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Summer of 2017
My MATC Internship Program Experience
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Before my experience this year with MATC and Iteris, I interned last summer at the Nebraska Department of Roads in the traffic division. Although I did learn and grow that summer as an engineer and learner, I wanted to try the private side of engineering before graduating to have an idea of what kind of career path I would like to pursue. I was fortunate enough to be able to get a taste of a private engineering firm for the past few weeks at Iteris. This firm focuses on finding traffic engineering solutions at the city, state, and federal level. I was told from the very beginning of this internship that the work I would do is typical for entry-level engineers. I even found myself assisting junior engineers out in the field or with tasks in projects.

The first task assigned to me was to do research on fiber-optic cable configurations for a memo describing the project's scope. Before this assignment, I knew very little about fiber-optic cables and networks. The research I did, as well as reading through the project scope memo, was an excellent introduction to how fiber-optic cables are used in communication networks.

After that, I spent some time working on a project on an autoCAD program called microstation. I drew the network architecture for a fiber-optic system project that will be implemented soon in Lincoln. In total, I spent about two or three weeks learning about fiber-optics and how they are an improvement to traditional cables. Although I still don't know much about these networks, I was intrigued by their impact on a global scale as well as our communities here in the Midwest. I was also able to brush up on my microstation skills and learn a few new things about using the program.

Next, I worked on the pavement plans for an intersection in Hastings that will have a new lane configuration. I gained insight as to what the engineering reasoning was for changing the lane configuration in technical meetings with other engineers in the office. This project in particular showed me how it is that Iteris operates in Lincoln. A senior level engineer meets with

junior level engineers and they discuss what deliverables are needed from the firm and when. A task was then delegated to me from a junior level engineer. After some time, we would meet again to discuss our progress on the plans. The engineers would discuss what improvements can be made to the plans. This took several iterations until the plans reach a satisfactory level. These are the kinds of meetings that I didn't witness much during my time at NDOR last year.

I also had the chance of working out on the field and conducting vehicle speed studies. It was nice to get out of the office for about a week and a half and measure vehicle speeds along study locations. After collecting data all over southeastern Nebraska, I went to Des Moines with three junior engineers to take inventory of traffic signal cabinets. With the help of an ArcGIS phone app, two teams of two would open cabinets, take pictures, and update cabinet information on the app.

Recently, I finished a cost estimate for the fiber-optic network project in Lincoln mentioned earlier. The preliminary cost analysis was made on an excel spreadsheet by referring to the plans we have prepared.

Something that I have just started working on is a spreadsheet for criteria that analyzes a public park and ride transportation system in the twin cities area in Minnesota. The park and ride services are lots that are filled with commuter's cars as they take a bus to high traffic metropolitan areas. The buses, in theory, should arrive sooner than other vehicles since the buses are allowed to drive on the shoulder of the highway. The criteria will be used to analyze how successful that park and ride program has been since its installation in 2010.

This summer, I have learned a great deal about this field and have learned a fair amount of how microstation works. A crucial part of the job I am starting to pick up on is the attention to detail that is required to be a successful engineer. There was a professor I had that was especially

tough on his students' lab reports and I can see why now. It's interesting to see how that attention to detail transfers over from an academic setting into a private firm. Iteris takes pride in their work and want everything to be the best it can be – including my work.

A part of my internship that I did not foresee, was the level of comradery that these engineers have. An example of this comradery is that the engineers all eat out for lunch together a couple of times a month. Another example is that I was able to go to Omaha to play mini golf with the Lincoln-Omaha-Council Bluffs Association of Transportation Engineers (LOCATE) for their third annual member appreciation outing. The engineers there were from various companies and came together just to have a nice and relaxing time. This was a great opportunity for me to see talk about traffic engineering to professionals at other firms.

One of the junior engineers from the office and I often find ourselves chatting about soccer since we both played soccer growing up. The engineer invited me to join him and some of his friends to play in a friendly soccer scrimmage against a new semi-professional soccer team in the area. We won the match and got dinner afterwards with his wife and friends. This is something I never anticipated happening when the summer started.

This summer has been one filled with learning beyond what can be taught in a classroom. I have learned a great deal related to technical knowledge within traffic engineering, how firms operate, and how important non-technical skills to succeed in this field. I will take the knowledge and experiences gained from this internship and use those to improve my skills. I would like to thank Iteris and MATC for making this opportunity available to me. I would also like to give special thanks to David McClintock, a former MATC intern and my supervisor this summer, for his tremendous help and patience throughout the summer. I am truly blessed to have been a part of this program.