

My SUPER Experience at the University of Stuttgart - Summer of 2022

Institute of Chemical Process Engineering

Project: Developing novel polymeric membranes

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**I hereby agree to my report being published on the websites of the Christian Bürkert Stiftung and the University of Stuttgart.**

## **Getting to Stuttgart**

Flying from the United States to Europe is a daunting task if you have never done it before, I found that out quick as I journeyed alone across the ocean to a whole different part of the world for the first time in my life. No one really prepared me for the protocols to follow, what to do, and what was going to happen. My journey here was a little rocky at times with last minute flight cancellations and ticket issues. During every step of the journey, though, the team at the International Office from the University of Stuttgart helped walk my family and I through what to do and made sure I was safe and taken care of. Once I finally landed in Stuttgart after the long delays and layovers, I was met by one of the International Office employees who helped me navigate the trains to my living accommodations at the Student Hotel. Safe and sound at last!

The days following were filled with unpacking and shopping for things either I had forgotten or things I intentionally left behind, along with lots of grocery shopping since we lived off campus.

## **Life in Stuttgart**

I am originally from North Dakota, which is heavily influenced by German culture and cuisine since most of the citizens' ancestors originated from Germany. Because of this, I didn't think that being in Germany would be that different from being at home, but, boy, was I wrong! Almost everything is different from the United States, even things as rudimentary as grocery shopping! Now to preface, I am by no means saying the adjustment to life in Germany was difficult, it was just surprising to me; all in all, it probably only took me about one week to get the hang of things. In the United States, individuality and living a fast-paced life is commonplace, just look at how quickly we prepare and eat our meals! In Germany, more emphasis is placed on social gatherings and taking time to enjoy food, drink, and the company of others. Meals with friends, family, or colleagues typically last a minimum of 2 hours, or can even be a whole evening ordeal! So be warned, when accepting a dinner invitation, you probably won't get home until 9 or 10 o'clock at night. Additionally, in the US, it is typical for people to never default to the honor-code, i.e. we don't really trust people to do the right thing on their own. In Germany, and really Europe in general, it is expected that people will follow the rules and are typically responsible for doing the right thing on their own. For example, if you are on a train (especially in the city), your ticket is hardly every checked, it's just expected that you

bought a ticket (now, don't think you can go to Stuttgart and just not pay for a ticket, if you get caught without a ticket, it's an 80 euro fine, so just buy a ticket, they're cheap). Another huge difference is a heavy emphasis placed on work-life balance. In the US, you are expected to output as much work as possible, and even are sometimes expected to work overtime voluntarily. In Germany, that is not the case; there is a huge focus on health and happiness of employees rather than what they can offer the company, so workplaces are a bit more relaxed compared to the US. Overall, the culture is just very different than what I grew up in in America.

My day-to-day life in Stuttgart was pretty ordinary. I went to work between 8 and 9 am via the public train system every morning and finished work between 5 and 6 pm. My coworkers and lab-mates were all fantastic people, willing to answer any questions I had or discuss any ideas I had regarding a project. Since the institute I worked in was off campus, I packed lunches for myself, and had breakfast and dinner back at the housing accommodation. In my unit, I had seven other roommates (mine was co-ed); we all shared one kitchen, but there were two toilets, four showers, and an array of sinks for everybody to share. Honestly, I know that sounds a little daunting, but was great! I became great friends with all my roommates, and we would often eat dinner together or travel together. The weekends were when I really got to travel and explore not only Stuttgart but also a plethora of other cities!



My research team!

## Traveling

During my stay in Stuttgart, almost every weekend I was traveling somewhere or doing something! Since relatively everything in Europe is accessible by train, it was super easy to travel between cities and even between countries!

I visited many cities in Germany, including (but not limited to) Rothenberg, Heidelberg, Esslingen, and Ludwigsburg.



