

Curriculum Vitae
Donna Calu Gogerdchi, PhD
Associate Professor, Department of Neurobiology
University of Maryland School of Medicine

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Contact Information

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Education

2000-2004 B.S. University of Maryland, College Park, MD, Neurobiology and Physiology
2004-2010 Ph.D. University of Maryland SOM, Baltimore, MD, Neuroscience, Thesis title: "Neural correlates of variations in event processing in the basolateral and central nuclei of the amygdala," mentor Geoffrey Schoenbaum

Post Graduate Education and Training

2010-2011 Postdoctoral Fellow, National Institute on Drug Abuse, Intramural Research Training Program, Behavioral Neuroscience Research Branch, mentor Yavin Shaham
2011-2015 Early Independent Scientist, National Institute on Drug Abuse Intramural Research Program, Behavioral Neuroscience Research Branch

Employment History

Academic Appointments

2022-present Associate Professor, Tenure Track Department of Neurobiology, UMSOM
2023-2024 Director, Program in Neuroscience, University of Maryland School of Medicine (UMSOM)
2015-2022 Assistant Professor, Tenure Track, Department of Anatomy and Neurobiology, UMSOM

Professional Society Memberships

2004-present Society for Neuroscience, member
2021 Pavlovian Society, member

Honors and Awards

2001-2003 University of Maryland; Biology Academic Honors
2007-2010 National Research Service Award; National Institute of Mental Health
2010 PhD Thesis Project Award; University of Maryland Graduate Program in Life Sciences
2010 Top Junior Investigator Data Presentation; Winter Conference on Brain Research
2011 Early Independent Scientist Position; National Institutes of Health; NIDA-IRP
2011 Cold Spring Harbor Laboratory Course on Cell Biology of Addiction; awarded enrollment
2013 Excellence in Scientific Research, Toni Shippenberg Fellow Award, NIDA-IRP
2013 Winter Conference in Brain Research Travel Fellowship, WCBR 2014

- 2016 Outstanding Young Scientist, Maryland Science Center, Maryland Academy of Sciences
2017 Nominated by UMSOM for Blavatnik National Awards for Young Scientist, Life Sciences Category
2019 PECASE: Presidential Early Career Award for Scientists and Engineers
2019 Alumnus Award, University of Maryland Graduate Program in Life Sciences

Administrative Service

Institutional Service

University of Maryland School of Medicine (UMSOM) / University of Maryland, Baltimore (UMB)

- 2016- present Thesis committee member (1-3 committees/yr), Program in Neuroscience, UMB
Qualifying Exam Committee member (2-5 committees/yr), Program in Neuroscience, UMB
Advisory committee member(1-2 committees/yr), Program in Neuroscience, UMB
Interviewer for Medical School Admissions (5-10 applicants/yr)
2016-2017 School of Medicine Council, Alternate member for Department of Anatomy & Neurobiology
Nomination review committee for GPILS and OPS Awards, Program in Neuroscience
Faculty representative
2017- 2023 Chair of Neurobiology Seminar Series for Department of Anatomy and Neurobiology
Program in Neuroscience Retreat Committee member, UMB
2017- 2018 Co-Chair Anatomy and Neurobiology Faculty Search Committee
2017-2019 Program in Neuroscience Seminar Committee member
2018-2019 School of Medicine Council, Representative for Department of Anatomy & Neurobiology
2018-2020 Program in Neuroscience Curriculum Committee member
2018- 2022 Chair of Program in Neuroscience Retreat
2018-present Program in Neuroscience Training Committee member, Admissions Committee
2019-2020 School of Medicine Council, Alternate for Department of Anatomy & Neurobiology
2020- 2021 Anatomy and Neurobiology Chair for Neuroscience, Anatomy, Pharmacology, and Physiology Seminar Series (virtual seminar series jointly held by listed departments)
2021-2023 Medical Scientist Training Program (MSTP) Admissions Committee
2021-present Program in Neuroscience Diversity Committee Member (IDEAS)
2022-2023 MSTP MD/PhD Thesis Committee Member
Department of Psychiatry Faculty Search Committee Member
Co-Chair Anatomy and Neurobiology Faculty Search Committee
2023-2024 Director of the Graduate Program in Neuroscience
2024-present Chair of Neuroscience Scholars Program for Department of Neurobiology
Kahlert Institute for Addiction Medicine (KIAM) Translational Working Group
Kahlert (KIAM) Translational Working Group Search Committee
MSTP-Medical Scientist Training Program- MD/PhD Application Screening Workgroup

Local and National Service

Journal Review *Ad Hoc*

- 2010-present *Ad Hoc* reviewer for *Journal of Neuroscience* (1-10x/yr), *Neuroscience* (1-2x/yr)
2012-present *Ad Hoc* reviewer for *Addiction Biology* (1x/yr)
2014- present *Ad Hoc* reviewer for Behavioral Neuroscience (1-3x/year)

