

CURRICULUM VITAE
Christopher Roy Bishop, Ph.D.
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Current Address

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Educational Background

5/94 B.A., Psychology, Cum Laude, Hope College, Holland, MI
4/99 M.A., Behavioral Neuroscience, Wayne State University, Detroit, MI
12/01 Ph.D., Behavioral Neuroscience, Wayne State University, Detroit, MI
7/05 Post-doctoral Research Associate, Department of Anatomy and Cell Biology,
Wayne State University School of Medicine, Detroit, MI

Professional History

9/18-present Director, Integrative Neuroscience Program, Binghamton University, Binghamton, NY
9/14-present Professor, Department of Psychology, Binghamton University, Binghamton, NY
1/11-present Chair, Institutional Animal Care and Use Committee, Binghamton University,
Binghamton, NY
9/15-9/16 Interim Chair, Department of Psychology, Binghamton University, Binghamton, NY
1/13-12/19 Co-Director, Howard Hughes Medical Institute grant for Undergraduate Research at
Binghamton University, Binghamton, NY
1/10-8/14 Associate Professor, Department of Psychology, Binghamton University, Binghamton,
NY
8/09-1/10 Interim Behavioral Neuroscience Graduate Director, Binghamton University,
Binghamton, NY
8/05-12/09 Assistant Professor, Department of Psychology, Binghamton University,
Binghamton, NY
11/01-7/05 Post-doctoral Research Associate, Department of Anatomy and Cell Biology,
Wayne State University School of Medicine, Detroit, MI
9/96- 11/01 Grad. Researcher, Department of Psychology, Wayne State University, Detroit, MI
6/94-9/96 Sleep Research Asst., Henry Ford Hospital, Detroit, MI

Memberships and Advisory Roles

1996- present Society for Neuroscience Member
2005- present Member of Integrative Neuroscience Program, Binghamton University
2005- present Member of the Center for Developmental Psychobiology, Binghamton University
2008- present Movement Disorders Society Member
2008- present Phi Eta Sigma honorary Member
2010- present International Basal Ganglia Society Member

2010- 2020	Faculty Advisor for Delta Epsilon Mu, Pre-health fraternity
2012- 2018	Handling Editor for ISRN Neuroscience
2012- 2019	Faculty Associate for Mountainview Residential Community
2012- 2014	President's Scholars Mentor
2012- 2014	Dyskinesia Therapeutics Working Group for Michael J. Fox Foundation
2014- 2020	Member of the Center for Affective Sciences, Binghamton University
2017-present	Associate Handling Editor for <i>Journal of Neurochemistry</i>
2019-present	American Society for Neural Therapy and Repair Member
2019-present	Emerging Targets Advisory Board for Michael J. Fox Foundation
2020-present	Editorial Board, <i>Experimental Neurology</i>
2024-present	Nu Rho Psi Member

Awards

1997, 1998	Spring/Summer Research Assistant Award, Wayne State University
1999	Young Investigator Award (Society for the Study of Ingestive Behavior)
1999	Young Investigator AccuScan Travel Award
2001	Stagner Memorial Award for Outstanding Research, Teaching and Service
2003, 2004	Michigan Chapter Society for Neuroscience Post-doctoral Travel Award Recipient
2008	Phi Eta Sigma Faculty Award
2009	Dean's Research Semester Award for Junior Faculty
2013	Faculty Recognition Award from Service for Students with Disabilities
2017-2018	Chancellor's Award for Excellence in Teaching
2020	Binghamton University Service Recognition Award
2023	Binghamton University Career Champion Award
2024	Binghamton University Career Champion Award
2023-2024	Chancellor's Award for Excellence in Scholarship and Creative Activities

Grant Review Panels

2008-2009	Michael J. Fox Review Panel on Target Validation for Parkinson's Disease
2009	Ad hoc Reviewer for Michael J. Fox Foundation
2009	Ad hoc Reviewer for New Zealand Neurological Society
2010-2012	Ad hoc Reviewer for Parkinson's Disease Society
2010	Reviewer for NIH Director's Opportunity for Research in 5 Thematic Areas (RC4)
2010	Ad hoc Reviewer for Long Island University Intermural Research Awards
2010	Ad hoc Reviewer for Prinses Beatrix Fonds, Dutch Research Institute
2010	Ad hoc Reviewer for Michael J. Fox Rapid Response Innovation Awards Program
2010-present	Ad hoc Member for NIH Study Section Clinical Neuroplasticity & Neurotransmitters
2011	Chair and Reviewer for NIH Special Emphasis Panel on Brain Injury
2011-present	Assessor/Reviewer for Michael J. Fox Grant Program on Target Validation
2011	Ad hoc Reviewer for Prinses Beatrix Fonds, Dutch Research Institute
2011-2015	Reviewer for Michael J. Fox Grant Dyskinesia Challenge Program
2012	Advisory Board, NIH Udall Parkinson's Disease Center, Michigan State University
2012-present	Reviewer for NIH Study Section Neurobiology 2 (NURE-2)
2012-present	Reviewer/Panelist for Michael J. Fox Foundation Therapeutics Pipeline Initiatives
2014	Reviewer/Panelist for Parkinson's Disease Foundation
2014	Ad hoc Reviewer for Parkinson's Disease UK
2014	Ad Hoc for Cure Parkinson's Disease (PD)
2015	External Assessor for National Health and Medical Research Council (Australia)
2017-present	Ad hoc Member for NIH Study Section Blueprint Neurotherapeutics Network
2018	Reviewer, Department of Defense, Congressionally Directed Research Programs

2018	Reviewer, National Science Centre, Poland
2019-2020	Ad hoc Reviewer, United States Veterans Affairs (NURE)
2020-2024	Standing Member, United States Veterans Affairs (NURE)
2024	Ad hoc Reviewer for student research grants, National Nu Rho Psi
2024	Ad hoc Reviewer for NIH Pioneer Grants

Manuscript Reviews

Acta Neuropathologica	Brain
Journal of Neuroscience	Journal of Clinical Investigation
Movement Disorders	Journal of Pharmacology & Experimental Therapeutics
Biochemical Pharmacology	British Journal of Pharmacology
Experimental Neurology	Pharmacological Reviews
Synapse	Progress in Neuro-psychopharmacol & Biological Psychiatry
Brain Research	Psychopharmacology
Behavioral Neuroscience	Neuropharmacology
European Journal of Neuroscience	European Journal of Pharmacology
Journal of Neurochemistry	Neurobiology of Disease
Journal of Neurology	Pharmacology Biochemistry & Behavior
Molecular Neurobiology	Pharmacological Reports
FASEB	Neuroscience Letters
Basal Ganglia	Neurochemistry International
Journal of Neuroscience Research	Journal of Parkinson's Disease
Life Sciences	ISRN Neuroscience
ACS Neuroscience	Neuroscience
Central European Journal of Medicine	Brain Stimulation
Progress in Neurobiology	European Neuropsychopharmacology
PLOS-ONE	Neurotoxicology Research
Scientific Reports	Journal of Neural Transmission
Science Advances	Expert Opinion on Drug Metabolism and Toxicology
Gene Therapy	Journal of Parkinson's Disease

External Tenure and Promotion Reviews

2008	Promotional review to Associate Research Scientist for University of Michigan School of Medicine, Department of Rheumatology
2012	Promotional review to Associate Professor for University of Arizona Medical Center, Department of Neurology
2013	Promotional review to Research Scientist for Columbia University Medical Center, Department of Neurology
2016	Promotional review to Associate Professor for University of Arizona Medical Center, Department of Neurology
2017	Promotional review to Full Professor for Boston University School of Medicine, Department of Anatomy and Neurobiology
2019	Promotional review to Associate Professor for Drexel School of Medicine
2020	Promotional review to Associate Professor for Northeast Ohio College of Medicine, Department of Pharmaceutical Sciences.

