
MICHAEL LAWRENCE MILLER, PH.D.

Icahn School of Medicine at Mount Sinai
One Gustave L. Levy Place
New York, NY, 10029, USA

PHONE	+1-516-244-0672
E-MAIL	michael.miller@icahn.mssm.edu
WEB	millem14.u.hpc.mssm.edu
GOOGLE SCHOLAR	7EVp2IkAAAAJ
DOXIMITY	6396828

Education

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| Icahn School of Medicine at Mount Sinai <ul style="list-style-type: none">• Ph.D. in Neuroscience (2016), M.D. (expected May 2018)
Dissertation Title: <i>Genetic and epigenetic risk factors of opiate abuse</i> | New York, NY
2010–present |
| Binghamton University <ul style="list-style-type: none">• B.S. in Integrative Neuroscience, B.S. in Biochemistry,
Dean's Certificate in evolutionary studies
<i>Summa cum laude</i> | Binghamton, NY
2006–10 |

Research Experience

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| Icahn School of Medicine at Mount Sinai <ul style="list-style-type: none">• Fishberg Department of Neuroscience, Friedman Brain Institute
Doctoral Candidate, Medical Scientist Training Program
Dissertation Advisor: Yasmin L. Hurd, Ph.D. | New York, NY
2012–present |
| Brookhaven National Laboratories <ul style="list-style-type: none">• Department of Medicine
Summer Undergraduate Researcher
Supervisor: Panayotis (Peter) K. Thanos, Ph.D. | New York, NY
2008–10 |
| Binghamton University <ul style="list-style-type: none">• Department of Biological Sciences
Undergraduate Researcher
Honor's Thesis Advisor: Anne B. Clark, Ph.D. | Binghamton, NY
2007–10 |

Grants and Fellowships

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|---|---------------------------|
| Ruth L. Kirschstein National Research Service Award Fellow <ul style="list-style-type: none">• National Institute on Drug Abuse, National Institutes of Health
Project title: <i>Identifying distinct striatonigral and striatopallidal disturbances</i> (F30-DA-038954) | 2015–present
\$171,370 |
| Barry M. Goldwater Scholar in Mathematics, Science and Engineering <ul style="list-style-type: none">• The Barry M. Goldwater Foundation | 2009–10
\$7,500 |

Publications

- Chadwick B, **Miller ML**, Dickstein DL, Purushothaman I, Egervari G, Rahman T, Tessereau C, Hof PR, Roussos P, Shen L, Baxter MG, & Hurd YL. (in revision). Adolescent exposure to Δ^9 -tetrahydrocannabinol alters the transcriptional trajectory and dendritic architecture of prefrontal pyramidal neurons.
- Michaelides M, **Miller ML**, DiNieri JA, Gomez JL, Schwartz E, Egervari G, Wang G-J, Mobbs CV, Volkow ND, & Hurd YL. (in press). Dopamine D2 receptor signaling in the nucleus accumbens comprises a metabolic-cognitive brain interface regulating metabolic components of glucose reinforcement. *Neuropsychopharmacology*.
- Miller ML**, Ren Y, Szutorisz H, Warren NA, Tessereau C, Egervari G, Mlodnicka A, Kapoor M, Chaarani B, Morris CV, Schumann G, Garavan H, Goate AM, Bannon MJ, IMAGEN Consortium, Halperin JM, & Hurd YL. (in press). Ventral striatal regulation of CREM mediates impulsive action and drug addiction vulnerability. *Molecular Psychiatry*. doi: 10.1038/mp.2017.80.
- Miller ML** & Hurd YL. (2017). Testing the Gateway Hypothesis. *Neuropsychopharmacology*, 42, 985–986. doi: 10.1038/npp.2016.279.