- 2015- present *Ad Hoc* reviewer for Frontiers in Behavioral Neuroscience (1-5/yr),
Neuropsychopharmacology (1-3/yr)
- 2016-present *Ad Hoc* reviewer for Behavioural Brain Research (1-3x/yr)
- 2017-present *Ad Hoc* reviewer for Scientific Reports (1x), Synapse (1x), Neuropharmacology (1x/yr),
Cell Reports (1x)
- 2018-present *Ad Hoc* reviewer for Behavioral Processes (1x), Neurobiology of Learning and Memory (1-
2/yr), Nature Communications (1x)
- 2019-present *Ad Hoc* reviewer for Progress in Neuropsychopharmacology and Biological Psychiatry
(1x), Physiology and Behavior (1-3x/yr), Journal of Experimental Psychology: Animal
Learning and Cognition (1-2x/yr), eLife (1-2x/yr)
- 2021 *Ad Hoc* reviewer for eNeuro (1x)
- 2021 *Ad Hoc* reviewer for International Journal of Neuropsychopharmacology (1x)
- 2022 *Ad Hoc* reviewer for Current Biology (1x)
- 2023 *Ad Hoc* reviewer for Biological Psychiatry (1x)

Editorial Positions

- 2018-present Associate Editor for Journal of Neuroscience (4-8x/year)
- 2020-present Review Editor for Decision Neuroscience; Frontiers in Neuroscience, Frontiers in
Psychology (4-8x/yr)
- 2021-present Review Editor for Frontiers in Behavioral Neuroscience, Learning and Memory (4-8x/year)

NIH Grant Peer Review

- 2019 *Ad Hoc* grant reviewer for Center on Compulsive Behaviors NIAAA/NIDA/NIMH IRP Study
Section for Postdoctoral Fellowships
- 2021 *Ad Hoc* grant reviewer for Neurobiology of Motivated Behavior (NMB) NIH Study Section
- 2023 *Ad Hoc* grant reviewer for Special Emphasis Panel: BRAIN Initiative F32 and K99 Review
Panel

International and Conference Program Peer Review

- 2013 *Ad Hoc* grant reviewer for French National Research Agency
- 2015 *Ad Hoc* grant reviewer for Israel Science Foundation
- 2016 *Ad Hoc* grant reviewer for Marsden Fund, Royal Society of New Zealand
- 2017 Abstract Reviewer for program selection; Cosyne Annual Meeting

Panels/Symposia Chaired

- 2012 Panel Chair, "Controlling the brain with light: An optogenetic approach to study the neural
circuit basis of behavior," Winter Conference on Brain Research, Snowbird, UT
- 2017 Panel Chair, "Complimentary Computational and Experimental Approaches for
Understanding Sign- and Goal-Tracking Trait Differences," Big Sky, MT
- 2018 Panel Chair, "Associative brain mechanisms underlying adaptive and maladaptive
behavior," International Behavioral Neuroscience Society meeting, Boca Raton, FL
- 2023 Panel Chair, "Considering individual and sex differences in preclinical models of
Substance Use Disorders," International Behavioral Neuroscience Society Annual
Meeting, Niagara, Canada
- 2024 Panel Chair, "Double Diamond: The Pursuit of Reward despite Consequence" Winter
Conference on Brain Research, Breckenridge, CO

Scientific Panels/Workshops/ Special Symposiums

- 2014 Lecturer, NIDA Summer Student Seminar Series, Baltimore, MD
- 2015 Panelist, "Future of the PhD," Academic Path representative, NIDA IRP, Baltimore, MD
- 2018 Panelist, "Future of the PhD," Academic Path representative, NIDA IRP, Baltimore, MD
- 2018 Panelist, "New Faculty Panel," Office of Postdoctoral Scholars and the GPILS/OPS Career and Professional Development, UMB, Baltimore, MD
- 2019-present Panelist, "Hypothesis Testing", Proseminar Course, Program in Neuroscience, UMB, Baltimore, MD
- 2020 Panelist, "Career Development Panel," Graduate Research Seminar, ME, cancelled due to pandemic
- 2021-2023 Training Grant Writing Class, GPLS and Office of Postdoctoral Scholars, "Biosketch and Contributions to Science"
Career Skills Short Seminar Series, Office of Research and Career Development, "Holding Effective Lab Meetings"
- 2024 Panelist, "Mentoring Trainees in Training Grant Submission," GPLS and Office of Postdoctoral Scholars
Presenter for T32 Program in Neuroscience external reviewer site visit, "PIN Program Overview" and "PIN Curriculum"

Other Service

- 2010-2013 F1000 Associate Faculty Member, post-publication review contributor (4-5/yr)
- 2014 Outreach lecturer to disadvantaged and special education high school students; Winter Conference on Brain Research School Outreach Program, Colorado
- 2015 Poster Judge, Greater Baltimore Society for Neuroscience Meeting, UMB, MD
- 2016 International Thesis Reader, PhD, University of New South Wales, Sydney, Australia
- 2016 Poster judge, International Behavioral Neuroscience Society Meeting, Budapest, Hungary
- 2018 Poster judge, Greater Baltimore Society for Neuroscience Meeting, The Johns Hopkins University, MD
- 2018-present Laboratory demonstration for NOVA Baltimore City Schools Fall Lab Tour, UMSOM, MD
- 2019 Poster judge, Graduate Research Conference, Amygdala in Health and Disease, MA
- 2019-2021 Mock Study Section for Graduate NRSA (2 students, 1 postdoc), UMB, Baltimore MD
- 2020-present Mentor, Women in Learning Mentor Program, Pavlovian Society
- 2021 Mentor, MiNDS Mentor Mid-Atlantic Neuroscience Diversity Scholars Program; NIH funded program for undergraduates that are under-represented minorities in sciences, UMSOM
- 2021 Poster judge, Graduate Research Conference, Baltimore, MD (virtual)
- 2022 Workshop Presenter, Research in Science and Engineering Conference, Centennial High School, Ellicott City, MD
- 2023 Neuroscience Scholars Program Committee Founding Member. West Baltimore high school and undergraduate scholars mentored by Department of Neurobiology faculty and trainees
- 2023 Developed and implemented departmental Land and Ancestry Acknowledgment and Diversity Action Plan
- 2023-present NOVA Baltimore Brain Awareness Week: local middle school STEM outreach
NOVA Donation drive to Paul's Place: provided transport and delivery of donations
- 2024 Invited Speaker, Carrer Seminar, Science National Honor Society chapter at Broadneck High School STEM

