Sabrina Drammis

32-670, 32 Vassar St, Cambridge, MA 02139

sdrammis@mit.edu +1 (801) 558-2360

EDUCATION

Massachusetts Institute of Technology

Ph.D. in Computer Science – Advised by Nancy Lynch — Sept 2020 – Present
M.E. in Computer Science and Engineering – Advised by Ann Graybiel — Feb 2018 – Jan 2020
B.S. in Computer Science and Engineering — Sept 2012 – June 2016

PUBLICATIONS

Effect of Acute Alcohol Consumption in a Novel Rodent Model of Decision Making
submitted for publication 2024
Atanu Giri*, Serina A. Batson*, Andrea Y. Macias*, Cory N. Heaton*, Neftali F. Reyes*, Alexis A. Salcido*, Luis D. Davila*, Lara I. Rakocevic*, Dirk W. Beck*, Raquel J. Ibañez Alcalá*, Safa B. Hossain*, Paulina Vara, Sabrina M. Drammis, Kenichiro Negishi, Adrianna E. Rosales, Laura E. O'Dell, Travis M. Moschak, Ki A. Goosens, Alexander Friedman
(* *denotes equal contribution*)

Model of a striosomal-centric circuit exploring biological mechanisms underlying decision-making during normal and disordered state
submitted for publication 2024
Dirk W. Beck, Cory N. Heaton*, Lara I. Rakocevic*, Luis D. Davila*, Sabrina Drammis*, Atanu Giri*, Danil Tyulmankov, Paulina Vara, Zhang Qingyang, Michael Pokojovy, Serina Batson, Kenichiro Negishi, Alexis A. Salcido, Netfali F. Reyes, Andrea Y. Macias, Shreeya Umashankar Beck, Safa B. Hossain, Rodrigo J. Ibanez-Alcala, Graham L. Waller, Laura E. O'Dell, Travis M. Moschak, Ki A. Goosens, and Alexander Friedman
(* *denotes equal contribution*)

RECORD: A high-throughput system for complex naturalistic decision-making in rodents
Nature Communications Biology 2024
Rodrigo J. Ibanez-Alcala, Dirk W. Beck, Alexis A. Salcido, Luis D. Davila, Atanu Giri, Cory N. Heaton, Kryssia Villarreal Rodriguez, Lara I. Rakocevic, Safa B. Hossain, Neftali F. Reyes, Serina A. Batson, Andrea Y. Macias, Sabrina Drammis, Kenichiro Negishi, Qingyang Zhang, Shreeya Umashankar Beck, Paulina Vara, Arnav Joshi, Austin J. Franco, Hernandez Carbajal, Bianca J. Miguel M. Ordonez, Felix Y. Ramirez, Jonathan D. Lopez, Nayeli Lozano, Abigail Ramirez, Linnete Legaspy, Paulina L. Cruz, Abril A. Armenta, Stephanie N. Viel, Jessica I. Aguirre, Odalys Quintanar, Fernanda Medina, Pablo M. Ordonez, Alfonzo E. Munoz, Gustavo E. MartÃnez Gaudier, Gabriela M. Naime, Rosalie E. Powers, Laura E. O'Dell, Travis M. Moschak, Ki A. Goosens, and Alexander Friedman.

Parallel algorithms for exact enumeration of deep neural network activation regions
preprint 2024
Sabrina Drammis, Bowen Zheng, Karthik Srinivasan, Robert C. Berwick, Nancy A. Lynch, and Robert Ajemian

Modulation of prefrontal couplings by prior belief-related responses in ventromedial prefrontal cortex
Frontiers in Neuroscience 2023
Bin A. Wang, Sabrina Drammis, Ali Hummos, Michael M. Halassa, and Burkhard Pleger

Thalamic regulation of frontal interactions in human cognitive flexibility
PLOS Computational Biology 2022
Ali Hummos*, Bin A. Wang*, Sabrina Drammis*, Michael M. Halassa, and Burkhard Pledger
(* *denotes equal contribution*)

Striosomes mediate value-based learning vulnerable in age and Huntington's model
Cell 2020
Alexander Friedman*, Emily Hueske*, Sabrina Drammis†, Sebastian E. Toro Arana†, Erik D. Nelson†, Cody W. Carter†, Sebastien Delcasso†, Raimundo X. Rodriguez†, Hope Lutwak†, Kaden S. DiMarco†, Qingyang Zhang, Lara I. Rakocevic, Dan Hu, Joshua K. Xiong, Jiajia Zhao, Leif G. Gibb, Tomoko Yoshida, Cody A. Siciliano, Thomas J. Diefenbach, Charu Ramakrishnan, Karl Deisseroth, and Ann Graybiel
(* *denotes equal contribution; †denotes equal contribution*)

CONFERENCE PRESENTATIONS

A geometric perspective of deep neural network performance and resemblance to the brain
submitted to COSYNE 2025
Sabrina Drammis, Bowen Zhen, Karthik Srinivasan, Robert Berwick, Nancy Lynch, and Robert Ajemian

The functional role of the striatum as an action evaluation circuit: a network-level theory
BDA 2024 – *contributed talk*
Sabrina Drammis, Nancy Lynch, and Alexander Friedman

Thalamic role in human cognitive flexibility and frontal region regulation
COSYNE 2022 – *poster*
Ali Hummos*, Bin A. Wang*, Sabrina Drammis*, Michael M. Halassa, and Burkhard Pledger
(* *denotes equal contribution*)

Novel computational approaches for signal extraction from striatal multi-color photometry recordings and evaluating high-throughput approach-avoidance learning applied to Huntington's disease mouse model
SFN Annual Meeting 2018 – *poster*
Friedman et al.

Evaluation of approach-avoidance learning in mouse model of Huntington's disease by a novel battery of cost-benefit decision-making tasks compatible with high-throughput imaging
SFN Annual Meeting 2018 – *poster*
Hueske et al.

FELLOWSHIPS & AWARDS

Frank Quick Fellowship (2020)
Friends of McGovern Institute Graduate Student Fellow (2019)
NCAA Postgraduate Studies Scholarship (2016)
CoSIDA Academic All American (2015, 2016)

TEACHING

Human Language and Computation (6.8630/6.S051) – *Teaching Assistant* — Spring 2023
Brain Algorithms (6.S899) – *Teaching Assistant* — Fall 2021
Blockchain and Money (15.S12) – *Teaching Assistant* — Fall 2018
Engineering Computation and Data Science (1.00) – *Teaching Assistant* — Spring 2018
Second Spectrum Inc. – *Summer Intern Mentor* — Summer 2017

INDUSTRY EXPERIENCE

Second Spectrum Inc. Los Angeles, CA – *Software Engineer* — Aug 2016 – Dec 2017