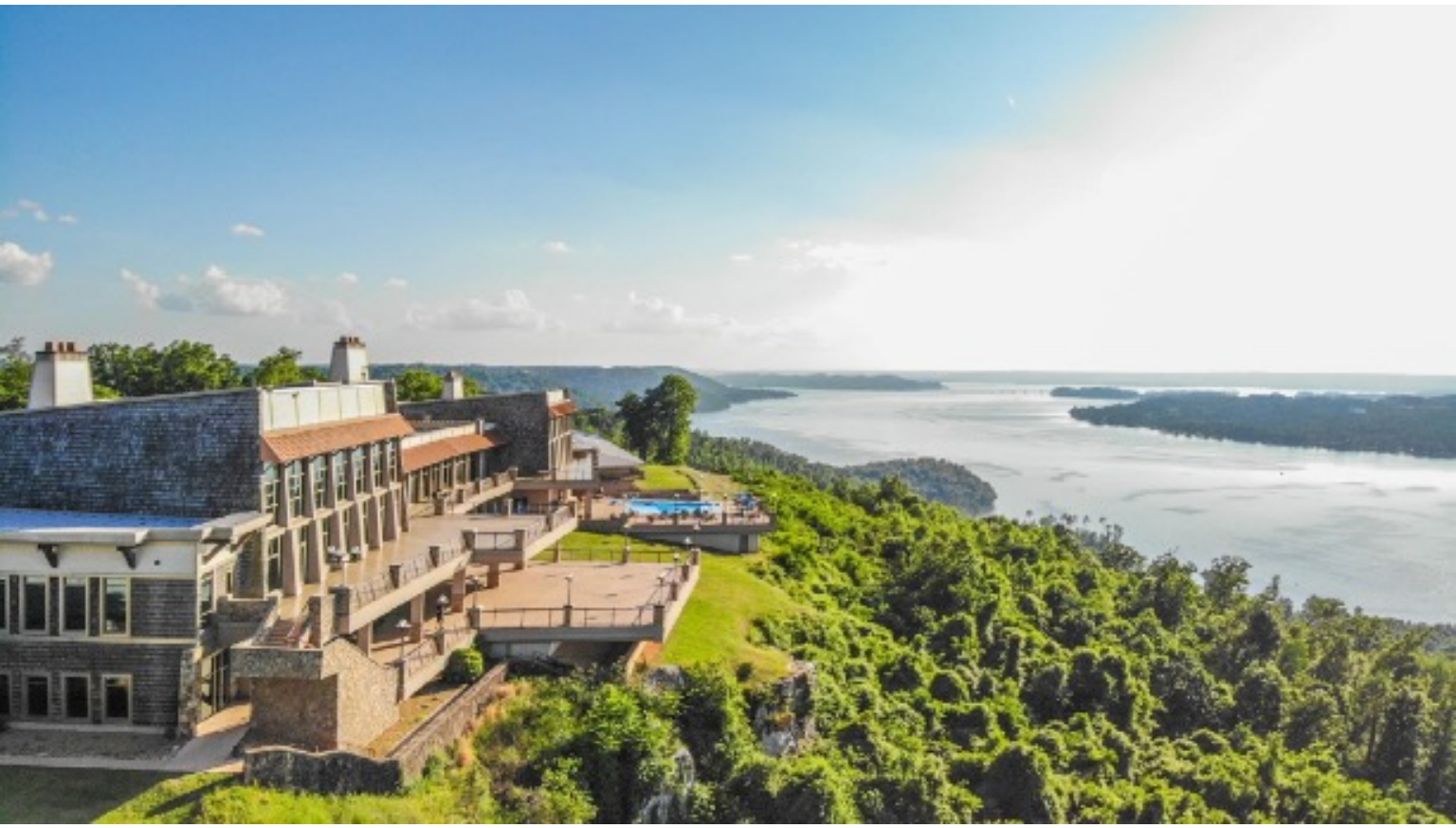
PROGRAM



UAB Comprehensive Neuroscience Center

ANNUAL RETREAT

September 14-15, 2022
Lake Guntersville State Park
Lodge and Convention Center

UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
Comprehensive Neuroscience Center

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
Comprehensive Neuroscience Center