Teaching Service

High School Student Mentoring

2011-21 Mentor, 8 high school students, 2 URM, 4 women, daily contact for the summer or semester, Malik Carrol (2012-3), Satvik Pendem (2013-4), Emily Park (2014-5), Caleb Park (2018), Camron Piotrowski (2018), Anne Tobin (2018-19), Fayth Pearson (2018), Monali Gandhi (2021), Schools include Long Reach High School, Friends School, Baltimore, BASIS Independent McLean High School, Akshaya Ganesh (2022), Poolesville High School, (2023) Co-Chair, Neuroscience Scholars Program,

Undergraduate Student Mentoring

2017 Mentor, URM summer visiting undergraduate, Janai Williams, City College of New York
2019 Mentor, summer visiting undergraduate, Jules Chabot, Wesleyan University, CT
2019 Mentor, summer visiting undergraduate, Anne Tobin, Haverford College, PA
2020 Mentor, spring semester visiting undergraduate, Hope Nyardi, Stevenson University, MD
2021 Mentor, URM summer MiNDS Scholar, Naru Kang, University of Maryland, College Park
2022 Mentor, URM summer MiNDS Scholar, Natalia Rincon, University of Maryland, CP
2024 Chair, Neuroscience Scholars Program, undergraduates from local HBCU and Meyerhoff
Mentor, semester volunteer, Jasmine Windham, Morgan State University, Baltimore MD

Total: 11 undergraduates; 8 URM, 8 women, daily contact for the summer or semester

Post-Graduate Mentoring

NIDA IRP all daily contact (parenthetical denotes next position(s))

2011-2013 Mentor, postbaccalaureate, Alex Kawa, (graduate student at University of Michigan Psychology Department, Terry Robinson lab, postdoc at Oregon Health and Science University, Marina Wolf lab)

2013-2015 Mentor, postbaccalaureate, Sam Bacharach, (graduate student at UMB, Program in Neuroscience)
Mentor, postbaccalaureate, Kimberly Fiscella (medical student at University of Rochester, NY)
Mentor, postbaccalaureate, Ellen Lesser (graduate student at University of Washington Graduate Program in Neuroscience)

UMSOM all daily contact (parenthetical denotes next position(s))

2016-2021 Mentor, graduate student, Sam Bacharach, Program in Neuroscience, UMB, graduated 12/2021, (postdoc University of Pennsylvania)

2017-2021 Mentor, graduate student, Utsav Gyawali, Program in Neuroscience, UMB, graduated 12/2021, (postdoc Rutgers University)

2020-present Mentor, graduate student, Catherine Stapf; Program in Neuroscience, UMB

Postdoctoral Fellow Mentoring

NIDA IRP all daily contact (parenthetical denotes next position(s))

2012-2014 Mentor, postdoctoral fellow Yu-Wei Chen (postdoc at National Institute on Environmental Health Sciences, NC)

UMSOM *all daily contact* (parenthetical denotes next position(s))

2015-2017	Mentor, postdoctoral fellow, Helen Nasser, (Senior Lecturer, Faculty in Department of Psychology at the Institute for Social Neuroscience in Melbourne, Australia and Researcher for Epigenes)
2017-present	Mentor, postdoctoral fellow, David Martin
2018-present	Mentor, postdoctoral fellow, Sara Keefer (Assistant Professor, Gettysburg College)
2018-2020	Mentor, postdoctoral fellow, Daniel Kochli, (Visiting Assistant Professor; Psychology; Washington College, Chestertown, MD)

Faculty Mentoring Committee

2021-present	Marco Venniro, PhD, Assistant Professor in Anatomy and Neurobiology
2022-present	Maged Haraz, PhD, Assistant Professor in Psychiatry

Medical Student Teaching

2016	Preceptor, Medical Neuroscience, Discussion Journal Club, MS1, 1 st year students, 15-20 learners, 10 contact hours
2016-2019	Structure and Development, MS1, UMSOM, Histology of the Epithelium Lecture, 1 st year students, ~155 learners, 1 contact hour,
2017-2019	Structure and Development, MS1, UMSOM, Gut Development Lecture, 1 st year students, ~155 learners, 1 contact hour
2021-present	UMSOM Digestion and Hormones course, MS1, MEDS 514 Gastrointestinal Embryology, 1 st year students, ~155 learners, 1 contact hour x 3 years UMSOM Skin, Bones, and Musculature course; Development of Limbs and Joints, MS2, MEDS 522 (Fall 2021), 2 nd year students, ~140 students, 1 contact hour x 3 years
2022	Molecules to Medicine, MS1, MS2, MSTP students ~12 students, course on "Addiction" January 2022, 5 contact hours

4-year Student Evaluation Average 4.1 out of 5.0, improving from 3.8 (2016) to 4.2 (2020)
2021-2022 97% satisfaction rating for MS1 and MS2 courses

