DAAD 2025 Report
Bhavesh Gnnanapareddy

Background:
I am Bhavesh Gnnanapareddy, a master's student in computational chemistry under Dr. Gino DiLabio at the University of British Columbia, Okanagan campus in Canada. I have pursued my bachelor's degree in physics and am passionate about developing and applying physical principles to chemical and biochemical systems, skills that I learned during my master's program. The DAAD provided a perfect opportunity to pursue a research internship at a multinational pharmaceutical company, Sanofi, under the guidance of Dr. Volker Derdau in the Isotope Chemistry Lab (Integrated Drug Design), where I could apply my skills in an industrial environment. Volker's group develops synthetic methods to attach isotopes of hydrogen or carbon into drug molecules for various applications, like radioactive tracking (Tritium).

Research at Sanofi:
My research utilized computational methods to aid in understanding an experimental setup developed by PhD student Elisa Martinelli, which involved attaching tritium through the reduction of aliphatic aldehydes. Computations can help elucidate the elementary processes occurring in the reaction, which can significantly aid in designing the experimental setup, selecting viable substrates, or optimizing other catalysts. This type of work is referred to as mechanistic studies, which is also the focus of my master's project. However, this was my first experience with a project where experimental and computational work were done simultaneously. I had a blast, and learnt a lot in a short three-month internship. The discussions on what the mechanism could be and what reactions/simulations to set up during the meeting were a fantastic environment. This positive dynamic led me to persuade Dr. Gino DiLabio and Dr. Volker Derdau to collaborate academically, allowing us to continue the project work. This also enables us to progress some of our goals in Dr. DiLabio's group.

Research in Germany:
This section is my view of the culture, strengths, and weaknesses of German industries and research compared to North America (NA) from my experiences in Germany. I have previously also studied in Germany during a semester exchange at TUM. The culture is more straightforward, and in the industry, there is a clear hierarchy, so it is easy to seek help based on what you need. Personally, I have always preferred this culture over the general North American ways. The German automotive/mechanical, as well as pharmaceutical, sectors are among the best in the world in both academia and industry. However, it lags in the IT, AI, and electric vehicle sectors compared to NA. Since I lean more towards pharmaceutical applications, although I do develop AI methods for this sector, I prefer Europe. Consequently, I am pursuing a PhD in computational chemistry in Paris at PSL University under Dr. Thijs Stuyver, coincidentally, the headquarters of Sanofi. (The country for my PhD within Europe was not a factor to me; the PhD project was well-suited for my future, which was the main factor). Ultimately, I would be pretty happy to be able to return to Germany for a research career.

Bank account and housing:
I have used the WISE international debit of all purposes during my time in Germany. I personally recommend it, and you can also quickly convert currencies. Housing is tricky, especially in big cities and for a short term in industry, since for a university, you can apply for university residence in most cases. I took what I could find for a reasonable price.

DAAD Internship:
Overall, I would highly recommend applying for any DAAD internship, whether it is the RISE program or a different program, as it can help advance your career. It also helps to understand the culture of the country and interact with diverse people. The DAAD-RISE conference was also an excellent event to meet the other interns in a different German city.