Wednesday, September 14, 2022

9:00am – 10:00am	**Arrival and registration**
10:00am Camelia Room	**Welcome, announcements, and State of the CNC address** ***Jeremy Day, Ph.D.*** *Director, UAB Comprehensive Neuroscience Center* *Michael J. Friedlander Heersink Endowed Professorship* *Associate Professor, Department of Neurobiology*
10:30am	**New faculty session I (Moderator: Dr. Karen Gamble)** **"Basolateral Amygdala Parvalbumin Interneurons Drive Anxiety-like Behavior Across the Estrous Cycle in Mice"** ***Beth Lucas, Ph.D.*** Assistant Professor, Department of Psychiatry **"Trans-synaptic mechanism of synaptic connectivity and function - lessons learned from the visual system"** ***Yuchen Wang, Ph.D.*** Assistant Professor, Department of Optometry & Vision Science **"Neurophysiological mechanisms of sentence comprehension in language"** ***Matthew Nelson, Ph.D.*** Assistant Professor, Department of Neurosurgery
12:00pm Main Dining Room	**Lunch**
1:00pm Camelia Room	**Trainee session I (Moderator: Dr. Kristina Visscher)** **"Impairments in fear extinction memory and basolateral amygdala plasticity in the TgF344-AD rat model of Alzheimer's disease are distinct from non-pathological aging"** ***Caesar Hernandez, Ph.D.*** Postdoctoral Fellow, Dobrunz Lab **"Mild traumatic brain injury induces an atypical response in astrocytes and neurons"** ***Carmen Muñoz-Ballester, Ph.D.*** Postdoctoral Fellow, Robel Lab **"Increased astrocytic Neat1 contributes to age- and Alzheimer's disease-associated memory impairment"** ***Ashleigh Irwin*** Graduate Student, Lubin Lab

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Wednesday, September 14, 2022

Continued	**Trainee session I**
	"Dopaminergic Neurons of the Substantia Nigra Exhibit a Cell Intrinsic Clock and Selective Ablation of This Molecular Clock Impacts Electrophysiological Output" ***Ananya Swaroop*** Graduate Student, Gamble Lab
	"Racial Differences in Biopsychosocial Factors Related to Current Opioid Treatment" ***Asia Wiggins*** Graduate Student, Goodin & Sorge Labs
	"Impact of α-synuclein pathology on corticostriatal synapses in Parkinson's Disease" ***Charlotte Brzozowski*** Graduate Student, Volpicelli-Daley Lab
3:00pm Camelia Room	**"Recognizing Intellectual Property When You See It"** ***Karthik Gopalakrishnan, Ph.D.*** *Director of Licensing and New Ventures* *Harbert Institute for Innovation and Entrepreneurship*
3:30pm	**Afternoon break & room check-in**
5:30pm Goldenrod Room	**Poster session** *Cash bar*
7:00pm Grandview Room	**Banquet dinner** *Cash bar*
8:30pm Grandview Room	**Evening activity**

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Thursday, September 15, 2022

8:00am Main Dining Room	**Breakfast**
9:00am Camelia Room	**New faculty session II (Moderator: Dr. Lawrence Sincich)** **"Methods for Non-Invasive Deep Brain Modulation to Study and Treat Neurologic and Psychiatric Disorders"** ***Jamie Tyler, Ph.D.*** Professor, Department of Biomedical Engineering **"Memory encoding in GABAergic engrams"** ***Kirstie Cummings, Ph.D.*** Assistant Professor, Department of Neurobiology **"Mechanisms of neurodegeneration from environmental factors associated with Parkinson's disease"** ***Briana DeMiranda, Ph.D.*** Assistant Professor, Department of Neurology
10:30am	**Trainee session II (Moderator: Dr. Jeremy Day)** **"Adult-born neurons excel in the computational function of pattern separation"** ***Harshad Panikkaveettil Ashraf, Ph.D.*** Postdoctoral Fellow, Wadiche Lab **"Changes in White Matter and Neurite Morphology in Response to Neurobehavioral Therapy for Nonepileptic (Functional) Seizures"** ***Christina Mueller*** Graduate Student, Szaflarski Lab
11:00am	**Break**
11:15am Camelia Room	**Keynote presentation – "Mechanism of Rapid Antidepressant Action"** ***Dr. Lisa Monteggia, Ph.D.*** *Barlow Family Director of the Vanderbilt Brain Institute* *Professor, Department of Pharmacology* *Vanderbilt University*
12:30pm Main Dining Room	**Lunch**
1:30pm Camelia Room	**Announcement of poster/presentation awards & closing remarks**
2:00pm	**Depart**

