Co-op Work Assignment

Within GE Energy, I was a part of the Measurement and Control business, specifically on the Moisture and Gas team based in Billerica, MA.

My primary project was to aid with the development of the next generation to the PACE series industrial instrumentation device. This product is built into bench-mount or rack-mount chassis, and you can imagine it being used in the control room of an industrial facility to monitor the processes going on within the facility. It integrates temperature, pressure, and oxygen readings from up to 6 different channels into a single touch-screen display. My work on this project included the following:

- Maintaining a bill of materials for the project
- Monte Carlo simulations of the circuitry
  - Each component can take on a range of values within a specified percentage of its desired value, so we need to account for that in our design
- Ordering parts for our prototyping
  - We wanted to test each subsystem as they were developed, so I would work with the sourcing team to acquire the parts and help build the prototypes.
- Aided with the development of a custom ‘intrinsically safe’ DC-DC converter
  - Because we work under the assumption that part of our product will be operating in volatile environments, we need to make that portion of the design intrinsically safe, meaning that no single component will see power that could cause it to short or blow out.
  - I also performed environmental testing on this device, collecting data about its operation over a range of temperatures over a long period of time. During this test, I discovered that ‘thermal runaway’ posed a risk to correct operation. The IS requirements cause the device to give off a lot of heat during operation. If the components on the board that bear the brunt of this do not have the proper heat sinking, the device would fail.
- Design of the primary DC supply to the module. The driving requirements of the design are to a) filter out unwanted noise from the power line and b) protect the rest of the system from overcurrent and overvoltage situations. I learned a lot about how to fix this common problem in ECE with use of pi filters, varistors, decoupling capacitors, and transient voltage suppression diodes.
- Design of the main fault alarm for the module. If the microprocessor determines that there is a problem with the operation of the device, it sends a signal to this circuit which raises the main fault alarm for the user.
- Design of various circuitries to support development and testing of higher level components of the product.
  - Modeling of a Hall Effect switch within the chassis to determine its effectiveness in the design
Building a variable current source to determine how much current would be required to drive the LED touchscreen to an appropriate brightness.

Building a variable voltage source for the testing of analog-to-digital functions.

I also became involved with some other projects going on within the business. One of the other products underwent a design change which required it to re-pass electromagnetic testing before production of the product could resume. Because our testing team was swamped at the time, I took on some of the workload in the E&M testing. This involved a significant amount of time in the lab at our facility, where I performed conductive, radiation, and electro-static discharge tests. I also took a trip to a third party test site for more thorough radiation testing.

While there was no specific training provided during my work term, I was more or less constantly learning about a wide breadth of things. This includes circuit design, reading and creating good schematics, soldering, data acquisition, laboratory protocol, and testing standards.

Most of my work over the course of the semester was assigned and supervised by a design engineer. I never had any reserves about asking a question with regards to completing an assignment, but he also encouraged individual effort in solving problems given the advice that he offered.

**Assessment of Learning and Development**

My work here fell right in line with the things I’ve learned at Cornell. Working for a company like GE could translate into opportunities across many disciplines within electrical engineering across, which is a huge reason I chose GE to begin with.

I would say that about 10% of my time was spent applying Cornell ECE curriculum material to a task at hand. As I soon learned, the majority of my effort (and any product engineer’s effort) was spent either in communication with coworkers, other teams within GE (sourcing, testing, mechanical, etc.) or outside companies we do business with to meet our goals.

This has been a very positive experience for my development as a professional. Knowing the ins and outs of engineering in the industry has really helped me to know where to take aim with my education. Personally it has been quite enriching too. It helped to improve my communication skills in a variety of ways.

**Life Out-side of Co-op**

In the suburb of Billerica and the surrounding areas, housing is pretty skim and expensive. But Boston is not more than a 45 minute drive. College housing (comparable in price to Collegetown) is bountiful, the best area probably being around Mission Hill, which is close to Northeastern University.

Public transportation from Boston falls a bit short of Billerica. You can use it to get to work, but it is timely and involves some walking. I would recommend a car for work at this location.
I am currently a summer intern at GE Energy Storage and this is my second term working for GE. Technical function of my working group is sourcing or procurement. I work on the indirect sourcing team so we generally deal with internal requests and products that don’t ship to customers directly.

