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MATC SUMMER INTERN REPORT, 2011



During this past summer I have had multiple opportunities to grow in the civil engineering area. I am especially grateful to the Mid-America Transportation Center, or MATC, for allowing me a position in the program. By the end of the internship, I will have worked only six weeks as a research assistant at this institute, but it has not hindered my learning by any means. Getting a hands-on look at different disciplines of this major, and various career paths within these areas, is invaluable. I have been involved in many ongoing research projects during my time as an intern, all which have given me a better understanding of the hard work behind all great discoveries in engineering.

As an undergraduate MATC intern, I was assigned to Dr. Anuj Sharma to assist him and his graduate students in current research projects. In total, I have worked on four different research topics, assisting in any way possible. My responsibilities have included analyzing data, video, pictures, road sensors and their efficiency, as well as performing a speed study in the field. Although the daily work varies, my primary duty has been data reduction of previously collected data, a very tedious and slow process. Although this may be the most unexciting part of a research project, it is essential to each study. Engineers rely on the information from data reduction to draw conclusions from the data and formulate graphs, theories, and trends in the information.

The main project I assisted Dr. Sharma with involved stress analysis on a driver while operating a vehicle. A driver was asked to navigate a path in several situations while a GPS camera on the dashboard recorded pictures and videos of the path looking ahead of the vehicle, along with other values. The heart rate of the driver, in beats per minute, was also being recorded throughout this duration. We would like to discover whether or not there is any correlation between events on the road and stress produced in the driver, monitored by the heart rate. In order to evaluate this data, I reviewed the information from the GPS camera, noting time and duration of any specific event that may cause stress. I also consolidated information such as velocity and acceleration values, traffic characteristics, location details, and driver traits into a single spreadsheet.

Although five minutes of driving film may take all day to analyze and feel daunting, this importance of this process really hit me. I soon learned how crucial it was to stay focused and prioritize my responsibilities to be truly helpful to Dr. Sharma and the graduate students. Although my part seemed small and unimportant at times, I do realize how appreciated I was as an intern. This position gave me a wonderful look into the possible daily structure of an engineer with a focus in research, and even a better understanding of the expectations of graduate students. This is invaluable perspective. Not until you have a job in a professional engineering environment in several different roles will you truly gain a feel for what role you want in your career. I have greatly benefited from a research perspective, and it has even changed some of my thoughts on graduate school for the better.

This opportunity has also allowed me to expand my knowledge in the transportation field, which is very helpful as I am deciding between the structural and transportation disciplines of civil engineering. I have interacted with some programs used for traffic and transportation systems that I have never seen

before, so having that skill set will benefit me as well. On top of all these new experiences and learning opportunities, I have been lucky to create relationships and networks with professionals, professors, advisors, and other students. This may be one of the most important pieces that I will bring away with me, a possible mentor system for me to turn to when deciding and advancing my career. I would like to send many thanks to the Mid-America Transportation Center for this opportunity to expand my knowledge, resources, and interest in transportation engineering, it was truly eye opening.