

## **Copenhagen Scholars Participant Comments Fall 2019**

### **Cathy Miao, '20 – Computer Science, Caltech / Computer Science, DTU**

The past 2 months here at DTU have been some of the best in my entire college experience. Not only have I met a lot of new people and made new friends, I also feel that I've learned so much in my courses here, and also gained practical life skills (see next paragraph). The scenery is very different from Pasadena; and because it rains more here compared to California, there's much more "green" everywhere. The weather is also a big change: as someone who's been in California for most of my life, experiencing a real winter has been quite refreshing.

The school canteen food here is really different from that of Caltech's. Meat is much less omnipresent, and some days not even on the menu. I've felt much healthier eating their delicious vegetarian dishes (such as baked cauliflower, creamy mushroom pasta, freshly baked bread with various cheeses and homemade spreads, and so much more). In addition, the food is subsidized by the government, so a plate of food costs me on average about 20-30 DKK, or 3-4 USD. However, the school canteens are only open during lunch on weekdays, so I've also had to learn to cook for myself. This may not sound like a big deal, but before coming here, I could count the number of times I'd attempted to cook an actual meal on one hand. Now, cooking has become a much less daunting, and more exciting, regular part of my day. It's also a social experience; I meet up about once a week with some other exchange students I met during Introduction Week and we cook and eat dinner together! There are also often multiple other Danish students from my hall in the kitchen at the same time, so this also serves as time to get to talk to them more. The fact that there's a small grocery store right next to our dorm (kollegiet) at Kampsax is just icing on the cake.

I also joined the DTU badminton team, which has been extremely fun. Badminton is pretty big in Denmark, so the team is actually 3 separate teams (based on skill level), and we regularly compete in tournaments around the Copenhagen area. I know there are also many other sports teams that are all very open to having new members join (one of my exchange student friends strongly recommends the ultimate frisbee team!), which I think is a great way to both exercise and meet people.

As for classes, I definitely enjoy the (very different) structure of courses here. Since there isn't mandatory homework every week for many of my classes, I'm able to spend time thoroughly reading the textbook, reviewing lecture slides, taking notes, and going over the optional exercises. These are things I never had time to do regularly at Caltech, and I feel that I've been learning much more this way. I'm also taking courses in subjects I otherwise wouldn't be learning about, such as Cognitive Modelling and Statistical Genetics (both in the CS department here). The professors are also extremely approachable, and spend the 2 hour exercise sessions related to each class block walking around helping people (in Denmark, students always address professors by their first name!). Going into Copenhagen twice a week for our Danish

language class is also a nice change of pace, and the class is actually a very good language course.

Being in Denmark as an exchange student has allowed me to really broaden my horizons and do things I otherwise would definitely not be doing. I'm so glad I decided to come here, and I would encourage anyone considering studying abroad to go for it, wherever "it" may be!

### **Catrin Murphy '19 – Computer Science, Caltech/Computer Science, DTU**

Since I came to Caltech, I've known that I wanted to study abroad, and I have finally gotten to do so at DTU. Living and studying in Denmark has been an amazing experience so far and one I would recommend to anyone. It has forced me out of my comfort zone and given me the chance to meet not only Danes, but people from all over the world and has let me experience a new culture in a much more immersive way than simply visiting would.

I chose DTU for two main reasons: The first is that I wanted to go somewhere where people didn't only speak English. While classes at DTU are taught in English and most people you talk to will be able to speak English, it was important to me to be able to study somewhere where I didn't speak the language, and where I could learn the basics of the language while there. Secondly, DTU provides a huge variety of classes that you might not encounter at Caltech, and the courses I'm taking are very practical: Much of what I'm learning is directly applicable to projects or jobs. To illustrate just how diverse the course offerings are, I'm currently taking a course on computer game prototyping, where for our final project we design and create a game in Unity, as well as courses in data security and data science.

On the topic of academics, the classes at DTU are also taught very differently from those at Caltech. The classes are taught in a block system, where each of your classes meets once a week for 4 hours. Generally, the first 1-2 hours of that will be lecture and the rest is devoted to working on class exercises with the assistance of the TAs, but this varies based on the class. These exercises are often ungraded and the focus in completing them is to make sure you understand the material taught each week. In addition, many of my classes have 1-3 group assignments that are graded as a part of the course – sometimes in place of an exam. As a Computer Science major this is very nice, since it gives more hands-on experience with the course material than simply taking an exam would. Overall the teaching style here is much more relaxed and self-paced, which has really helped with my understanding of the material.