Patents:

Inventor: **Bishop, C.** WO 2020/087031 A1 “Combination serotonin specific reuptake inhibitor and serotonin 1A receptor partial agonist for reducing L-DOPA-induced dyskinesia”. (Filed 4/30/20). Application Pending

Extramural Funding

Current Grants:

MPI/PD: **Bishop, C.** R01 NS122226-01A, NINDS. “Interrogating maladaptive serotonin raphe-striatal plasticity in L-DOPA-induced dyskinesia”. The overarching goal is to identify the mechanisms underlying the development of structural and functional maladaptation within the raphe-striatal circuit driving LID, which in turn could lead to novel, optimized targets for intervention. (12/01/2021-11/30/2026). Total Costs: \$3,200,000

Co-PI: **Bishop, C.** Department of Defense “Maladaptive 5-HT raphe-corticolimbic plasticity underlying the development of non-motor symptoms in Parkinson’s disease.” The overarching goal is to provide a mechanistic understanding of the influence of levodopa monotherapy on affective dysfunction in Parkinson’s disease patients. (9/01/2024-8/30/2028). Total Costs: \$673,448 to Bishop

Pending Grants:

PI: **Bishop, C.** Michael J. Fox Foundation “Investigating mechanisms of human alpha-synuclein-induced anxiety in a novel rat model of Parkinson’s Disease”. The central aim of this grant is to examine the effects of burgeoning alpha-synuclein accumulation on anxiety and its underlying neurocircuitry in a novel animal model of Parkinson’s disease.

Previous Grants:

PI: **Bishop, C.** Michael J. Fox Foundation “Chemogenetic and pharmacological targeting of the raphe-cortical pathway to reduce the development and expression of L-DOPA-induced psychosis”. The goal of this grant is to identify the neurocircuits involved in the generation of L-DOPA-induced psychosis and test a novel pharmacological treatment that corrects this treatment related side effect without altering L-DOPA motor efficacy. (9/01/2020-8/30/2023). \$200,000 to Bishop

Sub-Contract: **Bishop, C.** PI: Salvatore, M. (University of North Texas Health Sciences Center). Department of Defense "Interrogation of nigral tyrosine hydroxylase expression in movement initiation capacity during nigrostriatal neuron loss" The objective of the proposed project is to establish the mechanisms by which exercise modulates motor circuits in toxin and genetic models of Parkinson’s disease. (9/1/2019-8/31/2023). \$369,038 to Bishop

PI: **Bishop, C.** SUNY TAF “Re-purposing the multi-target 5-HT anti-depressant Vilazodone with Amantadine to optimize L-DOPA therapy”. This SUNY grant seeks to validate a combination therapy for the optimized treatment of Parkinson’s disease using a preclinical model. The goal with successful completion of the work is to license this invention currently under patent review for licensing. (1/1/2021-12/31/21). \$60,000 to Bishop

PI: **Bishop, C.** NSF I-Corp “Repurposing Serotonergic Compounds for Improved Treatment of Parkinson's Disease.” This program uses experiential education to help researchers gain valuable insight into entrepreneurship, starting a business or industry requirements and challenges. Our goal to to develop a strategic plan to move a marketable invention, repurposed pharmaceuticals for improved treatment of Parkinson’s disease, from concept to product while fostering a startup company. (12/1/2021-5/31/2022). \$50,000 to Bishop

- Sub-Contract: **Bishop, C. R44**, PI: Sortwell (Michigan State University) NINDS. "The Rat Pre-Formed Alpha-Synuclein Fibril Model of Parkinson's Disease". The objective of this research is to determine how seeding synuclein in basal ganglia affects known parameters of dopamine release in a novel rodent model of Parkinson's disease. (8/1/2019-12/31/2020). \$112,274 to Bishop
- Co-PI: **Bishop, C.** Howard Hughes Medical Institute. "Authentic research in STEM undergraduate education". The grant will fund a program that provides authentic STEM research experiences to freshmen undergraduate in the physical sciences, mathematics, computer science and engineering. (8/01/14-7/31/19). Total Costs: \$1,200,000 to program
- PI: **Bishop, C.** American Parkinson's Disease Association "Targeting cholinergic neurons of the pedunculopontine tegmental nucleus to improve treatment of Parkinson's disease". The goal of this grant is to validate the pedunculopontine tegmental nucleus, using chemogenetic and pharmacological techniques, as a target for the improved treatment of Parkinson's disease. Project Grant (9/01/2018-8/30/19). Direct Costs: \$50,000 to Bishop
- PI: **Bishop, C.** Michael J. Fox Foundation. "D-512, a novel multifunctional D2/D3 receptor agonist for the treatment of PD". The aim of this work is to determine whether the dopamine agonist D-512 is a useful monotherapy in a preclinical rat model of Parkinson's disease. MJFF Rapid Response Innovation Award Program (10/15/12-10/14/15). Total Costs: \$75,000 to Bishop
- Co-PI: **Bishop, C.** Howard Hughes Medical Institute. "Jumpstarting collaboration, fueling undergraduate research". The grant will fund a program that teams undergraduate majors in the life sciences with students in the physical sciences, mathematics, computer science and engineering to work on collaborative, interdisciplinary research projects in the life sciences. (1/01/10-12/31/14). Direct Costs: \$1,400,000 to Program
- PI: **Bishop, C.** Michael J. Fox Foundation. "Co-targeting of 5-HT_{1A} receptors and serotonin transporters for the treatment of L-DOPA-induced dyskinesia". The aim of this work is to determine whether coincident blockade of the serotonin targets reduces the development and long-term expression of dyskinesia in a rat model of Parkinson's disease. MJFF Dyskinesia Challenge Program (1/01/14-12/30/14). Direct Costs: \$100,000 to Bishop
- PI: **Bishop, C.** National Institute of Neurological Disease and Stroke. "Regulation of L-DOPA-induced dyskinesia by 5-HT_{1A} receptor mechanisms". The aim of the proposed set of experiments will be to test the hypothesis that striatal 5-HT_{1A} receptors represent a viable mechanistic target for the reduction of L-DOPA-induced dyskinesia using a validated in vivo rodent model of PD. 1R01NS059600-01 (5/01/08-4/30/14). Direct Costs: \$875,000 to Bishop
- PI: **Bishop, C.** Michael J. Fox Foundation. "Targeting serotonin transporters for the treatment of L-DOPA-induced dyskinesia". The aim of this work is to determine whether blockade of the serotonin transporter with selective serotonin reuptake inhibitors reduces the development and long-term expression of dyskinesia in a rat model of parkinson's disease. MJFF Dyskinesia Challenge Program (9/01/11-12/30/13). Direct Costs: \$200,000 to Bishop
- Co-PI: **Bishop, C.** SUNY Collaborative Grant, Upstate Medical-Binghamton University. "Non-invasive retinal imaging in animal models of Parkinson's disease". The experiments outlined in this grant aim to determine whether vascular, metabolic and circulatory dynamics in the mammalian retina predict the dopamine cell loss characteristic of idiopathic Parkinson's disease. (8/01/12-12/31/13). Direct Costs: \$20,000 to Bishop
- Co-PI: **Bishop, C.** Michael J. Fox Foundation. "Potential of concomitant targeting of 5-HT_{1A} and 5-HT_{2A} receptors against L-DOPA-induced dyskinesia in the hemiparkinsonian rat model". The goal of this line of inquiry is to examine if concurrent stimulation of 5-HT_{1A} and blockade of 5-HT_{2A} receptors provides interventional efficacy against the expression of L-DOPA-induced dyskinesia in a

rat model of parkinson's disease. Rapid Response Innovation Award (12/01/12-11/31/13).
Direct Costs: \$75,000 to Bishop

Collaborator: **Bishop, C.** National Science Foundation. "Mechanisms of central IL-1 responses to stress". The work outlined in this grant aims to determine the mechanisms by which stressor exposure leads to activation of inflammatory pathways in the brain. NSF 0822129 (8/01/08-7/31/12).
Direct Costs: \$400,000 to Deak

Sub-Contract: **Bishop, C.** National Institute of Neurological Disease and Stroke. "Novel pharmacotherapies for levo-dopa-induced dyskinesia". The aim of the proposed set of experiments will be to test the hypothesis that novel CNS receptors represent a clinical target for the reduction of L-DOPA-related side effects in Parkinson's Disease. SBIR to Skybridge Pharmaceuticals(10/01/09-8/30/10). Direct Costs: \$46,000

PI: **Bishop, C.** American Parkinson Disease Association. "Dorsal raphe regulation of L-DOPA-induced dyskinesia". The proposed set of experiments investigates the influence of brain stem serotonin neurons on the development and expression of L-DOPA-induced dyskinesia. (9/01/06-8/30/07). Direct Costs: \$50,000 to Bishop

PI: **Bishop, C.** National Institute of Drug Abuse. "Effects of nicotine on NPY-induced feeding and metabolism". The proposed set of experiments investigated the role of neuropeptide Y in the effects of nicotine and its withdrawal on feeding and body weight. 5F31DA006001-02. (9/01/99-8/30/01).
Direct Costs: \$43,000 to Bishop

