

Reflections on the Exchange Program to Jena, Germany

Broad Cultural Exposure, Educational Enrichment and Lasting Connections

Foreword: Leland Johnson, NESACS alternate councilor, Principal, Conditas Biotechnology Group, LLC

It has been a pleasure to be a part of the strong and growing program that we call the NESACS Exchange Program with Germany. An international cooperation between chemical societies, entrepreneurs, academics, and younger chemists in several nations, the program has served as an excellent model for others to emulate.

As a recent appointee to the position of co-chair alongside the founder of the exchange, Mike Strem, it has been my pleasure to help select and travel with an outstanding group of students from the universities and colleges within the boundaries of our local section. My first introduction to NESACS itself was the 2004 Exchange Program with Germany, when the 2004 German students came to our NSYCC Chemistry Research Conference, which happened to be hosted at my alma mater, Boston University. Two years later I was on the exchange to Konstanz, Germany as a traveler, and in 2008, I became the YCC chair. This program has truly opened doors as well as my eyes.

Ten years have passed, and my enthusiasm for the exchange program continues to grow. Since 2010, the last ACS National Meeting in Boston, there has been a concerted effort to increase the scope of the exchange without increasing the financial burden of the national society or the local section. The steering committee is working hard to realize these efforts.

I continue to be pleasantly surprised by the caliber of financial sponsors to this program, but the last exchange reminded me what the program is about: focusing on the international networking and scientific discovery and development that always occurs when we, as a local chemical section, choose to send our best and brightest graduate and undergraduate students to Germany to experience the exchange for themselves.

What follows are open letters from students from the current exchange who have already begun to spread the word about the exchange. One has moved to an internship at 3M's Corporate Research Materials Laboratory, one has moved with his professor to the University of Oregon, another has graduated from Northeastern University to pursue a Ph.D. at MIT, and yet another is nearing the culmination of her

graduate career, preparing to embark on a career as a Ph.D. in the pharmaceutical industry.

NESACS/GDCh: Germany Exchange- Peter Frank, UNH, currently at 3M on an internship

I had a phenomenal experience in Germany. It is a sizable task to capture the grandeur in a concise article, but I believe it can be summarized in 3 categories: Broad Cultural Exposure, Educational Enrichment, and Lasting Connections. Expanding on this is only possible with the aid of pictures!

Broad Cultural Exposure

Traveling to Europe for the first time, much of what I saw and experienced was new. One of the earliest realizations was that a true black forest cake is not dark chocolate cake covered in white frosting and cherries, but rather an intricately layered master work of art to delight one's taste buds.



Black Forest Cake

Together with a few leaders of the JungChemikerForum (JCF), our group toured Jena. We started with the renowned Carl Zeiss company, which operates under the motto “we make it visible.” There, we learned more about the company’s approach to innovative imaging technology. Jena is known for being home to several other companies in the optics industry such as Schott Glass, which also played a key role in growth of Carl Zeiss. Working collaboratively, these companies attracted and developed much of the talent in the optical industry convened in Jena, leading to the city being called “Jena, city of light.”



Collage of Weimar

We also visited Weimar via a short train ride. The city boasts an impressive palace of its historical monarchs. Currently a museum, Stadtschloss (the palace) contains a variety of art, literature, and furniture that the aristocrats at that time treasured. Continuing our tour in Weimar, we were exposed to the home of the Bauhaus Architectural movement, as well as numerous other sites and stories of cultural heritage. A notable experience was learning how the leaf of the ginkgo tree, a plant not indigenous to Weimar, became symbolic of the city. Duke Carl August, who strongly appreciated botanical gardens, deeply admired the unique shape and contour of the leaf. Introduced the plant to the city, everyone shared in his admiration of the leaf anchoring its status locally (paraphrased from Weimar visitors pamphlet).



