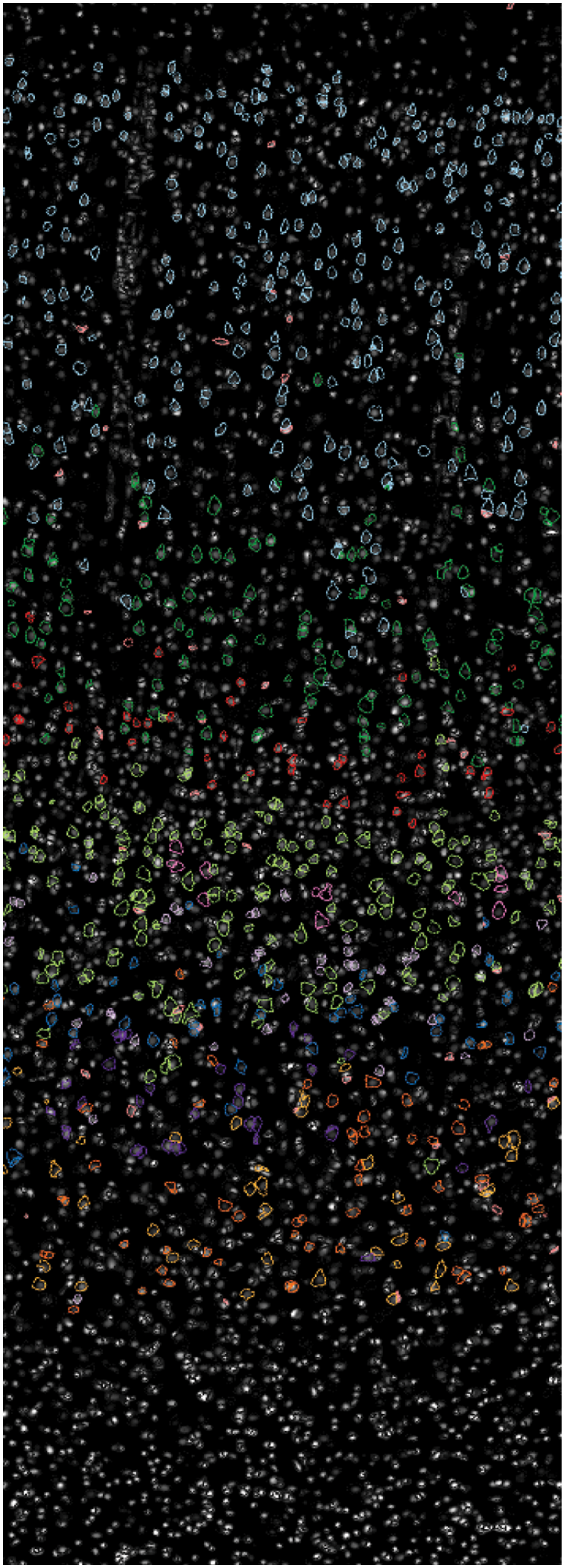

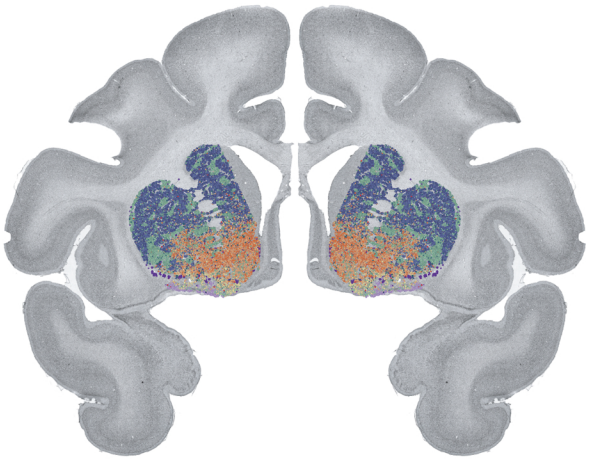

BRAIN-STORRM NETWORK

presents

NEUROSCIENCE BOOT CAMP

2025

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AGENDA

Day 1 – August 20, 2025

9:00	Arrival, Badge Program Pickup
9:15 – 9:45	Introduction to Fundamental of Neuroscience Bootcamp and Instructors *Bill Stauffer*
9:45 – 11:00	Biophysics of Neurons – Action Potentials And Synaptic Transmission *Andrew Fuglevand*
11:00 – 11:30	Practical Demonstration: Recording From Muscles
Lunch	
1:00 – 2:15	The Importance of Cell Types - Dopamine and Learning *Bill Stauffer*
2:15 – 3:15	Hands On Training: Single Cell Analysis *Ghada Adbelhady*
Flex/Break	
3:30 – 4:15	Neural Circuits and Cell Types *Andreea Bostan*
Flex/Break	
4:30 – 6:00	Gross Anatomy of the Human Brain I *Kati Gothard*
Dinner	
7:00 – 8:00	Cambridge-style Supervisions *Ghada, Tao, Willa, Rachel*

