My name is Andrew Ryan (ChemE ’11) and in Fall 2009, I worked as a Coop for Infineum USA at the Bayway Chemical Plant in Linden, NJ. Infineum is one of the world’s leading formulators, manufacturers, and marketers of petroleum additives for the fuels and lubricants industry. Set up in 1999, Infineum is a 50/50 joint venture between ExxonMobil and Shell. At the Linden site, most of the process units output products that are blended into additive packages for motor oil.

The first few weeks at the plant were exhilarating. I had an office in the same hallway as all of the contact engineers for the process units, as well as equipment specialists and my supervisor, with whom I would have weekly meetings throughout the semester to discuss my progress on my projects as well as my personal stay on Coop. I was also assigned a “buddy” who introduced me to everyone, set me up on my computer with all of the applications I would need, and gave me a tour of the Chemical Plant. Everyone that I worked with in my hallway was very friendly and willing to help. Even the two Cornell alumni who recruited me stayed in touch and treated me out to lunch once in while even though they worked at the Technology site.

After the first few days of getting acquainted with the company, I was able to get started on my project list. I was given five different improvement/troubleshooting projects that gave me some experience with almost all of Infineum’s process units. The projects were rewarding in that I needed to use material I learned in school and also knowledge gained only from being out in the field and communicating with the contact
engineers and operators. After several months of working each project, I felt like I “owned” the projects and became an expert on the projects’ designs and details, often running meetings for each project’s advancement.

Toward the end of the Coop term, each Coop needed to give a 15-20 minute final presentation on their time at Infineum. Although very nervous, I thought this was a great part of the Coop program because I learned how to prepare and give a technical presentation in a workplace setting to a lot of people who are not at all familiar with the details of my projects.

Infineum set up my housing at a very nice extended-stay community close to work and subsidized about 85% of the rent. I lived there with three other coops from Lehigh. Located only 20 minutes from New York City, it was very convenient for seeing friends during breaks and also for driving back to Cornell to visit.

Overall, I would rank my experience with Infineum as a very positive one. I learned that in real world engineering, the toughest part is often times defining the problem and then developing not just one, but several solutions to the problem. Out of these solutions, the best one is usually the most financially and environmentally beneficial to the company.
Andrew Ryan  
adr44@cornell.edu  
Chemical & Biomolecular Engineering '11  
Infineum USA L.P.  
Term 2 (Summer 2010)

My name is Andrew Ryan (ChemE '11) and in Summer 2010, I worked as a Co-op for Infineum USA at the Linden Technology Center in Linden, NJ. Infineum is one of the world's leading formulators, manufacturers, and marketers of petroleum additives for the fuels and lubricants industry. Set up in 1999, Infineum is a 50/50 joint venture between ExxonMobil and Shell.

During my summer term, I worked in Components Technology and more specifically, on the process modeling for some of our products. The first project that I worked on was the modeling of a new polymer process that Infineum is looking to invest in. I helped with the development of the thermodynamics for the polymer manufacturing process. I also used steady-state and time-dependent dynamic simulation software suites (Pro/II, gPROMS) to simulate the process. For another project, I used the same software suites to simulate a thin film evaporator, running in the manufacturing plant down the road, to predict the results of operational changes.

During my time at the Technology Center, I sat at a desk with a computer and phone, in a chemical lab. Most of the coops (3 others) at the Technology Center performed lab work, whereas my assignment only involved process modeling and did not involve lab work. This was something I preferred as a Chemical Engineer.

The first few weeks at work involved training with lab safety, getting acclimated with the environment, learning to use the resources of the Technology Center, and getting acquainted with the simulation software suites. I had used the steady-state software before in the previous co-op term at the manufacturing plant but the dynamic software was new to me. I also worked one-on-one with my supervisor everyday to get up-to-speed with the project that was already underway. This made me feel better about my
work since it was a major project that full-time employees were working on and not just something unimportant that is thrown at an intern.

The projects that I worked on were very rewarding in that I got experience using simulation software suites that will come in handy during the Unit Operations and Design courses in the senior year of ChemE. I also was able to better understand the uses of empirical thermodynamic correlations and how important they are in industry.