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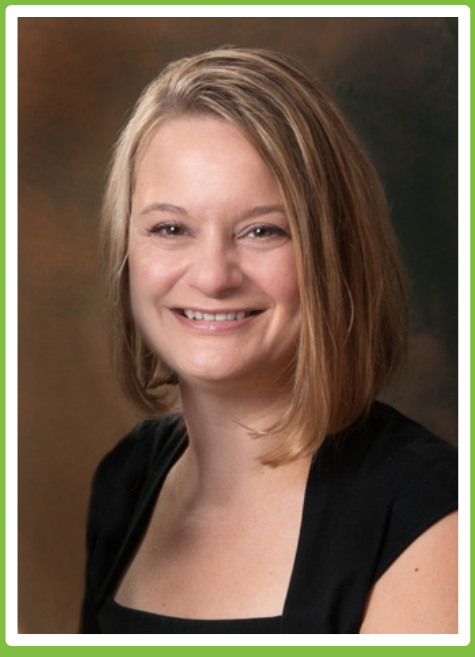
Keynote speaker



Dr. Lisa Monteggia is the Barlow Family Director of the Vanderbilt Brain Institute and Professor of Pharmacology at Vanderbilt University. Dr. Monteggia completed her undergraduate studies at the University of Illinois at Urbana-Champaign, receiving a B.S. in Microbiology and then a M.S. in Biology. Dr. Monteggia then worked for several years in a pharmaceutical company where she was promoted to the level of Scientist. Concurrently, Dr. Monteggia attended the Chicago Medical School receiving a Ph.D. in Neuroscience and working with Dr. Marina Wolf in the area of drug abuse. Dr. Monteggia then moved to Yale University to complete a fellowship under the guidance of Dr. Eric Nestler in the area of molecular psychiatry. Dr. Monteggia joined the faculty at UT Southwestern Medical Center where she held the Ginny and John Eulich Professorship in Autism Spectrum Disorders and was Professor of Neuroscience at UT Southwestern Medical Center before moving to Vanderbilt in 2018. The main focus of the Monteggia laboratory is on the molecular and cellular mechanisms that underlie psychiatric disorders, with a specific focus on neurotrophic factors, epigenetic mechanisms, and synapse function.

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Presentation awards

Trainee platform presentations will be selected from the submitted abstracts by a panel of judges. Awards will be given for both platform and poster presentations.

Platform (oral) presentation awards:
1st place - $500
2nd place - $250
3rd place - $100

