Identification Code: USA-2019-TSBS-w
Major and degree: Master of Science Neuroscience
Number of semesters: 4
Host country: USA
Internship abroad
Start and end date: January 14th, 2019 – April 12th, 2019
Host university: Massachusetts Institute of Technology

Experience report

Motivation & Preparation

Any aspiring scientist needs to develop a diverse skillset ranging from dexterity, logic and problem solving to communication, time management and patience in order to succeed. In the course of my master's degree, I had the chance to work on these skills during two mandatory lab internships. This requirement piqued my interest in exploring lab work in a country other than Germany before starting my PhD here. I was particularly drawn to the U.S. for their stellar reputation in the scientific community as well as the lack of a language barrier. A three-month internship seemed the ideal opportunity to see the well-equipped and hard-working U.S. American labs I had heard about with my own eyes and use them as a platform to further enhance my scientific expertise.

Due to previous stays in the area, I decided to limit my internship search to New England. Apart from that restriction, I applied to a variety of labs with different research topics and approaches. Since my major goal was to explore something new within the field of neuroscience before committing to my PhD, I was very open with respect to the research focus. Surprisingly, I received quite a sizable number of invitations to interview on Skype. These were all very informal interviews that focused on narrowing down the particulars of the internship rather than discussing whether it would be available to me at all. I thus found myself in a position to choose from several invitations and ultimately went with MIT not only for its reputation, but also for the genuine interest the hosting professor showed in me. Living directly in Boston was a nice bonus, albeit about three times higher in rent than Freiburg. Since I was prepared for the considerably higher living expenses, I made sure to secure sufficient funding beforehand. The DAAD health insurance saved me hundreds of dollars in comparison to MIT's recommended insurance, for which I am deeply grateful.

The most annoying part about preparing my stay was all the documentation that was required for my visa. MIT has an organized program for visiting students, which on the one hand means they know how everything works, but on the other hand also poses very strict requirements. Two months passed from the day I accepted the position to the day I could finally apply for my visa because MIT demanded a seemingly never-ending stream of documents from me regarding finances, university status etc. Most of the time when I tried to obtain said documents from e.g. my bank, the reply was a stern "No, we do not issue documents like this". Thus, although I fulfilled all requirements, mediating in between the demands from the U.S.

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American side and the policies on the German counterparts was a legitimate nightmare. My recommendation here is to plan a lot of time to get your documents in order and be prepared for some frustration along the way. Once I had accumulated acceptable versions of all necessary documents, however, the actual visa process was straightforward. I had to pay the usual fees of about 300$ in total, go to the embassy in Frankfurt and everything was approved within a week. At this point, booking a flight seemed like a walk in the park. For a destination on the East Coast one should calculate around 400$.

In terms of housing, I did not qualify for on-campus housing because I did not stay for the full semester. Hence, I booked an AirBnB room for my first week, during which I looked for permanent accommodation on Craigslist. Craigslist has a reputation for being sketchy but I had the impression that with common sense (No bank transfers before signed leases) and safety precautions (Avoid meeting people in their homes one-on-one. Bring someone with you) it is quite easy to find legitimate offers. Apparently, January is not a popular time to seek housing, which meant that I could choose between several options. I eventually ended up staying a 20-minute bus ride away from MIT with one American roommate who also became my best friend during my time there. With the well-developed public transportation system in Boston, the commute was easily manageable and I appreciated how it encouraged me to explore the city outside of work. Even once the snowstorms started hitting, buses were slightly delayed but never absent. With respect to the organization of my stay here, MIT's previously mentioned experience with visiting students enabled a smooth start into my work here. The International Office holds weekly orientation seminars, during which all concerns regarding visa, social security, taxes, documentation etc. are addressed. Therefore, I always felt well-informed about my position as a visiting student with its perks and responsibilities.

Research Stay

MIT is undoubtedly a fantastic research institution with a lot of funding, dedication and drive. Everybody in my lab was very committed to their work, often staying until 10-11 pm simply because they were motivated and ambitious. I especially liked how our professor made a point of openly appreciating people's hard work in lab meetings. One aspect I had not considered prior to coming here was that MIT did not accept any of my prior training in lab safety. The school insists on each new employee completing their own lab safety training, which took up the first three weeks of my stay. Given that the training here was significantly less exhaustive than back home, this felt like a waste of my time. Incoming students should be prepared that they will not be able to do any lab work in the first few weeks.