AGENDA

Day 2 – August 21, 2025

9:00 – 10:15	Motor Systems *Andrew Fuglevand*
10:15 – 11:30	Limbic, Emotion, and Social Systems *Katalin Gothard*
Lunch	
12:30 – 1:30	Graduate Student Research Presentations
Flex/Break	
1:45 – 3:00	Cognitive Systems *Bill Stauffer*
3:00 – 3:45	Practical – Limbic/Cognitive Systems
4:00 – 6:00	Gross Anatomy of the Human Brain II *Kati Gothard*
Dinner	
7:00 – 8:00	Cambridge-style Supervisions *Ghada, Tao, Willa, Rachel*

AGENDA

Day 3 – August 22, 2025

9:15 – 10:00	Intro to Parkinson's Disease (PD) pathophysiology *Andreea Bostan*
10:15 – 10:45	Molecular Changes in PD *Ghada Adbelhady*
Flex/Break	
11:00 – 12:00	AAV Biology and its Applications *Rachel Tittle*
Lunch (& Brainstorming)	
1:00 – 2:30	Brainstorming Sessions about Cell Type Specific AAV Approaches to Gene Therapy for PD. Prepare Student Presentations Each Group Led by 1 Instructor / TA
2:30 – 5:00	Student Presentations from each group
Closing Dinner and Celebration	

Meet the Instructors

In Alphabetical Order

Instructor

University of Pittsburgh

Andreea C. Bostan, Ph.D. is a Research Assistant Professor of Neurobiology at the University of Pittsburgh. She investigates the anatomical and functional organization of neural circuits that support complex motor and cognitive functions. Her work has mapped networks linking the basal ganglia, cerebellum, and cerebral cortex, revealing pathways that challenge and expand traditional views of their interactions. Dr. Bostan is currently working on advancing cell type–specific tracing techniques to dissect neural circuits with unprecedented precision and uncover how they are disrupted in disorders such as Parkinson's disease.

Instructor

University of Arizona

Andrew Fuglevand, Ph.D. is a Professor of Physiology & Neuroscience at the University of Arizona. He received his PhD from the University of Waterloo, Canada and did post-doctoral training at the University of Arizona and at Yale University. His lab focusses on how the brain and spinal cord orchestrates the activities of multiple muscles in the elaboration of movement. His research is supported by the National Institutes of Health. He was the recipient of the Delsys Prize for Innovation in Electromyography and has received teaching recognition awards at the University of Arizona. He is the author of the textbook "Introduction to the Neurophysiology of Movement".

Meet the Instructors

In Alphabetical Order

Katalin Gothard, MD, Ph.D. obtained her M.D. in Romania, followed by postgraduate training in neurosurgery. After receiving her Ph.D. in Neuroscience, she continued her training at the National Primate Research Center at UC Davis, where she began her research on the neurophysiology of the amygdala and the socio-emotional behavior of macaques. She pioneered methods of monitoring brain activity in the context of natural social behaviors, tracking simultaneously brain activity, observable social behaviors, and associated autonomic changes. Measuring in real-time brain-body interactions helps understand health and disease from the perspective of the individual, whose organ-level functions and mental-emotional life are in constant conversation.

Instructor

University of Arizona

Instructor

University of Pittsburgh

William Stauffer, Ph.D. is an Assistant Professor in the Department of Neurobiology at the University of Pittsburgh. His research focuses on the neurophysiology of reward learning and decision making. He pioneered techniques for cell-type–specific expression of optogenetic actuators in nonhuman primates, using them to demonstrate that dopamine neuron activation drives value-based learning. The Stauffer Lab aims to uncover the cell-type–specific computations underlying deliberation, inference, and reasoning, with a particular emphasis on identifying cell types in the cognitive and reward centers of the primate brain and developing targeted tools for circuit-level investigations.

