

DAAD RISE Report – Physics in Hamburg

Alex Roseman

I was a RISE intern in the summer of 2023. I stayed in Hamburg, and worked with a University of Hamburg group studying gravitational wave detection, based at DESY, in Bahrenfeld (we were using pseudo-random phase modulation to make scattered light not coherent with the main laser in a Michelson interferometer). I did a number of different things over the course of my internship - all part of the same large project, but not very connected to one another. At the beginning of the summer, I spent time reading about gravitational wave detection, and also attended my PI's lecture on the subject. Later, I did a bit of lab work, helping to set up optics (mostly aligning components so that the laser could pass through the experiment with minimal loss). Most of my time, though, was spent working with the lab's optics simulation tool, coded in Python. I added a few features, and also spent a lot of time chasing bugs/figuring out how to get good data out of the simulation. The closest thing to a final project I had was a write-up of one particularly subtle issue with this simulation tool, which ended up over 50 pages long (mostly pictures). I wasn't doing life-changing research, but I was able to help with some genuinely challenging technical issues, and I learned a lot about optics, coding, and how to do research in physics.

My lab and mentor offered me a lot of flexibility in what I did. Generally, I wanted to experience different aspects of lab work/physics research, which is why I jumped around so much. The lab was very well-organized—we had short daily lab check-ins, and longer weekly meetings. I think the daily meetings were particularly helpful for me as an intern, as they kept me on-task, and also allowed me to course-correct quickly when I misunderstood something. The lab also had a lovely social environment—we ate lunch together every day, and occasionally played board games after work. We also had one lab outing to a chocolate museum.

I lived at the Christophorus-Haus e.V, about a 20-minute walk from the DESY campus where I went to work. The other people on my floor were very friendly and spoke excellent English, so we would often talk over meals, and we had one game night together. I did a lot of cooking—I would cook about every 3 nights, and almost all of my dinners were homemade (the rest were largely purchased on “Too Good to Go,” a wonderful app where restaurants post discounted takeout food). The dorm was great—cheap rent, nice rooms, and a (fairly out of tune) piano in the basement.

Most of my friends in Germany were other RISE interns, although I did also have a few friends in my dorm (this was largely because I didn't speak much German, and also because the other RISE interns were very friendly and generally wonderful, and so I didn't really need to look for another group of friends). If you are accepted to RISE, I would highly recommend getting in touch with other interns somehow (in my year there was an information session online, and then a conference in Heidelberg about halfway through the summer). In retrospect, I wish I had spent more time with my friends. I realized only at the end of the summer that I might not see the other interns ever again, and if I'd realized this earlier I would have tried to organize more hangouts.

I did a little travel—I went to the conference in Heidelberg for a weekend, and visited Cologne and Schwerin for a day each. I also spent a little over a week in Berlin, staying with a friend who happened to be living there at the time. Many of my friends did much more travel: Hamburg is surprisingly close to Amsterdam, and flights around Europe are relatively cheap. If you think you would like to travel a lot, I would recommend finding some other source of funding, in addition to RISE. The RISE funding was sufficient for me personally, but it wouldn't have been enough if I had gone on more trips, or had more expensive housing.

I also got sick for a week and a half, during which I played a lot of video games. Seeing a doctor was fairly simple, as was using the DAAD insurance, although finding a doctor was a little tricky—it might be worth looking for a doctor in your area even if you aren't planning on getting sick, just in case.

Miscellaneous Advice

- Apply! RISE was great, and I'm really glad I had the opportunity to visit/work in Germany for a summer. I really liked the people I met, and I think I grew a bit as a person from being thrown into a new environment (where I didn't speak the language!) and getting to build a life for myself.
- You can get by without speaking German (you'll pick some up as you go), but it will be significantly easier/harder depending on where you go. Berlin is completely English-friendly, Hamburg a little less so but I was mostly okay with Google Translate. I think it would be difficult to communicate without German outside of major cities.
- The Deutschbahn (DB) Trial BahnCard 25 pays for itself very quickly if you purchase any high-speed train ticket.
- The DB 49 Euro Deutschland Ticket is an excellent deal if you plan on regularly using public transport. It's also very nice to just have the security of knowing that you can take any local bus or train for free.
- HOUSING: Your research mentor is likely your best resource. You probably know about WG-Gesucht – expect about 1 response per 15-30 messages. Studierendewerk is another great resource. For Hamburg, this page is super useful: <https://www.stwhh.de/en/accommodation-for-students-and-trainees/student-residences>. (probably you can find an equivalent for other places). The STW housing is nice but for me was already full. I found housing by emailing the “Student residences of other landlords.”
- Also watch out for housing scams. WG-Gesucht has resources on catching scams, but at a bare minimum I would recommend asking for video tours of apartments, and Google searching the text of people's messages to check if they show up on scamwarners.com.
- My first few days in Germany were quite lonely. I have come to believe that this is normal, and it will pass.

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.