GE Energy Storage is a start-up business so I was given a lot responsibility. My major projects have been tool vending machines, office pantry supplies, and to initiate contract for catering and food line. For all three projects, I met with requesters, or my internal customers, to understand their needs and expectation. Then, I reached out to vendors to see what their recommendations would be for GE. After gathering enough information, I drafted Scope of Work (SOW) and Request for Quotation (RFQ) and issued out to vendors to ask for quotes. Then I analyzed quotes and met with my team again to select final vendor.

As GE Energy Storage is a start-up, lots of things are not established yet and everyone learns along the way. Therefore, training and orientation are limited, especially for my role. In indirect sourcing, it is entirely project based. Although the general approach is similar, every project is unique and requires lots of learning on the spot. However, I was fortunate enough to have an amazing mentor and she gave me all the support and help I needed. We also have weekly meeting with indirect sourcing leaders from other GE business so I get support from them as well.

Sourcing is an important part of manufacturing, and I learned manufacturing theories as an OR at Cornell. I plan to pursue a career in manufacturing, thus this internship fits well into my career interest. Professional culture is completely different; it's more about how to establish and work the connections you have. After this internship, I am more certain that I want to go into industry right after college and more certain about a career in manufacturing. Also, during this internship, I learned to step up when my team needs me and be credible to others by delivering any action items I promised. I am more mature comparing to when I first stepped into my role. If I were to go through the same experience again, I would find a time to figure out a timeline for all my projects to avoid any of them dragging on.

I live 30 minutes away from where work so I commute every day. But a lot interns live in an apartment on 100 Union Drive, Albany NY. I heard positive feedback about that place so it’s something to consider if future interns need housing here. For transportation, you definitely need a car because Albany is suburb. During free time, I recommend Crossgates Mall and Colonie Center. They are the two biggest malls around here. Also, within an hour drive, there is Great Escape amusement park, Six Flag, Saratoga Horse Race during the summer, Lake George, etc. GE offers lots of community service opportunities. We also have softball game one per week after work.
Best feature of being in sourcing is to get to establish relationship with both requesters and vendors. Being in sourcing, there is a lot of paperwork, but there is also lots of communication. I work with requesters and vendors on a daily basis and I learn something new every day. Worst feature about this job is when people don’t get work done by the date they promised to. There are lots of follow-ups in sourcing.

Working for GE is great, and if future interns have the opportunity to come to GE Energy Storage, they should do so. This is a brand new GE business (we just had our Grand Opening on July 10, 2012) and there are lots of career opportunities.
Tom Hirschfeld, Chemical Engineer

Fall 2011 @ General Electric Energy: Bently Nevada

Tier 1 Technical Support Specialist

Tmh79

Working Assignment:

I was a technical support specialist. I take calls and answer emails from our customers and field engineers. About a third of the cases that I worked were simple things like clarifying things in the manual to a customer, or helping a fix a known error. Most of these cases lasted less than a few hours and required few correspondences. The other two thirds of the cases that I handled were fairly extensive. For example, customers with system1 software problems often required extensive troubleshooting and most cases involving system1 lasted more than a week. On site, we have a “lab” with all of the products that we sell. When we came across an unknown issue, we would replicate in our office with our products, and then try to solve the problem. Sometimes this was easy and fast, and sometimes this took up to a week. Outside of “working cases” I configured a System1 enterprise consisting of many of our products for a product demonstration center that is currently being built. I would spend the time before lunch taking calls, and the time after lunch working on the System1 enterprise. Most of the “training” I had was on the job training, which worked very well in this role. The training I had consisted mostly of me learning where to do my research and effective ways to troubleshoot. As I became more experienced, research became easier, and I could answer many of the customers’ questions without extensive research.