Mentor: **Bishop, C.** National Institute of Neurological Disease and Stroke. "5-HT_{1A} receptor-mediated striatonigral activity in the hemiparkinsonian rat". The proposed set of experiments in this mentored fellowship to graduate student Kristin Dupre aim to test the hypothesis that striatal 5-HT_{1A} receptors reduce L-DOPA-induced dyskinesia in part through modulation of glutamate and GABA signaling using a validated in vivo rodent model of PD. 1F31NS066684-01 (9/01/09-8/30/11). Total
Costs: \$80,318 for Fellow

Intramural Funding

Previous Grants:

PI: **Bishop, C.** XCEED Grant, Research Foundation of Binghamton University. "Effects of co-administration of Vilazodone and Amantadine for the treatment of L-DOPA-induced dyskinesia". This pilot grant sought to leverage the effects of new and known therapeutics for optimization of L-DOPA therapy in Parkinson's disease using a preclinical model. (4/1/20-10/31/20). Direct Costs: \$10,000 to Bishop

PI: **Bishop, C.** Binghamton University Bridge Program. "Examining transgenic dopamine D1 receptor-cre rats for improved treatment of Parkinson's disease" The objective of the proposed project is to establish colony of transgenic rats to investigate a causal role for the striatal D1R-D3R heteromer in L-DOPA-induced dyskinesia (LID). (1/01/17-7/31/19). Direct Costs: \$75,000 to Bishop

Co-PI: **Bishop, C.** Transdisciplinary Areas of Excellence Grant, Binghamton University. "Treatment of Parkinson's disease using intranasal delivery via electrospray atomization". Experiments in this proposal aim to optimize intranasal delivery of anti-parkinsonian medication by novel electrospray techniques in a model of Parkinson's disease. (6/01/15-5/31/16). Direct Costs: \$15,000 to Team

Co-PI: **Bishop, C.** Interdisciplinary Collaborative Grant, Binghamton University. "Stress-induced neurodegeneration in Parkinson's disease". The experiments outlined in this grant aim to determine the possible mechanism by which stress exacerbates the cellular and behavioral correlates of Parkinson's disease. (6/01/06-5/31/07). Direct Costs: \$10,000 to Team

Training Grants (Contributor)

Contributor: **Bishop, C.** National Institutes of Health. “SUNY Upstate Bridges to Baccalaureate Program”. This program aims to identify the appropriate under-represented minority students in their first year at the community college; 2) Support the students in their science courses at the community college; 3) Provide a hands-on research experience in the university setting for these students. 5R25GM056637-05. (6/01/06-present). Direct Costs: \$5,500

Industry Contracts/Collaborations

Collaboration with Melior Pharmaceuticals (Exton, PA). I serve as an advisor to this company developing novel dopaminergic compound for the improved treatment of Parkinson’s disease. (4/30/12-present) Direct Costs: Ongoing

Collaboration with Renovo Neural (Cleveland, OH). We provide technical and research services to this company developing novel dopaminergic compound for the improved treatment of Parkinson’s disease. (11/30/16-present) Direct Costs: Ongoing

Collaboration with Psychogenics (Tarrytown, NY). Our group is currently contracted to work with this company, providing them with conceptual and technical expertise on the rodent model of dyskinesia for novel pharmaceutical testing. (8/15/2016-present). Direct Costs: Ongoing

Collaboration with Southern Research Institute (Birmingham, AL). We are currently investigating the role of D3 receptors in the development and expression of dyskinesia and treatment efficacy in the Parkinsonian models (11/15/2015-1/1/2020). Direct Costs: N/A.

Collaboration with Neurolix (San Diego, CA). We are presently examining the neuroanatomical substrates that support the pronounced anti-dyskinetic efficacy of a series of compounds that act as biased agonists at 5-HT receptors in the CNS (8/15/2014-1/1/2021). Direct Costs: N/A.

Collaboration with Eli Lilly (Indianapolis, IN). We developed a line of inquiry with LY compounds that may convey benefit to PD patients with medication-induced side effects. (9/1/2014-1/15/2016). Direct Costs: N/A.

Collaboration with Forest Pharmaceuticals (New York, NY). We are currently testing a novel serotonergic compound for the treatment of L-DOPA-induced dyskinesia. (7/1/13-present) Direct Costs: N/A.

Collaboration with Janssen (Beerse, Belgium). We have been testing a novel anti-inflammatory compounds for improved PD treatment. (9/1/14-12/31/2015). Direct Costs: N/A.

Collaboration with Xencor (Monrovia, CA). We tested a new compound with promising characteristics for the reduction of treatment-induced side effects such as dyskinesia (6/1/2014-5/31/15). Direct Costs: N/A.

Collaboration with Epix Pharmaceuticals (Lexington, MA). The supported preclinical work aims to identify a novel glutamatergic compound for the treatment of L-DOPA-induced dyskinesia. (11/01/08-10/31/09) Direct Costs: \$42,283.

Publications (peer reviewed), +denotes graduate students, *denotes undergraduate student

97. +Chambers, N.E., *McLune, A., Coyle, M., *Sergio, J., +Delpriore, I., +Lanza, K.L., Lindsley, C.W., Conn, J., **Bishop, C.** Rostral pedunculopontine nucleus infusion of M4 positive allosteric modulator VU0467154 augments effects of L-DOPA in hemiparkinsonian rats. (*bioRxiv*, 2024.04. 16.589785).
96. Kasanga, E.A., *Meadows, S.M., Shifflet, M.K., Geddes, J.W., **Bishop, C.**, Salvatore M.F. Ceftriaxone post-lesion prevents motor decline in hemi-Parkinson’s rat model with increased nigral tyrosine hydroxylase expression contralateral, but not ipsilateral to lesion. (*bioRxiv*, 2023.07. 11.548638).

95. +McManus, G., +Galfano, A., +Budrow, C., Deak, M., +Lipari, N., Tseng, K.Y., Manfredsson, F.P., **Bishop, C.** Effects of genetic knockdown of the serotonin transporter on established L-DOPA-induced dyskinesia and gene expression in hemiparkinsonian rats. *Submitted*.
94. +Lipari, N., +Galfano, A., *Venkatesh, S., Grezenko, H., Sandoval, I.M., Manfredsson, F.P., **Bishop, C.** The Effects of Chemogenetic Targeting of Serotonin-Projecting Pathways on L-DOPA-Induced Dyskinesia and Psychosis in a Bilateral Rat Model of Parkinson's Disease. *Submitted*.
93. *Holden, H., *Venkatesh, S., +Budrow, C., *Nezaria, S., Coyle, M., +Centner, A., +Lipari, N., +McManus, G., **Bishop, C.** (2024). The effects of L-DOPA on gait abnormalities in a unilateral 6-OHDA rat model of Parkinson's disease. *Physiology and Behavior* 8;281:114563. (PMID: 38723388).
92. Kasanga, E. A., Soto, M.I., +Centner, A., McManus, R., Shifflet, M.K., Navarrete, W., Han, Y., Lisk, J., Ehrhardt, T., Wheeler, K., Mhatre-Winters, I., Richardson, J.R., **Bishop, C.**, Nejtek, V. Salvatore, M.F. (2024). Moderate intensity aerobic exercise alleviates motor deficits in 6-OHDA lesioned rats and reduces serum levels of biomarkers of Parkinson's disease severity without recovery of striatal dopamine or tyrosine hydroxylase. *Experimental Neurology* Sep;379:114875. (PMID: 38944332).
91. +Centner, A., +Del Priore, I., +Chambers, N., *Cohen, S., *Terry, M., Coyle, M., Glinski, J., Sortwell, C., **Bishop, C.** (2024). Characterization of striatal dopamine dynamics in the pre-formed fibril rat model of Parkinson's disease. *European Journal of Neuroscience*. Apr;59(7):1585-1603. doi: 10.1111/ejn.16275. (PMID: 38356120).
90. +Conti-Mazza, M.M., +Centner, A., Werner, D.F., **Bishop, C.** (2023). Striatal serotonin transporter gain-of-function in L-DOPA-treated hemi-parkinsonian rats. *Brain Research*. Jul 15;1811:148381.(PMID: 37127174)
89. +Budrow, C., *Elder, K., Coyle, M., +Centner, A., +Lipari, N., *Cohen, S., Glinski, J., *Kinzonzi, N., *Wheeler, E., +McManus, G., Manfredsson, F.P., **Bishop, C.** (2023). Broad serotonergic actions of Vortioxetine as a promising avenue for the treatment of L-DOPA-induced dyskinesia. *Cells*. 12(6):837. doi: 10.3390/cells12060837. (PMID: 36980178).
88. +Lipari, N., +Centner, A., Glinski, J., *Cohen, S.R., Manfredsson, F.P. and **Bishop, C.** (2022). Characterizing the relationship between L-DOPA-induced dyskinesia and psychosis-like behaviors in a bilateral rat model of Parkinson's disease. *Neurobiology of Disease* 176:105965. (PMID: 36526089).
87. Moreno, E. Casajuana-Martinb, N., Coyle, M., Campos Campos, B., Galaj, E., Llinas del Torrent, C., Seyediand, A., Read, W., Caid, N-S., Bonifazi, A., Floráne, B., Zheng-Xiong Xi, Z-X., Guitart, X., Casadó, V., Newman, A.H., **Bishop, C.**, Pardo, L., Ferré, S. (2022). Pharmacological targeting of G protein-coupled receptor heteromers. *Pharmacological Research* 185:106476. (PMID: 36182040).
86. *Cohen, S.R., *Terry M.L., Coyle, M., *Wheeler, E., +Centner, A., +Smith, S., Glinski, J., +Lipari, N., +Budrow, C., Manfredsson, F.P., **Bishop, C.** (2022). Investigating the anti-dyskinetic effects of co-administered serotonin- and glutamate-acting compounds Vilazodone and Amantadine, in hemiparkinsonian rats. *Pharmacology, Biochemistry, and Behavior* May 2;217:173393. doi: 10.1016/j.pbb.2022.173393. (PMID: 35513119).
85. +Smith, S., *Sergio, J., Coyle, M., *Elder, K., +Centner, A., *Cohen, S., *Terry, M., *Wheeler, E., +Lipari, N., Glinski, J., +Budrow, C., **Bishop, C.** (2022). The effects of Vilazodone, YL-0919 and Vortioxetine in hemiparkinsonian rats. *Psychopharmacology* Mar 11. doi: 10.1007/s00213-022-06078-9. (PMID: 35275226)
84. Salvatore, M.F., Kasanga, E.A., Kelley, P., Venable, K.E., Cantu, M.A., Mcinnis, T.R., Terrebonne, J., +Lanza, K., *Meadows, S.M., +Centner, A., **Bishop, C.**, Ingram, D.K. (2022). Modulation of dopamine signaling mitigate parkinsonian signs of aging: evidence from calorie restriction and modulation of dopamine uptake. *Geroscience*. May 30. doi: 10.1007/s11357-022-00583-7. (PMID: 35635679)

