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Host University: Freie Universität Berlin
Theoretical Physics

RISE REPORT 2009

My RISE scholarship was for theoretical physics with Professor Kleinert's group at the Freie Universität in Berlin. I have grown so much from my internship in Germany. It certainly has not been the easiest or most comfortable experience of my life, but it has definitely one of the most valuable.

Having the opportunity to actually do theoretical physics research as an undergraduate was—to say the least—incredible. My internship was intense, combining a crash course in the graduate level material which I would be working with and also research on an unexplored part of it. I was able to see directly how theoretical research works (how new physics is born!) in addition to learning practical programming skills and the ways in which one can check the quality and usefulness of their theory.

In addition, the group that I worked with was amazing. We were a very diverse collection of people, so I learned much more from them than just physics. We could compare anything from education systems, gun control, health care, and drinking laws to food, holidays, and the weather in Germany, Brazil, America, China, Ukraine, and Portugal, since we had natives from all of these places. Being around people with such different experiences and opinions has been an eye-opening experience and I feel that my understanding and perspective of the world have been greatly enriched by this.

I was lucky in that the language of science is English, so that even with such a diverse group of people, everyone spoke English quite well. Having had no previous experience with German besides a few audio tapes, the language barrier was the most difficult part of my internship. I had never felt so ignorant—so blind, deaf, dumb, and illiterate—ever before. I certainly now understand much more about what it is like to be a foreigner in a strange land. I was forced to overcome my embarrassment of my poor language skills and to use what German I knew to get by. I now have such respect for those who can speak more than their native languages! I also found a tandem partner through a language-

matching service at the Freie Universität. This was a really cool experience—I helped her with her English, and she helped me to improve my German. It was very relaxed; we would just go get beers and talk. I ended up learning a little German and even made a friend in the process.

And though the language barrier initially made me want to stay home and hide, I ended up doing a lot of travelling throughout Germany. I saw the Saxon treasury in Dresden, went to the Fischmarkt in Hamburg, ate cheesecake in Lübeck, strolled through the palace parks in Potsdam, climbed through basilica ruins in Heidelberg, drank liters of good beer in München, got disgusted by the concentration camp in Dachau, and even crossed the border to see Switzerland and Poland using the free German rail pass we were given. And that was just what I did when I wasn't falling in love with Berlin (where my internship was located). Berlin was fantastic. I loved the museums (free on Thursday evenings), the English theatre, the open air cinemas, the East Side Gallery, the quirks of living in what was once a divided city, the clubs, the Turkish food stands (which made being a vegetarian in Germany really not so bad as you might think—I even was able to try vegan currywurst!), the flea markets, the attitudes of the big city Berliners...I even loved the "cheap and nasty" grocery stores and the wild boars which lived in the forest by my apartment. Also through traveling, I met many of the other RISE scholars, many of whom I still plan on keeping in touch with after this summer.

I feel that I am no longer the same person who left for Germany three months ago. My approach toward physics has become more sophisticated after seeing what research in theoretical physics is really like. I have become a more confident and adventurous person. I have been challenged both academically and socially here and I have learned a lot about myself and others from this experience. I am very grateful that this program exists and that I was able to take advantage of it—I am so glad I came!

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