**Florence P. Varodayan** (607) 777-4327
**Binghamton University – State University of New York** fvaroday@binghamton.edu

## Education

Ph.D. in Neurobiology & Behavior, Columbia University 2013
Dissertation: Alcohol alters the expression of SNAREs and spontaneous GABA release via activation of the transcription factor HSF1
Advisor: Neil L. Harrison, Ph.D.

M.Phil. in Neurobiology & Behavior, Columbia University 2009

M.Sc. in Chemistry, University of Pennsylvania 2007
Thesis Advisor: Brenda E. Porter, M.D., Ph.D.

B.A. in Biochemistry, University of Pennsylvania 2007
Roy & Diana Vagelos Molecular Life Sciences Scholar

## Professional Positions

Assistant Professor, Psychology Department, Binghamton University – SUNY 2020–present
SUNY Chancellor's Early-Career Scholar

Research Associate, The Scripps Research Institute 2013–2019
Laboratory of Marisa Roberto, Ph.D.

Research Assistant, Children's Hospital of Philadelphia 2003–2007
Laboratory of Brenda E. Porter, M.D., Ph.D.

Research Assistant, The Hospital for Sick Children in Toronto 2004, 2007
Laboratory of Christopher MacGowan, Ph.D.

## Honors & Awards

Beckman Scholars Program Mentor 2022
Fleishman Center Career Champion at Binghamton University 2022
Harpur College Teaching Award Honorable Mention 2020
Young Investigator Award, 5th International Congress on Alcoholism and Stress in Volterra, Italy 2020
SUNY PRODiG Faculty Salary Support Award 2020–2023
Young Investigator Travel Award, Winter Conference on Brain Research 2019
Hot Topic Presentation, American College of Neuropsychopharmacology Meeting 2018
Harry June ACNP Travel Award, American College of Neuropsychopharmacology 2017
Young Investigator Award, Association of Alcohol Researchers of Indian Origin 2017
Junior Investigator Award, Research Society on Alcoholism 2016
Enoch Gordis Recognition Award Postdoc Finalist, Research Society on Alcoholism 2015
Memorial Award, Research Society on Alcoholism 2015
Travel Award, 3rd International Congress on Alcoholism and Stress in Volterra, Italy, NIAAA 2014
Best Pharmacology Retreat Talk, Pharmacology Department, Columbia University 2011
Enoch Gordis Recognition Award Grad Student Finalist, Research Society on Alcoholism 2011
Student Merit Award, Research Society on Alcoholism 2010, 2011
University of Pennsylvania Trustee Scholarship, University of Pennsylvania 2003–2007

## External Funding

***On-going:***
R00AA025408 (PI: Varodayan) 5/10/2020–4/30/2023

NIH/NIAAA
*Alcohol-induced Neuroadaptation of Prefrontal Cortical Projections*
The goal of this project is to investigate how alcohol dependence induces noradrenergic neuroadaptations that dysregulate infralimbic control of the central amygdala, and whether this circuit mediates withdrawal-induced alcohol drinking and anxiety-like behavior.

DEARC Pilot grant (PI: Varodayan) 9/1/2022–8/31/2024
NIH/NIAAA funded P50 at Binghamton University
*Long-lasting effects of Adolescent Binge Ethanol Drinking in Interleukin-1 signaling in the Medial Prefrontal Cortex*
The goal of this proposal is to delineate the long-lasting impact of adolescent ethanol drinking on cognitive function in adulthood and clarify the underlying IL-1 signaling mechanisms.

***Completed:***
K99AA025408 (PI: Varodayan) 8/1/2017–1/31/2020
NIH/NIAAA
*Alcohol-induced Neuroadaptation of Prefrontal Cortical Projections*

## Peer-reviewed Publications

***Research Articles:***

1. Rodriguez L, Kirson D, Wolfe SA, Patel RR, **Varodayan FP**, Snyder AE, Gandhi PJ, Khom S, Vlkolinsky R, Bajo M, Roberto M. (2022). Alcohol Dependence Induces CRF Sensitivity in Female Central Amygdala GABA Synapses. *Int J Mol Sci.,* 16;23(14):7842. https://doi.org/10.3390/ijms23147842

2. **Varodayan FP**, Patel RR, Matzeu A, Wolfe SA, Curley DE, Khom S, Gandhi PJ, Rodriguez L, Bajo M, D'Ambrosio S, Sun H, Kerr TM, Gonzales RA, Leggio L, Natividad LA, Haass-Koffler CL, Martin-Fardon R, Roberto M. (2022). The Amygdala Noradrenergic System Is Compromised With Alcohol Use Disorder. *Biological Psychiatry*, 91(12):1008-1018. https://doi.org/10.1016/j.biopsych.2022.02.006

3. Patel RR*, **Varodayan FP***, Herman MA, Jimenez V, Agnore R, Gao L, Bajo M, Cuzon Carlson VC, Walter NA, Fei SS, Grant KA, Roberto M. (2022). Synaptic effects of IL-1β and CRF in the central amygdala after protracted alcohol abstinence in male rhesus macaques. *Neuropsychopharmacology*, 47(4):847-856. https://doi.org/10.1038/s41386-021-01231-y.
*Co-first authors

4. Kisby BR, Farris SP, McManus MM, **Varodayan FP**, Roberto M, Harris RA, Ponomarev I. (2021). Alcohol Dependence in Rats Is Associated with Global Changes in Gene Expression in the Central Amygdala. *Brain Sciences,*11(9):1149. https://doi.org/10.3390/brainsci11091149.