- Egervari G, Jutras-Aswad D, Landry J, **Miller ML**, Anderson SA, Michaelides M, Jacobs MM, Peter C, Yiannoulos G, Liu X, & Hurd YL. (2016). A functional 3UTR polymorphism (rs2235749) of Prodynorphin alters microRNA-365 binding in ventral striatonigral neurons to influence novelty seeking and positive reward traits. *Neuropsychopharmacology*, 10, 2512–2520. doi: 10.1038/npp.2016.53.
- Thanos PK, Michaelides M, Subrizi M, **Miller ML**, Bellezza R, Cooney RN, Leggio L, Wang G-J, Rogers AM, Volkow ND, & Hajnal A. (2015). Roux-en-Y gastric bypass alters brain activity in regions that underlie reward and taste perception. *PLoS One*, 10, e0125570. doi: 10.1371/journal.pone.0125570.
- Miller ML**, Chadwick B, Morris CV, Michaelides M, & Hurd YL. (2015). Cannabinoid-Opioid Interactions. In P. Campolongo & L. Fattore (Eds.) *Cannabinoid Modulation of Emotion Memory and Motivation* (pp 393–407) New York NY: Springer New York. doi: 10.1007/978-1-4939-2294-9_15.
- Maze I, Chaudhury D, Dietz DM, von Schimmelmann M, Kennedy PJ, Lobo MK, Sullivan SE, **Miller ML**, Bagot RC, Sun H, Turecki G, Neve RL, Hurd YL, Shen L, Han M-H, Schaefer A, & Nestler EJ. (2014). G9a influences neuronal subtype specification in striatum. *Nature Neuroscience*, 17, 533–539. doi: 10.1038/nn.3670.
- Szutorisz H, DiNieri JA, Sweet E, Egervri G, Michaelides M, Carter JM, Ren Y, **Miller ML**, Blitzer RD, & Hurd YL. (2014). Parental THC exposure leads to compulsive heroin-seeking and altered striatal synaptic plasticity in the subsequent generation. *Neuropsychopharmacology*, 39, 1315–1323. doi: 10.1038/npp.2013.352.
- Chadwick B, **Miller ML**, & Hurd YL. (2013). Cannabis use during adolescent development: susceptibility to psychiatric illness. *Frontiers in Psychiatry*, 4, 129. doi: 10.3389/fpsyt.2013.00129.
- Hurd YL, Michaelides M, **Miller ML**, & Jutras-Aswad D. (2013). Trajectory of adolescent cannabis use on addiction vulnerability. *Neuropharmacology*, 76, 416–424. doi: 10.1016/j.neuropharm.2013.07.028.
- Michaelides M, **Miller ML**, Subrizi M, Kim R, Robison L, Hurd YL, Wang G-J Volkow ND, & Thanos PK. (2013). Limbic activation to novel versus familiar food cues predicts food preference and alcohol intake. *Brain Research*, 1512, 37–44. doi: 10.1016/j.brainres.2013.03.006.
- Miller ML**, Gallup AC, Vogel AR, Vicario SM, & Clark AB. (2012). Evidence for contagious behaviors in budgerigars (*Melopsittacus undulatus*): An observational study of yawning and stretching. *Behavioural Processes*, 89, 264–270. doi: 10.1016/j.beproc.2011.12.012.
- Miller ML**, Gallup AC, Vogel AR, & Clark AB. (2012). Auditory disturbances promote temporal clustering of yawning and stretching in small groups of budgerigars (*Melopsittacus undulatus*). *Journal of Comparative Psychology*, 126, 324–328. doi: 10.1037/a0026520.
- Miller ML**, Gallup AC, Vogel AR, & Clark AB. (2010). Handling-stress initially inhibits but then potentiates yawning in budgerigars (*Melopsittacus undulatus*). *Animal Behaviour*, 80, 615–619. doi: 10.1016/j.anbehav.2010.05.018.
- Gallup AC, **Miller ML**, & Clark AB. (2010). The direction and range of ambient temperature change influences yawning in budgerigars (*Melopsittacus undulatus*). *Journal of comparative Psychology*, 124, 133–138. doi: 10.1037/a0018006.
- Gallup AC, **Miller ML**, & Clark AB. (2009). Yawning and thermoregulation in budgerigars: Science as an incremental process. *Animal Behaviour*, 78, e3–e5. doi: 10.1016/j.anbehav.2009.09.017.
- Gallup AC, **Miller ML**, & Clark AB. (2009). Yawning and thermoregulation in parakeets (*Melopsittacus undulatus*). *Animal Behaviour*, 77, 109–113. doi: 10.1016/j.anbehav.2008.09.014.

Presentations

Talks

Miller ML. Transcriptional microdissection of striatal neurocircuits: applications for studying substance use disorder. Undergraduate Research Symposium in Biological, Chemical, Structural, and Computational Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, 17 September 2016.

Posters

Miller ML, Ren Y, Szutorisz H, Egervri G, Morris CV, Sperry J, & Hurd YL. Striatal CREM mediates impulsive action and associates with fatal overdose in heroin abusers. 7th Annual Icahn School of Medicine at Mount Sinai Neuroscience Retreat, The New York Academy of Medicine, New York, NY, 13 May 2015.

Miller ML, Chadwick B, & Hurd YL. Identifying distinct striatonigral and striatopallidal disturbances after developmental cannabis exposure: pathway-specific changes in miRNAs and their contribution to heroin addiction. 6th Biennial Gordon Research Conference on Cannabinoid Function in the CNS, Renaissance Tuscany Il Ciocco, Barga LU, Italy, 24–29 May 2015.

Miller ML & Hurd YL. Identifying distinct striatonigral and striatopallidal disturbances after developmental cannabis exposure: pathway-specific changes in miRNAs and their contribution to heroin addiction. 14th Annual Icahn School of Medicine at Mount Sinai Medical-Scientist Training Program Retreat, Honors Haven Resort, Ellenville, NY, 5–7 September 2014.

Mentorship and Teaching

- **Teaching Assistant for Principles of Neurobiology: Systems Neuroscience**
Winter 2013, Directed by Elizabeth Cropper, Ph.D
- **Teaching Assistant for Brain & Behavior**
Fall 2012, Directed by Carrie Ernst, M.D.
- **Undergraduate Teaching Assistant for Cellular Neurobiology**
Fall 2008 and Fall 2009, Directed by Carol I. Miles, Ph.D.
- **Mentored summer undergraduate interns and Master's students**
J Rodriguez (2013), N Downer (2014), Y Valentine (2015) and T Rahman (2015–2016).
Directed by Yasmin L. Hurd, Ph.D.

Awards

- Gordon Research Conference (GRC) Graduate Student Poster Award (2013)
- President's Award for Undergraduate Student Excellence (2010), \$1000
- State University of New York Chancellor's Award (2010)
- John L. Fuller Memorial Award (2010), \$100
- University Undergraduate Research Award (2008, 2009), \$169 & \$250
- Edward Thorsen Memorial Scholarship (2008), \$400
- Freshman Chemistry Award (Fall 2006, Spring 2007), \$50 each
- Brain Awareness Week Travel Award (2009), \$750 + conference registration
- Sigma Xi Undergraduate Research Poster Award (2008, 2009), \$100 each
- U.S. Department of Energy Summer Undergraduate Lab Internship (Summer 2009), \$3200 stipend
- Plainview Diner Scholarship (2006), \$500