

Neuronal Development, Synaptic Function & Behavior *C. elegans* Topic Meeting Conference Program

Sunday, June 27th

12 noon – 7:30 pm	Registration Check-In	Annex
12 noon – 7:30 pm	Poster Set-up	Great Hall/Reception Room
5:00 pm – 7:30 pm	Opening Reception	Tripp Commons
7:30 pm – 10:15 pm	Oral Session #1 (Abstracts 1-8) Sensory Function Chairs: Max Heiman and Hang Lu	Union Theater
7:30 pm	Opening Remarks – Organizers	
7:40 – 8:10	Invited Lecturer: Miriam Goodman Sensory Mechano-electrical Transduction Channels in <i>C. elegans</i>	
8:10	Alexander Gottschalk Optogenetics-assisted Functional Analysis of Harsh Touch Nociception Mediated by PVD Neurons in <i>C. elegans</i>	(Lab: Gottschalk)
8:25	Takashi Murayama Alkaline pH Sensation Mediated by a <i>Caenorhabditis elegans</i> Transmembrane Guanylyl Cyclase	(Lab: Maruyama)
8:40	Meredith Ezak <i>C. elegans</i> TRPV Channels Function in a Modality-Specific Pathway to Regulate Response to Aberrant Sensory Signaling	(Lab: Ferkey)
8:55 – 9:15	Refreshment Break	Union Theater Lobby
9:15	Samuel Chung The ASJ cell body, dendrite, and axon play distinct roles in dauer entry and exit	(Lab: Mazur)
9:30	Elissa Hallem A Sensory Code for Host Seeking in Parasitic Nematodes	(Lab: Sternberg)
9:45	Bryn Gaertner The Role of Natural Genetic Variation in Shaping Thermosensory Behavior	(Lab: Phillips)

10:00 **Maxwell Heiman** (Lab: Shaham)
Electron Microscopic Reconstruction of Sensory Dendrite
Formation

Monday, June 28th

7:00 am – 7:30 pm **Registration Continues** **Annex Room**

7:30 am – 9:00 am **Breakfast Buffet** **Tripp Commons**

9:00 am – 12:30 pm **Oral Session #2 (Abstracts 9-19)** **Union Theater**
Synapse Formation and Function
Chairs: Queelim Ch'ng and Thomas Boulin

9:00 – 9:30 **Invited Lecturer: Jean-Louis Bessereau**
Spatial control of synaptic transmission at a cholinergic synapse in
C. elegans

9:30 **Michael Jensen** (Lab: Maricq)
Wnt-Mediated Ror RTK Signaling Is Specifically Required for ACR-
16 Receptor Localization at the Neuromuscular Junction

9:45 **Thomas Boulin** (Lab: Bessereau)
MOLO-1: a novel acetylcholine receptor-associated protein that
modulates cholinergic transmission at neuromuscular junctions in
C. elegans

10:00 **Piya Ghose** (Lab: Rongo)
EGL-9, CDK-5, and LIN-10 Regulate Glutamate Receptor
Trafficking in a HIF-Independent Manner: A Novel Response
Mechanism to Hypoxic Insult

10:15 **Alexander Gottschalk** (Lab: Eimer)
Analysis of Synaptic Ultrastructure after Optical Hyperstimulation

10:30 – 11:00 **Refreshment Break** **Union Theater Lobby**

11:00 **Belinda Barbagallo** (Lab: Francis)
A Dominant Mutation in a Neuronal Acetylcholine Receptor
Subunit Leads to Motor Neuron Degeneration in *C. elegans*.

11:15 **Nooreen Dabbish** (Lab: Raizen)
Reduced GABAergic synaptic transmission during lethargus

11:30 **Andrew Bellemer** (Lab: Koelle)
Two Types of Chloride-extruding Transporters are Required for
GABA_A Receptor-mediated Inhibitory Neurotransmission in
C. elegans