5. Kirson D, Khom S, Rodriguez L, Wolfe SA, **Varodayan FP**, Gandhi PJ, Patel RR, Vlkolinsky R, Bajo M, Roberto M. (2021). Sex Differences in Acute Alcohol Sensitivity of Naïve and Alcohol Dependent Central Amygdala GABA Synapses. *Alcohol Alcohol,* 56(5):581-588. https://doi.org/10.1093/alcalc/agab034.

6. Warden AS*, Wolfe SA*, Khom S*, **Varodayan FP***, Patel RR, Steinman MQ, Bajo M, Montgomery SE, Vlkolinsky R, Nadav T, Polis I, Roberts AJ, Mayfield RD, Harris RA, Roberto M. (2020). Microglia Control Escalation of Drinking in Alcohol-Dependent Mice: Genomic and Synaptic Drivers. *Biological Psychiatry,* 88(12):910-921. https://doi.org/10.1016/j.biopsych.2020.05.011.
*Co-first authors

7. Khom S, Wolfe SA, Patel RR, Kirson D, Hedges DM, **Varodayan FP**, Bajo M, Roberto M. (2020).

Alcohol Dependence and Withdrawal Impair Serotonergic Regulation of GABA Transmission in the Rat Central Nucleus of the Amygdala. *Journal of Neuroscience,* 40(36):6842-6853. https://doi.org/10.1523/JNEUROSCI.0733-20.2020.

8. **Varodayan FP**, Minning MA, Steinman MQ, Oleata CS, Riley MW, Sabino V, Roberto M. (2020). PACAP regulation of central amygdala GABAergic synapses is altered by restraint stress. *Neuropharmacology,* 168:107752. https://doi.org/10.1016/j.neuropharm.2019.107752.

9. Bajo M, Patel RR, Hedges DM, **Varodayan FP**, Vlkolinsky R, Davis TD, Burkart MD, Blednov Y, Roberto M. (2019). Role of MyD88 in IL-1b and ethanol modulation of GABAergic transmission in the central amygdala. *Brain Sciences,* 9(12):361. https://doi.org/10.3390/brainsci9120361.

10. Suárez J, Khom S, Alén F, Natividad LA, **Varodayan FP**, Patel RR, Kirson D, Arco R, Ballesta A, Bajo M, Rubio L, Martín-Fardon R, Rodríguez de Fonseca F, Roberto M. (2019). Cessation of fluoxetine treatment increases alcohol seeking during relapse and dysregulates endocannabinoid and glutamatergic signaling in the central amygdala. *Addiction Biology,* 25(5):e12813. https://doi.org/10.1111/adb.12813.

11. Patel RR, Khom S, Steinman MQ, **Varodayan FP**, Kiosses WB, Hedges D, Vlkolinsky R, Nadav T, Polis I, Bajo M, Roberts AJ, Roberto M. (2019). IL-1β expression is increased and regulates GABA transmission following chronic ethanol in mouse central amygdala. *Brain, Behavior and Immunity,* 75:208-219. https://doi.org/10.1016/j.bbi.2018.10.009.

12. **Varodayan FP***, Sidhu H*, Roberto M, Contet C. (2018). Morphological and functional evidence of increased excitatory signaling in the prelimbic cortex during ethanol withdrawal. *Neuropharmacology,* 133:470-480. https://doi.org/10.1016/j.neuropharm.2018.02.014.
*Co-first authors

13. **Varodayan FP**, Khom S, Patel RR, Hedges D, Steinman MQ, Oleata CS, George O, Roberto M, Bajo M. (2018). Role of TLR4 in the Modulation of Central Amygdala GABA Transmission by CRF Following Restraint Stress. *Alcohol and Alcoholism,* 53(6):642-649. https://doi.org/10.1093/alcalc/agx114.

14. Blasio A, Wang J, Wang D, **Varodayan FP**, Pomrenze MB, Miller J, Lee AM, McMahon T, Gyawali S, Wang H, Roberto M, McHardy S, Pleiss MA, Messing RO. (2018). Novel Small Molecule Inhibitors of Protein Kinase C Epsilon Reduce Ethanol Consumption in Mice. *Biological Psychiatry*, 84(3):193-201. https://doi.org/10.1016/j.biopsych.2017.10.017.

15. **Varodayan FP***, Correia D*, Kirson D*, Khom S, Oleata CS, Schweitzer P, Roberto M. (2017). CRF modulates glutamate transmission in the central amygdala of naïve and ethanol-dependent rats. *Neuropharmacology,* 125: 418-428. https://doi.org/10.1016/j.neuropharm.2017.08.009.
*Co-first authors

16. **Varodayan FP**, Logrip ML, Roberto M. (2017). P/Q-type voltage-gated calcium channels mediate the alcohol and CRF sensitivity of central amygdala GABAergic synapses. *Neuropharmacology,* 125:197-206. https://doi.org/10.1016/j.neuropharm.2017.07.017.