83. +Lanza, K. and **Bishop C.** (2021). Dopamine D3 Receptor Plasticity in Parkinson's Disease and L-DOPA-Induced Dyskinesia. *Biomedicines*. Mar 19;9(3):314. (PMID:33808538).
82. +Conti Mazza, M., Ngyuen, V., Beilina, A., Karakoleva, E., *Coyle, M., Ding, J., **Bishop, C.**, Cookson, M.R. (2021). Combined knockout of Lrrk2 and Rab29 does not result in behavioral abnormalities *in vivo*. *Journal of Parkinson's Disease*. *Journal of Parkinson's Disease* 11(2):569-584. (PMID: 33523017)
81. Landeck, N., +Conti Mazza, M., Duffy, M., **Bishop, C.**, Sortwell, C.E., Cookson, M.R. (2021). Using stereotaxic intracranial delivery of chemicals, proteins or viral vectors to study Parkinson's disease. *Journal of Visualized Experiments* Feb 18;(168). (PMID: 3368258).
80. +Lovejoy, P.C, *Foley, K., +Conti, M.M., *Meadows, S.M, **Bishop, C.** and Fiumera, A.C. (2021). The genetic basis of susceptibility to low dose paraquat and variation between the sexes in *D. melanogaster*. *Molecular Ecology* May;(30;9):2040-2053. (PMID: 33710693).
79. +Chambers, N.E., *Coyle, M., *Sergio, J., +Lanza, K., *Saito, C., *Topping, B., Clark, S.D., **Bishop, C.** (2021). Pedunculopontine nucleus cholinergic lesion produces gait deficits and decreases dyskinesia in hemiparkinsonian rats. *European Journal of Neuroscience* Apr;53(8):2835-2847. (PMID:33426708)
78. +Lanza, K., +Centner, A., *Coyle, M., +Di Priore, I., Manfredsson, F.P., **Bishop, C.** (2021) Genetic suppression of the dopamine D3 receptor in striatal D1 cells reduces the development of L-DOPA-induced dyskinesia. *Experimental Neurology* Feb;336:113534. (PMID: 33249031).
77. Steece-Collier, K., Collier, T.J., Lipton, J.W., Stancati, J.A., Winn, M.E., Cole-Strauss, A., Sellnow, R., +Conti, M.M., Mercad, N.M., Nillni, E.A., Sortwell, C.E., Manfredsson, F.P. and **Bishop, C.** (2020). Striatal nurr1, but not FosB expression links a levodopa-induced dyskinesia phenotype to genotype in Fisher 344 vs. Lewis hemiparkinsonian rats *Experimental Neurology*, Aug;330:113327. (PMID:32387389)
76. +Kiessling, C.Y., +Lanza, K., *Feinberg, E., **Bishop. C.** (2020). Dopamine receptor cooperativity synergistically drives dyskinesia, motor behavior, and striatal GABA neurotransmission in hemiparkinsonian rats. *Neuropharmacology* Sept. 1; 174:108138 (PMID:32492451)
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Conference Presentations and Published Abstracts (+graduate students, *undergraduate students)

191. *Kinzonzi, N., *Franks, J., *Shah, A., Venkatesh, S., +Centner, A., **Bishop, C.** (2024). Investigating the role of treadmill exercise to enhance levodopa treatment efficacy within a hemiparkinsonian rat model. *Psi Chi and Nu Rho Psi Symposium, Binghamton University, April 26, 2024, Binghamton, NY.*
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Invited Lectures/Symposia/Webinars

45. “Ode to a Gap Year”, Invited Speaker, Binghamton University Career Champions, Binghamton, NY, April 12, 2024.
44. “Brain health: a use it or lose it strategy”, Invited Lecture, Binghamton University Retirees Association, Binghamton, NY, December 7, 2023.
43. “Optimizing Parkinson's Disease Treatment by Leveraging Serotonin Neuroplasticity”. Invited colloquium Speaker, Barrow Neurological Institute, Phoenix, AZ, October 17, 2023.
42. “Working with the Division of Research” Invited Speaker, Binghamton University, Binghamton, NY, September 21, 2022.
41. “Targeting Serotonin Neuroplasticity to Optimize Treatment of Parkinson's Disease”. Invited Speaker, Dopamine 2022, Montreal, Quebec, Canada, May 23, 2022.