Collage of Buchenwald Memorial

Our tour in Weimar also allowed our group to visit the Buchenwald memorial, the site of one of the largest concentration camps in Germany. Despite the educational and cultural awareness it provided, one cannot help but be saddened by the tragedies that occurred during its use. The memorial stands today to honor those who suffered and remind us of the effects of ill ambitions.



Collage of Street Pictures

Outside specific tours, cultural exposure occurred through daily interactions with friendly locals, as well as street art and architectures seen as we visited Jena and Weimar.

Educational Enrichment

Although our trip to Germany was specifically for the JCF symposium, the trip also served as an academically enriching experience. We visited and met with a number of academic and research institutes in Jena. These included the Max Planck Institute, the Hans Knöll Institute, the Friedrich Schiller University and the Bauhaus University. Meeting with both graduate and lead researchers, we learned not only new concepts in chemistry, but also the unique German approach to STEM education. When a country is reputed for its engineering and science it is important to learn what they do differently.



Collage of Research Presentations

The JCF symposium started with a great kickoff reception and networking event with famous German food. Like many US-based conferences, the symposium included high quality chemical research that spanned theory and a variety of applications. If one did not take notes throughout the day memory would fail to contain the breadth and depth of the research presented. The symposium boasted over 250 posters and oral presentations, primarily from young chemists across Europe—in essence, very good science and a robust learning opportunity.

Lasting Connections

At the conference I met several brilliant young European chemists. We shared mutual admiration of each other's research and engaged in conversations about life and education in Germany versus that in the USA and Jamaica, my home country. Similarly, the experience provided a bonding experience for the Northeastern

Section delegation as a close unit of friends and young chemist diligently working to improve our world through chemistry, one reaction at a time.



Collage of Friendship

I am honored to have had the opportunity to expand my international experiences and educational opportunities while forming lasting friendships with young chemical leaders, both in Germany and in NESACS. My sincerest appreciation goes to the JungChemikerForum, Gesellschaft Deutscher Chemiker, Young Chemist Committee, Northeastern Section of the American Chemical Society, as well as my university for allowing me to participate in the exchange program. If anyone is considering this opportunity, take it from me: "you'll never regret it- it is a great experience for young chemists!"

NESACS Exchange Program with Germany- Thomas J. Sisto (Boston University, now University of Oregon)

I want to start by thanking everyone involved in the NESACS Exchange Program with Germany.

With their help, my outlook on academic chemistry, and subsequently, the path I am currently navigating, has drastically changed. As a 4th year graduate student I was becoming disenchanted with academic research; simply trudging along in my narrow field and waiting for the day that I would have regular hours and better pay. The German Exchange changed my frame of mind and profoundly impacted both the way I look at science and the broader academic community.

Upon meeting my fellow travelers and scientists, I knew the trip would be good. We all immediately took to one another and conversations about life, our common experiences in school, and diverse science discussions flowed effortlessly amongst the group. The Fruehjarssymposium conference was simply an extension of this. For an entire week there was a sea of interesting people, each with new science to enhance my informal education. Through this experience I was able to network, hone my presentation skills, and learn more about my own science through discussion. I was fortunate to win an award and to become aware that academic science is also about meeting people and exposing yourself to the broad world of research. It was exhilarating to realize that the point of what I was doing in lab was not only to run the next reaction, but also to meet and learn from others about topics I had never before discovered. Coupling this with an amazing visit to Goethe and Schiller's Weimar, the friendly culture of the German people, and local food made the whole experience surreal.

I want to end by thanking everyone involved in the NESACS German Exchange Steering Committee. The time, effort, and money invested in this program are valuable and have a true impact on the travelers. Since the trip I have decided to pursue a postdoctoral position instead of transitioning to industry. Neither is a poor option, however the German Exchange allowed me to step away from the lab into an environment where I came to more fully understand myself, and what I want to pursue.