Socially, I have been able to make friends with both Danes and other exchange students. Through my Danish classes each week at UCPH, I have gotten to know other exchange students in Denmark, and when you first arrive you will also go through orientation week, where you will be placed in a group with other exchange students to learn about DTU and Denmark, as well as hopefully make some friends. I have gone on weekend trips to other countries in Europe with people in my buddy group, and we have met up and made dinner together with dishes from the countries we came from. Through the kitchen system, in which everyone in the hall you'll be living in shares a kitchen (~15 people), you'll be able to meet

Danes who study at DTU. Many kitchens will have events and cook together sometimes as well. I've also gotten the opportunity to make friends through my classes' group projects and through my involvement in DTU's LGBTQ+ club.

Overall, living and studying in Denmark is a great experience that I would recommend to anyone thinking about going abroad. Denmark is beautiful and very easy to travel in, and I have been able to travel to Germany and France as well so far during the term, with a few more trips still being planned. Plus, especially coming from LA where there aren't any seasons, I've really been enjoying the fall weather.

### **Michael Rupprecht '20 – Mathematics, Caltech / Department of Applied Mathematics and Computer Science, DTU**

I opened my application essay for the study abroad program with an anecdote about how I chose Caltech over a number of schools that felt more familiar in the hopes of broadening my experience without subjecting myself to artificial limits, and how that motif had shaped my college experience so far. Choosing to study abroad was a logical extension of this idea; I hoped to broaden my experience in both learning and living in ways I was not able to before, on top of having fun and meeting new people, of course.

Two months into my stay (about halfway, wow!), I've had the good fortune of taking classes with jovial, engaged professors, where the focus is on a thorough understanding of material that we learn together as a class; living with a tight-knit, familial group of DTU students; having a group of familiar faces from introduction week to spot around campus, have lunch with, talk with – and study with, in the case of one member who's in my machine learning class (02450: Introduction to Machine Learning and Data Mining); and plenty of opportunity to go into and beyond Copenhagen and learn about the broader cultures I've chosen to immerse myself in and surround myself by.

In my cryptology class (01426: Cryptology 2), we have lectures interspersed with problem sessions where we work on problems on our own as well as in small groups, and so get hands-on practice doing math – just like at Caltech, but with the whole class participating. I feel that these sessions allow me time to mull over the material in a setting where I can easily access help, which I believe is a quite positive learning environment.

In my history class (10610: History of Technology), we are taught about timelines of various fundamental themes of technological progress – like how water is involved in technology and society – in the morning, with some discussion. In the afternoon, we explore some of these themes in a bit more depth, look at different examples (such as visiting the Danish Design Museum), and discuss our incipient papers, which are each to be 10000-word-long open-ended explorations of a particular technology in whatever light or context we feel is interesting; my paper will explore the extent to which events and trends that were specific to the United States affected development of urban rail infrastructure in other OECD countries, especially in the postwar period.

These approaches to teaching and learning differ slightly from my classes at Caltech, and I believe I will come back to Caltech with a fuller perspective on what is possible in that sense. It also helps me in that I am very interested in pedagogy and get to see more of what's possible and have a better idea of what works.

I am lucky enough that my schedule allows me to travel rather extensively with no interference in my classes. This allows me to fulfill my main goal of studying abroad, which is to learn how other people live. Cultural differences fascinate me; the way people live varies from location to location and from group to group, and everywhere from trifles to the cores of cultural identities, there is sometimes more than one way of doing something "correctly": a bit like how neighboring towns may decide to color their street signs differently with no discernible positive or negative effect on society, the ways different groups of people live can often disagree without causing a notable difference in their quality of life, even if the resultant lifestyle varies dramatically. From the tiny to the drastic, differences in culture can indeed be due to problems in a certain society, but, very often, are simply artifacts of societies' different answers to the same questions. Sometimes, like when an author uses MLA versus APA formatting, cultural differences can reveal societies' divergent priorities and values, and sometimes, they appear to simply be idiosyncratic.