Assessment of Learning Outcomes:

This job is tangentially related to my career interests. I would like to become a field engineer. In this role, I worked with a number of field engineers and helped them troubleshoot their problems. Near the end of the term, I had lunch with the field engineering manager for the Bently Nevada Western Region and he offered me a tentative internship in the company this summer, pending HR approval. The knowledge I have about our products will be very valuable in the future if I work as a field engineer for Bently Nevada. Another thing that I learned was how many different “applications” of engineering there are. At Bently, if someone has a question, and they don’t know who to ask, they ask tech support, and we direct them to the right working group. Out of necessity, we are very well connected with almost every working group at Bently. Before I worked here, I didn’t know how big departments like “hazardous area approvals”, “SIL”, and “Sustaining Engineering” could be. There is much more to engineering than just design, and I feel like as students, we lose sight of that. This position has not really affected my “personal development” or how I work with others. I’ve been working since I was 15, I love being productive. Basically, I have experience with less agreeable people at worse jobs, so this job was easy as far as “learning about myself” went. Additionally, I love working in a team. Because of these things, this job was a good fit, but it wasn’t challenging or “developing” my interpersonal skills. I wouldn’t change anything if I were to do this again; I feel like this term went very well.
Life outside Coop:

Bently Nevada is about 20 minutes from South Lake Tahoe, CA. I lived in south lake, and had a great time with my friends that I met there. I found the best way to find a room was on the “craigslist” room shares board where people rent a room for pretty cheap. This was useful because if you live with people you like, you already have a few friends. The room share search was probably one of the most interesting cultural experiences I had out here. One of the first groups of people I met was an artist colony gearing up for burning man. They had a large satellite dish behind their house filled with futon pads, and they were meditating together in it when I came by. Another guy lived in a gross (IE filled with trash) three bedroom house. When he showed me the bedrooms, he showed me his room, my potential room, and his “special room” where he had some “420 goin' on in there, buts it’s totally cool, because were in Cali, and its legal here". Eventually, I found a place to stay and a good group of friends. A car is necessary. There are entire books written around fun things to do in Tahoe, so I won’t detail this too much. I spent most of my time rock climbing in Yosemite, or skiing at Heavenly, which is just across the street from my house. There are plenty of restaurants and bars in town, and the casinos on the Nevada side have amazing deals on Friday night (No cover, free drinks for ladies, etc). I suggest living on the Nevada side of the lake because you will avoid the CA income tax which is pretty high. One thing that was nice is that GE has a program to introduce the interns to the EEDP program participants (essentially they are master’s degree interns). I made good friends with the other intern and the EEDP people in Minden.

Evaluation:

The best part of this job was the lifestyle. I love the mountains, skiing, and rock climbing. Bently is probably the closest salaried job you could find to the Eastern Sierras/Yosemite. The mountains are about a 10 minute drive from the office, and I was able to live in Tahoe with a half hour commute. Yosemite National park is about an hour and a half away too. Most teams here are very flexible with schedules; if you want, you can start at 6 and leave at 2:30, or you can start at Noon and leave at nine. Most people take an hour for lunch, but you can take 30 minutes and leave early if you want. The worst part about this job was the lack of math/chemical engineering knowledge required. The job was intellectually challenging, but not in a way that would allow me to apply anything that I learned in school. There was no thermodynamics, no mass balances, nothing like that. This was the only disappointment. Having an engineering degree is a ticket into a technical job, not necessarily an engineering job, and unless you are designing something, what type of engineering degree you have doesn’t matter very much. At the end of the day though, I would rather do general technical stuff in Lake Tahoe, than reactor design in New Jersey and I don’t regret my decision to come out here at all.

Additional Info:

Bently is always looking for more interns. You need to apply through the GE energy EID program, but when you select your job from the possible options, there will be a lot of options at Bently. Additionally for all GE EID coops, it is pretty much imperative that you find a manager to work for, or a role you would like to be in during your fall term if you want to do a summer term. They changed the process of reapplying this year to the EID program so you have to formally reapply. Unfortunately, you are
reapplying after they have done all of their autumn on campus recruiting so the EID program is full by the time your internship ends and you reapply. Due to the unfortunate situation in GE HR, you may not be offered a return position even if you have good scores in your appraisal because there simply aren’t positions for you. I don’t know how difficult it is to get a return offer, and I got really good scores on my appraisal, so we will see. My frustration right now lies in the fact that I have a current manager that really enjoyed me and gave me high marks, a new manager here that wants to hire me for the summer, and an HR department that is dragging their feet on rehiring me for some reasons I don’t fully understand. I feel somewhat “screwed” by the situation because all of the “good” companies recruit for summer internships during the fall, when you are gone on co-op. I applied to about 5 internships at oil companies and didn’t hear back from any of them. I suspect this is partly because they do the vast majority of their recruiting for interns through on campus recruiting which I did not have access to, and also partly because I applied in late October, which is pretty late in the fall recruiting season. So, here is the take away lesson: if you work for GE, spend September and October looking for summer employment at other companies.
Tom Hirschfeld
Tmh79
General Electric Energy
Manufacturing internship