17. **Varodayan FP***, de Guglielmo G, Logrip ML, George O, Roberto M*. (2017). Alcohol dependence disrupts amygdalar L-type voltage-gated calcium channel mechanisms. *Journal of Neuroscience,* 37(17):4593-4603. https://doi.org/10.1523/JNEUROSCI.3721-16.2017.
*Corresponding authors
Faculty of 1000 Prime Recommended: https://f1000.com/prime/727467401
Press Release by The Scripps Research Institute published in:
- "Surprising brain change appears to drive alcohol dependence." ScienceDaily, 12 April 2017.

www.sciencedaily.com/releases/2017/04/170412132352.htm
- "Alcoholism Treatment 2017: Alcohol-Dependent Brains Respond To Booze Differently." Medical Daily, 13 April 2017. http://www.medicaldaily.com/alcoholism-treatment-2017-alcohol-dependent-brains-respond-booze-differently-415601

18. Harris RA, Bajo M, Bell RL, Blednov YA, **Varodayan FP**, Truitt JM, de Guglielmo G, Lasek AW, Logrip ML, Vendruscolo LF, Roberts AJ, Roberts E, George O, Mayfield J, Billiar TR, Hackam DJ, Mayfield RD, Koob GF, Roberto M, Homanics GE. (2017). Genetic and Pharmacologic Manipulation of TLR4 Has Minimal Impact on Ethanol Consumption in Rodents. *Journal of Neuroscience,* 37(5):1139-1155. https://doi.org/10.1523/JNEUROSCI.2002-16.2016.

19. **Varodayan FP**, Bajo M, Soni N, Luu G, Madamba SG, Schweitzer P, Roberto M. (2017). Chronic alcohol exposure disrupts $CB_1$ regulation of GABAergic transmission in the rat basolateral amygdala. *Addiction Biology,* 22(3):766-778. https://doi.org/10.1111/adb.12369.

20. Schweitzer P, Cates-Gatto C, **Varodayan FP**, Nadav T, Roberto M, Lasek AW, Roberts AJ. (2016). Dependence-induced ethanol drinking and GABA neurotransmission are altered in Alk deficient mice. *Neuropharmacology,* 107:1-8. https://doi.org/10.1016/j.neuropharm.2016.03.003.

21. **Varodayan FP**, Soni N, Bajo M, Luu G, Madamba SG, Schweitzer P, Parsons LH, Roberto M. (2016). Chronic ethanol exposure decreases $CB_1$ receptor function at GABAergic synapses in the rat central amygdala. *Addiction Biology,* 21(4):788-801. https://doi.org/10.1111/adb.12256.

22. Herman MA, **Varodayan FP**, Oleata CS, Luu G, Kirson D, Heilig M, Ciccocioppo R, Robert M. (2016). Glutamatergic transmission in the central nucleus of the amygdala is selectively altered in Marchigian Sardinian alcohol-preferring rats: Alcohol and CRF effects. *Neuropharmacology,* 102:21-31. https://doi.org/10.1016/j.neuropharm.2015.10.027.

23. Bajo M, **Varodayan FP**, Madamba SG, Roberts AJ, Casal LM, Oleata C, Siggins GR, Roberto M. (2015). Interleukin-1 Interacts with Ethanol Effects on GABAergic Transmission in the Mouse Central Amygdala. *Frontiers in Pharmacology,* 19(6):49. https://doi.org/10.3389/fphar.2015.00049.

24. Bajo M, Herman MA, **Varodayan FP**, Oleata CS, Madamba SG, Harris RA, Blednov YA, Roberto M. (2015). Role of the IL-1 receptor antagonist in ethanol-induced regulation of GABAergic transmission in the central amygdala. *Brain, Behavior and Immunity,* 45:189-97. https://doi.org/10.1016/j.bbi.2014.11.011.

25. Kallupi M, **Varodayan FP**, Oleata CS, Correia D, Luu G, Roberto M. (2014). Nociceptin/Orphanin FQ decreases glutamate transmission and blocks ethanol-induced effects in the central amygdala of naïve and ethanol-dependent rats. *Neuropsychopharmacology,* s39(5):1081-92. https://doi.org/10.1038/npp.2013.308.

26. **Varodayan FP***, Harrison NL. (2013). HSF1 transcriptional activity mediates alcohol induction of Vamp2 expression and GABA release. *Frontiers in Integrative Neuroscience,* 7:89. https://doi.org/10.3389/fnint.2013.00089.
*Corresponding author

27. Pignataro L*, **Varodayan FP***, Tannenholz LE, Protiva P, Harrison NL. (2013). Brief alcohol exposure alters transcription in astrocytes via the heat shock pathway. *Brain and Behavior,* 3(2):114-133. https://doi.org/10.1002/brb3.125.
*Co-first authors
Press Release by Columbia University published in:
- "Researchers find that alcohol consumption damages brain's support cells." Medical Express, 18 March 2013. https://medicalxpress.com/news/2013-03-alcohol-consumption-brain-

cells.html

28. **Varodayan FP**, Pignataro L, Harrison NL. (2011). Alcohol induces Synaptotagmin 1 expression in neurons *via* activation of heat shock factor 1. *Neuroscience,* 193:63-71. https://doi.org/10.1016/j.neuroscience.2011.07.035.

29. **Varodayan FP**, Zhu X, Cui X, Porter BE. (2009). Seizures increase cell proliferation in the dentate gyrus by shortening progenitor cell-cycle length. *Epilepsia,* 50(12):2638-2647. https://doi.org/10.1111/j.1528-1167.2009.02244.x.

30. Porter BE, Lund IV, **Varodayan FP**, Wallace RW, Blendy JA. (2008). The role of transcription factors cyclic-AMP responsive element modulator (CREM) and inducible cyclic-AMP early repressor (ICER) in epileptogenesis. *Neuroscience,* 152(3):829-836. https://doi.org/10.1016/j.neuroscience.2007.10.064.