Poster presentation awards:
1st place - $500
2nd place - $250
3rd place - $100

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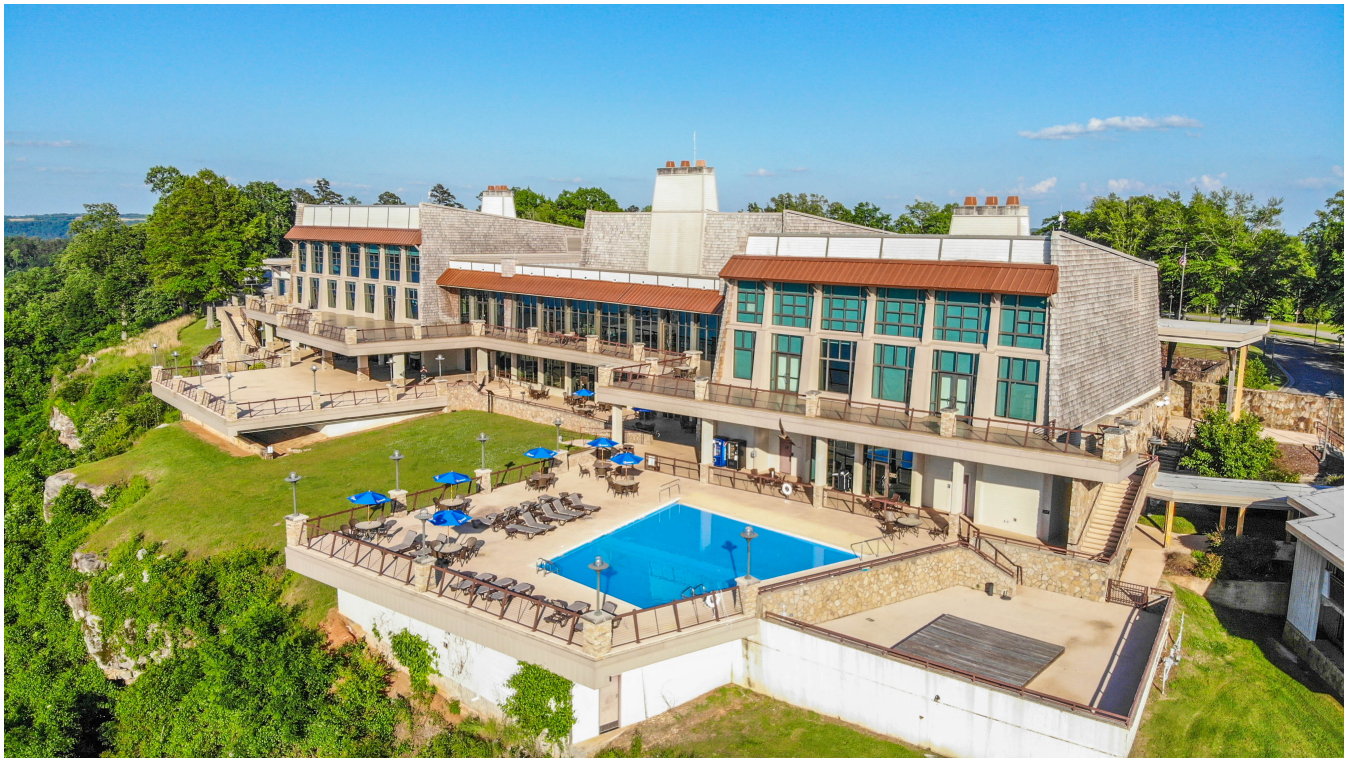
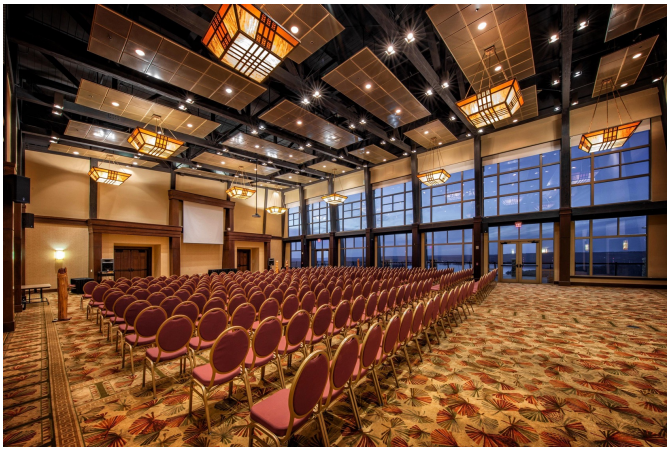
Location

The 2022 CNC Retreat will be held at the Lake Guntersville State Park Lodge and Convention Center in Guntersville, Alabama.

Lake Guntersville State Park Lodge and Convention Center
1155 Lodge Dr. Guntersville, AL 35976
(256) 505-6621
Map
Website





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Poster session (Wednesday, Sept. 14 5:30pm)

1. **Experiences of Discrimination Predict Current Substance Usage, Depressive Symptoms and Insomnia Symptoms in People with HIV**
   Joanna M. Hobson, BS, Shannon R. Gilstrap, BS, S. Justin Thomas, PhD, Shameka L. Cody, PhD, AGNP-C, Burel R. Goodin, PhD

2. **Impact of pharmacological manipulation of Kv7 (KCNQ) channels on MSN excitability and cultured striatal neuron activity**
   Emily T. Jorgensen, Jeremy J. Day

3. **Application of Transfer Learning Drug Repurposing for Glioblastoma**
   Jennifer L. Fisher, Vishal Oza, PhD, Brittany N. Lasseigne, PhD

4. **Abnormalities in glycosphingolipid degradation caused by progranulin deficiency**
   Nicholas Boyle, Andrew Arrant, Trae Dunn, Erik Roberson

5. **Neuronal transduction of AAV-Progranulin rescues pro-inflammatory microglial morphology in a mouse model of progranulin deficiency**
   Shreya N. Kashyap, Katherine I. Wilson, Andrew E. Arrant, Erik D. Roberson

6. **Alzheimer's disease risk factor BIN1 in parvalbumin interneurons**
   Natalie Davis, Yuliya Voskobiynyk, Robert Phillips, Nick Cochran, Erik Roberson

7. **Neuropeptide Y Acts on Y1 Receptors in Temporoammonic-CA1 Synapses**
   Cortes M.A., Li Q., Bartley A.F., Davis T.R., Cunningham S.E., Perez P.J., Dobrunz L.E.