A) Coop Work Assignment

I worked on the manufacturing floor of a general electric facility that produces instrument transformers. My work was project based, and consisted of making three improvements in the manufacturing line. My first project was reducing the amount of rubber scrap we produced. My second project was designing a copper jumper for use in a transformer. My third project was implementing a process to bring a new name plate etching laser into production.

B) Assessment of learning development.

During this summer, I experienced the job of a manufacturing engineer. In this role, I realized that I want to work as an engineer for an oil and gas company. I feel like my technical skills were underutilized in this role. In the future, I will look for a more technical role, most likely in the oil and gas industry.

C) Life outside of Coop

I had a summer sublet in Durham, NH which was about 20 minutes away. The housing wasn’t bad, but I wouldn’t recommend it. I was the only intern for much of the summer, and I didn’t meet many people. I spent most of my weekends rock climbing with friends from school.

D) Best/worst

The best features of this job were the quick paced work atmosphere, the ability to immediately affect the manufacturing line, and the ownership of the projects I had. The worst features of the job were the lack of a social life, the lack of air conditioning, and the lack of deep technical skills.

E) Additional information

Air conditioning is a really nice thing. Also, while working on the manufacturing floor was really neat and hands on, it was also loud, hot, and dirty.
The group I worked with at GE Energy was the Industrial Services team for the Northwest part of the U.S. Our group provides power system services for industrial customers. Services include: power system studies, onsite testing, onsite maintenance, equipment training and sales of GE power equipment. Our team constantly interacts with customers as we are responsible for the design, service, maintenance and sale of their power systems.

The major projects I was involved with were power system studies, field work and business optimization related tasks. I had the chance to travel to several customers and shadow engineers onsite. Since our group is not extremely large, all training was provided one on one with an engineer or manager. This allowed for a unique learning experience. I did not have an ‘assigned’ mentor, but there was an engineer I worked several projects with who I constantly went to with questions. He is a power systems engineer with a degree in EE and a graduate degree in power systems. Since we have similar formal academic training, he was able to be of great assistance to me while on the job. Also, I worked closely with an engineer that has been working for GE for 41 years. Through his years, he has obtained unparalleled wisdom and knowledge for the industry.

I was able to excel in our unique fast paced group due to my past professional experiences, not any experiences in academia. Power systems was a new subject for me, but it was easy to pick up having solid background in circuit theory. EE is the right major for the position I had, but power systems are seldom the focus of EE programs these days because they are not an area of cutting edge research. I am interested in the Energy field, so this was good exposure.

I have already had several internships and research experiences so the professional world was not completely new. I continued challenging myself and being responsible just as I have in past experiences. I continue to do well interacting with different types of people. I attribute this to interpersonal skills I have learned since a kid, not to any professional experience.

The Portland area is a fun place. There are a lot to do outdoors and the city is unique. Finding housing was not a problem for me, there were plenty of online resources. I recommend driving here, regardless of where you are coming from. You are going to want a car so you can visit the mountains and beaches. Most social activities are found in the city: pubs, breweries, concerts, Saturday markets and sports games. No opportunities were given for community service or athletics, but I found my own opportunities.
The best feature of this job was the variation day to day. One day I might be designing a power system, the next I could be at a wind farm. It was fast paced, I like that. Features that I didn’t like were that it seldom challenged my academic skills learned at Cornell. I was not completely expecting that to happen though. In a survey of Cornell Engineering Alumni it was reported that Cornell over prepares students with unnecessary theoretical training. Also according to the Alumni, the business and professional training provided by Cornell was insufficient. Although not as intellectually stimulating as I would have hoped, the business and industry exposure I gained during this employment was fantastic.
Fall 2011 GE Job Summary

My job at General Electric (GE) Energy was much different than the typical technical engineering role. I decided to apply for a role in the GE Energy sourcing department, whose role was to buy goods and services for GE Energy. In particular, I worked under a Global Commodity Leader who dealt with buying over $250 million of goods/products for GE Energy on a global level.