31. Macgowan CK, Al-Kwifi O, **Varodayan F**, Yoo S, Wright GA, Kellenberger CJ. (2005). Optimization of 3D contrast-enhanced pulmonary magnetic resonance angiography in pediatric patients with congenital heart disease. *Magnetic Resonance in Medicine,* 54(1):207-212. https://doi.org/10.1002/mrm.20538.

***Review Articles and Commentaries:***

1. Farokhnia M, Berger AL, Karoly HC, Hwa LS, **Varodayan FP**. (2020). The Promise of Neuroimmune Targets for Treating Drug Addiction and Other Psychiatric Disorders: Granulocyte-Colony Stimulating Factor Exemplification. *Frontiers in Psychiatry,* 11:220. https://doi.org/10.3389/fpsyt.2020.00220.

2. Roberto M, **Varodayan FP**. (2017). Synaptic targets: Chronic alcohol actions. *Neuropharmacology,* 122:85-99. https://doi.org/10.1016/j.neuropharm.2017.01.013.

3. Roberto M, **Varodayan F**. (2015). Commentary on the Third International Congress on "Alcoholism and Stress: A Framework for Future Treatment Strategies". *Alcohol,* 49(8):e1-2. https://doi.org/10.1016/j.alcohol.2015.11.007.

4. Pignataro L, **Varodayan FP**, Tannenholz LE, Harrison NL. (2009). The regulation of neuronal gene expression by alcohol. *Pharmacology and Therapeutics,* 124(3):324-335. https://doi.org/10.1016/j.pharmthera.2009.09.002.

***Manuscripts in preparation:***

1. Blockade of orexin receptors in the infralimbic cortex prevents stress-induced reinstatement of alcohol-seeking behavior in alcohol-dependent rats. Flores-Ramirez F, **Varodayan FP**, Patel RR, Illenberger J, Di Ottavio F, Roberto M, Martin-Fardon R. *Submitted.*

2. Chronic ethanol induces a pro-inflammatory switch in interleukin-1β regulation of GABAergic signaling in the mouse medial prefrontal cortex. **Varodayan FP**, Pahng AR, Davis TD, Bajo M, Steinman MQ, Kiosses WB, Blednov YA, Burkart MD, Edwards S, Roberts AJ, Roberto M. *In submission.*

3. Nguyen JD, Kirson D, Steinman MQ, Patel R, Khom S, **Varodayan FP**, Hedges DM, Oleata CS, Grant Y, Roberto M, Taffe MA. Withdrawal-induced escalated oxycodone self-administration is mediated by kappa opioid receptor function. *Preprint on bioRχiv:* https://doi.org/10.1101/177899.

**Invited Research Talks**

***Conference Presentations:***

1. The role of the interleukin-1 system in alcohol dependence-induced cortical dysfunction 2019

Winter Conference on Brain Research, Snowmass, CO

2. The role of the interleukin-1 system in alcohol dependence-induced cortical dysfunction 2018
Hot Topic Presentation, American College of Neuropsychopharmacology Meeting, Hollywood, FL

3. Noradrenergic regulation of central amygdala GABA synapses is altered by alcohol dependence 2018
Research Society on Alcoholism Annual Meeting, San Diego, CA

4. Alcohol dependence disrupts amygdalar L-type voltage-gated calcium channel mechanisms 2018
Behavioral Pharmacology Society Annual Meeting, San Diego, CA

5. Alcohol-induced adaptation of IL-1 signaling at GABA synapses in the mouse prelimbic cortex 2018
Gordon Research Seminar, Alcohol and the Nervous System, Galveston, TX

6. Effects and interactions of ethanol and endocannabinoids in rat central and basolateral amygdala 2018
American College of Neuropsychopharmacology Meeting, Hollywood, FL

7. Alcohol dependence activates microglia and reverses the IL-1β induced decrease in inhibition of prelimbic cortex pyramidal neurons 2016
Research Society on Alcoholism Annual Meeting, New Orleans, LA

8. L-type channel mediation of ethanol-induced GABA release is disrupted by chronic exposure 2015
Research Society on Alcoholism Annual Meeting, San Antonio, TX

9. Alcohol induces Vamp2, but not Vamp1, gene expression in neurons via activation of HSF1 2011
Research Society on Alcoholism Annual Meeting, Atlanta, GA

***Departmental Seminars:***

1. Interleukin-1 system and alcohol dependence-induced cortical dysfunction 2020
Developmental Exposure Alcohol Research Center (DEARC), Binghamton University – SUNY

2. Alcohol dependence selectively alters neuroimmune function 2019
Department of Molecular Medicine, The Scripps Research Institute, La Jolla, CA

3. Circuit dysfunction at the intersection of alcohol and stress 2018–2019
   - National Institute on Alcohol Abuse and Alcoholism, NIH, Bethesda, MD
   - Depts. of Pharmacology and Psychiatry & Behavioral Neurosciences, Wayne State University, Detroit, MI
   - School of Psychology, University of Ottawa, Ottawa, ON, Canada
   - Dept. of Biological Sciences, University of Texas at El Paso, El Paso, TX
   - Dept. of Anatomy & Neurobiology, University of Maryland School of Medicine, Baltimore, MD
   - Dept. of Neuroscience, UConn Health School of Medicine, Farmington, CT
   - Dept. of Psychology, Binghamton University, Binghamton, NY
   - Dept. of Neuroscience, West Virginia University School of Medicine, Morgantown, WV
   - Dept. of Neuroscience & Experimental Therapeutics, Albany Medical College, Albany, NY
   - Dept. of Physiology, Louisiana State University - Health Sciences Center, New Orleans, LA
   - Dept. of Psychology, University of Toronto Scarborough, Toronto, ON, Canada
   - Division of Pharmacology and Toxicology, The University of Texas at Austin College of Pharmacy, Austin, TX
   - Dept. of Psychological Sciences, Kansas State University, Manhattan, KS
   - Dept. of Pharmacology, Physiology & Neuroscience, University of South Carolina School of Medicine, Columbia, SC