40. “Leveraging Serotonin Neuroplasticity to Optimize Treatment of Parkinson's Disease”. Invited colloquium Speaker, University of Tennessee Health Science Center, Memphis, TN, September 8, 2021.
39. “Gene therapy to optimize Parkinson’s disease treatment” Invited Lecture, Student Psychological Association, Binghamton, NY, May 6, 2021.
38. “Gene therapy to optimize Parkinson’s disease treatment” Invited Lecture, WSKG Public Radio, Binghamton, NY, March 10, 2020.
37. “Leveraging serotonin neuroplasticity to optimize Parkinson’s disease treatment”, Invited Symposium Speaker, American Society for Neural Therapy and Repair, Clearwater, FL, April 26, 2019.
36. “Rat models of Parkinson’s disease: searching for novel treatments”, Invited Lecture, Student Psychological Association, Binghamton, NY, November 12, 2018.
35. “Brain health: a use it or lose it strategy”, Invited Lecture, Student Psychological Association, Vestal, NY, April 26, 2018.
34. “Brain health: a use it or lose it strategy”, Invited Lecture, Delta Epsilon Mu, Pre-Health Fraternity, Vestal, NY, April 22, 2018.
33. “Targeting serotonin neuroplasticity to optimize Parkinson’s disease treatment”, Invited Lecture, National Institutes of Drug Abuse, Baltimore, MD, May 23, 2017.
32. “Targeting serotonin neuroplasticity to optimize Parkinson’s disease treatment”, Invited Lecture, Stony Brook University, Stony Brook, NY, September 8, 2016.
31. “Targeting serotonin neuroplasticity to optimize Parkinson’s disease treatment”, Invited Lecture, North Texas Health Sciences Center, Fort Worth, Texas, April 19, 2016.
30. “Dyskinesia: What to Do about Moving Too Much?”, Third Thursdays Webinars On Parkinson's Research, Michael J. Fox Foundation, January 21, 2016.
29. “Brain gain, use it or lose it”, TIER Talk, Binghamton University Homecoming, Binghamton, NY, October 11, 2015.
28. “Rat models of Parkinson’s disease: searching for novel treatments”, Binghamton University Student Psychological Association, Binghamton, NY, March, 2015.
27. “Rat models of Parkinson’s disease: searching for novel treatments”, Invited Lecture, Binghamton University Delta Epsilon Mu Pre-Health Fraternity, Binghamton, NY, October, 2014.
26. “Everything we wanted you to know about graduate school”, Invited Lecture, Binghamton University Department of Psychology, Binghamton, NY, October, 2014.
25. “Health Sciences Initiative at Binghamton University”, Invited Lecture, Binghamton University, Binghamton Biomedical Conference, Binghamton, NY, April, 2014.
24. “Neuroprotection: a use it or lose it strategy”, Invited Lecture, Kopernik Observatory and Science Center, Vestal, NY, March, 2014.
23. “Neuroprotection: a use it or lose it strategy”, Invited Lecture, Kopernik Observatory and Science Center, Vestal, NY, May, 2013.
22. “Behavioral sciences: from mind to matter”, Invited Lecture, Panel Moderator, Binghamton University Health Care Innovation Day, Binghamton, NY, April, 2013
21. “Serotonin neuroplasticity in Parkinson’s disease: novel targets for the treatment of L-DOPA-induced dyskinesia”, Invited Lecture, Monitoring Molecules in Neuroscience, London, UK, September, 2012.
20. “Neuroprotection: a use it or lose it strategy”, Invited Lecture, Binghamton University Resident Life Series, Dickinson Hall, Binghamton University, Binghamton, NY, April, 2012.

19. "Rat models of Parkinson's disease: searching for novel treatments", Invited Lecture, Binghamton University Student Psychological Association, Binghamton, NY, March, 2012.
18. "Rat models of Parkinson's disease: searching for novel treatments", Invited Lecture, Onondaga Community College, Syracuse, NY, March, 2012.
17. "Serotonin neuroplasticity in Parkinson's Disease: implications for movement and mood", Invited Lecture, Emory University School of Medicine, Atlanta, GA, February, 2012.
16. "Cognitive exercise, a brain protection strategy", Invited Lecture, Binghamton University Resident Life Series, College in the Woods Community, Binghamton University, Binghamton, NY, October, 2011.
15. "Serotonin neuroplasticity in Parkinson's Disease: implications for movement and mood", Invited Lecture, Commonwealth Medical College, Scranton, PA, September, 2011.
14. "If I only had a brain, lessons from someone who's made a few mistakes", Invited Lecture, Binghamton University Neuroscience Club, September, 2011.
13. "If I only had a brain, lessons from someone who's made a few mistakes", Invited Lecture, Binghamton University Student Psychological Association, September, 2011.
12. "The Good, Bad and Ugly of Neuroplasticity in Parkinson's disease:", Invited Lecture, Binghamton University Neuroscience Club, February, 2011.
11. "Serotonin neuroplasticity: implications for the treatment of Parkinson's disease", Invited Lecture, University at Buffalo School of Medicine, Department of Pharmacology, Buffalo, NY, February 2009.
10. "Serotonin neuroplasticity: implications for the treatment of Parkinson's disease", Invited Lecture, Wilson Hospital, Grand Rounds, Binghamton, NY, January 2009.
9. "Serotonin neuroplasticity: implications for the treatment of Parkinson's disease", Invited Lecture, Decker School of Nursing, Binghamton University, Binghamton, NY, October 2008.
8. "Serotonin neuroplasticity in the dopamine depleted basal ganglia: implications for the treatment of Parkinson's disease", Invited Lecture, Hope College, Holland, MI, May 2005.
7. "Serotonin neuroplasticity in the dopamine depleted basal ganglia: implications for the treatment of Parkinson's disease", Invited Lecture, Calvin College, Grand Rapids, MI, May 2005.
6. "The role of serotonin neuroplasticity for the treatment of Parkinson's disease", Invited Lecture, Oakland University, Rochester, MI, February 2005.
5. "Serotonin neuroplasticity in the dopamine depleted basal ganglia: implications for the treatment of Parkinson's disease", Invited Lecture, University of Kansas School of Medicine, Kansas City, KA, January 2005.
4. "Serotonin neuroplasticity in the dopamine depleted basal ganglia: implications for the treatment of Parkinson's disease", Invited Lecture, State University of New York-Binghamton, Vestal, NY, January 2005.
3. "Effects of nicotine on neuropeptide Y- and 8-hydroxy-2-(di-n-propylamino) tetralin-induced induced feeding and metabolism", Invited Lecture, Hope College, Holland, MI, December 2001.
2. "Effects of nicotine on body weight and neuropeptide Y-induced feeding during acute chronic and withdrawal phases", Society for the Study of Ingestive Behaviors Young Investigators Presentation, Clearwater, FL, June 1999.
1. "The frequency of sleep onset REM periods among subjects with no excessive daytime sleepiness", National Meeting for Associated Sleep Professionals Societies, Nashville, TN, June 1996.

Teaching Experience

Wayne State University-

Undergraduate Courses

PSY3070, ***Learning and Memory Laboratory***, 9/96-12/98- Instructor

PSY3120, ***Brain and Behavior***, 1/99-5/99- Co-Instructor

PSY3120, ***Brain and Behavior***, 7/99-8/99- Instructor

Binghamton University-

Undergraduate Courses

PSYC473 (4 credits), ***The Diseased Brain***, 8/05-present- Instructor

PSYC356 (4 credits), ***Experimental Psychology-Learning***, 8/06-present- Instructor

PSYC391 (4 credits), ***Teaching Assistantship***, 8/06-present- Instructor/Mentor

PSYC397 (various credits), ***Movement Disorders Laboratory***, 8/05-present- Mentor

PSYC395 (2 credits), ***Honors Thesis Development***, 8/21-present-Instructor

PSYC498 (previously PSYC395, 2 credits), ***Honors Thesis Development***, 8/21-present-Instructor

Graduate Courses

PSCY609 (2 credits), ***Clinical Neuroscience***, 1/07-present- Instructor

PSYC575/576 (various credits), ***Neurobiology of Disease***, 1/15-present- Instructor

PSYC576 (various credits), ***Neurobiology of Aging***, 8/20-present- Instructor

PSYC592 (various credits), ***Movement Disorders Laboratory***, 8/06-present- Mentor

PHARM580C/PHSC610 (team taught), ***Basis of Human Disease***, 8/22-present- Co-Instructor

Mentoring

Post-doctoral associates:

C.J. Barnum (2008-2009) from Binghamton University, currently @ Takeda Pharmaceuticals

Nirmal Bhide (2010-2013) from University of Cincinnati, currently @ Eli Lilly

Doctoral/masters graduate students:

Karen Eskow (2006-2011) from Binghamton University, Received MA 5/2008, Ph.D. 12/2011, currently an Assistant Professor of Neurology @ University of Alabama-Birmingham

Kristin Dupre (2006-2011) from LeMoyne University, Received MA 5/2008, Ph.D. 12/2011, post-doctoral researcher @ NIH until 2017, currently Scientific Content and Communication Strategist in the Office of Scientific Liaison at the National Institute of Neurological Disorders and Stroke.

Corinne Ostock (2008-2014) from Lock Haven University, Received MS 5/2009, Ph.D. 5/2014, currently an Assistant Professor of Psychology @ Kings College.

David Lindenbach (2009-2015) from Willamette University, received MS 5/2010, Ph.D. 5/2015, currently a Research Associate in Psychiatry @ University of Calgary.

Melissa Conti (2011-2016) from Gannon University, received MS 12/2012, received Ph.D. 12/2016, post-doctoral researcher @ NIH from 2017-2021, now employed by Avantor-VWR.

C.J. Barnum (2007-2008) jointly mentored with Terry Deak, received his Ph.D. in 2008. Currently Director of Neuroscience at INmune Bio.

Molly Deak (2012-2013) with S. Tammeriello and T. Deak, received Ph.D. 12/2013, currently @ Binghamton University as a Neuroanatomy Specialist.