Postgraduate Teaching

2010	Systems and Cognitive Neuroscience, University of Maryland School of Medicine (8-10 students, 1 contact hour)
2012	Statistics and Experimental Design, National Institute on Drug Abuse (10-15 learners, 2 contact hours)
2012-2014	Theories of Addiction, National Institute on Drug Abuse (8-10 learners, 2 contact hours/year)
2014	Addiction; Cocaine and Psychostimulants, Joint NIDA IRP – Johns Hopkins Medical School Course, The Johns Hopkins University School of Medicine (8-10 learners, 2 contact hours)
2015-2020	Systems and Cognitive Neuroscience, Hippocampus Lecture and Learning and Memory Lecture; GPILS641 (1 st year graduate students, 8-10 learners, 2 contact hours/year)
2015-2022	Research Ethics, UMB; Ethical use of animals in research and/or Authorship and Publication; CIPP907 (8-10 learners, 1.5 contact hours/year)
2016	Foundations of Research and Critical Thinking, UMB; Alternative Hypothesis Testing

- 2017 Interface of Pain, Affect, and Addiction, Behavioral models of addiction, Program in Neuroscience, GPLS775, UMB, (8-10 learners, 1.5 contact hours)
Addiction minicourse; Animal models and historical perspectives; Program in Neuroscience, GPLS 618, UMB, (8-10 learners, 2 contact hours)
- 2020 Cellular Basis of Synaptic Physiology and Pharmacology; CNS Recording in vivo; GPILS 620 (8-10 learners, 2 contact hours)
- 2020-present Advanced Neuroscience Investigation; Amygdala in motivation and flexibility; Program in Neuroscience, UMB GPLS 655 (10-15 learners, 2 contact hours/year)
Addiction Nanocourse; Animal models and historical perspectives; Program in Neuroscience, UMB (8-10 learners, 2 contact hours/year)

Course Direction

- 2021-present Course Director GPLS691; Current topics and techniques in neuroscience (fall semester, 1st and 2nd year graduate students, ~15-20 learners, 20 contact hours/year)

Grant Support

Active grants

- 9/1/2017- 7/31/2023 PI: Calu, 40% effort (NCE through 7/2025)
“Role of basolateral amygdala projections in mediating individual differences in motivation and flexibility”
R01DA043533 with PECASE Award: 1-year funding extension
Annual direct costs: \$250,000
Total direct costs: \$1,500,000 over six years
- 3/9/2022-3/8/2023 Co-Investigator Calu 5% with Co-I, PI: Linda Chang (NCE through 12/2024)
“Focused ultrasound for neuromodulation in the treatment of opioid addiction”
Focused Ultrasound Foundation; General Awards Track
Direct costs: \$100,000 for 1 year (now in NCE)
Role: oversee, analyze, interpret self-administration experiments

Other Active Support

- 6/1/21- 4/30/26 Co-Inv. Calu 10% effort with Co-Inv, Heredia, Lobo, Gendelman, PI: Linda Chang
“MR-guided focused ultrasound to eradicate CNS viral reservoirs and promote neurogenesis in the HIV-infected brain”
NIH/NIDA DP1, DP1DA053719
Annual direct costs: 700,000 per year for 5 years
Role: oversee, analyze, interpret self-administration experiments

Trainee funding

- 2/7/2023-2/6/2026 PI: Stapf
“Sex Differences in Endocannabinoid Regulation of Behavioral Flexibility”
Mentor (Calu): F31 DA057817, National Research Service Award
Total direct costs: \$117,348 over three years
Role: Sponsor, oversee, design, analyze, interpret experiments

Pending grants

- Submitted 9/6/2023 PI: Calu 40%
Resubmit 3/5/2025 "Role of Amygdala-Striatal Projections in Distinguishing Drug Relapse Phenotypes"
Annual direct costs: \$353,878
Direct costs: 1,769,389 over 5 years
- Submitted 2/5/2024 PI Calu (40% effort), Martin, Lobo, Herb, Ament MPI
Resubmit 11/5/2024 "Psychedelic Effects on Nucleus Accumbens in Opioid Motivation"
Annual direct costs: ~\$485,000 varies annually
Direct costs: 1,695,682.14 over 5 years
- Submitted 6/5/2024 PI: Calu 40% effort with MPI. Venniro 20%
"Amygdala-cortico-striatal basis of opioid relapse despite negative consequences and positive alternatives"
Annual direct costs: \$359,426
Direct costs: \$1,701,098.16 over 5 years
- Submitted 7/5/2024 PI: Calu 40% effort
"Role of Extended Amygdala Dopamine in Relapse Vulnerability Phenotypes"
Annual direct costs: \$342, 278
Direct costs: 1,550,563.97 over 5 years

Completed grants/awards

- 7/10/07-7/09/10 PI: 100% effort
"Role of orbitofrontal signaling of expected outcomes in Pavlovian blocking"
F31 MH080514, National Research Service Award
- 10/1/2011-8/31/2015 PI: 100% effort
Early Independent Scientist Position (current Early Independent Award equivalent)
NIH/National Institute on Drug Abuse/Intramural Research Program
- 1/15/2017-1/14/2019 PI: 1% effort allowed
"Role of Amygdala Projections in Incubation of Fear and Drug Craving"
NARSAD Young Investigator Grant Award, Brain and Behavior Research Foundation
- 2/1/2017-1/31/2020 PI: Calu 0% effort allowed
"Individual Differences in Attention Signaling in Amygdala Circuits"
McKnight Endowment Fund for Neuroscience; McKnight Memory and Cognitive Disorders Award
Annual direct costs: \$90,000
Total direct costs: \$270,00 over three years with two years of no cost extension after 1/31/2020