- School of Neurosciences, Virginia Tech, Blacksburg, VA

4. Alcohol dependence disrupts voltage-gated calcium channels in the rat central amygdala 2016
   Department of Biological Sciences, University of Alaska Anchorage, Anchorage, AK

5. Alcohol alters SNARE protein expression and spontaneous GABA release 2011–2012
   - Committee on the Neurobiology of Addictive Disorders, The Scripps Research Institute, La Jolla, CA
   - Anesthesiology Department, Columbia University, NYC, NY
   - Pharmacology Department, Columbia University, NYC, NY

6. Neurogenesis and cell cycle changes in epilepsy 2006
   Joseph Stokes Jr. Research Institute Chalk Talk Series, Children's Hospital of Philadelphia, Philadelphia, PA

**Chaired Conference Symposia**

1. Beyond Inflammation: Neuroimmune Pathways in Alcohol Use Disorders 2019
   Winter Conference on Brain Research, Snowmass, CO

2. Noradrenergic mechanisms at the intersection of alcohol dependence and stress 2018
   Research Society on Alcoholism Annual Meeting, San Diego, CA

3. Calcium signaling toolkit: integrators and targets of alcohol 2015
   Research Society on Alcoholism Annual Meeting, San Antonio, TX

**Conference Abstracts**

1. Athanason A, Scroger M, **Varodayan FP**. (2022). Noradrenergic Modulation of Medial Prefrontal Cortex. 45th Research Society on Alcoholism Annual Meeting, Orlando, FL. *Alcohol Clin. Exp. Res.* 46, S1, P-267.

2. Gandhi PJ, Varodayan FP, Patel RR, Cruz B, Rodriguez L, Vlkolinsky R, Roberto M (2022) Dysregulation of corticotropin releasing factor system in infralimbic prefrontal cortex of alcohol dependence and withdrawal in male and female rats. 45th Research Society on Alcoholism Annual Meeting, Orlando, FL. *Alcohol Clin. Exp. Res.* 46, S1, P-709.

3. **Varodayan FP**, Patel RR, Matzeu A, Wolfe SA, Khom S, Gandhi PJ, Rodriguez L, Bajo M, D'Ambrosio S, Sun H, Kerr TM, Gonzales RA, Natividad LA, Martin-Fardon R, Roberto M. (2021). Alcohol use disorder compromises the amygdalar noradrenergic system. American College of Neuropsychopharmacology 60th Annual Meeting (Virtual). Neuropsychopharmacology, 46, S369.

4. Athanason A, Coble C, **Varodayan FP**. (2021). Noradrenergic Regulation of Medial Prefrontal Cortex Synapses. 44th Research Society on Alcoholism Annual Meeting (Virtual).

5. Kirson D, Khom S, Rodriguez L, Wolfe SA, **Varodayan FP**, Gandhi P, Patel RR, Vlkolinsky R, Bajo M, Roberto M. (2021). Central amygdala GABA synapses of alcohol naïve and dependent females are less sensitive to acute alcohol compared to male rats. 44th Research Society on Alcoholism Annual Meeting (Virtual).

6. Dugan MP, Maiya R, **Varodayan FP**, Patel RR, Roberto M, Srinivasan S, Messing RO. (2021). BRSK1 is a PKCε substrate involved in several PKCε dependent responses to ethanol. 44th Research Society on Alcoholism Annual Meeting (Virtual).

7. **Varodayan FP**, Nadav T, Polis I, Roberts AJ, Roberto M. (2019). Alcohol Dependence Alters Noradrenergic Influence Over the Medial Prefrontal Cortex. American College of Neuropsychopharmacology 56th Annual Meeting, Orlando, FL. Neuropsychopharmacology, 44, S365.

8. **Varodayan FP**, Pahng AR, Davis TD, Nadav T, Bajo M, Burkart MD, Edwards SE, Roberts AJ, Roberto M. (2019). The role of the Interleukin-1 system in alcohol-induced cortical dysfunction. 42nd Research Society on Alcoholism Annual Meeting, Minneapolis, MN. *Alcohol Clin. Exp. Res.* 43, S1, P-729.

9. Khom S, Patel RR, Kirson D, Hedges DM, **Varodayan FP**, Bajo M, Steinman MQ, Wolfe SA, Roberto M. (2019). Ethanol dependence- and withdrawal-induced alterations of serotonergic modulation of GABA transmission in the CeA. 42nd Research Society on Alcoholism Annual Meeting, Minneapolis, MN. *Alcohol Clin. Exp. Res.* 43, S1, P-489.

10. **Varodayan FP**, Pahng AR, Davis TD, Nadav T, Bajo M, Burkart MD, Edwards SE, Roberts AJ, Roberto M. (2019). The role of the Interleukin-1 system in alcohol-induced cortical dysfunction. 13th Annual Canadian Neuroscience Meeting, Toronto, ON, Canada.