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For the remainder of my stay, however, I was allowed to develop and execute my own research plan with no scarcity of resources for any kind of experiment I wanted to do. While I enjoyed the possibilities and the freedom, I would have preferred a little more guidance during my first weeks. Since my supervisor had an extremely busy work schedule that did not allow him to spend much one-on-one time with me, I had to figure out many procedures on my own, when I could have learned them much faster with instructions. However, everyone else at the lab was always happy to help, so over time I learned whom to ask for advice. In general, the lab provided a friendly environment that quickly made me feel integrated. We would always eat lunch together and talk about all sorts of topics, also apart from science. Therefore, I was happy with my interactions with everyone other than my actual supervisor. The structure of my workdays was entirely up to me, which allowed me to come to work early when my brain tends to be most active and then leave in the early evening. Many of my more nocturnal coworkers instead chose to arrive later but then stay until late at night. Every other week we had lab meetings in which an individual's work progress was discussed over free coffee and pastries. I found these meetings especially meaningful because I learned a lot about how to structure experiments and obtain publishable results. At MIT in general, there are always events like workshops and guest lectures, usually with free food. You receive emails about every event and it is definitely worth going to hear famous scientists speak about their work in person.

Living in Boston

I loved living in Boston because the city is small enough to feel like home but also large enough to offer plenty of activities. Everything has a fairly European feel to it, from people's work ethics to political views and general lifestyle. Especially around Cambridge, you can find many intellectuals, organic grocery stores and athletes running in twenty centimeters of snow. It is the perfect city to dip your toes into quintessential "American" experiences like going to a baseball or football game, eating at a diner or shopping in a ridiculously oversized mall. My favorite places include Newbury Street (shopping and people watching), The Friendly Toast (diner near MIT), Market Basket (cheapest and best grocery store) and the Charles River (best running route). My roommate was a huge basketball fan, so we traditionally watched basketball games in sport bars every Saturday. Also worth knowing is that with the MIT student ID many museums around Boston are free (Isabella Stewart Gardner is great) or heavily discounted. I went for weekend trips to Washington DC (2 hour flight) and New York City (4 hour bus ride), which are both great places to explore as well. For day trips, I would recommend Cape Cod, Newport (RI) and Martha's Vineyard.

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Reflection on the internship

My goals for the internship were to gain more hands-on lab experience, learn new techniques and implement the first project I had designed by myself. In terms of the first two goals, I definitely succeeded. The vast resources at the lab allowed me to practice a plethora of techniques, which will benefit my future academic path. Despite all the possibilities, there were moments when I struggled with the decreased concern for animal welfare. Since my experiments involved live mice, I found myself quite shocked by their overall treatment in the U.S. However, I made a point out of taking care of my own mice the way I felt comfortable and I hope I managed to inspire some of my coworkers to emphasize animal welfare a little more in the future. As my work continued, it became obvious that I would not be able to finish the research project I had set out to do. Yet, this is a common occurrence in science and therefore a good preparation for my future in research. I learned a lot about time management, trouble shooting and organization, all of which will aid my future work. All in all, I do not think I was over-challenged because I did truly appreciate the opportunity to develop my own research project and to make all the mistakes a junior scientist makes during their first project. On top of that, talking about my problems and failures with my colleagues proved helpful more than once. Thus, I never felt alone with the challenges every scientist faces.

Before starting my internship, I had been worried about unattainably high expectations for researchers working at a prestigious institution like MIT. This turned out to be an unnecessary concern. Everyone in the lab, including my professor, was satisfied to see hard work and effort, independent from the achieved results. Therefore, I did not feel inferior in the slightest, but rather motivated to catch up to my superiors. What I will take away from this internship is the certainty that you do have a place in the scientific community as long as you work hard on yourself and do not hesitate to ask others for help. Research can be a frustrating route but everyone else is on the same journey and can guide you. Having learned this lesson at MIT further motivated me to continue working in science, which is why I would recommend a lab internship in the U.S. and at MIT specifically to every young scientist.

Recommendations I can make for future visiting students is to arrive one or two weeks before the start of the internship. This time period is perfect to get acclimated and organized. You will need to set up a bank account, get your Social Security Number, figure out public transportation and probably also find housing. I only gave myself a few days to do so, which left me more stressed at the beginning than I had to be. It is especially important to thoroughly research housing and living costs in the area to avoid unnecessarily high expenses. The choice of grocery store, for instance, can easily double or triple the cost.

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But I think if a student researches all these things beforehand, stays motivated and puts their heart and soul into it, an internship here is a great opportunity.