

# Sloan Career Cornerstone Center

## Profiles of Engineering Students

### Christopher Lester

**Electrical Engineering  
BS and MS Student  
Drexel University**



#### **Education in Progress:**

BS/MS, Computer Engineering, Drexel University

#### **Education in Progress:**

Currently working toward Ph.D. in Electrical Engineering  
Drexel University

#### **Advice to Students:**

"I would emphasize two things for a student that thinks they want to go into the engineering field. The first is mathematics. A solid foundation in calculus and physics (both mechanics and electricity/magnetism) in particular will go a long way in giving you the skills that you need to get you through the first couple years in any engineering discipline. The second would be some sort of hands on experience where you can put the math that you know to use."

#### **Interview:**

► **Q: When did you know you wanted to become an Engineer?**

► **Lester:** Prior to going off to college, I was pretty much set on getting an engineering degree. Especially after the experience that I had in FIRST Robotics in high school, I knew that becoming an engineer was something that I wanted to do, that I would enjoy it and that I would be challenged by it.

► **Q: What is your college experience like in terms of the amount of time you find you need to study each day?**

► **Lester:** Being in a dual degree (BS/MS) program, I am working on a research project in addition to just taking classes. As a result, I have more work to accomplish each day than the typical engineering student. Between research and schoolwork, I spend an average of 6 hours a day outside of classes completing labwork, projects, homework and research work during the academic term. The amount of time that I spend studying in the traditional sense is not very much right now. As I have progressed through my course of study, the tests of learning in my classes have moved away from the typical homework/quiz/exam model, and more towards the lab/report/project model. In the end, I find the amount of time that must be put into the work is about the same.

► Q: Are you incorporating any work experiences while you are a student? (include both internships/co-ops and any other jobs you may be holding while in school)

► Lester: During the 5 years that I will have been in school by the time I have graduated, I will have gone through 2 six-month co-ops (the first at a computer engineering firm, and the second at a Drexel University research lab), and spent 2 years on a Drexel research project in collaboration with DARPA and Lockheed Martin. I feel that both the industry experience and the research experience will prove to be quite valuable upon graduation. By choosing a school that heavily pushes the co-op program, I committed to being in school a year longer than everyone else I graduated high school with, but I have no regrets about that decision now. Job experience goes a long way in directing your efforts in school, including choosing a major, concentration or free/technical elective studies.

► Q: How did you prepare for your college experience?

► Lester: I suppose that I did not do much extra to prepare for college, other than the academic preparation that high school naturally provided. I saw college as an extension of high school in a way, only that it would be farther from home, allow greater independence, and present an increasingly higher education level.

► Q: Did/do you have a mentor that has helped guide you thus far? (If so, describe the impact of this person on your education and career plans)

► Lester: My academic adviser has been a great help to me, mostly by revealing to me the reasons behind why I desire an education. He motivates me to work hard towards high goals. In addition, I have met quite a few people ahead of me in my major, through co-op, research projects and other extra-curricular organizations, that have been helpful in choosing particular classes, learning difficult material, and figuring out what aspects of electrical engineering I am most interested in. In talking with people who are two or three years ahead of me, I have been able to tap into their "hindsight," and avoid some of the mistakes that they had to suffer through.

► Q: Is there a specialty area you have focused on in engineering? If so, what is it, and how did you decide on this specialty? Also, at what point in your college experience did you decide?

► Lester: My BS degree will be in Electrical Engineering with a focus on Systems and Controls. I came to focus on this concentration gradually, in about my third year of school, after I had started to take many more major specific courses. The decision was mostly based on what I enjoyed and found myself excelling in.

► Q: Is it hard to balance your engineering studies with other college activities (entertainment, travel, having fun)?

► Lester: Sometimes, balancing your life is difficult. I know many people who don't seem to do much else besides attend class and prepare for the next class. I personally feel that this is not a great way to live... eventually you'll break down. I try to do many other things to make my time at school more enjoyable. I am involved with Campus Crusade for Christ, which gives me numerous opportunities to meet new people and hang out; I have taken up playing squash on a regular basis, I climb at an indoor rock climbing gym, and also read books that are unrelated to my schoolwork. It is important that you keep up with your schoolwork in such a way that you have time to participate in other activities, however I find that, sometimes, you have to simply take a break from work and force yourself to do something else for an hour or two. The work will eventually get done!