Nadia Schuman (2014-2015) from Rutgers, received Ph.D. 5/2021 in Comparative Literature @ Binghamton University. Currently Visiting Assistant Professor of German.

Nicole Chambers (2014-present) received her BS from Bowling Green and MS from Western Kentucky. Received her Ph.D. 12/2021, currently in post-doctoral position @ University of Florida.

Kate Lanza (2015-present) received her BS from Syracuse University, received Ph.D. in 5/2021. Currently a post-doctoral researcher @ Northwestern University.

Isabella Del Priore (2019-2021) received her BS from Binghamton University, received her MS 5/2021

Samantha Smith (2019-2021) received her BS from Binghamton University, received her MS 5/2021
Michael Coyle (2022-2023) received his BS from Binghamton University, received his MS 8/2023
Ashley Centner (2019-present) received her BS from University of Albany, received her MS 7/2021
Natalie Lipari (2020-present) received her BS from SUNY-Cortland, received her MS 5/2022
Carla Budrow (2021-present) received her BS from Binghamton University
Grace McManus (2022-present) received her BS from Le Moyne University

Undergraduate students (*denotes Bridges to Baccalaureate or McNair Scholar students)

Vikas Gupta (2005-2006)- Neurologist, Syracuse, NY
Salmahn Alam (2005-2006)- Psychiatrist, New York, NY
John Park (2005-present)- Internal Medicine, Arden, OK
Karen Eskow (2005-2006)- earned Ph.D., Asst. Professor, Neurology @ UAB School of Medicine
Giselle Negron (2006-2007)- earned D.D.S., working as a dentist in Connecticut
*Adinoyi Garba (Summer 2006)- Clinical Associate Professor at D'Youville School of Pharmacy
Aimee Steiniger (2006-2008)- Pediatrician in Tuscon, AZ
Lydia Lormand (2006-2007)- OB/GYN in Springfield, MA
Anna Klioueva (2006-2009)- Epidemiologist at Austin/Travis County Health and Human Services
Samantha Schatz (2006-2007)- enrolled in Peace Corps
Alexander Moore (2007-2009)- earned M.A. in teaching, high school chemistry teacher
Catherine Kelly (2007-2008)- earned D.O., ER Resident @ Good Samaritan
Emma Mohamed (2008)- applying to graduate school in Social Work
*Kinra Johnson (Summer 2008)- graduated from Buffalo, Patient Service Representative
*Nathalie Mora (Summer 2008)- earned M.D. @ Upstate Medical
Stefanie Tignor (2008-2009)- earned Ph.D @ Northeastern University, working @ HUMU
Hannah Walters (2008-2010)- Neurologist, New York, NY
Yuchen Liu (2008-2010)- Anesthesiologist in Stony Brook, New York.
*John Banahene (Summer 2009)- Pharmacist, New Carlisle, OH
Melanie Salamon (2009-2010)- Physician's Assistant, Altoona, PA
Maggie Surrena (2009-2010)- attended nursing school @ Binghamton University
*Sando Dickinson (Summer 2007-2012)- research associate @ Regeneron Pharmaceuticals
Evan Feinberg (2009-2012)- E.R. Resident @ Northwell Health, Success, NY
Adam Goldenberg (2010-2012)- Anesthesiologist currently in Springfield, MA
*Jose Estrella (2010-2012)- graduated 12/2012, MS in Bioinformatics from Leipzig University
Bill Buchta (2010-2011)- earned Ph.D. in Neuroscience @ MUSC, Medical Writer @ Whitsell Innovations
Alex Kuberka (2010-2012)- earned MS, currently a PA-C @ St. Peters Hospital
*Besi Sanchez (Summer 2011)- attending M.D. program in Dominican Republic
Aaron Katzman (2011-2012)- attending Ph.D. program in Neuroscience @ NYU
*Mohamed Mohamed (2010-2012)- E.R. Resident @ Albert Einstein School of Medicine
*Clementine Namba (Summer 2012)- attending M.D. program @ University of Buffalo
*Satti Eissa (2011-2012)- earned Pharm.D. @ St. Johns Fischer School of Pharmacy
*Levi Cleare (2012)- graduated Binghamton University, lab technician @ Albert Einstein
*Pardeep Singh (2012-2013)- earned M.S. from CUNY, working @ Regeneron
Elias Kampton (2012-2013)- attending D.O. Program @ NYIT College of Osteopathic Medicine
Noel Palumbo (2012-2014)- M.D. in Orthopedics residency @ Washington University
Joy Hallmark (2012-2014)- M.D. in Emergency medicine @ Wake Forest University
Samantha Meadows (2012-2017)- attending Ph.D. program in Neuroscience @ Wiell-Cornell
*Nissah Vilceus (2013-2015)- attending D.O. program @ Touro Coll. of Osteopathic Medicine
Emily Nuss (2014-16)- received M.D., in OB/GYN residency @ Delaware
*Nadine Brown (summer 2013)- received A.S. from Westchester Community College
Mitchell Melikhov-Sosin (2013-2015)- received M.D. in ER residency in NYC
*Geovanny Cervantes (summer 2014)- applying to M.D. programs
Yarden Avnor (2014-2016)- attending Ph.D. program @ Haifa University

Libby Gross (2014-2017)- received Ph.D. in Occupational Therapy @ Boston University
 Austin Hettinger (summer 2015)- currently attending University @ Buffalo in PA Program
 *Jessica Randolph (summer 2015)- graduated from Westchester Community College, working as nurse
 *Aleha Meikle (summer 2015)- @ Roberts Wesleyan, studying biochemistry
 Shriman Balusubramanian (2015-2016)- attending D.O. program @ Touro Coll. of Osteopathic Medicine
 Sharon Bossert (2015-2017)- attending M.D. program at Hofstra School of Medicine
 Crystal Tasber (2015-2017)- graduated, is in the film industry
 Eitan Sheena (2015-2017)- received M.D., resident @ Stony Brook
 Anne Taylor (2015-present)- attending Ph.D. program @ Vanderbilt School of Medicine
 *Sarah Llopis (summer 2016)- studying biochemistry @ SUNY Brockport
 *Nahillah High (summer 2016)- applying to Ph.D. programs in clinical psychology
 *Bianca Archange (summer 2016)- attending Onondaga Community College
 Sarah Singer (2016-2017)- attending Ph.D. program in Biomedical Sciences @ Albert Einstein
 Jessica Chumsky (2016-2017)- attending D.O. program @ NYCOM
 Kat Chemakin (2016-present)- attending M.D. program @ Albert Einstein School of Medicine
 Dani Lore (2016-present)- attending Physical Therapy school
 Sarah Lefkowitz (2016-present)- graduated in 2019, Medical Liaison @ Evolution Health Group
 Cary Saito (2016-present)- graduated in 2019, research assistant in NYC
 *Anniqne McLune (summer 2017-2020)- Graduated, applying to M.D. programs
 *Susie Villarreal (summer 2017)- attending Ph.D. program @ Binghamton University
 Austin Goldsman (2017-2018)- attending M.D. program @ Albert Einstein
 Ella Siok (2017-2018)- attending dental school @ University of Pittsburgh
 Jordan Sergio (2017-2020)- attending M.S. program @ Albert Einstein
 Mike Coyle (2017-present)- graduated in 2019, working as a technician in Bishop lab
 Brent Topping (2017-2018)- graduated, serving as technician in North Carolina
 Richelle Fassler (2018-2020)- graduated, attending M.D. program @ Stony Brook University
 Joe Landers (2018-2020)- graduated, attending M.D. programs @ Hofstra for Air Force
 *Daisy Gomez (2019-2021)- graduated in 2022
 *Daisha Gonzalez (summer 2019)- attended Brockport University, Medical Technology
 Ellie Shaskan (2019-2020)- graduated in 2021, attending D.O. program @ Touro Medical College
 Michelle Terry (2019-2021)- in M.D. program @ Albany Medical College
 Tiffany Ricciardi (2019-2020)- graduated, attending Pharm.D. program at UNC-Chapel Hill
 Sophie Cohen (2019-2021)- graduated, attending Ph.D. program @ Drexel
 Evan D'Almeida (2019-2021)- graduated, research assistant in NYC
 *Aubrey Powell-Morgan (summer 2020)- currently student @ Brockport
 *Joceline Maita Deleg (summer 2020)- graduated Lehman College, 2022
 Mark Melnik (2020-2021)- graduated, 2022.
 Kayla Elder (2020-2023)- graduated, currently serving as technician @ Binghamton University
 Emily Wheelis (2021-2023)- graduated, attending Ph.D. program @ UPitt
 Tiana Vasquez (2021-2023)- graduated, attending M.D. program @ Hofstra
 Sareen Nezaria (2021-2023)- graduated, applying to M.D. programs
 Samrita Kamkolkar (2021-2023)- currently finishing BS in neuroscience @ Binghamton University
 Hannah Holden (2021-2024)- graduated in 2024, applying to M.S. program in Radiology
 Ethan Klayman (2021-present)- graduated, applying to M.D. programs
 N'Senga Kinzonzi (2021-present)-currently in lab
 Shruti Venkatesh (2022-present)-currently in lab
 *Rabia Tarar (summer 2022)- currently student @ Stonybrook
 *Nyasia Hunt (summer 2022)- currently student @ Brockport
 Izabella DiRosa (2022-present)-currently in lab
 Julia Maslinski (2022-present)-currently in lab
 Emma Sarinick (2023-present)-currently in lab

