Co-op Work Assignment

Zimmer, Inc. is an international leader in orthopedic reconstructive technologies. It designs, manufactures, and markets implants and instruments associated with hip, knee, and extremity joint replacement surgery, in addition to trauma and custom devices. As a co-op in the Postmarket Engineering (PME) group within the Hip Department, I help to analyze, assess and develop solutions to problems that arise with products after release to market. The work relies heavily on communicating with New Product Development engineers, Quality engineers, Designers, Sales Representatives, and Manufacturing personnel. Our Hip PME group historically consists of four full-time engineers and two co-ops, including myself. It is the job of the co-ops to help the full-timers complete their tasks, which often consist of recording, trending, and analyzing product history. When an issue with a device is observed, further investigation is often needed. PME engineers have the responsibility to research the problem – looking into the design history files, engineering drawings, and manufacturing records – and then to determine how to resolve or mitigate any risks associated with the issue. In many senses, PME engineers are the detectives of Zimmer. Through my work with this group, I have gained experience with Microsoft Office Suite, especially Excel and PowerPoint, Unigraphics computer aided design, reading engineering drawings, and technical writing. In addition, I have learned a great deal about the development of a Zimmer product, from project initiation to release in the market, and I have witnessed the challenges associated specifically with the medical device industry, including appeasing the various regulatory bodies which control the production, sale, and use of implants and their associated instruments. I have even had the opportunity to read and present orthopedics-related research articles to the Hip Department, and to participate in a couple of cadaver studies, where engineers interacted with orthopedic surgeons while testing the functionality of a particular Zimmer device. Due to the diverse wealth of information on Zimmer products and processes to which members of the PME department are constantly exposed, it is common for co-ops to spend their first rotation in this group.

Although it was the lead PME engineer who often assigned me my most involved projects, I felt comfortable going to any of the other engineers for help or advice. Zimmer has a well-established co-op program, and the full-timers are used to having many co-ops around. Consequently, everyone, inside and outside the Hip Department, is very supportive and willing to answer a co-op’s questions, with co-ops very often also helping each other out. My formal training consisted of occasionally being required to read online documents and presentations that summarize company standards and policies, and attending a four-day class which introduced me to the concepts of Geometric Dimensioning and Tolerancing. However, the majority of my most crucial, work-related training came from other employees who took time out of their days to explain concepts and processes to me.
Assessment of Learning and Development

As a mechanical engineering student, I have not yet had the chance to learn about biological applications to engineering though my university coursework; however, since high school I have had an interest in the medical device field. This co-op term has given me the opportunity to experience biomedical engineering firsthand in a professional working environment. Through this semester at Zimmer, I have discovered that orthopedics has much more to do with mechanical engineering than I had anticipated. In fact, I did not feel to be at a disadvantage at all in terms of my perceived lack of biological knowledge. Much of the functionality of an implant or instrument is entirely dependent on the static forces and moments, and stresses and strains being applied to the device due to the way the human body loads the joint, as well as on the material considerations of a product that must not only be strong and resilient but also biocompatible. At work I was also challenged to be assertive, to be a leader, to manage my own time and to meet deadlines. Although I was not receiving a grade, the quality of my work was a direct reflection of my own character and would determine whether or not I was given additional responsibilities by my supervisors. I also learned to be resourceful and humble, as the most efficient way to answer a question is oftentimes to search for an expert and ask for help. In addition, through working at Zimmer, I have clarified my future goals for academic advancement such as taking some more biomechanics, biology, and chemistry classes, conducting research on joint replacement technologies, and hopefully attending graduate school, for a Masters of Engineering degree or a degree in Business Administration.