11. **Varodayan FP**, Steinman MQ, Davis TD, Wolfe SA, Nadav T, Montgomery SE, Kiosses WB, Burkart MD, Roberts AJ, Bajo M, Roberto M. (2018). Alcohol-induced neuroadaptation of IL-1 signaling at GABAergic synapses in the mouse prelimbic cortex. 48th Society for Neuroscience Annual Meeting, San Diego, CA. *Soc Neurosci. Abst. Program* #P-648.14.

12. Khom S, Patel RR, Hedges D, **Varodayan FP**, Bajo M, Steinman MQ, Vlkolinsky R, Kirson D, Roberto M. (2018). Alcohol dependence and withdrawal alter serotonergic modulation of GABA transmission in the CeA. 48th Society for Neuroscience Annual Meeting, San Diego, CA. *Soc Neurosci. Abst. Program* #P- 601.01.

13. Gilpin NW, Avegno E, Middleton J, Roberto M, **Varodayan F**, Weera M, Lobell T, Itoga C, Whitaker A, Edwards S. (2018). Central amygdala circuits mediate hyperalgesia in alcohol-dependent rats. 41st Research Society on Alcoholism Annual Meeting, San Diego, CA. *Alcohol Clin. Exp. Res.* 42, S1, P-128.

14. **Varodayan FP**, Steinman MQ, Davis TD, Wolfe SA, Nadav T, Montgomery SE, Kiosses WB, Burkart MD, Roberts AJ, Bajo M, Roberto M. (2018). Alcohol-induced neuroadaptation of IL-1 signaling at GABAergic synapses in the mouse prelimbic cortex. Gordon Research Conference: Alcohol & the Nervous System, Galveston, TX.

15. **Varodayan FP**, Steinman MQ, Montgomery SE, Roberts AJ, Bajo M, Roberto M. (2017). Alcohol dependence alters IL-1 regulation of GABA transmission in the mouse prelimbic cortex. American College of Neuropsychopharmacology 56th Annual Meeting, Palm Springs, CA. *Neuropsychopharmacology*, 42, S294-S475.

16. **Varodayan FP**, Steinman MQ, Montgomery SE, Roberts AJ, Bajo M, Roberto M. (2017). Alcohol dependence alters IL-1 regulation of GABA transmission in the mouse prelimbic cortex. 40th Research Society on Alcoholism Annual Meeting, Denver, CO. *Alcohol Clin. Exp. Res.* 41, S1, P-385.

17. Kirson D, Steinman MQ, Oleata CS, **Varodayan FP**, Patel R, Roberto M. (2017). Oxytocin decreases central amygdala GABAergic signaling in naïve but not alcohol dependent rats. 40th Research Society on Alcoholism Annual Meeting, Denver, CO. *Alcohol Clin. Exp. Res.* 41, S1, P-712.

18. Khom S, Patel R, Hedges D, **Varodayan FP**, Steinman MQ, Bajo M, Roberto M. (2017). Alcohol dependence and withdrawal alter serotonin regulation of GABA transmission in the CeA. 40th Research Society on Alcoholism Annual Meeting, Denver, CO. *Alcohol Clin. Exp. Res.* 41, S1, P-26.

19. **Varodayan FP**, Steinman MQ, Montgomery SE, Roberts AJ, Bajo M, Roberto M. (2017). Alcohol dependence alters IL-1 regulation of GABA transmission in the mouse prelimbic cortex. Fourth International Congress on Alcoholism and Stress, Volterra, Italy. *Alcohol*, 60, P-109.

20. Bajo M, Steinman MQ, **Varodayan FP**, Khom S, Patel R, Hedges DM, Herman MA, Montgomery SE, Nadav T, Steiner N, Mandyam CD, Roberts AJ, Roberto M. (2017). Chronic ethanol-induced immune responses in the mouse central amygdala: focus on glia and IL-1 system. Fourth International Congress on Alcoholism and Stress, Volterra, Italy. *Alcohol*, 60, P-95

21. Kirson D, Steinman MQ, Oleata CS, **Varodayan FP**, Patel R, Roberto M. (2017). Oxytocin decreases central amygdala GABAergic signaling in naïve but not alcohol dependent rats. Fourth International Congress on Alcoholism and Stress, Volterra, Italy. *Alcohol*, 60, P-105.

22. Nguyen JD, Kirson D, **Varodayan FP**, Khom S, Patel R, Hedges D, Roberto M, Taffe MA. (2017). Kappa opioid receptor signaling contributes to re-escalation of oxycodone self-administration under extended access conditions. Experimental Biology Meeting, Chicago, IL. *Experimental Biology Program*, #P-985.1.

23. **Varodayan FP**, Oleata CS, Sabino V, Roberto M. (2016). A single restraint stress alters PACAP-38 modulation of GABA transmission in the rat central amygdala. 46th Society for Neuroscience Annual Meeting, San Diego, CA. *Soc Neurosci. Abst. Program* #P-124.18.

24. Nguyen JD, Kirson D, **Varodayan FP**, Khom S, Roberto M, Taffe MA. (2016). Determination of kappa opioid receptor contributions to re-escalation of oxycodone self-administration under extended access conditions. 46th Society for Neuroscience Annual Meeting, San Diego, CA. *Soc Neurosci. Abst. Program* #P-78.18.

25. Bajo M, Herman MA, Khom S, **Varodayan FP**, Montgomery SE, Roberts AJ, Roberto M. (2016). Interleukin-1 modulation of GABA transmission in the mouse central amygdala after chronic ethanol exposure. 46th Society for Neuroscience Annual Meeting, San Diego, CA. *Soc Neurosci. Abst. Program* #P-826.08.

