Schaefer Lab
- As a laboratory focused on epigenetics, the Schaefer Lab has many ongoing projects related to the way different mutations and environmental factors play into neurodevelopmental disorders.
- The two projects I worked on examined the role of different candidate genes for epilepsy and Autism Spectrum Disorder (ASD).

Objective of Internship
This internship provided the opportunity to practice bench work techniques and learn about the process of experimentation required for developing new treatments for neurodevelopmental disorders.

Work profile
- The first project examined the role of miR-128 levels on seizure susceptibility of mice.
- The second project investigated the connection between a non-coding strand of DNA, irf2bpl, and whether variations could induce seizures and autism-like behavior in mice.

Reflection
- Skills learned: genotyping, gel electrophoresis, dissections of mouse brains, perfusions, seizure monitoring, open field assessments
- Literature search on associations between irf2bpl and ASD
- Specific investigation of transcription factors ebf1 and lef1 and their effects on pathways affecting neurodevelopment as well as striatal development in mice with irf2bpl haploinsufficiency
- Spine analysis of miR-128 treated dendrites using NeuroLucida360
- Wrote protocol for lab on spine analysis and confocalizing dendrites

Seaver Autism Center
- The Seaver Autism Center works to identify the causes of ASD and develops personalized treatment plans for its patients. Along with ASD, Phelan-McDermid Syndrome and Fragile X Syndrome are the key disorders studied.

Objective of Internship
This internship provided insight into the clinical research setting by demonstrating the variety of assessments that could be conducted to better understand ASD.

Work profile
- The organization focused not only on finding the different possible genetic causes of ASD but also on discovering new treatment for alleviating symptoms.
- Current ongoing projects included measuring response levels using noninvasive techniques such as visual evoked potentials and receiving oxytocin treatment monthly to reduce social anxiety.

Looking ahead
- I would like to continue studying more about autism and its epidemiology through molecular and sociological research and contribute to the way ASD is understood in society.

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