*Mohammad Noor (summer 2023)- currently student @ Onandago CC

*Ethan Valle (2023-present)- currently in lab

Justin Franks (2023-present)-currently in lab

Aizza Shah (2023-present)-currently in lab

So Demus (2023-present)-currently in lab

Jiaer Huang (2024-present)-currently in lab

*Balqiisa J-Elmi (2024-present)-currently in lab

Jacleen Nardiello (2024-present)-currently in lab

Jacob Jodlowski (2024-present)-currently in lab

Natalia Hakimzadeh (2024-present)-currently in lab

Haley Prisinzano (2024-present)-currently in lab

Honor's Theses:

Yee, J. (2006). Recognition of compounds objects parsed on edge properties in pre-school children.

Leschinsky, S. (2006). Temporal coding in the NTS in response simulated taste aversion.

Knight, K. (2007). The effects of the 5-HT₃ antagonist Ondansetron on light-induced fos in the SCN of rats during subjective day.

Matthews, C. (2008). Effects of highlighting n word recognition.

Silver, A. (2009). Cross-racial facial features as determinants of attractiveness.

Zaccarini, D. (2009). Characterizing the retinal fibers innervating regions controlling circadian rhythms.

Seay, K. (2009). Intra-adrenal cascade: an explanation for the ACTH and corticosterone dissociation.

Eberle, J. (2010). The bad neighbor paradigm: a possible model of chronic stress.

Hung, J. (2010). Ontogeny of calbindin-d28k cells in the rat superchiasmatic nucleus.

Caitlin Melvin (2011). Autobiographical memory and non-suicidal self-injury

Ferraioli, F. (2011). Stress Challenges occurring at different times of the circadian rhythm are a determinant of post-stress recovery.

Buchta, W. (2011). Therapeutic effects of intrastriatal NMDA receptor antagonists amantadine and memantine in the hemiparkinsonian rat.

Agolia, A. (2011). The effect of Kappa Opioid receptor activation on conditioned taste aversion in stressed and non-stressed male Sprague-Dawley rats.

McGough, R. (2011). Alterations in hippocampal c-fos expression in an animal model of Wernicke Korsakoff syndrome: dose exercise improve behavioral and neural functioning.

Bush, P. (2012). Effects of housing conditions and food deprivation on sign-tracking behavior in adolescent and adult male Sprague-dawley rats.

Castro, G. (2013). Effects of prenatal ethanol exposure on dopamine function in the prefrontal cortex of neonatal Sprague Dawley rats.

Kampton, E. (2013). Serotonin transporter inhibition in the dorsal raphe nucleus reduces L-DOPA-induced dyskinesia without interfering with L-DOPA efficacy in hemi-parkinsonian rats.

Crump, K. (2013). The cytokine hypothesis of depression: inflammatory effects of desipramine in the forced swim test.

Rapp, A. (2014). Conditioned aversion to electrical stimulation of the PbN.

Alvarado, C. (2014). The role of exercise on the number and soma morphology of cholinergic and nestin positive cells in the medial septum and diagonal of Broca.

Schechter, P. (2014). Orientation energy in natural scenes and children's screen media.

Groenendaal, E. (2016). An investigation of the revelation effect in motor tasks.

Tuck, A. (2016). Personalities in members of fraternities and sororities on college campuses: an analysis using the NEO five-factor inventory and the brief symptom inventory.

LeClarie, E. (2016). Child and parent perceptions of parenting: sibling differences and links to child and parent psychopathology.

Doherty, K. (2017). The AB-40 induced membrane disruption in model liposomes.

Chemakin, K. (2018). Characterizing striatal dopamine D3 receptor stimulation in a rat model of Parkinson's disease.

Piazza, M. (2018). Neuroinflammation in the aging brain: sex differences and involvement of purinergic receptors.

Coyle, M. (2019). Striatal activation during D3 receptor stimulation in a hemi-parkinsonian rat model

Roy, T. (2019). Mid-vision object recognition

Severa, L. (2019). Consequences of adolescent alcohol exposure on Protein Kinase A and Protein Kinase C expression in an adult rat model

Sergio, J. (2020). The anti-dyskinetic effects of partial 5-HT1A agonists and SERT blockers Vilazodone and YL-0919 in a hemiparkinsonian rat model.

Michelle Terry (2020-2021)- Investigating the anti-dyskinetic effects of co-administered serotonin- and glutamate-acting compounds, Vilazodone and Amantadine, in hemiparkinsonian rats.

Sophie Cohen (2020-2021)- Effects of co-administered serotonin- and glutamate-acting compounds, Vilazodone and Amantadine on dyskinesia, in hemiparkinsonian rats.

Shani Evans (2020-2021)- A role for glucocorticoids in ethanol-induced neuroinflammation.

Jonathan Gaughan (2020-2021)- COVID-19 is terrifying. Or is it? Applying the death-thought accessibility hypothesis to COVID-19 in emerging adults.

Hannah Wojcik (2021-2022)- Adolescent Intermittent Ethanol exposure exerts sex-specific effects on the febrile response.

Juan Mato (2021-2022)- Differential Impact of Adolescent Intermittent Ethanol Intake on Acetylcholine Efflux and Memory Acquisition along the Hippocampal Axis

Madelyn Lux (2021-2022)- Investigation of the neural impact of adolescent intermittent ethanol exposure in females with acute ethanol challenge in adulthood.

Gina Rizzo (2021-2022)- Examining Reinforcement Learning in High & Low Impulsive BXD Mice through the Probabilistic Reversal Learning Task

Laura Navarro (2021-2023)- Elucidating dopamine and serotonin projections along the accumbal rostro-caudal axis.

Emily Wheelis (2022-2023)- Investigating the serotonin 5-HT 2A receptor's role in the development of psychosis-like behavior in a bilateral parkinsonian model with and without chronic L-DOPA administration.

Hannah Meltzer (2022-2023)- Relational Learning of Cognitive Biases Through Group Coordination Tasks.

Molly Batchelder (2023-2024)- The role of medial prefrontal cortex astrocytic calcium signaling in alcohol consumption and anxiety-like behavior.

Emily Feldman (2023-2024)- Effects of the sudden reduction of social enrichment on a novel rat model of approach orientation.

Master's Theses:

Roussin, A. (2006). Response variability in taste cells of the nucleus of the solitary tract of the rat.

Barnum, C.J. (2006). Variable effect of stress paradigms on body temperature and locomotor activity.

Eskow, K.L (2007). The essential role of the rostral raphe nuclei in movement control in the L-DOPA-treated hemiparkinsonian rat.

Dupre, K.B. (2007). Striatal 5-HT1A receptor stimulation reduces D1 receptor-induced dyskinesia and improves movement in the hemiparkinsonian rat.

Linsenhardt, D. (2007). Effects of cannabinoid stimulation on ethanol consumption using the drinking in the dark procedure.

Boycheva, E. (2008). Are all scales created equal? Comparison of two standardized hypnotic suggestibility scales.

Bachman, D. (2008). Review: neurotoxin models of Parkinson's disease.

Anzalone, S. (2008). Cholinergic cortical dysfunction in an animal model of diencephalic amnesia.

Ostock, C. (2010). The role of the motor cortex in the anti-dyskinetic effects of 5-HT1A receptor stimulation in the hemiparkinsonian rat.

Broadwater, M. (2009-2010). Effects of variable ethanol exposure schedules on the development of acute and chronic tolerance in adolescent and male rats.

Schubert, J. (2010-2011). Circadian rhythm disruption and obsessive compulsive symptoms: investigating the role of inhibitory deficits.