Naturally, a job like this is not as heavily dependent on technical skills as a traditional engineering job may be. Instead, I had to focus on building my skills in communication and organization. Unfortunately, there was no training or orientation period that helped me right at the beginning of my work term. Instead, I was given an assignment leader who served as my mentor and provided me real-time feedback on the work I was doing. An important thing to note is that, in the beginning, I had to actively seek out projects that would help my assignment leader gain confidence in my abilities to complete assignments quickly and accurately. Only after completing the projects that I had personally sought out did I get important feedback from my assignment leader. Once I had proved to my assignment leader that I was a skilled hard-worker, I began receiving many important projects to complete and much more feedback on my work.

By the end of my work term, I realized that I may not want to pursue a very technical role in engineering after graduation. I enjoyed the level of responsibility and visibility that I received talking and meeting with GE suppliers. Now, I plan on finding a job that would use my technical skills to supplement a more business-oriented role. I would never have found this out if I didn’t take a chance and choose a less technical job that may not have aligned with my interests. Looking back on my time at GE and the choices that I made during the fall semester, I would not have done anything differently except try to actively seek our projects to work on earlier during my term.

It is also important to mention that having one’s own car is vital when working for another company. Unfortunately, I did not have a car with me and I had to depend on my roommate taking me to the GE plant and back. Luckily, any stores that I needed to go to were within a five minute walk from my location, and I did not have to constantly ask my roommate
to give me a ride. In the end, it turned out that also making sure that an apartment complex is close to any stores or facilities that one may require is an important thing to consider.
Allyssa Stover  
Ads242@cornell.edu  
Mechanical Engineering  
GE Energy – Wind Commercial Operations  
Fall Term 2011

A. I worked in the role of a Commercial Manager for the Wind Services Commercial Operations. My group supported the Sales team in their effort to sell wind services (upgrades and maintenance services) on GE wind turbines. We ran cost models to produce pricing, developed external customer documents to capture the value added from GE technology, assessed the technical requirements and possibilities for different product offerings a specific site and negotiated and wrote the Terms and Conditions of a deal. I worked mostly with underperforming wind sites and how these customers could use GE upgrades to increase their production and become profitable. I looked at both the commercial side (revenue increases, cash flows, net present values) and technical side (sourcing requirements, production increases) of these projects. As I was unfamiliar with many commercial aspects, I was trained in these topics by some of the coworkers.

B. While my engineering and critical thinking skills were useful in my role, they were not integral. However, I found my experience is going to further my educational experience by furthering my insight into the commercial site of an engineering product. In my degree, I focus mostly on the technical and design aspects of a product. Now, I have furthered my understanding of the value a product brings to a customer, and how this goes into pricing and selling this product. Also, the role was in wind energy, which is a great interest of mine and goes along with my minor of Sustainable Energy Systems.

After doing this role, I feel as though I am interested in pursuing a role in the commercial side of engineering. I enjoy working with people and using technology to meet customer’s business needs. I would definitely take a role like my current role again; however, I would have like to read into some basic economic terms (NPV, cash flow, etc).

C. Life outside co-op was interesting. Schenectady is a rough town. While I feel mostly safe where I live, I feel quite nervous in the neighborhood just a block away. I would highly, highly recommend that co-ops live in Albany or Saratoga (it is worth the commute and the extra money!). I was able to spend time with other interns. We had a game night once a week which was a really fun way to spend time and compare experiences. I was also able to spend time with people I worked with after work, which was rewarding.

D. I loved my job. I feel like a got an awesome insight into a technical job that is not hard engineering and learned a great deal about the commercial world. I really liked the people I worked with—very passionate, active and intelligent people who were welcoming and encouraging. The worst part of the job was where I lived. There is not much to do in Schenectady and I wish I had a roommate.
Job Summary

A. Co-op Work Assignment

General Electric Energy Storage is responsible for the manufacturing and design of the new Durathon Battery. This battery is based off of a molten salt chemistry developed in the 1980’s but commercialized and scaled up only recently. Specifically, I worked on the motive team on the commercial side at Energy Storage and focused mainly on industrial motive and transportation market segments. My official job title was Motive Market Analyst.

