Jozsef Meszaros

Associate Research Scientist (2023-)
Columbia University
Departments of Neurology and Psychiatry
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Profile: Biological scientist with advanced proficiency in technical and quantitative methods, developing novel data analytics and communicating knowledge to a broad audience

Employment

Columbia University (at NYSPI)
Associate Research Scientist
Laboratory of Dr. Jonathan Javitch
July 2023-Present

Columbia University (at NYSPI)
Postdoctoral Research Scientist and Fellow
Laboratory of Dr. Jonathan Javitch
July 2019-July 2023

Columbia University (at Zuckerman Institute)
Postdoctoral Research Scientist
Laboratory for Optical Imaging
July 2018-July 2019

Columbia University (at NYSPI)
Casual/staff
Laboratory of Dr. Sulzer
February 2018-July 2018

Bard College
Teaching faculty
January 2018-February 2018

Education

Columbia University
Ph.D., Neuroscience, October 2017.
Fields: Neurotransmitter release, imaging techniques, data science

University of Pennsylvania
J.D., 2010 (with emphasis on mental health law, scientific evidence)

University of Maryland College Park
B.S., Physics, B.S., Neurobiology and Behavior, 2007.

Dissertation

"Optical characterization of dopamine release in the globus pallidus and striatum"
Conceived of experiments to locate, measure, and validate the existence of dopamine release in a brain area where it had previously not been possible.

Teaching

Psychology Department, City University of New York
Instructor, Psychology 301: Perception, Spring 2018

Bard College
Instructor, Citizen Science, January 2017 and January 2018

Biology Department, Columbia University
Instructor, Neurolaw, Summer 2012, Fall 2013, Fall 2014

Fellowships and Honors

NIH T32 Postdoctoral Fellow, Columbia University
Psychiatry, 2020-2023

NIH T32 Graduate Fellow, Columbia University
Neurobiology and Behavior, 2014-2016

Summer Teaching Scholar, Columbia University
Law and Neuroscience, 2012

Senior Editor
University of Pennyslvania *Journal of Law and Social Change*, 2009-2010

Computational skills

Advanced proficiency with Matlab, Python, LaTeX, HTML+CSS/PHP/SQL, Javascript, Arduino

Publications

Meszaros, Jozsef, Peter Geggier, Wesley Asher, Jonathan A Javitch, Mitchell D McCauley, et al. Methods for automating the analysis of live-cell single-molecule fret data. *Frontiers in Cell and Developmental Biology*, 11(1184077), 2023.

Wesley B Asher, Peter Geggier, Michael D Holsey, Grant T Gilmore, Avik K Pati, **Meszaros, Jozsef**, Daniel S Terry, Signe Mathiasen, Megan J Kaliszewski, Mitchell D McCauley, et al. Single-molecule fret imaging of gpcr dimers in living cells. *Nature methods*, 18(4):397–405, 2021.

Pia-Kelsey O'Neill and **Meszaros, Jozsef**. Chronic pain releases parabrachial activity from central amygdala inhibition. *Journal of Neuroscience*, 40(42):7996–7998, 2020.

Shreya Saxena, Ian Kinsella, Simon Musall, Sharon H Kim, **Meszaros, Jozsef**, David N Thibodeaux, Carla Kim, John Cunningham, Elizabeth MC Hillman, Anne Churchland, et al. Localized semi-nonnegative matrix factorization (locanmf) of widefield calcium imaging data. *PLoS computational biology*, 16(4):e1007791, 2020.

Ying Zhu, **József Mészáros**, Roman Walle, Rongxi Fan, Ziyi Sun, Andrew J. Dwork, Pierre Trifilieff, and Jonathan A. Javitch. Detecting *GPCR* Complexes in Postmortem Human Brain with Proximity Ligation Assay and A Bayesian Classifier. *Biotechniques*, 68(3), 2019.

Jozsef Meszaros, Timothy Cheung, Un Kang, Dalibor Sames, David Sulzer, and Christoph Kellendonk. Using Fluorescent False Neurotransmitters to Characterize Exocytosis from Dopamine Synaptic Vesicles within the GPe. *eLife*, 7(e42383), 2018.

Eduardo Gallo, **Jozsef Meszaros**, Jeremy D Sherman, Muhammad O Chohan, Eric Teboul, Claire S Choi, Holly Moore, Jonathan A Javitch, and Christoph Kellendonk. Accumbens dopamine D2 receptors increase motivation by decreasing inhibitory transmission to the ventral pallidum. *Nature Communications*, 9(1086):1–13, 2018.

Daniela B Pereira, Yvonne Schmitz, **Jozsef Meszaros**, Paolomi Merchant, Gang Hu, Shu Li, Adam Henke, José E Lizardi-Ortiz, Richard J Karpowicz Jr, Travis J Morgenstern, et al. Fluorescent false neurotransmitter reveals functionally silent dopamine vesicle clusters in the striatum. *Nature Neuroscience*, 19(4):578–586, 2016.

Fernanda Carvalho Poyraz, Eva Holzner, Matthew R Bailey, **Jozsef Meszaros**, Lindsay Kenney, Mazen A Kheirbek, Peter D Balsam, and Christoph Kellendonk. Decreasing striatopallidal pathway function enhances motivation by energizing the initiation of goal-directed action. *Journal of Neuroscience*, 36(22):5988–6001, 2016.

Dominik K Biezonski, Pierre Trifilieff, **Jozsef Meszaros**, Jonathan A Javitch, and Christoph Kellendonk. Evidence for limited D1 and D2 receptor coexpression and colocalization within the dorsal striatum of the neonatal mouse. *Journal of Comparative Neurology*, 523(8):1175–1189, 2015.

Aliya L Frederick, Hideaki Yano, Pierre Trifilieff, Harshad D Vishwasrao, Dominik Biezonski, **Jozsef Meszaros**, E Urizar, DR Sibley, C Kellendonk, KC Sonntag, et al. Evidence against dopamine D1/D2 receptor heteromers. *Molecular Psychiatry*, 20(11):1373–1385, 2015.

Jozsef Meszaros. Achieving peace of mind: the benefits of neurobiology evidence for battered women defendants. *Yale Journal of Law and Feminism*, 23(1):117–178, 2011.