

Jaclyn (Jackie) Birnbaum



EDUCATION

Northeastern University

Bachelor of Science Degree in Behavioral Neuroscience with Honors

Minor in Ethics

GPA: 3.95 (*Summa cum laude*)

Boston, MA

December 2018

AWARDS

Dean's List

Northeastern University

2014-2018

Presidential Scholarship

Northeastern University

2014-2018

PUBLICATIONS

Huang, K. W., Ochandarena, N. E., Philson, A. C., Hyun, M., **Birnbaum, J. E.** & Sabatini., B. L. (2019). Molecular and Anatomical Organization of the Dorsal Raphe Nucleus . *eLife*, 8.

RESEARCH EXPERIENCE

Harvard Medical School

Neurobiology Department

Sabatini Laboratory

Principal Investigator: Bernardo Sabatini, M.D., Ph.D.

Undergraduate Researcher

Boston, MA

July 2016-January 2019

- Investigated the cell type heterogeneity and efferent projection patterns of dorsal raphe neurons
- Investigated the role of dorsal raphe serotonergic neurons in behavioral inhibition
- Quantified fiber density in select brain regions from anterograde tracing experiments using Fiji and generated data visualizations using R
- Used image analysis software packages to quantify the distribution of retrogradely labeled cells and their gene expression using single molecule RNA detection techniques
- Used immunohistochemistry techniques to stain for known markers of cell types and then imaged the tissue with confocal and epifluorescence microscopy
- Conduct behavioral experiments on mice, including the Open Field Test and head-fixed goal-directed tasks

Catholic University of Leuven

Neuroelectronics Research Flanders

Kloosterman Lab

Principal Investigator: Fabian Kloosterman, Ph.D.

Undergraduate Researcher

- Investigated the topographic organization of different cell populations in the subiculum
- Performed stereotaxic injections to deliver retrograde tracers and viral vectors, including G-deleted rabies virus and herpes-simplex virus, into specific brain regions in mice
- Used immunohistochemistry techniques to amplify fluorescent protein expression from injections and then imaged the tissue with confocal and epifluorescence microscopy
- Assisted with the training of rats to perform complex behavioral tasks including Linear track and Radial arm maze

Leuven, Belgium

July 2017-December 2017

Stony Brook School of Medicine

Orthopedics Department

Molecular and Cellular Orthopaedic Laboratory Principal

Investigator: David Komatsu, Ph.D.

Research Assistant

- Investigated the effects of methylphenidate on skeletal development of male and female rats
- Sectioned rat bones and used immunohistochemistry techniques to stain for certain proteins which indicate bone growth

Stony Brook, NY

June 2015-June 2016 (seasonal)

PRESENTATIONS

Tracing the inputs to cortical-projecting subiculum cells

Poster presentation at Neuroelectronics Research Flanders

December 2017