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RISE 2008

Experiences and Impressions: Measuring the World

Near the end of my internship, my PhD supervisor surprised me with a question, “So, what have you learned in Germany this summer?” It was early in the morning and an unexpected question, but I immediately responded, “I learned how to measure things.” I don’t really know where that answer came from. I had never thought about it before, but those words describe my summer very well. Between living in a German dormitory, traveling, and working in the lab, every aspect of my summer showed different ways of measuring the world.

One of the most important reasons I had for applying to the RISE program was the chance to live in a foreign country for the summer (particularly in Germany). Throughout the summer, living, working, and traveling, I continually made observations and gathered information about German language and culture. By the end of the summer, I have measured up Germany, and I find it... it’s actually hard to find the words for it in English. Auf Deutsch: Deutschland gefällt mir! Ich finde es echt gut!

Perhaps the best parts of my summer have been simply living in Germany and making friends with other students. I lived in a German Studentenwohnheim (similar to a standard American dormitory, but not the same as what I was expecting), on a floor with several other international students and lots of Germans. Everyone was very welcoming, which seems opposite to the stereotype that foreigners have of Germans. It took some time getting my room settled, finding a bicycle, and getting an internet connection set up in my room, but the Germans were eager to help with everything. I was invited to play

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with them in their football (soccer) games, to join in their Sommerfest, and to celebrate their farewell parties as they left. They took me into their house and made it my home.

I spent much of my time with the other international students on my floor, simply because we had the same interests. We baked desserts and cooked dinners together, bringing together foods from Europe, Asia, and North America. Many of the international students were here in Germany to study German, so we were all in the same situation of experiencing and learning a new culture. Another opportunity came because most of them did not speak any English, while the Germans I met spoke English extremely well and enjoyed practicing with me. So I ended up speaking even more German with my friends from Russia, China, and Mongolia than with my friends from Germany.

Besides just cooking, baking, and jogging together, the other international students and I found time to discuss international politics, wars, the Olympics, and other relevant issues. It was enlightening to learn about the different cultures and answer other people's questions about the USA. Together, we compared our countries and our cultures, realizing that each has its own good reasons for their beliefs and practices, as well as many bad reasons for going to war, limiting freedoms, and disguising corruption. Learning about several different cultures helped me see a bigger picture of the world and not confine my thinking to the borders of the United States.

In the lab, I worked with my PhD supervisor and a Diplom student (similar to a Masters degree in the rest of the world). Our work focused on measuring the concentrations of various gas molecules in flames. Of course, there is no direct method to measure the concentrations of arbitrary gas molecules. However, some sneaky scientists have found ways to trick our specific gas molecules into telling us some information

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using lasers. The basic set up involves a burner, a laser, a detector, and lots of computer code. Beyond these, we also need devices to measure the pressure and temperature at different places in the burner chamber, others for the gas flows into the burner, the height of the burner, and every other detail of the situation. Without all of those measurements, we know nothing about the gases in the flames. Of course, the preparations are not even so simple as that. Each device used to measure something about the flame needed to be calibrated, which required measuring the measurement devices!

Along with learning about making measurements, I have learned that every measurement has limitations. Even with all of our equipment, we can only measure several different gas molecules in three very specific flames. My measurements of the German cities I visited turn out really to be nothing more than my own opinions; to make these measurements even less useful, they were inevitably linked as much to the weather and to the people I traveled with as to the city itself. Normally, taking a larger sample size can improve results of a measurement. However, measuring people and cultures seems more limited yet, due to the billions of unique situations, viewpoints, and opinions instead of just my own. Rather than learning methods to evaluate the different cultures, I actually learned how impossible it is to objectively measure the people of the world.

Robert Niederriter

I agree that my report and accompanying photos are used by the DAAD in printed materials, presentations, and on the website in order to inform funding organizations, sponsors, and students about the RISE program.