NESACS/NSYCC Exchange Program with Germany- Elise Miner (Northeastern University '14, now Massachusetts Institute of Technology)

Jena, Germany March 2014

Going into the German Exchange Program, I had a preconceived notion that the trip would be akin to any other out-of-town conference; a week of scientific discussion, possibly networking, and a bit of sightseeing. To my amazement and, I believe, to the amazement of the other eleven program participants, our time in Germany was more impactful and transformative than any of us could have imagined. In addition to presenting our research to a diverse group of scientists and becoming exposed to other attendees' research, we were completely immersed in German culture and history as we navigated the scientifically rich city of Jena. With our gracious hosts Elisabeth Kapatsina (Gesellschaft Deutscher Chemiker (GDCh)) and several Jungchemikerforum (JCF) members, our group learned about Jena's footprint on the scientific world and how the city had made a name for itself in optics, life science, and much more. Some of my favorite memories include touring the Max Planck Institute for Chemical Ecology and the Carl Zeiss Optical Museum. To observe scientific history that has impacted the world and is relevant today, to be where it all began, and to hear about how it evolved and continues to evolve highlighted how scientific research and development transcends both cultures and time.

In addition to numerous institutes, museum, and city explorations, we had the unforgettable opportunity to present at the Jungchemikerforum Fruehjahrssymposium, where we witnessed first-hand the power of international collaborations. Expanding across the continents to advance research and scientific awareness, both locally and abroad, is an activity in which I wish to play a direct role during my career. I discovered this during our experiences in Jena. Through presenting at and attending the symposium, I established ties internationally, as well as within our local section. I had attended several NESACS events previously, but through participating in the German Exchange Program I now feel more strongly connected to our local section. Seeing what can be accomplished with a vision and a team to execute that vision has inspired me to explore local resources while keeping an open mind and eye on opportunities beyond our backyard.

At the end of the day we are all still scientists, no matter where in the world (literally) we come from. My most cherished memory from our time in Jena is the excitement expressed from all symposium attendees to see others' work and share their own. As science was shared so were cultures, stories, and ideas. From this multi-faceted exchange burgeoned invaluable professional relationships and lifelong friendships. When conversing with other students and scientists in attendance about their lives and countries, each story was vastly different from the next; however, when we set all of the differences aside and focused on the science, our passion for research was universally shared.

Participating in the Exchange Program with Germany was an enlightening and unforgettable experience, and the lessons and insights gained will extend far beyond the 10 days of the program. Thanks to NESACS/NSYCC and the GDCh/JCF, I have been provided the valuable assets of scientific feedback and professional networking, as well as international connections, cultural appreciation, and friendships that I will revere throughout my time as a scientist and citizen of the world.

NESACS Exchange Program with Germany-Emel Adaligil (Tufts University)

When I first read the email about the Germany-exchange program application, I thought it was a great opportunity to look for options to work as a chemist in Europe in either academia or industry. But it turned out to be an excellent combination of science and friendship, through an amazing 8 days in Jena.

It was an intense trip full of science, day trips and cultural activities. Following the itinerary and schedule for our time in Jena, I was thrilled with the visit to Max-Planck Institute to meet scientists working in the field of chemical biology and to visit one of the largest and well-known science institutions in Europe.

Also, the group took a brief train ride to the town of Weimar, where you can feel the impact of Goethe and Schiller at every corner. One of our group pictures was taken under the monument known as “one of the most famous and most beloved monuments of Germany.”

We spent the last four days of the trip attending the 16th JCF-Frueh-jahrssymposium, where more than 300 scientists from many countries in Europe attended and gave talks or poster presentations. It was an exciting venue for exchanging scientific ideas with people who work in similar fields to my own. During the poster sessions, I had a chance to have a discussion with Prof Dieter Seebach, who gave the talk titled “ My sixty years of Chemistry: A magical mystery tour” on the first day of conference. He and I discussed experimental ideas for one of my ongoing projects, I also got to meet with my college chemistry professors from Istanbul several years after graduation. Overall, I returned to Boston with new friends on both sides of the Atlantic, great memories, a more broadened knowledge of my field, and a lot of German chocolates.