Hosted by:
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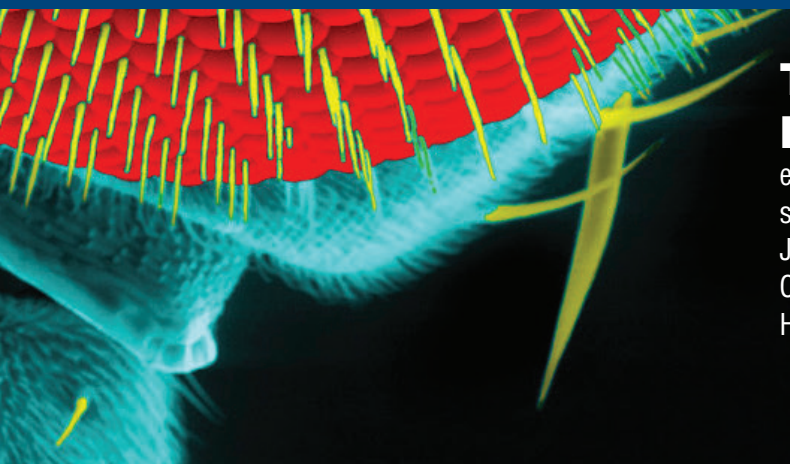
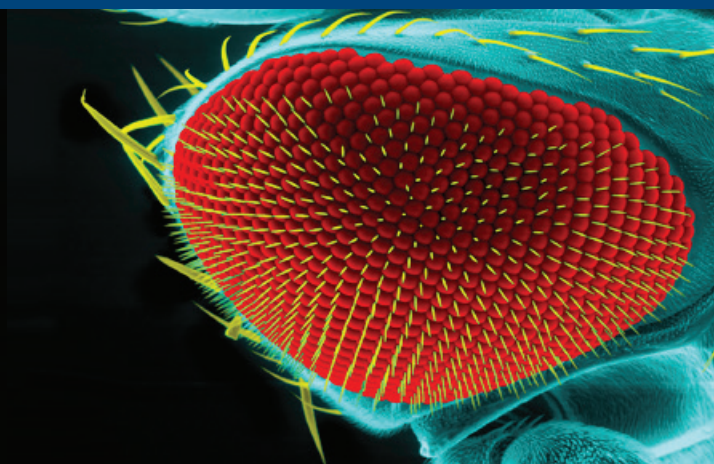
FAU
JUPITER LIFE SCIENCE INITIATIVE
Florida Atlantic University

Flies on the Beach 2017

Neurobiology of Drosophila Symposium



The Jupiter Life Science Initiative is aimed at building educational and research capabilities in the life sciences on FAU's John D. MacArthur Campus in Jupiter, and is a collaborative effort between the Charles E. Schmidt College of Science and the Harriet L. Wilkes Honors College.



Flies on the Beach 2017

May 12

9:00-9:45	Registration (Lobby outside AD room 119)
	Program: (All talks in AD room 119)
9:45-10:00	Opening Remarks, Rod Murphey and Ellen Goldey
10:00-11:00	Dan Tracey
11:00-12:00	Michelle Arbeitman
12:15-1:30	Lunch (FAU cafeteria)
1:30-2:30	Tzumin Lee
2:30-3:30	Pete Hollenbeck
3:30-4:00	Coffee Break
4:00-5:00	Leslie Griffith