8. **Multimerization of TREM2 is impaired by Alzheimer's disease–associated variants**
   Hunter B Dean, Rory A Greer, Thomas J Brett, Yuhua Song, Erik D Roberson

9. **The small-molecule TrkB ligand LM22-A4 improves dendritic spine phenotypes in male and female Rett mice**
   D MEDEIROS, K A-BAYLON, HE BETANCOURT, EC MILLER, CA CHAPLEAU, H ROBINSON, T YANG, F LONGO, W LI, LP-MILLER

10. **The Role of Syntaxin 1 Phosphorylation in The Reverse Transport of Dopamine**
    Samuel Mabry, Aparna Shekar, Mary Cheng, Daniele Zanella, Jenny Aguilar, Shalin Patel, Angela Carter, Ivet Bahar, Heiner Matthies, Aurelio Galli

11. **The role of cell-cell communication in Alzheimer's disease**
    Tabea M. Soelter, Vishal H. Oza, T.C. Howton, Brittany N. Lasseigne

12. **Alpha-synuclein Inclusions in the Amygdala**
    Nolwazi Z. Gcwensa, Dreson L. Russell, Kahliah Long, Dr Laura Volpicelli-Daley

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Poster session (Wednesday, Sept. 14 5:30pm)

13. **The dorsal peduncular cortex functions as a novel fear-promoting brain region**
    Zephyr Desa and Dr. Kirstie A Cummings

14. **Reelin protein marks cocaine-sensitive Drd1+ medium spiny neurons and modulates the behavioral response to cocaine**
    Kasey L. Brida, Robert A. Phillips III, M. Natalie Davis, Kelsey Montgomery, Kristen R. Maynard, Keri Martinowich, & Jeremy J. Day

15. **Circadian regulation of dentate gyrus excitability mediated by G-protein signaling**
    Gonzalez JC; Lee H; Vincent AM; Hill AL; Goode KL; King GD; Gamble KL; Wadiche JI; Overstreet-Wadiche L

16. **Dementia with Lewy Body amplified α-synuclein seeds drive synuclein related neuropathology in a transgenic mouse model**
    Henrique de Oliveira Amaral, Marissa Menard, Laura Volpicelli Daley, Ashley Harms, David G. Standaert, Connor Bargar, and Shu Chen

17. **LRRK2 kinase inhibition protects dopaminergic neurons from Parkinson's disease-associated environmental toxicants**
    Neda M. Ilieva, Anantha Korrapati, Ikjoon Shin, Briana de Miranda

18. **Novel Camera Based Tool for Characterization of Drosophila Amphetamine Preference**
    David P Saleeby, Yanqi Zhu, Samuel J Mabry, Mark Bolding, Angela M. Carter, Aurelio Galli

19. **Identification and validation of a novel Pdyn enhancer**
    Robert A. Phillips III, Brooke Walker, David Reid, Lara Ianov, Jeremy J. Day.

20. **GABAA receptor-mediated inhibition suppresses Long-term Potentiation in adult-born dentate granule cells**
    W. M. Kennedy, A. H. Lee, J. I. Wadiche, L. Overstreet-Wadiche

21. **Glutamate "spill-in" mediates afferent convergence to common postsynaptic receptors**
    Reagan Pennock

22. **Changes in electrophysiological properties of Nav1.8Cre/YFP trigeminal afferent neurons in mice with oxaliplatin-induced trigeminal neuropathic pain**
    Saurav Gupta, Ryan J. Vaden, Akihiro Yamada, Jennifer Ling, Jianguo G. Gu

23. **A network of Phosphatidylinositol-4,5-biphosphate binding sites on the dopamine transporter regulates AMPH-induced behavior in Drosophila melanogaster**
    Yanqi Zhu, Jenny Aguilar, Samuel J. Mabry, Heinrich J. G. Matthies, Aurelio Galli

Poster session (Wednesday, Sept. 14 5:30pm)

24. **Dopamine from Purkinje cells regulates cerebellum-dependent behaviors through Bergmann glial cells**
Chang Li, Natalie B Saliba, Hannah Martin, Nicole A Losurdo, Kian Kolahdouzan, Riyan Siddiqui, Wei Li