► Q: Do you find yourself studying more in a team situation or alone? Do you have a preference?

► Lester: I most often study and work alone. If given a choice, I prefer to be alone, as I am less distracted and thus usually more productive. There are always exceptions to this, however. In particular, I feel that it is much better to spend a half hour going through an assignment with someone else who understands it than to spend hours trying to figure it out yourself. If there are people around you who know what's going on, don't be afraid to ask for help.

► Q: What's the hardest thing you have found about your college experience working toward a degree in engineering?

► Lester: The hardest part about college for me has been staying motivated in certain classes that are either more challenging for me, or that seem to be unimportant for what I see myself doing in the future. There are times when it feels like keeping up with assignments for another two months until the class ends is just not worth it. In those times, I just have to stick to it and keep pressing onwards, looking ahead to the (hopefully) more enjoyable classes that I get to take after the seemingly meaningless class is over.

► Q: What's the most rewarding aspect about working toward a degree in engineering?

► Lester: I feel that the biggest reward in engineering comes after graduation, when you are finally doing something to improve society. I also have the sense that what I am doing in pursuing an engineering degree is the most appropriate thing for me at this time, and that by pursuing an engineering degree I will have great opportunities to serve others in the future.

► Q: Do you think you'll continue studying engineering, or do you think you'll switch to another area? Why?

► Lester: I will definitely continue pursuing engineering, both in the near future as I finish out my program and also as I continue in the working world. I am proud to be in the engineering field, and look forward to the things that I will accomplish for society.

► Q: Do you have any idea what sort of industry or work you'd like to do when you graduate? If so, how did you find out about this industry or field?

► Lester: That is something that I have put a lot of thought into recently, as I will be graduating this June. While I don't have a specific job type picked out, I believe that I will probably end up in a research and development type position, possibly at a company that does much of their business as a DoD contractor.

► Q: Do you think you'll want to pursue additional degrees after you complete the one you are working on? Why or why not?

► Lester: This is a question that I have been thinking on for over a month now, as I prepare to graduate with my masters in June. Thus far, I haven't been able to figure out whether or not I will stay now to pursue a Ph.D. or whether I will seek out a job.

► Q: Did you think that school will prepare you for the way the work gets done in the real world?

► Lester: Upon graduation, I know that I will not have every skill I need for my first job. I do believe that I will have all of the skills necessary to be familiar with the work I will be doing, and to learn the additional skills that I will need to work proficiently. I see my college education as a tutorial on learning how to adapt what you know to a given task that needs to be accomplished.

- ▶ Q: How many engineering schools did you apply to? How many accepted you?
- ▶ Lester: I applied to five different schools for engineering, and was accepted at all but one.
  
- ▶ Q: Did you have a "first choice?" Were you accepted into your "first choice?"
- ▶ Lester: My first choice school was the US Naval Academy; this was the only school that I did not get accepted into, primarily due to the increased competition I faced as a result of having imperfect vision.
  
- ▶ Q: How did you decide which college/university to go to?
- ▶ Lester: My decision to come to Drexel was largely based on location and the co-op program. I also looked heavily at WPI in Boston, but decided on Drexel as it was in an area that I was more familiar with and offered more substantial opportunities in the established co-op program.
  
- ▶ Q: What should high school students be doing to prepare themselves to take on the work that engineering students do?
- ▶ Lester: I would emphasize two things for a student that thinks they want to go into the engineering field. The first is mathematics. A solid foundation in calculus and physics (both mechanics and electricity/magnetism) in particular will go a long way in giving you the skills that you need to get you through the first couple years in any engineering discipline. The second would be some sort of hands on experience where you can put the math that you know to use. Participation in a program like FIRST Robotics provides not only a place to use math but also challenges in creative problem solving that will be helpful as you move ahead in your education.