26. Bajo M, **Varodayan FP**, Khom S, Hedges DM, Patel RR, Steinman MQ, Herman MA, Montgomery SE, Nadav T, Roberts AJ, Roberto M. (2017). Brain Region Differences in the IL-1b Modulation of GABAergic Transmission Following Chronic Ethanol Treatment. 50th Winter Conference on Brain Research, Big Sky, Montana.

27. **Varodayan FP**, Montgomery SE, Roberts AJ, Bajo M, Roberto M. (2016). Alcohol dependence activates microglia and reverses the IL-1β induced decrease in GABA inhibition of prelimbic cortex pyramidal neurons. 39th Research Society on Alcoholism Annual Meeting, New Orleans, LA. *Alcohol Clin. Exp. Res.* 40, S1, P-254.

28. Bajo M, Herman MA, Khom S, **Varodayan FP**, Montgomery SE, Roberts AJ, Roberto M. (2016). Neuroimmune responses in the mouse central amygdala after chronic ethanol exposure: activation of microglia and IL-1 modulation of GABA transmission. 39th Research Society on Alcoholism Annual Meeting, New Orleans, LA. *Alcohol Clin. Exp. Res.* 40, S1, P-255.

29. **Varodayan FP**, Montgomery SE, Roberts AJ, Bajo M, Roberto M. (2016). Alcohol dependence activates microglia and reverses the IL-1β induced decrease in GABA inhibition of prelimbic cortex pyramidal neurons. Gordon Research Conference: Alcohol & the Nervous System, Galveston, TX.

30. Parsons LH, Natividad L, Ciccocioppo R, **Varodayan F**, Herman M, Roberto M. (2015). Dysregulated endocannabinoid signaling in the CeA: consequence of chronic alcohol exposure vs. premorbid vulnerability factor. 38th Research Society on Alcoholism Annual Meeting, San Antonio,

TX. *Alcohol Clin. Exp. Res.* 39, S1, P-689.

31. Sabino V, Iemolo A, Blasio A, **Varodayan F**, Roberto M, Cottone P. (2014). Central Amygdala PACAP in the behavioral stress response. 44th Society for Neuroscience Annual Meeting, Washington, DC. *Soc Neurosci. Abst. Program* #P-350.01.

32. **Varodayan FP**, Roberto M. (2014). Ethanol increases GABA release in the rat central nucleus of the amygdala via L- and P/Q-type calcium channels and calcium-induced calcium release. 37th Research Society on Alcoholism Annual Meeting, Bellevue, WA. *Alcohol Clin. Exp. Res.* 38, S1, P-644.

33. Bajo M, Madamba SG, **Varodayan FP**, Blednov YA, Harris RA, Siggins GR, Roberto M. (2014). Role of IL-1 receptor antagonist in ethanol-induced regulation of the GABAergic transmission in the central amygdala. 37th Research Society on Alcoholism Annual Meeting, Bellevue, WA. *Alcohol Clin. Exp. Res.* 38, S1, P-366.

34. **Varodayan FP**, Roberto M. (2014). L-and P/Q-type calcium channels mediate ethanol enhancement of GABA release in rat central nucleus of the amygdala. Third International Congress on Alcoholism and Stress, Volterra, Italy. *Alcohol*, 48, P-91.

35. Bajo M, Madamba SG, **Varodayan FP**, Blednov YA, Harris RA, Siggins GR, Roberto M. (2014). Role of IL-1 receptor antagonist in ethanol-induced regulation of the GABAergic transmission in the central amygdala. Third International Congress on Alcoholism and Stress, Volterra, Italy. *Alcohol*, 48, P-76.

36. **Varodayan FP**, Roberto M. (2013). Ethanol enhancement of GABA release in the central nucleus of the amygdala is mediated by calcium channels. 43rd Society for Neuroscience Annual Meeting, San Diego, CA. *Soc Neurosci. Abst. Program* #P-155.02.

37. Sitko AA, **Varodayan FP**, Hill A, Padilla N, Gellman C, Brachman R, Burgos A, Marshall K, Shakman KB, Yu WH, Waites C, Remole KE. (2012). Columbia University Neuroscience Outreach: An expanding program of K-12 neuroscience outreach in the inner city. 42nd Annual Meeting for the Society for Neuroscience, New Orleans, LA. *Soc Neurosci. Abst. Program* #P-29.08SU.

38. Gellman C, Sitko AA, **Varodayan FP**, Burgos A, Deihle D, Remole K, Crumiller M, Pham T, Wu M, Rabinowitz G, Lourdes Martin Hernandez A, Saotome K, Mihali A, Spatzer A, Murray A, Reibstein L, Alamu O, Jensen CL, Rayport S, Yu H. (2012). An inquiry-based neuroscience curriculum emphasizing the scientific method. 42nd Annual Meeting for the Society for Neuroscience, New Orleans, LA. *Soc Neurosci. Abst. Program* #P-29.07SU.

39. Jensen CL, Sitko A, Hill A, Gellman C, McKellar H, **Varodayan F**, Yu WH, Remole KE. (2011). Columbia University Neuroscience Outreach: Successful inner city K-12 neuroscience workshops. 41st Annual Meeting for the Society for Neuroscience, Washington, DC. *Soc Neurosci. Abst. Program* #P-27.20SU.