View from the Castle in Esslingen am Neckar



Group picture overlooking Heidelberg



One entrance into Ludwigsburg's Residenzschloss

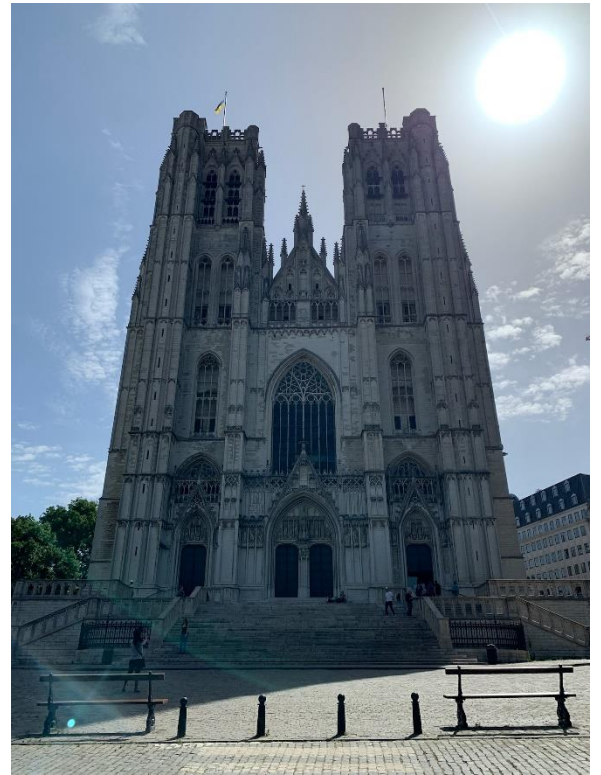


Gardens of Rothenberg

While in Germany, I visited the Netherlands, Belgium, Luxemburg, and Switzerland. Each country is a unique blend of their own culture as well as those of the surrounding countries.



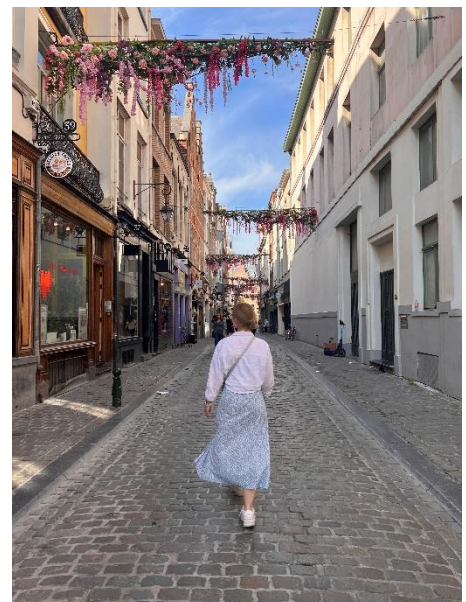
Adolphe Bridge in Luxembourg



Luxembourg's Royal Cathedral



Grand Square of Brussels at Dusk



Wandering the Brussel's city center

## **Research**

Like I said before, my research was treated more or less as an actual job. I had set hours when I would be in the laboratory. I was given my own project to work on by my professor dealing with ion exchange membranes in a carbon dioxide fixation process. I was asked to create a model to estimate the energy consumption of the process and to design a testing protocol for the characterization of commercially available ion exchange membranes. In all steps of my project, I learned something new; I was in direct contact with industry representatives and was in charge of running my own experiments and analysis. I worked on this project for a total of 2 months but unfortunately with the back-ordered materials and equipment, I didn't get to see all my hard work come to fruition; the project, along with my work, will be passed to another researcher.

One huge difference between research in Germany versus in the US is the amount of authority or say I had. At my home university, I really just did the grunt work for my graduate students, I didn't really have a huge say in the project and was not included in any discussions. In the SUPER program, I was the head of my own project, making important decisions and being an integral part of the actual research and theory going on. I felt like I was learning something rather than just mindlessly washing glassware, etc.

## **Advice for future SUPER students**

- This may sound odd, but when you go grocery shopping in Germany, start packing your groceries as soon as the teller scans them. Germans value time, so if you wait to bag your groceries until after you pay, you will get a few annoyed glances.
- Germans love to find any reason to have a party or a festival; take advantage of these and try to attend as many as possible! It's a great way to experience German culture and meet amazing people!
- If you don't speak any German, it's a fantastic idea to learn basic German phrases; most younger people speak English but some smaller restaurants, shops, or the older people in Germany may only speak German.

- Bring medications from home, like cold medicine or allergy medicine, if you need it; there are pharmacies in Germany, but everything is in German so it might be difficult to find what you need.
- Bring reusable bags; you have to pay extra for shopping bags in Germany, so it's just easier and cheaper to bring your own!
- Try all sorts of foods! There is a plethora of amazing foods in Stuttgart. I would highly recommend going to as many farmer's markets and specialty bakeries as you can, the food is delicious and it's not something you are going to find anywhere in the US!
- Just have fun! This is your time in Europe, if you want to travel, do it, if you want to just explore Stuttgart, do it! There is so much to do in Stuttgart, let alone Europe, so you will always find something that interests you.