Completed Trainee grants/awards:

- 4/6/2020-4/5/2023 PI: Bacharach (ended upon graduation 12/2021)
"The role of Cannabinoid Receptor-1 in modulating addiction vulnerability"

Mentor (Calu): F31 DA050367, National Research Service Award
Annual direct costs: \$38,376
Total direct costs: \$115,128 over three years
Role: Sponsor, oversee, design, analyze, interpret experiments

4/1/2021-8/15/2023 PI: Keefer (ended upon receiving faculty position Gettysburg College 8/2023)
“Individual differences in cortical-striatal pathway utilization regulating flexibility”
Mentor (Calu): F32 DA053772, National Research Service Award
Annual direct costs: \$70,550
Total direct costs: \$211,650 over three years
Role: Sponsor, oversee, design, analyze, interpret experiments

Publications

Peer-reviewed journal articles

1. Stalnaker TA, Roesch MA, Franz TM, **Calu DJ** and Schoenbaum G. (2007) Cocaine-induced decision-making deficits are mediated by miscoding in basolateral amygdala. *Nature Neuroscience*. 10(8):949-51. *Conducted in vivo neural recordings and contributed to manuscript preparation.*
2. **Calu, DJ**, Roesch MA, Stalnaker TA, and Schoenbaum G. (2007) Associative encoding in posterior piriform cortex during odor discrimination and reversal learning. *Cerebral Cortex*. 17:1342-1349.
3. **Calu DJ**, Stalnaker TA, Franz TM., Singh T, Shaham Y, and Schoenbaum G. (2007) Withdrawal from cocaine self-administration produces long-lasting deficits in orbitofrontal-dependent reversal learning in rats. *Learning and Memory*. 14:325-328.
4. Roesch MA*, **Calu DJ***, and Schoenbaum G. (2007) Dopamine neurons encode the better option in rats deciding between differently delayed or sized rewards. *Nature Neuroscience*. 10(12):1615-24. **co-first author, contributed equally to the work.*
5. Roesch MA, **Calu DJ**, Burke KA, and Schoenbaum G. (2007) Should I stay or should I go? Transformation of time-discounted rewards in orbitofrontal cortex and associated brain circuits. *Annals of the New York Academy of Sciences*. 1104:21-34. *Conducted in vivo neural recordings and contributed to manuscript preparation.*
6. Stalnaker TA, Roesch MA, Burke KA, **Calu DJ**, and Schoenbaum G. (2007) Neural correlates of inflexible behavior in the orbitofrontal-amygdalar circuit after cocaine exposure. *Annals of the New York Academy of Sciences*. 1121:598-609. *Conducted in vivo neural recordings and contributed to manuscript preparation.*
7. **Calu DJ**, Schoenbaum G. (2008). Cocaine-paired cues activate aversive representations in accumbens neurons. Preview. *Neuron*. 57(5):633.
8. Takahashi YK, Roesch MA, Stalnaker TA, Haney RZ, **Calu DJ**, Taylor A.R., Burke K.A., Schoenbaum G. (2009) The orbitofrontal cortex and ventral tegmental area are necessary for learning from unexpected outcomes. *Neuron*. 62(2):269-80. *Conducted in vivo neural recordings and contributed to manuscript preparation.*
9. Haney RZ, **Calu DJ**, Takahashi YK, Hughes B., Schoenbaum G. (2010) Inactivation of the central but not the basolateral nucleus of the amygdala disrupts learning in response to over-expectation of reward. *Journal of Neuroscience*. 30(8):2911-7. *Conducted in vivo pharmacological inactivation and contributed to manuscript preparation.*

