10 mA current. The manufacturing drawings were done on AutoCAD LT 2010, as well as the field installation diagrams specific to the power plant. Drafting installation diagrams from plant pictures and part drawings was something I worked on regularly on my co-op. One of the things which made these small engineering projects more meaningful was that my supervisor explained not just what needed to be done in the small-scale, but took the time to explain how that particular component fit into the big picture of our governor system in the power plant.

Another project I worked on involved wiring diagrams and elementary diagrams for one of our governor electrical enclosures. My job was to use an existing wiring diagram for another plant, and adjust it to create a wiring diagram for a similar sister plant which we had previously designed a similar electrical enclosure for. This was the first time I worked with electrical drawings, so it was a very edifying experience which challenged me as a mechanical engineer. I gained even more knowledge from making the elementary diagram, which maps out the flow of power through all the cabinet components, and shows how they are all inter-connected.

Near the end of my term, I was given the opportunity to take on a lead-engineer role for a project which was the smallest governor system we had ever designed for a small plant in Connecticut. Prior to starting work on it, I also got the chance to travel to the site and take necessary measurements and photos in order to design all of the required components. I worked closely with the project manager to design the required brackets for the two feedback transducers.
needed, the MLDT and LVDT. Additionally, I used a previous similar project to come up with wiring and elementary electrical drawings, as well as electrical enclosure drawings. Lastly, I was able to witness the testing of the cabinet and may get a chance to see it commissioned on-site in the near future.

My work activity related extremely well to my career interests, but not directly with my educational background. My engineering education helped me have a more in-depth understanding of some topics and design tasks, but I feel most of the knowledge required for the position was taught along the way. It also helped to have knowledge of AutoCAD, as this is the program I mostly used. As a professional experience, I was very satisfied because of the company culture at AGC. As it is a small company, there is more room to get very involved in projects which may be more difficult to do in a larger company. Additionally, I was encouraged to pursue projects I was actually interested in, and told numerous times to “run with” whatever ideas for designs I had. I felt that more responsibility was given in a shorter amount of time than most organizations, which allowed me to get a very well-rounded and meaningful experience in only a few months. I would recommend this position to individuals who can work well independently and with a team and are comfortable coming up with their own structure for completing given projects and meeting goals.

For future co-ops, I would recommend looking for housing the Philadelphia region through sites such as craigslist. I was very fortunate to find housing in a suburb near Warminster, PA, called Langhorne. As I was seeking housing, I came into contact with a couple who owned a home in Langhorne, but who lived at a boarding school where they worked. As their oldest son was moving out at the time, they were happy to allow me to rent their home for the duration of my co-op, as they didn’t want to leave their house vacant. One thing to keep in mind about living in Philadelphia is that it would most likely be about a 45 minute commute to work with traffic. A car is necessary, as there is no public transportation in the suburb where the office is located.

Social activities were not lacking throughout my first term. I travelled to visit friends almost every weekend in Philadelphia, New Jersey, and numerous times to Cornell. Additionally, my coworkers were mostly young and social, so we would grab dinner after work at least once a week. There were numerous gyms in the area, and many grocery stores and malls. I enjoyed my time living in the suburb, but hope to live in the city of Philadelphia on my next term.

One of the best features of this job is that AGC is a very small, dynamic company, which allows for accelerated professional growth and limitless opportunities to pursue one’s interests within the company. For example, I was able to accompany an engineer to project sites more than once, and witness the commissioning of one of our units. I was also given the freedom to design mechanical brackets (with help and supervision), and shop around on my own for electrical and mechanical components required for our designs. Another example was the role of lead engineer
that I was able to play in a project. Another great aspect of this job is the engineers I got to work with. I found them to be very amiable, open minded, and fun to be around outside of work. I learned a lot from all of them, and it definitely made work more enjoyable and efficient because it was easy to work with everybody.

As with small companies, one of the negative features is that the lack of procedures and standards sometimes made projects less efficient, as many revisions needed to be made to documents from previous projects. This is something that AGC is working hard on correcting and improving, but it will take time and effort to realize. Another negative aspect is that the company is divided geographically because the other major office is in Amherst, Wisconsin, and there several engineers who work remotely from home. This meant that sometimes I would need to work with somebody from across the country on projects, and had to rely on email and phone communication. Naturally, the lack of constant communication made for inefficiencies, but this is also something AGC is working on improving.

Overall, I would absolutely recommend this co-op position to any Cornell engineer seeking to further his/her professional career. I doubt I would have had as many opportunities to grow and learn at another company. Please feel free to reach out to me for more information.