D'Agostino, A. (2011). Taste mixture coding in the NTS of the behaving rat.

Conti, M. (2012). Anti-dyskinetic effects and underlying mechanisms of ongoing selective serotonin reuptake inhibitor administration in L-DOPA-treated hemi-parkinsonian rats.

Catanzaro, J. (2012). The impact of the P2X7 receptor antagonist A-804598 on neuroinflammatory consequences of stress.

Bobal, M. (2013). Functional convergence between the hippocampus and prefrontal cortex via the reuniens nucleus of the thalamus is critical for cholinergic based recovery in the amnesic rat.

Cabrera, M. (2013). Role of crosstalk in Akt/Gsk3 and ERK signaling pathways in altered behavioral sensitization following intermittent ethanol exposure in adolescence.

Woody, M. (2013). Genetic and physiological mechanisms underlying the link between brooding rumination and history of major depression.

Escanilla, O. (2014). Olfactory taste convergence in the nucleus of the solitary tract of awake-behaving rats.

Lovelock, D. (2014). Assessment of chronic stress effects on neuroimmune function.

Lanza, K. (2016). Behavioral and cellular dopamine D1R-D3R receptor synergy: implications for L-DOPA induced dyskinesia.

Wherry, J. (2018). Effects of chemogenetic inhibition of dopamine transporter- or A2A-expressing neurons on spontaneous activity and motivation to consume a palatable food reward.

Madiera, J. (2019). The transgenerational effects of intragastric administration on anxiety and consumptions behaviors.

Villareal, S. (2020). The effect of adolescent general anesthetic exposure on ethanol-induced responding during adolescence and persistent effects into adulthood.

Del Priore, I (2020). Characterization of striatal dopaminergic neurotransmission in the rat pre-formed fibril model of Parkinson's Disease

Smith, S. (2021). Investigating the effects of Vilazodone, yl-0919, and Vortioxetine in hemiparkinsonian rats.

Centner, A. (2021). Characterization of striatal dopamine dynamics in the pre-formed fibril rodent model of Parkinson's disease.

Spodnick, M. (2021). Kappa opioid receptor activation across the rostral-caudal axis of the nucleus accumbens shell: effects on dopamine, serotonin, and sucrose-seeking behaviors.

Coleman, H. (2022). Ethanol modulation of social anxiety and neural activation following adolescent intermittent ethanol exposure.

Lipari, N. (2022). Characterizing the Relationship Between L-DOPA-induced-Dyskinesia and Psychosis-like Behaviors in a Bilateral Rat Model of Parkinson's Disease.

Fecik, M. (2022). Rescuing Cortical Acetylcholine Tone and Behaviors Following Adolescent Alcohol Exposure.

Budrow, C. (2023). Effects of chemogenetic inhibition of serotonergic raphe-striatal neurons on circuit specificity and L-DOPA-induced behaviors in a rat model of Parkinson's disease.

McManus, G. (2024). Effects of a genetic knockdown of the serotonin transporter on L-DOPA-induced behaviors and transcriptional changes in a rat model of Parkinson's disease.

Geraci, D. (2024) Mechanisms of glucocorticoid-mediated neuroimmune sensitivity to ethanol in adolescents.

Allen, S. (2024) Investigating reinforcement learning using a probabilistic reversal learning task and associated dopamine signaling in the nucleus accumbens core in a genetically diverse inbred mouse panel.

Doctoral Qualifiers:

Barnum, C.J. (2007-2008)
Blandino, P. (2007-2008)
Eskow, K.L. (2008-2009)
Dupre, K.B. (2008-2009)
Vetreno, R. (2008-2009)
Anzalone, S. (2009-2010)
Ostock, C. (2011-2012)
Lindenbach, D. (2011-2012)
Conti, M. (2013-2014)
Saalfield, J. (2013-2014)
Carter, J. (2015-2016)
Lovelock, D. (2015-2016)
Chambers, N. (2017)
Lanza, K. (2017-2018)
Wherry, J. (2018-2019)
Kipp, B. (2019-2020)
Centner, C. (2021-2022)
Lipari, N. (2022-2023)
Fecik, M. (2022-2023)
Lehr, M. (2022-2024)
Budrow, C. (2023-2024)
Trapp, S. (2023-2024)
McManus, G. (2024-present)
Heitkamp, M. (2024-present)

Doctoral Committees:

Crossett, S. (2007-2009), Psychology, Clinical
Hallquist, M. (2007-2009), Psychology, Clinical
Barnum, C.J. (2007-2008), Psychology, Behavioral Neuroscience
Blandino, P. (2007-2008), Psychology, Behavioral Neuroscience
Coleman, S. (2008-2009), Psychology, Clinical
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Lehr, M. (2024-present), Psychology, Behavioral Neuroscience
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Dissertation Defenses:

Barnum, C.J. (2008). Contribution of IL1 signaling to L-DOPA-induced dyskinesia.
Blandino, P. (2008). Role of noradrenergic innervation on footshock-induced cytokine response.
Pavlidis, S. (2009). Molecular and biochemical analysis in two models of pupal diapause.
Hallquist, M. (2009). Role of effortful control in executive inhibition in personality dysfunction.
Crossett, S. (2009). Interpersonal and cognitive risk factors for Postpartum depression.
Coleman, S. (2010). Cognitive inhibition and executive function in the thought suppression task
Rosen, A. (2011). Neural circuitry of the gustatory nucleus of the solitary tract and sensitivity to temporal pattern of chorda tympani nerve input.
Sen, D. (2011). Effect of nerve growth factor and delta opioid receptor on [D-ala²,D-Leu⁵]-enkephalin-mediated survival and differentiation of PC12h and F11 cells.
Roussin, A. (2011). Taste responsivity of the nucleus of the solitary tract in the awake, behaving rat, evidence of temporal coding.
Jaunarajs, K. (2011). L-DOPA-induced serotonin dysfunction and associated behavioral indices in a bilateral rat model of Parkinson's disease.
Dupre, K. (2011). 5-HT_{1A} receptor-mediated striatonigral activity in the hemiparkinsonian rat.
Ray, D. (2012). Evaluation of wild-type and mutant p53 from cancer cell lines and incorporation of 3-nitrotyrosine in to protein.
Deak, M. (2013). Stress interactions with Parkinson's disease and dyskinesia
Kiessling-Ostock, C. (2014). Contribution of the locus coeruleus to the effects of L-Dopa in a rodent model of Parkinson's disease.
Lindenbach, D. (2015). The role of the primary motor cortex in the pathophysiology and treatment of Parkinson's disease.
Conti, M.M (2016). Role of monoamine transporters in L-DOPA-induced neurotransmission and behavior in hemi-parkinsonian rats.
Lovejoy, P. (2018). Sex-specific paraquat susceptibility in drosophila melanogaster.
Weishaar, I. (2018). The effects of rho-associated kinase (rock) inhibition or the cytokine il-26 on tnf-alpha induced cytokine secretion by intestinal epithelial cells.
Stephens, E. (2019). The influence of metamorphosis on the timing of heteromorphic spermatogenesis in manduca sexta (lepidoptera).
McClelland, A. (2019). An investigation into the antidyskinetic and reinforcing effects of UWA-101 in Sprague Dawley rat.
Carter, J. (2019). The Molecular Mechanisms that Modulate the Age-sensitive Responses to the Aversive Properties of Ethanol.
Swanson, O. (2020). Primary motor cortex circuitry in a mouse model of Parkinson's disease
Lanza, K. (2020). Investigating the role of dopamine d1 receptor and d3 receptor cooperativity in dyskinesia.
Chambers, N. (2020). Role of the cholinergic pedunculopontine nucleus in parkinsonian motor deficits and dyskinesia in memi-parkinsonian rats.
Tawalbeh, S. (2020). Leveraging bioinformatics techniques to support biomarker studies in pediatric inflammatory diseases.
Reitz, N. (2023). Investigating the neurological underpinnings of accelerated cognitive decline in a rodent model of alzheimer's disease following ethanol exposure in adolescence

Marsland, P. (2023). Neurobehavioral and neuropathological consequences of lifelong alcohol consumption on alzheimer's disease and related dementias.

Cruceta, L. (2023). Studies in the structural propagation and cellular toxicity of pyroglutamated and truncated AB40 subtypes.

Kenyaga, J.M. (2024). Studies of interaction between biological membranes and A β aggregates by solid-state nuclear magnetic resonance spectroscopy.

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