Meet the Teaching Assistants

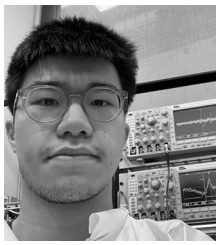
In Alphabetical Order

Ghada Abdelhady, MSc. is a fourth-year PhD student in the Systems Neuroscience Program (PSN), Neuroscience Institute at Carnegie Mellon University under the mentorship of Dr. Andreas Pfenning. Her research lies at the intersection of computational genomics and neurobiology, with a focus on characterizing cell-type specificity, pushing towards the prioritization of candidate markers to be targeted for gene therapy. Currently, Ghada is working on mapping spatially resolved cell type profiles on functionally distinct regions in the primate striatum. This work aims to identify molecular access points that can be targeted using cell type-specific enhancer driven AAVs, enabling precise modulation of neural circuits. Her approach facilities the dissection of cell-type-specific contributions to striatal function and pathology.

TA

University of Pittsburgh

TA



University of Pittsburgh

Tao Hong, B.A. is a Graduate Student in the Program of Neural Computation at Carnegie Mellon University. He is part of William Stauffer's Neurobiology Lab at the University of Pittsburgh. He is a behavioral neurophysiologist with an undergraduate background in pure mathematics at Oberlin College. Tao Hong is interested in the neural basis of economic decision making and higher-level cognition. He currently works to reveal the neural underpinning of combinatorial reasoning under computational complexity in nonhuman primates.

Meet the Teaching Assistants

In Alphabetical Order

Willa Kerkhoff, B.S. is a PhD student in the Stauffer Lab at the Center for Neuroscience at the University of Pittsburgh (CNUP). Her prior work includes studies of multisensory integration in humans, dopamine dynamics in rodents, and the conserved transcriptomic identity of cortical projection neurons across rodents and non-human primates. Currently, her doctoral research focuses on uncertainty and value representation in the primate dorsolateral prefrontal cortex (dlPFC), integrating cell type characterization, AAV tool development, and neurophysiological recordings during decision-making under ambiguity. Her research aims to uncover how specific cell types and circuits execute the fundamental computations that guide decision-making.

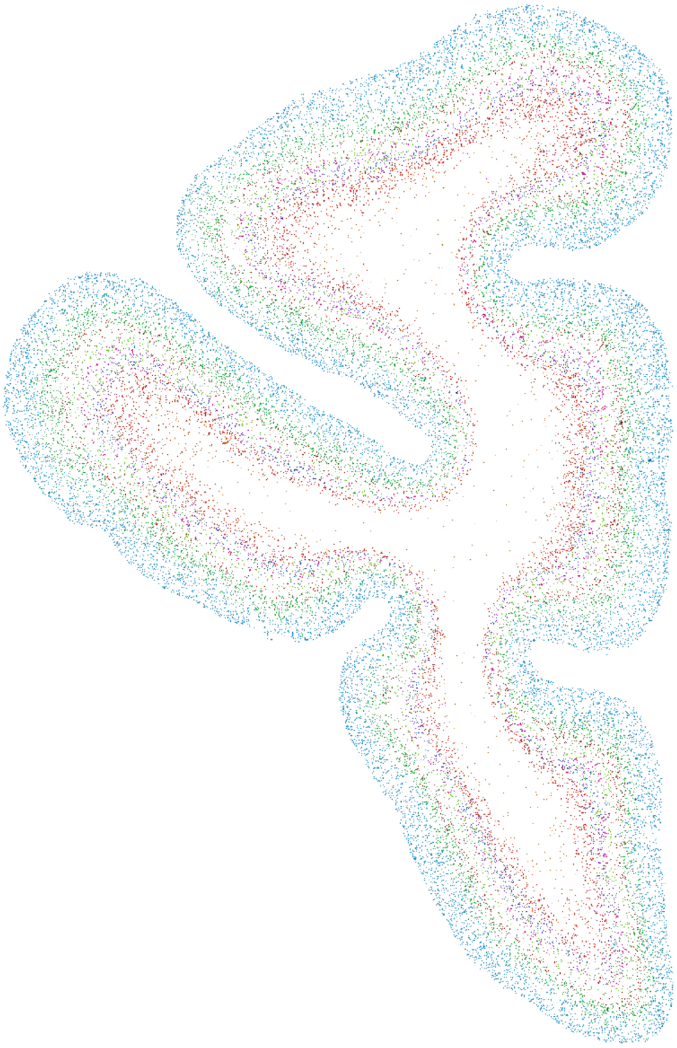
TA

University of Pittsburgh

TA

University of Pittsburgh

Rachel K. Tittle, Ph.D. is a Senior Research Scientist in William Stauffer's Neurobiology Lab at the University of Pittsburgh. Her research background includes elucidating the structure and regulation of neurotransmitter-gated ion channels, defining epigenetic pathways in vertebrate lens differentiation, and identifying genetic and environmental contributors to human congenital disease. Dr. Tittle currently performs project planning and data analysis to interrogate the function of neural circuits using cell type-specific enhancer-AAVs in nonhuman primates.



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