40. **Varodayan FP**, Harrison NL. (2011). Alcohol differentially regulates Vamp2 and Vamp1 expression in neurons via heat shock factor 1 (HSF1). Gordon Research Conference: Inhibition in the CNS, Waterville, ME.

41. **Varodayan FP**, Harrison NL. (2011). Alcohol induces Vamp2, but not Vamp1, gene expression in neurons via activation of heat shock factor 1 (HSF1). 34th Research Society on Alcoholism Annual Meeting, Atlanta, GA. *Alcohol Clin. Exp. Res.* 35, S1, P-720.

42. **Varodayan FP**, Pignataro L, Harrison NL. (2010). Alcohol and heat shock regulate Synaptotagmin 1 (Syt1) expression in cortical neurons. 33rd Research Society on Alcoholism Annual Meeting, San Antonio, TX. *Alcohol Clin. Exp. Res.* 34, S1, P-270.

43. Pignataro L, **Varodayan FP**, Mamut PL, Tanneholz LE, Harrison NL. (2010). Ethanol activates the heat shock pathway in astrocytes. 33rd Research Society on Alcoholism Annual Meeting, San Antonio, TX. *Alcohol Clin. Exp. Res.* 34, S1, P-273.

44. **Varodayan FP**, Maronski M, Porter BE. (2006). Seizures increase neurogenesis in the dentate gyrus by shortening progenitor cell cycle length. 36th Society for Neuroscience Annual Meeting, Atlanta, GA. *Soc Neurosci. Abst. Program* #P-418.15.

45. Lund IV, **Varodayan F**, Brooks-Kayal AR, Blendy JA, Porter BE. (2005). Increased severity of epilepsy and lack of neuroprotection after SE in CREM/ICER null mice. 59th American Epilepsy Society Annual Meeting, Washington, DC. *Epilepsia* 46, S8, P-2.069.

## Teaching

***Instructor:***

Behavioral Neuroscience (Psyc 362), Binghamton University – 243 undergraduates 2022
Behavioral Neuroimmunology (Psyc 473D), Binghamton University – 25 undergraduates 2021
Behavioral Neuroscience (Psyc 362), Binghamton University – 210 undergraduates 2020

***Teaching Assistant:***

Developmental & Systems Neuroscience, Columbia University 2011
Cellular & Molecular Neuroscience, Columbia University 2010

## Mentoring & Advising

***Graduate Student Mentees:***

Alexandria Athanason, Psychology 2020– present
Andrea Liss, Psychology 2021–present

***Undergraduate Student Mentees:***

15 students 2020–present
Includes McNair, CSTEP and Bridges Scholars, students completing Senior Honor's Theses, an Undergraduate Research Awardee, and a Summer Scholars and Artists Program Awardee.

***Graduate Student Committees:*** 2020–present
8 students
Includes Master's Thesis Committees, Preliminary Exam Committees and Doctoral Committees.

***Undergraduate Student Committees:*** 2020–present
9 students

***Teaching Assistants:*** 2020–present
5 students

***STEM Outreach:***

DiRT Research Rap Speaker, Binghamton University 2022
STEM Career Paths Panelist, First-Year Research Immersion Program, Binghamton University 2021
NuRhoPsi Induction Ceremony Speaker, Binghamton University 2021
Developing an IDP Panelist, Women and Gender in Academia, Binghamton University 2021
K-12 Schools Visiting Scientist, TSRI Alcohol Research Center 2017–2019
Harvey Mudd College Upward Bound Highschool Program Laboratory Mentor 2018
STEM Education Fellow, New York Academy of Sciences 2012
NYC Regional Brain Bee Coordinator & Mentor, Dana Alliance for Brain Initiatives 2010–2012

K-12 Schools Visiting Scientist, Columbia University Neuroscience Outreach 2009–2012
Columbia Science Mentor, Mott Hall II Middle School 2009

**Service**

***Editorial Service:***

Guest Associate Editor, Frontiers in Synaptic Neuroscience Special Issue on Plasticity of Inhibitory Cells in Health and Disease 2021–2022
Review Editor, Frontiers in Motivation and Reward 2022–present
Review Editor, Frontiers in Addictive Disorders 2021–present
Review Editor, Frontiers in Psychopharmacology 2021–present

***Ad-Hoc Reviewer for Peer-reviewed Journals:***

Addiction Neuroscience, Alcohol, Alcohol & Alcoholism, Behavioural Brain Research, Biological Psychiatry, eNeuro, Frontiers in Psychiatry, Neuropharmacology, Progress in Neuropsychopharmacology & Biological Psychiatry, Scientific Reports

***Ad-Hoc Reviewer for Fellowships, Training, and Grant Awarding Programs:***

NIAAA Fellowship Panel (ZAA1 GG 32) 2022
Pharmacotherapies for Alcohol and Substance Use Disorders Alliance (PASA) Panel (RFA6b) 2022

***University and Professional Committees:***

Research Development Specialist Search Committee Member, Office of Strategic Research Initiatives, Binghamton University 2021–2022
Faculty Awards & Digital Presence Coordinator Search Committee Member, Office of Research Advancement, Binghamton University 2021–2022
Harpur College Council Faculty Representative, Binghamton University 2021-2022
Psychology Department EDI Committee Member, Binghamton University 2019–present
Psychology Department Strategic Plan Subcommittee Chair, Binghamton University 2020–2021
Education Committee, Research Society on Alcoholism 2017–present

**Professional Memberships**

Canadian Association for Neuroscience 2019–present
Research Society on Alcoholism 2009–present
Society for Neuroscience 2006–present