To give some background, GE Energy Storage is essentially a third year startup backed by GE Transportation and GE Capital. For the past three years, Energy Storage has been focused mainly on the following: building a new large scale, state-of-the-art factory; developing batteries for stationary devices (UPS, Telecommunications Backup, Grid Storage, etc.); and targeting customers focused on those markets. Starting in early 2012, Energy Storage began to move into the motive market and started up a brand new motive commercial team devoted to all-things electric vehicles, whether it be car, bus, train, boat, or forklift.

When I joined the motive group, they were in the midst of customer discovery and market research i.e. they were researching and meeting with potential customers to figure out who’d want to buy a Durathon battery and figuring out what new module of battery should be developed should GE enter the motive space. My assignment leader and mentor was Matt Maroon, the product manager of motive batteries. The first two assignments he gave me were heavily focused on market research and lead generation – I researched two medium to small sized markets, determined the market size, and developed a simple metric to ascertain which companies to target. From there, I was able to send a few “feeler” emails and gather contacts from individuals within the industry in hopes of generating leads or sales. These two assignments proved very useful as they introduced me and immersed me into the world of the industrial motive market.

Following those tasks, I was asked to help out by diving further into the industrial motive market and segment the market, develop a value proposition for the transportation space, and aid in setting up a possible pilot project. Segmenting the industrial motive market proved to be a little difficult as I couldn’t find much publicly available information about market breakdowns. Even reports by private companies had little to offer. Developing the value proposition for the transportation space was fairly interesting as it had a lot to do with electric vehicles. I was able to come up with a rather simple value proposition for an electric truck as a simple tool before a better model could be found.
B. Assessment of Learning and Development

My educational background and the worked I was involved in were mostly separate seeing as I study chemical engineering and I worked a marketing position. This is not to say my chemical and engineering background did not help, though. The battery I was working to sell was based on a new-to-market chemistry and it was extremely beneficial to understand how that worked. Also, the analytical thinking and problem solving skills I’ve learned from my engineering coursework proved useful in my daily tasks.

In regards to my career aspirations, I’m fairly interested in business (I founded the Cornell Science and Engineering Business Association) and this role gave me fairly good insight into external facing positions and how engineering and business work together. I found that I was interested in the product development and product management side of things and might even consider working a similar role out of college.

I believe that my biggest area of personal development came on the management side. While personally, I did not have anyone to manage; I was able to compare how my assignment leader managed me and how other assignment leaders managed their own interns. I was surprised to find such a wide range of styles. Some manager’s seemed to excessively micromanage an intern leaving them no free time and ultimately making their time unpleasant while some manager’s didn’t even take the time to plot out the intern’s summer leaving them with nothing to do. By gathering these experiences, I’ve been able to look at my own managerial experience and hopefully change a few things about my style when I go back to leadership positions at school. The experiences also made me appreciate the assignment leader I had.

C. Life Outside of Co-op

Finding housing with GE is generally fairly difficult as they do not provide you with many resources. Fortunately, I was able to find housing with other Cornell students who previously searched the Albany / Schenectady area and join their group.

A car is definitely recommended and might be a necessity. I lived in Albany and had to commute 20 – 30 minutes to work every day. If properly planned, it would be feasible to coordinates ride to and from work getting rid of the need for a car, but having the independence of your own car would certainly be easier. Also, I would recommend getting an EZ-Pass as there are tolls.

The ended up hanging out with the interns I worked with the most. They’re all college students so it was easy to organize nights to go out or just hang out with each other. Albany was also only three hours from New York City, Boston, and Ithaca so weekend travel was fairly easy.

D. Evaluation
Overall, I really enjoyed my time at GE Energy Storage. Comparing my experience with my previous co-op in Erie, I felt I held a greater role in the company and was actually able to help in some ways. I think the best feature of the job was actually the environment I was able to work in. I've always been interested in working for a smaller company or a startup, and to finally have the experience of working in that atmosphere (despite being a part of GE) confirmed the benefits of small businesses.

