Hosted by:
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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
Neurobiology of Drosophila Symposium
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

9:30 - 10:00: Registration (Lobby outside 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, Dang lab, FSU
- "Logic governing molecular interactions at the tip of the aC dendritic processes" – Brandon Buonaiuto, Chiba lab, University of Miami
- "A novel role for Drosophila Amylloid Precursor Protein in regulating axonal retrograde trafficking of selective cargoes" – Tyrone Peneronga, Godenschwege lab, FAU
- "Locomotor activity and grooming in a Drosophila model of Neuroilmobromatosis type 1" – Lankeea King, Tomchik lab, Scripps Florida
- "Assessing locomotion and survival of D. melanostigaster 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 - 3:30: Coffee break (Lobby outside AD room 119)

3:30 - 5:00: Trainee Talks, Session II (AD room 119)
- "Sucroseolose suppresses food intake" – Scarlett Park, Ja lab, Scripps Florida
- "Sleep-dependent modulation of metabolic rate in Drosophila" – Kelsey Wilson, Brininger lab, FAU
- "Machine learning: A powerful tool for analyzing Drosophila behaviors" – Bing Qiao, Syed lab, University of Miami

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
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 only 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 trafficking, fusion-fission, 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.