Neuroscience in Chicago Gathers Undergraduate and Post-Docs Alike

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Introduction

It was a chilly day in Chicago when a large group of neuroscience students from Lake Forest College walked to third floor of Northwestern Memorial Hospital. March thirty-first marked this year's annual Conference for the Society of Neuroscience, Chicago chapter. I walked as one of the Lake Forest students, eager to join grad students, undergrads and post docs, and learn from some very prominent neuroscientists. The conference, which lasted from eight o'clock in the morning until about six-thirty that night, was divided into sections, including a presidential symposium, graduate student presentations, two smaller symposia and poster presentations.

The conference began with some of the top research being presented in the presidential symposium. The theme for this section was “In Vivo Imaging” meaning to look at structures and functions within an organism itself. This section provided some novel uses for imaging techniques, but none more interesting than Dr. Larry Squire, the keynote speaker for the conference. Dr. Squire used fMRI and case studies to challenge some preconceived notions about the structure of memory in the mammalian brain. His research is leading towards a better understanding of memory mechanisms, centered around the temporal lobe. He has found new mechanisms which suggest different pathways in the formation of declarative memory. He did this through a combination of fMRI imaging and also through studies of patients with specific brain damage. I thought his presentation was by far the best one given that day, not only because of the quality of his research, but because of how accessible it was to someone with a broader scientific background, which includes myself and the other Lake Forest undergrads. While other speakers in the forum presented very interesting and cutting edge research, their presentations were not as understandable to someone without a PhD. Another presenter who exhibited this quality was D.J Surmeier, a graduate student from Northwestern University. His research concerned alloparenting in male prairie voles. While his research may have run into several obstacles and his results were contradictory to his expectations, he presented his research in a hopeful and resourceful manner which, I found to be very inspirational as to how science should work. In addition to his positive mindset and highly understandable presentation, his research also has the potential to give insight into certain emotional aspects of human behavior.

While on the topic of inventive research, one of the more notable presentations in the mini symposium on psychiatric disorders involved the development of an effective mouse model for Obsessive Compulsive Disorder. The research, presented by Dr. Stephanie Dulawa, was able to accurately replicate some of the perseverative behavior associated with OCD. They used an agonist for serotonin 1B receptors, which is known to exacerbate obsessive-compulsive behavior in humans, and they found that it produced perseverative behavior and sensorimotor gating deficits in mice. The development of a mouse model for OCD is important for new research and treatment for OCD. It is also important because it is difficult to have effective models for psychiatric disorders. Breakthroughs like this can help enlighten us to newer understandings of psychiatric disorders.

On an undergraduate level, this conference was enlightening to myself and other undergrad students. I thought the importance of going to the conference as a freshman was in seeing the scientific world outside of the laboratory and classroom. I don't think that, as an undergraduate, I was expected to understand the majority of what I saw and heard, but I feel that the conference was important to my scientific education because it showed me a further step in scientific education that would come after Lake Forest. I was exposed to multiple different fields that were new to me and I saw multiple presentations in those fields. I think I also gained some valuable insight on how to give scientific presentations. I found that the ones I enjoyed had the most explanation and were the most accessible to a broad audience. I also found something to aspire to in my peer mentors from Bio 346, four of whom presented research in the undergraduate poster contest, one of whom won first prize, demonstrating the strength of our science program.

On a broader scale, the conference had a positive impact on the scientists that gathered there, however it did not exactly cater to the general public. Someone without an extensive background in science would likely have been lost among the technical terms and detail of the research. It's difficult for a non-scientific population to be interested in ion channel research without making the greater connection to the role if ion channels in diseases like Parkinson's. Even when that connection was made, it seemed that the presentations were made by PhD's and for PhD's. That is not to say the conference was a negative experience for someone without an advanced degree, in fact the parts that I understand were quite fascinating. It is also important to note that the conference was not aimed at the general public because the general public was not present, everyone at the conference had some sort of a scientific connection or interest that could explain their presence. It also represented a great opportunity for graduate students to show their potential as future contributors to the field of neuroscience.

In conclusion, the Conference for the Society of Neuroscience, Chicago chapter, was a success for all involved, including the undergraduates in attendance. The CSFN conference gave great exposure to the broad scientific community. It allowed us to enhance our public speaking skills through observation of excellent public speakers like Dr. Larry Squire.

“I thought the CSFN gave me a good experience in how to listen to presentations and to understand broad concepts,” said Johnathan Vinkavich, another Lake Forest freshman. Johnathan's comment brings to light one of the most important parts of attending the conference, which was learning to listen and try to understand a lecture in an advanced scientific field.

Finally I think one of the most apparent things about the conference was the number of presenters, from PhD to undergraduate, who were in attendance and demonstrated just how rapidly the field of neuroscience is growing. I think the potential for groundbreaking discoveries in neuroscience over the next few years is staggering and this is directly because of how much interest is invested in the study of the

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nervous system right now. We are at the precipice of neurological discovery and this, if nothing else, is most exciting part.