Whether it's American car culture versus the shiny European intercity rail system, the sarcasm and informality of Eastern Europe versus the by-the-book predictability of Denmark, or the varieties of the cabbage salad that appears, fundamentally, to be universal, the best way to learn about cultural differences is to experience them firsthand.

While short trips are only enough for a glimpse into how people live elsewhere, a glimpse accompanied by explanation is naturally much better than having to resort to reading Wikipedia on a couch thousands of miles – er, kilometers – away. As such, I've attempted to balance this with truly being able to soak in the culture of Denmark, Copenhagen, and DTU. I have settled on a strategy of frontloading my travel and staying in Denmark more as the term progresses and gets more difficult, and I believe this has been rather successful so far. So far, I have gotten glimpses into the historical and contemporary cultures of Prague, Brussels, Krakow, Hamburg, Berlin, Dresden, and Munich – not to mention Copenhagen – and I have been able to afford each place I visit a chance to explain its history in its own words – literally speaking, by going to museums, monuments, and other such vessels of historical knowledge. Traveling equipped with a sense of curiosity has given me a sense of context for my stay here: I've seen how art, architecture, food, languages, transportation, manners, weather, government, and clothing, among other things, differ and compare across a selection of major cities on the continent, and this has given me a better sense of what it means to live in Denmark and what it means to be American.

While short trips are only enough for glimpses into other cultures, I've luckily been afforded a long trip – a whole semester – to DTU. A short trip is great, but a long trip is a game-changer.

While getting used to the details of Danish life – shopping at Netto (a large chain of small supermarkets), taking the bus, occasionally sharing in the weekly dinners cooked by the full-time DTU students, and so on – I’ve come to realize more deeply that the place you live matters. At Caltech, I mostly stay on campus, and so I sometimes feel I’m not getting much culturally out of it, despite living so near LA, which is so different from my native Chicago and plays host to many cultural institutions. But my trip to Denmark has made me realize that even the small details of my living there – the weather, of course, but also the food, the attitudes, the fashion – exactly the same things I’ve noticed differ between the various cities here I’ve visited – really do constitute an experience of living in SoCal. Living somewhere is a different sort of cultural exposure from the glimpses I’m afforded by taking short trips to other cities; while those glimpses allow me to *see* how others live, if only to a small extent, this trip allows me to *live* how others live, and that is one of the most valuable benefits I’ve experienced in my time here.

But, of course, humans are social animals, and no matter how interesting the surroundings, I would be lonely were it not for the people I’ve been meeting. On this long trip, I’ve been fortunate enough to live with a group of people that are obviously much more than vehicles for cultural learning. Whether it’s Vince’s contagious enthusiasm for cooking, Emil’s surprising love of American football and joking disdain for the Danish language, or Nicolas’s jokes, my experience here at DTU wouldn’t be what it is without the whole gang in KK35 (Kampsax Kitchen 35, the section of the dorm I stay in), which has accounted for a good number of evenings of warm camaraderie that have collectively been highlights of my trip here. Together with the occasional lunches I have and group work I do with members of my buddy group (the group of people I was with during introduction week), the biweekly trips to the University of Copenhagen for Danish language class with Cathy and Catrin, and the encounters I’ve had with random people during my travels (like the Australian on an extended vacation I ran into by chance in both Prague and Krakow, the American writer of *Bojack Horseman* on a one-year sabbatical at my hostel in Krakow, the Irish tech consultant on my train to Warsaw, the German food logistics expert on my train to Prague, the Chinese trio of entrepreneurs on the same train, the German couple at the currywurst stand in Berlin, the Berliner who overslept his stop and walked with me to my hostel in Dresden, and so on), the people complete the experience. Just like how it is possible to work a mediocre job and love it because of the people, this incredible, eye-opening experience has only been bettered by everyone I’ve met.

When I left for Copenhagen, I expected a fun trip where I got to learn about other cultures. I got a fun trip where I got to not just learn more about other cultures, but about the differences between them and how they blend together, as well as some deeper lessons about what it means to live within a culture. I’ve met some amazing people and hope to stay in touch with them as well as meet more – and I’ve learned about cryptology, machine learning, history, and Danish – and a different paradigm of education altogether – along the way. I am incredibly grateful for having been afforded the opportunity to study abroad, and I would highly recommend that anyone else do the same.