10. Roesch MA, **Calu DJ**, Esber GR, Schoenbaum G. (2010) Neural correlates of variations in event processing during learning in basolateral amygdala. *Journal of Neuroscience*. 30(7):2464-71. *Conducted in vivo neural recordings and contributed to manuscript preparation.*
11. **Calu, DJ**, Roesch, MA, Haney, RZ, Holland, P.C., Schoenbaum, G. (2010). Neural correlates of variations in event processing during learning in central nucleus of amygdala. *Neuron*. 68(5):991-1001.
12. Roesch MR, **Calu DJ**, Esber GR, Schoenbaum G. (2010) All that glitters ... dissociating attention and outcome expectancy from prediction errors signals. *Journal of Neurophysiology*. 104(2):587-95. *Contributed to manuscript preparation.*
13. Badiani A, Belin D, Epstein DH, **Calu DJ**, Shaham Y. (2011) Opiate versus psychostimulant addiction: the differences do matter. *Nature Reviews Neuroscience*. 12(11):685-700. *Authored sections in review and contributed to manuscript preparation.*
14. Pickens CL, **Calu DJ**. (2011) Alcohol reward, dopamine depletion, and GDNF. *Journal of Neuroscience*. 31(42):14833-4.
15. Pickens CL, Cifani C, Navarre BM, Eichenbaum H, Theberge FR, Baumann MH, **Calu DJ**, Shaham Y. (2012) Effect of fenfluramine on reinstatement of food seeking in female and male rats: implications for the predictive validity of the reinstatement model. *Psychopharmacology*. 221(2):341-53. *Conducted behavioral pharmacology experiments and contributed to manuscript preparation.*
16. Cifani C, Koya E, Navarre BM, **Calu DJ**, Baumann MH, Marchant NJ, Liu QR, Khuc T, Pickel J, Lupica CR, Shaham Y, Hope BT. (2012) Medial prefrontal cortex neuronal activation and synaptic alterations after stress-induced reinstatement of palatable food seeking: a study using c-fos-GFP transgenic female rats. *Journal of Neuroscience*. 32(25):8480-90. *Conducted behavioral pharmacology experiments and contributed to manuscript preparation.*
17. **Calu DJ**, Kawa AB, Marchant NJ, Navarre BM, Henderson MJ, Chen B, Yau H-J, Bossert JM, Schoenbaum G, Deisseroth K, Harvey BK, Hope BT, Shaham Y. (2013) Optogenetic inhibition of dorsal medial prefrontal cortex attenuates stress-induced reinstatement of palatable food seeking in female rats. *Journal of Neuroscience*. 33(1):214-26.
18. Bossert JM, Marchant NJ, **Calu DJ**, Shaham Y. (2013) The reinstatement model of drug relapse: recent neurobiological findings, emerging research topics, and translational research. *Psychopharmacology*. 229(3):453-76. *Authored sections of the review and contributed to manuscript preparation.*
19. Chen, YW, Fiscella, KA, **Calu, DJ**. (2014) Effect of cafeteria diet history on cue-, pellet-priming-, and stress-induced reinstatement of food seeking in female rats. *PLoS One*. Jul 15; 9(7):e102213.
20. **Calu, DJ**, Chen, YW, Kawa, AB, Shaham, Y. (2014) The use of the reinstatement model to study relapse to palatable food seeking during dieting. *Neuropharmacology NIDA 40th Anniversary Special Issue*. 76 (B):395–406.
21. Caprioli D, **Calu D**, Shaham Y. (2014) Loss of phasic dopamine: a new addiction marker? Commentary. *Nature Neuroscience*. 17(5):644-6. *Co-authored preview.*
22. Chen, YW, Fiscella, KA, Bacharach, SZ, Tanda, G, Shaham, Y, **Calu, DJ**. (2015) Effect of yohimbine on reinstatement of operant responding in rats is dependent on cue contingency but not food reward history. *Addiction Biology*. Epub ahead of print Jul, 20(4):690-700.
23. Nasser, HM*, Chen, YW*, Fiscella, KA, **Calu, DJ**. (2015) Individual variability in behavioral flexibility predicts sign-tracking tendency. *Frontiers in Behavioral Neuroscience*. Nov 3; 9:289. eCollection.

24. **Calu, D**, Nasser, H, Shaham, Y. (2015) Unexpected results on the role of nucleus accumbens dopamine in stress-induced relapse. Commentary. *Biological Psychiatry*. 77(10):848-9.
25. Kourrich, S, **Calu, DJ**, Bonci, A. (2015) Intrinsic plasticity: an emerging player in addiction. *Nature Reviews Neuroscience*. 16(3):173-8.
26. Nasser, HM, Lafferty, DL, Lesser, EN, Bacharach, SZ, **Calu, DJ**. (2017). Disconnection of basolateral amygdala and insular cortex disrupts conditioned approach in Pavlovian lever autoshaping. *Neurobiology of Learning and Memory*. 2017 Nov 21;147:35-45.
27. Nasser HM, **Calu DJ**, Schoenbaum G and Sharpe MJ. (2017) The dopamine prediction error: contributions to associative models of reward learning. *Frontiers in Psychology*. 8:244. *Co-authored sections of the review and contributed to manuscript preparation.*
28. Bacharach, SZ*, Nasser, HM*, Zlebnik, NE, Dantrassy, HM, Cheer, JF, **Calu, DJ**. (2018) Cannabinoid receptor-1 signaling contributions to sign-tracking and conditioned reinforcement in rats. *Psychopharmacology*. doi: 10.1007/s00213-018-4993-6 *equal contribution.
29. Lee, B, Gentry, RN, Bissonette, GB, Herman, RJ, Mallon, JJ, Bryden, DW, **Calu, DJ**, Schoenbaum, G, Coutureau, E, Marchand, AR, Khamassi, M, and Roesch, MR. (2018) Manipulating the revision of reward value during the intertrial interval increases sign tracking and dopamine release. *PLoS Biology*;16(9):e2004015. doi: 10.1371/journal.pbio.2004015. *Contributed to experimental design, interpretation, and manuscript preparation.*
30. Bacharach SZ, **Calu DJ**. (2019) Stability of individual differences in sucralose taste preference. *PLoS ONE*. 14(5): e0216431. doi.org/10.1371/journal.pone.0216431.
31. Martin, DA, **Calu, DJ** (2019). Probing the Motivational Circuitry of Binge Eating. *Neuropsychopharmacology*. 2019 Nov 18. Online ahead of print. DOI: 10.1038/s41386-019-0568-4
32. Keefer SE, Bacharach, SZ, Kochli, DE, Chabot, JM, **Calu, DJ**. (2020) Effects of limited and extended Pavlovian training on devaluation sensitivity of sign-and goal-tracking rats. *Frontiers in Behavioral Neuroscience*. 04 February 2020;14:3.*featured Editor's Pick 2021 collection
33. Martin, DA, Gyawali, U, **Calu, DJ**. (2020) Effects of 5-HT 2A Receptor Stimulation on Economic Demand for Fentanyl After Intermittent and Continuous Access Self-Administration in Male Rats. *Addiction Biology*. 2020 May 26; e12926.
34. Kochli, DE, Keefer, SE, Gyawali, U, **Calu, DJ**. (2020) Basolateral amygdala to nucleus accumbens projections differentially mediate flexibility of sign- and goal-tracking rats. *Frontiers in Behavioral Neuroscience*. Nov 25;14:593645.
35. Gyawali, U, Martin, DA, Sulima, A, Rice, KC, **Calu, DJ**. (2020) Role of BNST CRFR1 receptors in incubation of fentanyl seeking. *Frontiers in Behavioral Neuroscience*. Aug 28; 14:153.
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37. Martin, DA, Keefer, SE, **Calu, DJ**. (2022) Investigating discriminative stimulus modulation of opioid seeking after conflict-induced abstinence in sign- and goal-tracking rats. *Psychopharmacology*. Oct;239(10):3223-3236.
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40. Bacharach, S.Z., Martin, DA, Stapf, CA, Sun, F, Li, Y, Cheer, JF, **Calu, DJ** (2023). Decreased ventral tegmental area CB1R signaling reduces sign-tracking and shifts cue-outcome dynamics in rat nucleus accumbens. *The Journal of Neuroscience*. 21 June 2023, 43 (25) 4684-4696; PMID: 37208179
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42. Martin, DA, Delgado, AM, Calu, DJ (2024). Effects of psychedelic, DOI, on nucleus accumbens dopamine signaling to predictable rewards and cues in rats. *Neuropsychopharmacology*. 2024 Nov;49(12):1925-1933.
43. Stapf, CA, Keefer, SE, McInerney, JM, Cheer, JF, **Calu, DJ**. (2025). Dorsomedial Striatum CB1R signaling promotes Pavlovian devaluation sensitivity in male Long Evans rats and reduces DMS inhibitory synaptic transmission in both sexes. *eNeuro*. 2025 Jan 29;12(1):ENEURO.0341-24.2024. doi: 10.1523/ENEURO.0341-24.2024.