25. **The environmental pollutant trichloroethylene induces cellular senescence and neuroinflammation as potential mechanisms of Parkinson's neurodegeneration**
Ashley Adamson, Julia Langman, Briana De Miranda

26. **Bariatric surgery and bile acids modulate central cocaine reward**
Daniele Zanella, Nicholas K. Smith, J. Andrew Hardaway, Anna Marie Buchanan, Angela M. Carter and Aurelio Galli

27. **Connectivity fingerprints as a tool for investigating plasticity changes in central vision loss**
Rachel Chua, Leland Fleming, Kristina Visscher

28. **Social ranking is disrupted in Rett syndrome mice**
Acevedo-Triana, C., Pozzo-Miller, L.

29. **Defining compensation after central vision loss, and relating it to functional connectivity in the visual cortex**
Elam Cutts, Marcello Maniglia, Leland L. Fleming, Kristina Visscher

30. **Exploring Nonsense Suppression as a Treatment for Rett Syndrome**
Xin Xu, Kim M. Keeling, Ming Du, Josh Echols, Bob Bostwick, Corinne Augelli-Szafran, Micah Simmons, Yanhong Yin, Jonathan Merritt, Jeffrey Neul, Qiang Chang, Rita M. Cowell, Mark Suto, David M. Bedwell, Lucas Pozzo-Miller

31. **Brain temperature elevations as biomarker in temporal lobe epilepsy**
Ayushe A. Sharma, Rodolphe Nenert, Adam Goodman, Jerzy P. Szaflarski

32. **Sex differences in socioemotional behavior and changes in ventral hippocampal gene expression across aging**
Nina Baumgartner, Mandy Biraud, Elizabeth Lucas

33. **Heterozygosity of the GBA1 L444P mutation enhances hippocampal alpha-synuclein inclusions and Glucosylsphingosine while reducing cognitive function**
Casey Mahoney-Crane Co Authors: Megha Viswanathan, Dreson Russell, Jennifer Freire, Sai Sumedha Bobba, Rachel A.C. Curtiss, Nathan G. Hatcher , Sean M. Smith, Jacob N. Marcus PhD., and Laura A. Volpicelli-Daley Ph.D

Poster session (Wednesday, Sept. 14 5:30pm)

34. **Characterizing a unique Oprm1 expressing neuronal population in the rat nucleus accumbens**
Emma Andraka, Kasey L. Brida, Robert A. Phillips III, & Jeremy J. Day

35. **Transcription factor 4 coordinates developmental and dopamine-related epigenetic signatures in striatal neurons**
Nathaniel J. Robinson, Jenna E. Hinds, Saige Thompson, Jeremy J. Day

36. **Endogenous neuropeptide Y release attenuates long-term potentiation in the temporoammonic pathway of hippocampus**
Qin Li, Aundrea F. Bartley, Megan R. Hu, Lynn E. Dobrunz

37. **Novel Mouse Models to Define the Role of Sialylation in the Developing and Neoplastic Brain**
Ethan Vallely, Sajina GC, Lucas Rickenbacker, Kaysaw Tuy, Susan Bellis, Anita Hjelmeland

38. **Determining optimal clustering of co-activation patterns in resting-state and task data**
Paul Stewart, Kristina Visscher, Anat Grinfield, Daniel Goldberg-Zimring, Swetha Ravichandran

39. **Sex-dependent effect of NPY overexpression on hippocampus- and prefrontal cortex-dependent behaviors in mice**
Taylor R. Davis, Aundrea F. Bartley, Lynn E. Dobrunz

40. **Examining layer-specific functional connections using high field MRI: applications to studying neural changes after central vision loss**
Pinar Demirayak, Dawn DeCarlo, Gopikrishna Deshpande, Thomas Denney, Kristina M. Visscher

41. **Mechanism for Microbial Regulation of Psychostimulant Abuse**
Mabry SJ*, Cao X*, Patel S, Elam A, Zhu Y, Saleeby DP, Wu H, Galli A, Carter AM

42. **Neural control of disconjugate eye movements in the primate: Effects of electrical microstimulation**
Julie Quinet, Kevin Schultz, Paul J May, Paul D Gamlin

43. **Aging, PAI-1, astrocyte senescence, and Alzheimer's disease**
Chun-sun Jiang, Lee-Way Jin, Tapasi Rana, Hong Wei Qin, Susan A. Farr, John E. Morley, Erik D. Roberson, Rui-Ming Liu