

## What I Did During My MATC Summer Internship

By: Nicole Voelte

Hands-on experience is the best way for most students to learn what they're being taught in the classroom and from textbooks. This summer I got a lot of hands on experience in the field of asphalt paving and construction. I learned about the process and steps taken to pave a highway properly and I learned how to test the asphalt's density. The Nebraska Department of Roads is funding a research project with the University of Nebraska Lincoln to find out whether the new TransTech non-nuclear PQI 301 gauge is as accurate as the nuclear gauge that is used now.

I worked with a group of graduate students on this research project throughout the summer. We contacted contractors and found job sites to visit and test. We would test right after the roller finished compacting the newly laid asphalt. We then used an infrared camera to find spots that were good to test based on the temperature variations in the asphalt. Once our test spots were marked we then used a nuclear gauge and the PQI gauge to test the density at each spot. After the readings were taken with both gauges, we drilled core samples at those spots to calculate the density of the samples back at the lab. We would then calibrate the new PQI gauge based on the average of the densities of the samples taken. With the new calibration we would test another site with the new PQI gauge and see if we got better results. We continued this process all summer and gathered a lot of data to support our research.

This is my second year doing a MATC internship and both years I have found it to be interesting and educational. I have learned so much these past two summers in regards to work in research and out in the field. Internships are very important for students pursuing a degree in which they have no previous experience. It helps give students a taste of what their future career could be like once they finish school. It is also a great way to start making connecting and meeting people in the industry for

future networking. I am honored to have been accepted two years in a row to get an internship with MATC and the university.



This is a picture of us on a job site in Royal, NE on highway 20. The nuclear gauge is shown in front (the yellow instrument) while Heejung and I take readings with the non-nuclear PQI gauge.



Here is Koudous using the infrared camera to find what spots we want to test while I write down the GPS markings for return visits.





Here I am trying to write down all of the readings Ziquing is taking with the non-nuclear PQI gauge.