Major Invited Seminars

Local

1. National Institute of Health Early Independent Scientist Lecture, National Institutes of Health, Bethesda, MD. "Reward prediction and attention signals in the brain; implications for learning and addiction," 2011.
2. NIDA-IRP Women Scientist Advisor Award Ceremony, NIDA IRP, Baltimore, MD. "Individual differences in stimulus processing: implications for learning and addiction," 2013.
3. University of Maryland School of Medicine, Anatomy and Neurobiology department seminar series. Baltimore, MD. "Brain mechanisms underlying individual differences in natural and drug reward seeking," 2014.
4. National Institute on Alcohol Abuse and Alcoholism; Rockville, MD. "Behavioral insights into incentive and flexible learning strategies," 2016.
5. Board of Visitors, University of Maryland SOM, "Brain Circuit Basis of Addiction Vulnerability," 2018.
6. Neurology Grand Rounds, UMSOM, "Probing Addiction Vulnerability: Amygdala mechanisms driving motivation and flexibility," 2018.
7. American University Center for Behavioral Neuroscience, Washington D.C. "Amygdala mechanisms driving individual differences in Pavlovian approach and flexibility," 2018.
8. University of Maryland SOM Council meeting, Baltimore MD. "The brain circuit basis of addiction vulnerability," 2019.
9. NIDA Headquarters, Division of Neuroscience and Behavior, Bethesda, MD. "Probing Addiction Vulnerability: Amygdala Mechanisms Driving Motivation and Flexibility," 2019.

10. Keynote lecture 42nd annual Graduate Research Conference, University of Maryland School of Medicine, Baltimore, MD, "The brain circuit basis of addiction vulnerability," 2020.
11. National Institute on Drug Abuse, Intramural Research Program (scheduled for 5/12/2020 but cancelled due to pandemic).
12. Morgan State University (HBCU), ASCEND Center for Biomedical Research Interdisciplinary Seminar Series, Baltimore MD. "Behavioral and Brain Basis of Addiction Vulnerability," 2023.
13. Kahlert Institute for Addiction Medicine, UMSOM, invited panelist for Inaugural Research Symposium, panel entitled, "Psychedelics in Substance Use Disorders." Talk given by Research Assistant Professor in Calu lab, Dr. David Martin, 2024.