May 13

9:30 – 10:00	Registration (Lobby outside AD room 119)
	Trainee Talks (AD room 119)
10:00 – 10:10	Welcoming Remarks
10:10 – 12:00	Trainee Talks Session I
	"Systematic analysis of microRNAs in Drosophila epithelial tumors reveals tumor-enhancing, tumor-suppressing, and passenger miRNAs" – Zhiqiang Shu, Deng lab, FSU
	"Logic governing molecular interactions at the tip of the aCC dendritic processes" – Brandon Buonaiuto, Chiba lab, University of Miami
	"A novel role for Drosophila Amyloid Precursor Protein in regulating axonal retrograde trafficking of selective cargoes" – Tyrone Penserga, Godenschwege lab, FAU
	"Locomotor activity and grooming in a Drosophila model of Neurofibromatosis type 1" – Lanikea King, Tomchik lab, Scripps Florida
	"Assessing locomotion and survival of D. melanogaster in an age-related hypoxia tolerance assay" – Stephanie Kelly, Dawson-Scully lab, FAU
12:00 – 1:00	Lunch (FAU cafeteria)
1:00 – 2:15	Poster Session (SR room 149)
2:15 – 2:30	Coffee break (Lobby outside AD room 119)
2:30 – 3:30	Trainee Talks, Session II (AD room 119)
	"Sucralose suppresses food intake" – Scarlett Park, Ja lab, Scripps Florida
	"Sleep-dependent modulation of metabolic rate in Drosophila" – Bethany Stahl, Keene lab, FAU
	"Machine learning: A powerful tool for analyzing Drosophila behaviors" – Bing Qiao, Syed lab, University of Miami
3:30 – 3:45	Break
3:45 – 4:45	Trainee Talks, Session III (AD room 119)
	" Stromalin Developmentally Limits Adult Learning" – Anna Phan, Davis lab, Scripps Florida
	"TBA" – Kelsey Wilson, Binninger lab, FAU
	"Spermine Synthase Deficiency Causes Lysosomal Dysfunction and Oxidative Stress in Snyder-Robinson X-linked Intellectual Disability Syndrome" – Chong Li, Zhai lab, University of Miami
4:45 – 5:00	Wrap up
5:00 – 8:00	Pizza and informal screening of The Fly Room movie (Scripps Florida, Building B, room 159).

Dan Tracey, PhD

Linda and Jack Gill Chair
and Associate Professor of Biology

A painless operation—what can fruitflies teach us about pain pathways?

Research in the Tracey laboratory aims to understand the general principles that govern the specification and function of neuronal circuits. We study this problem using the fruitfly Drosophila melanogaster whose relatively simplified nervous system must perform many of the same computations that are carried out by our own. Despite its simplified brain, Drosophila perform an array of complex behaviors. Powerful genetic tools of Drosophila enable the dissection of neural circuits with a precision that is not matched in any other model system. Genetically encoded calcium sensors allow us to measure the neuronal activity of identified neurons while neuronal silencers and activators allow us to determine the behavioral consequences of the same activity. We are using the fly model to identify circuits and genes that function in nociception which is the sensory input involved in pain signaling. In addition, we are attempting to identify the molecules that are used in neurosensory mechanotransduction which underlies our sense of touch.

Leslie Griffith, M.D., PhD

Nancy Lurie Marks Professor
of Neuroscience, Brandeis University

Regulation of CaMKII localization and function by 3'UTR-dependent processes

From a human health perspective, gaining a better understanding of the biology underlying complex behaviors such as sleep and memory in Drosophila will provide insights which can be applied to the more complex mammalian brain. The lab works at three different levels: organismal (behavior, genetics), neuronal (electrophysiology, live fluorescence imaging), and biochemical (phosphorylation, gene expression, ion channel physiology). Our long-term goal is to integrate information from all of these approaches to build detailed biochemical and cellular models of how organisms generate behaviors in response to external and internal cues.

Michelle Arbeitman. PhD

Associate Professor, Florida State
University College of Medicine

Genes to behavior: genome-wide studies of reproductive behaviors

Understanding how complex behaviors are specified at a molecular-genetic level is a major unsolved question in biology, for which we have very little understanding in any organism. The lab focuses on unlocking the molecular mechanisms used to specify sexual dimorphism in the nervous system that underlies differences in male and female reproductive behaviors using fruit flies and mice as a model.

Peter Hollenbeck, PhD

Professor of Biology, Purdue University

The axonal transport and turnover of mitochondria in Drosophila models of Parkinson's disease

Maintenance of healthy mitochondria is crucial in cells, such as neurons, with high metabolic demands, and dysfunctional mitochondria are thought to be selectively degraded. But we still know relatively little about how the life cycle of neuronal mitochondria is organized in time and space. We have been testing hypotheses about mitochondrial quality control in the fly nervous system vivo and find that mitochondrial traffic, fission-fusion, metabolic state and turnover are regulated with surprising independence from one another.

Tzumin Lee, M.D., PhD

Group Leader, Janelia Farm/Howard
Hughes Medical Institute

Wiring the Drosophila brain with individually tailored neural lineages

We explore the Drosophila brain from the perspectives of cell lineage. We have uncovered that the adult Drosophila central brain is composed of ~100 pairs of individually tailored neuronal lineages. Examining the preprogrammed neuronal lineages offers an exceptional opportunity for understanding how the genome can encode a complex brain and even how evolution might work to build a different brain.