Toward the end of the co-op term, each co-op needed to give a 15 minute presentation on their time at Infineum. This was a great part of the program because I learned how to prepare for and give a technical presentation in a workplace setting.

Infineum subsidized housing at a temporary stay hotel for about 80% of the cost. I lived there with 2 other co-ops from Lehigh.

My experience with Infineum was a very positive one and I would definitely recommend it as a co-op for someone interested in learning about the practical aspects of Chemical Engineering. During my time in the Technology Center, I learned the more academic aspects of what goes on behind the plant manufacturing processes and greatly appreciate the experience Infineum and the co-op program has given me.
Anna Sims (als378)  
Chemical Engineering '12  
**Infineum USA, L.P.**  
Summer 2011

This summer I completed my second work term as a co-op for Infineum USA at the Linden Business and Technology Center (LBTC) in Linden, NJ. Established as a joint venture between ExxonMobil and Shell in 1999, Infineum is now one of the world’s most profitable companies in the formulation, manufacturing, and marketing of petroleum additives for lubricants and fuels. The LBTC is home to Infineum’s Technology, Sales and Marketing, Supply, Finance, Information Technology, Human Resources, and Law divisions. This summer, I had the opportunity to work in the Technology Department as part the Components Group.

My main area of focus was in the process modeling division of the Components Technology Group. I worked directly under my supervisor on a variety of projects that all focused on one of Infineum’s heavy polymer products. At the start of my summer term, I spent most of my time learning the software language and interfaces of different modeling programs, such as GPROMs, PRO-II, and Aspen. Once proficient at using the software, I began my actual project assignments. First, I ran simulations to validate the polymerization reaction kinetics of a dynamic process model. I was then assigned the task of researching heat transfer correlations and the equipment information to verify a previous co-op’s heat transfer calculations for the polymer reactor used in the dynamic model. Finally, I developed my own steady-state thermodynamic model to track the liquid-vapor split of trace side products in the stripping process subsequent to the polymer reactor.

I learned the most this summer from working collaboratively with my supervisor. When assigning tasks, he would explain his expectations and ways to achieve the results, but he would not go into too much detail so that I could first learn how to problem solve on my own. Once I exhausted all efforts to finish a task individually, I would return to him with questions and he would then guide me in the right direction. When completing a task, we would work together to insure all calculations were correct and all extreme process conditions were covered. This learning process was extremely effective in strengthening my problem-solving and research skills.
What I liked most about working in the process modeling division was that I did not have to be in a lab at all. I was able to access all modeling software from my desk. I shared an office with a fellow co-op, who also did not work in the lab, so it was enjoyable having company of the same age around each day.

This summer there were eleven co-ops working at Infineum, which is largest number of co-op students the company has ever had. Five of the co-ops were located at the Bayway Chemical Plant down the road, and six worked at the Technology Center. All eleven co-ops and the entire Process Engineering Group (where I worked last fall) participated in a team-building event at the end of July. We traveled to the Delaware River where we spent the day kayaking, rafting, and swimming. This experience was a great time to get to know the other co-ops and young employees at the plant, as well as to enjoy the summer weather outside of the office.

At the end of the term, each co-op delivered a 15-minute presentation to the company about his or her experience at Infineum. I was very comfortable at this presentation, as it was my second time delivering a speech in front of the company. The questions I received from the audience taught me how to think quickly on my feet and prepared me for what types of questions are asked at technical presentations.

This summer, I lived in the same apartment complex as I did last fall. Infineum again covered approximately 85% of the housing expenses. My housing situation is still by far one of my favorite parts of my co-op experience, especially because this summer four of the other co-ops lived in the building with me. My apartment was completely furnished, and included a full kitchen, bath, bedroom, laundry, living area, and balcony overlooking the pool. The apartment complex also has a covered garage, outdoor pool, and work out facilities. The other co-ops and myself frequently made dinner together, enjoyed the summer sun by the pool, and rode the train into the New York City on the weekends.

Overall, my experience at Infineum was incredibly rewarding. I would recommend it to other students interested in gaining hands-on experience in the field of Chemical Engineering, both in a plant environment and on the technology side as well. What I learned during my time at Infineum, both in and out of the office, has prepared me for my senior year courses and for my transition into a professional career.