National

14. 45th Winter Conference on Brain Research, Snowbird, UT. "Optogenetic investigation of reinstatement of food seeking," 2012.
15. 7th Brain Research Conference on Optogenetics and Pharmacogenetics. New Orleans, LA. "Optogenetic study of relapse to food seeking in female rats" talk given by post-baccalaureate student, Alex Kawa, 2012.
16. 47th Winter Conference on Brain Research, Steamboat Springs, CO. "Inhibition of dorsal medial prefrontal cortex (mPFC) attenuates yohimbine-induced reinstatement," 2014.
17. 48th Winter Conference on Brain Research, Big Sky, MT. "Insensitivity to outcome devaluation in sign-tracking rats." 2015.
18. 49th Winter Conference on Brain Research, Breckenridge, CO. "Behavioral insights into incentive and flexible learning strategies." 2016.
19. 51st Winter Conference on Brain Research, Whistler, Canada. "Amygdalar mechanisms driving individual differences in Pavlovian approach and flexibility," Panel on individual differences in substance abuse, 2018.
20. International Behavioral Neuroscience Society meeting, Boca Raton, FL. "Amygdala mechanisms driving individual differences in Pavlovian approach and flexibility," 2018.
21. 52nd Winter Conference on Brain Research, Aspen, CO. "CB1 Signaling modulates Pavlovian appetitive processes in sign- and goal-tracking rats," talk given by graduate student, Sam Bacharach, 2019.
22. Gordon Research Conference, Amygdala in Health and Disease, Easton MA, "Probing Addiction Vulnerability: Amygdala Mechanisms Driving Motivation and Flexibility," Symposium on Addiction. 2019.
23. Yale University, Department of Molecular Psychiatry, New Haven, CT. "Brain basis of Pavlovian incentive processes in sign- and goal-tracking rats," 2019.

24. Pavlovian Society Annual Meeting, invited lecture, Ann Arbor, MI, Sept 30th -Oct 2nd, 2021, Panelist, "Probing SUD vulnerability: Amygdala contributions to sign- and goal-tracking flexibility differences" Symposium on "The predictive and causal relationship between cognitive endophenotypes and substance use," 2021.
25. McKnight Neuroscience Conference, invited lecture, Aspen, CO, October 29-31, 2021, "Amygdala Mechanisms Distinguishing Addiction Vulnerability Phenotypes," 2021
26. 53rd Winter Conference on Brain Research, invited lecture, Aspen, CO, "Amygdala mechanisms distinguishing addiction vulnerability phenotypes," 2022.
27. University of West Virginia, Department of Psychology colloquium, virtual, Morgantown, WV, "Amygdala and striatal mechanisms of addiction vulnerability," 2022.
28. 55th Winter Conference on Brain Research, panelist and panel chair, Breckenridge, CO, "Individual and Sex Differences in Behavioral Flexibility" 2024

International

29. Addiction in Theory Meeting, London, UK. "Behavioral Insights from Incentive Learning; Addiction, Cognitive Strategy, and the Brain," 2016.
30. International Behavioral Neuroscience Society Annual Meeting, Budapest, Hungary. "Sign-tracking; A failure in flexibility," 2016.
31. Associative Learning Symposium, Gregynog, Wales, UK. "Behavioral insights from incentive learning; Addiction, Cognitive Strategy and the Brain," 2017.
32. Concordia University Department of Psychology, Montreal, Canada. Colloquium, "Amygdala mechanisms driving individual differences in Pavlovian approach and flexibility," 2018.
33. Concordia University Department of Psychology, Montreal, Canada. Seminar, "Cannabinoid receptor-1 signaling modulates Pavlovian and instrumental appetitive motivation," 2018.
34. European Behavioral Pharmacology Society Annual Meeting, Braga-Porto Portugal, "CB1 Signaling modulates Pavlovian appetitive processes in sign- and goal-tracking rats," symposium on Endocannabinoids, 2019
35. Canadian Association for Neuroscience Annual meeting, "Amygdala mechanisms distinguishing addiction vulnerability phenotypes," symposium on Amygdala in response to Reward Cues, 2022
36. International Drug Abuse Research Society Biennial meeting, "Amygdala-Insular mechanisms distinguishing addiction vulnerability phenotypes," symposium on Clinical and pre-clinical views on the contribution of the insular cortex to addiction Insula, 2022
37. University of Calgary, Hotchkiss Brain Institute Seminar Series, "Amygdala mechanisms distinguishing addiction vulnerability phenotypes" 2022

38. International Behavioral Neuroscience Society Annual Meeting, Niagara, Canada, symposium on “Considering individual and sex differences in preclinical models of Substance Use Disorders,” 2023. Panel co-Chair.

Future Confirmed Seminars

1. Drexel University College of Medicine, Department of Pharmacology and Physiology Seminar Series, Philadelphia, PA (November 2024)

Media Reports

1. “NIH’s First Intramural Early Independent Scientists” The NIH Catalyst, National Institutes of Health, Office of the Director, Vol. 22 Issue 4, July–August 2014, By Rachel Scheinert, NIMH; <https://irp.nih.gov/catalyst/v22i4/nih-s-first-intramural-early-independent-scientists>
2. Maryland Science Center Feature, “2016 Outstanding Young Scientist Recipient: Donna Calu, Ph.D.,” <https://www.youtube.com/watch?v=SN44wkQi6bc>
3. Pavlovian Society Featured Faculty, March 2020; by Sydney Trask, <https://sydneytrask.github.io/Pavlovian-Society-Featured-Faculty/index.html>
4. “NIH Avant Garde Award for out-of-box, innovative concept to cure HIV and treat addiction” featured as collaborator, in <https://www.medschool.umaryland.edu/news/2021/UM-School-of-Medicine-Researchers-Receive-NIH-Avant-Garde-Award-for-Out-Of-Box-Concept-to-Cure-HIV-and-Treat-Co-Existing-Addiction.html> and AAAS EurekAlert!, July 6, 2021. https://www.eurekalert.org/pub_releases/2021-07/uoms-nag070221.php
5. Stories of WIN, by Reanne Campbell and Sydney Smith <https://www.storiesofwin.org/profiles/2023/10/12/dr-donna-calu>