Life Outside of Co-op

Zimmer, Inc. is located in Warsaw, Indiana – a town of about 13,500 people. The two closest cities are Fort Wayne, at forty-five minutes away, and South Bend – the home of Notre Dame University – at about one hour away. Chicago, Illinois, is a very easy two and a half hour drive northwest. Warsaw itself is a quiet town, known for its beautiful lakes which typically reach their full recreational potential during the summer months. When the weather is nice, participating in water sports, biking on the lakeside trails, boutique shopping, or playing volleyball at Spike’s are all fun things to do. Zimmer has numerous recreational sports teams, Ultimate Frisbee being the most common in the Hip Department. Since Warsaw is actually a hub of orthopedic medical device companies, sports teams from each of the companies like to compete against one another as fundraising opportunities for local charities. The warmer months are also full of festivals, fairs, and concerts – if you like country music. The winter is a bit slower, but even then, there is not a shortage of activities to consume your weekends so long as you are willing to expend a little effort looking. Good shopping can be found in Fort Wayne and South Bend, and as mentioned previously, it is a relatively easy drive to Chicago. A person can also go to Amish Acres for a home-cooked meal and a play, or explore any of the quaint surrounding towns. Zimmer also constantly promotes opportunities to participate in walks or runs to support various charitable causes, and co-ops can tutor local high school students at Starbucks every Thursday after work, or volunteer at the animal shelter or senior center on the weekends. The library is also very extensive, and there are plenty of ways to get involved with the numerous Churches in town.
Finding housing is a cinch. Some Zimmer employees commute from Fort Wayne, but there are also plenty of apartment complexes right in Warsaw from which to choose. Lakeland Villa Apartments is where most of the co-ops live, since it offers short-term lease options and it is only a five minute drive from Zimmer’s main building. However, bear in mind that there is no public transportation in Warsaw so, unless you are able to coordinate sharing a car with another Zimmer employee, it is essential that you have your own.

Evaluation

The best feature of this job by far was the working environment within Zimmer. In general, coworkers and superiors are exceptionally personable and friendly, always willing to set aside their own tasks in order to lend a co-op a helping hand or to share their knowledge. Each department organizes numerous potlucks and off-site dinners, through which it is easy to get to know the other members of the team. Even the main Zimmer building itself promotes a creative, cooperative atmosphere with open-concept desk arrangements, “toy” boxes full of puzzles and modeling tools, and especially an Innovation Café, which sports imitation-sky ceiling tiles, a fireplace and water features, whiteboard desks, a grassy conference room, and – to top it all off – a slide and ball pit.

The worst feature of this job was occasionally having a lack of assignments or having to do tedious tasks. Unfortunately, sometimes boring work must be done in any company and co-ops are the perfect candidates for the job. Be assured, though, that in my experience this type of work was well-balanced with more meaningful assignments and most days were not consumed by menial labor.

Additional Info

Zimmer is a large company with a lot of co-ops. While this makes for a great community, huge support system, and abundant opportunities, it also means that as one of many, a co-op may have to work harder to seek the more interesting, intellectually challenging projects. One thing that I have learned is that if you are slow on work, or if there is something that you are particularly itching to work on, you must ask around and be persistent in order to become involved. Most often, once you speak up, people will be more than willing to include you.
This document is meant to supplement the fall 2012 “Job Summary” document; all components of the previous summary still apply.

Co-op Work Assignment

This co-op rotation, I had the opportunity to work in the New Product Development segment of the Global Hip department within Zimmer, Inc. During my last rotation, I had handled products that currently existed on the market, but this summer I was able to observe the development of new concepts that had never before been released by Zimmer. I researched predicate devices to compare with the products in development and I learned even more about dealing with regulatory bodies associated with the submission of new medical devices. I witnessed first-hand the major influence federal regulation has on the medical industry and how to maintain compliance. I was also able to contribute to the design process, by suggesting ways in which to redesign a certain component of an instrument as well as by organizing design review meetings to close out Design Review Phase 1. I trended complaint and sales history, searched for scientific journal articles to answer the questions of senior engineers or to validate the company’s internal testing parameters, and I had experience working with engineering drawings as well as computer aided design (with the help of a professional designer). Additionally, I was able to give two presentations this summer: one reviewing a journal article, and one to wrap up my final rotation as a co-op at Zimmer. Both presentations were given in the presence of my manager, Greg Mangan.

Life Outside of Co-op

Zimmer, Inc. is located in Warsaw, IN, a small town in northwestern Indiana. On top of year-round recreational activities such as visiting Chicago or shopping in South Bend / Fort Wayne, the summer provides additional opportunities to explore the outdoors through hiking, lake sports, athletic teams, county fairs, concerts, and professional sporting events. One can participate in local runs (like the Color Run), camp at Turkey Run State Park, or head up to the Lake Michigan Sand Dunes to swim, hike, and dune buggy. Or, play volleyball at Spikes’ outdoor bar and grill, softball on the Zimmer team, and go out to eat at the various tasty Mexican restaurants!

Evaluation

I enjoyed this rotation at Zimmer. My favorite experience was innovating; brainstorming ways to modify a design and witnessing the development of new concepts. I also found great value in having one-on-one meetings with some of the most influential people in my department and speaking with a former employee via telephone. My least favorite experience was validating testing in response to a visit from the FDA.