The worst part about the job might have been how short the internship was. The timeline of researching customers, reaching out to them, starting a pilot project, and selling batteries to them is on the scale of many months not ten weeks. I would have really liked to see a project go from start to finish.
A. Co-op Work Assignment

General Electric Transportation is responsible for the manufacturing of locomotives, heavy equipment, mining vehicles, diesel engines, and generators for wind turbines. Specifically, I worked in the Information Based Solutions department, located in Building 50 of the GE Transportation Plant, which focused on the on-board computers and various electronics found on locomotives and also provided 24/7 support to locomotives via their Remote Monitoring and Diagnostics Center.

My main responsibilities as a co-op dealt with the repair and return of these on-board computers. The on-board computers, also known as Communications Management Units or CMUs, are used to gather and process data regarding the health of the locomotive, communicate this data to the Remote Monitoring and Diagnostic Center, and to run several applications designed to support the locomotive, such as a Fuel Trip Optimizer. However with CMUs being such sensitive pieces of equipment running on the harsh environment of a locomotive, many of these computers experience failures and require repair. My job was to collect the failure data on each failed CMU, given to me in the form of Failure Analysis reports from our supplier Nortech, tabulate and compile the data into graphs and useful charts, and build a Powerpoint presentation which I would present to my boss on a weekly basis and present to a program leader and various field team members on a biweekly basis. Several side projects would often come out of these weekly and biweekly meetings as participants would like to see metrics specific to their railroad or would like me to follow up on trending failures.

My other responsibilities as a co-op revolved around indirect material and services ordering and tracking. With this, I had to use General Electric’s Engineering Notice (EN) Workflow, which is essentially a document conveying engineering instructions to functions internal and external to engineering, and Oracle SSS, an internal requisition system, to purchase tools and equipment for various members of the I-Based team.

Training was generally given to me on the spot for my role, but I did receive an orientation checklist of meetings to attend and people to meet on the very first day. This orientation checklist proved to be very beneficial to getting up to speed on all the terminology and lexicon used at GE Transportation.

While I did have an assigned mentor, he fell ill within my first month at work and I was not able to work as closely with him as I would have liked. I was, however, able to ask my co-workers and supervisors of any questions I had.

B. Assessment of Learning and Development

Majoring in Chemical Engineering, I had a lot of difficulty finding any directly relatable educational material that corresponded with my work. However, I did take a couple courses in Java which aided me in writing Excel macros as well as a basic statistics course which helped me
in my analysis of failure data. While some might cringe at being unable to use their coursework in a work setting, this co-op has demonstrated to me that the most important aspect of engineering school is not the material learned, but rather the critical thinking and analytical skills that come from the learning.

I'm not sure if I have decided on a career path yet, but this experience has definitely opened up more possibilities as I am considering potential paths outside chemicals and chemical engineering.

Perhaps my greatest challenge in this co-op role was to exercise my confidence and interpersonal skills required at a company as large as GE. As I approached the end of my first term, I definitely began to recognize my expertise in certain matters, and in turn, I felt more confident about myself and the role I played within the I-Based team. If I could go through the same experience again, I would definitely just try to be more vocal and communicate with my co-workers and supervisor earlier in the work term.

C. Life Outside Co-op

Housing ended up being fairly stressful as the HR department did not provide information on whether housing was to be provided or whether a search was to be conducted independently until about a month before the scheduled start date (Housing is provided in the summer, but not for the fall!). They did, however, provide a list of realtors and apartments that previous co-ops have stayed. This and craigslist proved to be a useful tool as I was able to schedule a few tours and eventually found an apartment. I would strongly recommend having a car in Erie as there are not really any great modes of public transportation.

D. Evaluation

The best feature of this job is probably the independence and autonomy of my position. As I was the only person in my office to work on reliability and quality data, I felt a lot of satisfaction in that fact that people were relying on me to present accurate information, and thus, I felt I was an integral and important part of the team. While this may be cliché, I honestly believe the best part about my co-op was also the worst part of my co-op. Being the only one in my office to work on quality data separated me from some of my co-workers. Going into this co-op, I definitely thought I would be working closely with someone and collaborating on group projects.

Overall though, I am pleased with the opportunity I have had as a co-op. I have enjoyed seeing the different roles people have played within this business and have gained a better understanding about how business works.