

DAAD RISE Report

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Home University: Yale University, USA

Host University: Justus-Liebig-Universität, Gießen

These 10 weeks in Giessen, Germany have been a very rewarding and educational experience that, I believe, perfectly complemented my previous research experience and added greatly to my toolkit as a prospective chemist. I had previously spent one and a half years doing organic synthesis and organocatalysis at my home university. With two more summers left, I decided to diversify my experience by applying for a research attachment abroad. My objectives were to explore a wholly different field of chemistry, and perhaps gain some skills that could be transferable into organocatalysis. I was very fortunate to be accepted as a summer intern in Prof. Peter R. Schreiner's group at the Justus-Liebig University Giessen, which studies, among other things, the synthesis and characterization of reactive intermediates such as the aforementioned carbenes. My day-to-day supervisor was Markus Schauer mann, whose project was on mercaptocarbenes.

From a social standpoint, I was impressed by how everyone in the Schreiner group was extremely welcoming to visiting students such as myself. In the first few weeks, everyone went out of their way to help me settle in both in- and outside the lab. For instance, my labmates were more than happy to show me where to find apparatus I needed, demonstrate safety protocol, and answer any questions I had. I was immediately invited to a lunch group which visited the nearby Mensa daily. There, I had a great time getting to know members of the group outside my lab. Some group members were also very generous with suggestions on what I could do in the evenings and during the weekends.

From an academic standpoint, this experience met and exceeded my expectations regarding learning new skills and doing new chemistry. There were many opportunities to learn. For instance, I attended weekly computational chemistry workshops, as well as academic lectures, seminars, and colloquia, sometimes up to thrice a week—these were enjoyable and educational breaks from lab work. Looking back, I am surprised by how much these experiences factored into my German research experience overall, and I believe they complemented the work I did in lab. My mentor, Mr. Schauer mann, was extremely patient in teaching me new techniques and answering my many questions. By the end of the internship I felt much more competent especially in computational chemistry and matrix isolation.

A typical day in my internship involved getting in at 8:30, writing down my plans for the day, checking on reactions that were set up the day before, and working them up if necessary. We usually went to lunch at around 11:15, after which we returned and continued work until around 17:00. My days were highly varied on account of, first, the seminars, group meetings, and workshops that were scattered throughout the week; and second, the varied nature of my work, which involved synthesis, computation, and matrix isolation. My time was therefore divided between many things, which meant that whenever I got stuck with one problem, I could always move on to do something else and return to it later. This strategy proved very useful in the long run.

Outside the lab, I had a wonderful experience exploring Germany and the neighboring countries. I visited one new place on average every weekend, usually leaving late Friday or early Saturday, and returning on Sunday. Overall, I very much enjoyed learning about German culture through interacting with people, tasting food, and walking through cities and towns. I also had a great time with fellow visiting undergraduate students to my host university—we took some trips and explored Gießen together.

Overall, this research experience has further cemented my interest in chemistry. From it, I have been able to gain some new skills and knowledge, which will certainly prove useful in my future career as a chemist. More than ever, I see myself extending my academic interest in organic chemistry, by pursuing a research

career. I would definitely recommend the RISE program, for the perspective and experience I have gained in a short 10-week experience this summer. I am very much indebted to the DAAD for sponsoring my visit to Germany.

“I agree that my report and accompanying pictures may be used by the DAAD in printed materials, presentations, and on websites in order to inform funding organizations, sponsors, and students about the RISE program.”