11:45	Geetika Kalloo Genetic and Pharmacological Analysis of Synaptic Function in <i>smn-1</i> Animals	(Lab: Hart)
12:00	Joori Park A Novel Role for UNC-40/DCC and UNC-6/Netrin in Synaptic Partner Choice	(Lab: VanHoven)
12:15	Brock Grill The PP2C α/β phosphatase, tag-93, regulates axon termination and synapse formation in <i>C. elegans</i>	(Lab: Grill)
12:30 pm – 2:00 pm	Luncheon Buffet	Tripp Commons
2:00 pm – 5:30 pm	Oral Session #3 (Abstracts 20-30) Axon Growth and Regeneration Chairs: Heather Van Epps and Marc Hammarlund	Union Theater
2:00 – 2:30	Invited Lecturer: Erik Lundquist Cytoskeletal regulation of growth cone lamellipodia and filopodia in axon pathfinding	
2:30	Leonie Kirszenblat Wnt signals and Frizzled receptors regulate dendrite formation in <i>C. elegans</i>	(Lab: Hilliard)
2:45	Rafael Demarco An Axon's Journey to Find Its Path – How TIAM-1, a GEF for Rac GTPases, Controls Axon Pathfinding Downstream of CDC-42	(Lab: Lundquist)
3:00	Adam Norris Watching Neurons Grow: UNC-6/Netrin, UNC-40/DCC and UNC-5 Affect in vivo Growth Cone Morphology and Dynamics of Circumferential Neurons	(Lab: Lundquist)
3:15	Jitendra Kumar The <i>C. elegans</i> kinesin motor UNC-104 is degraded upon loss of specific binding to cargo	(Lab: Koushika)
3:30 – 4:00	Refreshment Break	Union Theater Lobby
4:00	Qun Zheng <i>C. elegans</i> SAM-4 is a Novel Conserved Protein Interacting with UNC-104 to Transport Synaptic Vesicles	(Lab: Nonet)
4:15	Kenneth Miller Kinesin Acts with JIP3 and Dynein to Restrict the Flow of Golgi and Endosomal Organelles into Axons	(Lab: Miller)
4:30	Christopher Gabel The Core Apoptotic Executioner Proteins CED-3 and CED-4 Promote Neuronal Regeneration in <i>Caenorhabditis elegans</i>	(Lab: Driscoll)

4:45	Rachid El Bejjani Notch signaling inhibits axon regeneration	(Lab: Hammarlund)
5:00	Brent Neumann Axonal Regeneration Proceeds Through Axonal Fusion in <i>C. elegans</i> Neurons	(Lab: Hilliard)
5:15	Paola Nix Antagonistic Control of Axon Regeneration by Multiple MAPK Pathways	(Lab: Bastiani)

5:30 pm – 7:00 pm **Dinner Buffet** **Tripp Commons**

7:00 – 8:30 pm **Keynote Lecture: Oliver Hobert (Abstract 31)**
Introduction by Claire Bénard
Terminal selectors: how the worm builds its nervous system

8:30 pm – 11:30 pm **Poster Session #1 & Refreshments**
(EVEN numbered posters present)

Great Hall/Reception Room (4th floor)
Axon outgrowth and pathfinding (65-77)
Circuits and Behavior: (78-118)
Neural cell differentiation: (119-123)
Neural diseases and regeneration: (124-136)
Neurobiology of other nematodes: (137-142)
Sensory function: (143-159)
Synaptic function and modulation: (160-187)
Synaptogenesis: (188-191)
Technical advances: (192-204)

Tuesday, June 29th

7:30 am – 9:00 am **Breakfast Buffet** **Tripp Commons**

9:00 am – 12:30 pm **Oral Session #4 (Abstracts 32-42)**
Circuits I: Behavior and Modulation
Chairs: Dan Chase and Miri VanHoven

9:00 – 9:30 **Invited Lecturer: Richard Komuniecki**
Monoaminergic/peptidergic signaling interactions in the modulation of sensory-mediated aversive responses: useful models for both anthelmintic chemotherapy and human behavior

9:30 **Yuichi Iino** (Lab: Iino)
Ascaroside Pheromones Regulate Olfactory Plasticity through the SNET-1 Peptide

9:45	Sreekanth Chalasani Neuropeptide feedback modifies odor induced responses in <i>Caenorhabditis elegans</i> olfactory neurons	(Lab: Bargmann)
10:00	Joy Alcedo A Neuromedin U Receptor Acts with the Sensory System to Modulate Food Type-Dependent Effects on <i>C. elegans</i> Lifespan	(Lab: Alcedo)
10:15	Gareth Harris A Complex Food-Signal Modulates Aversive Behavior In <i>C. elegans</i>	(Lab: Komuniecki)
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10:30 – 11:00	Refreshment Break	Union Theater Lobby
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11:00	Jamie Donnelly Tyraminerpic Inhibition of GABA Release Facilitates Turning Behavior in the <i>C. elegans</i> Escape Response	(Lab: Alkema)
11:15	Andrés Vidal-Gadea Biogenic amines mediate transition between crawling and swimming in <i>C. elegans</i>	(Lab: Pierce-Shimomura)
11:30	Heonick Ha Distinct Neural Circuits Regulate Aversive Olfactory Learning in <i>Caenorhabditis elegans</i>	(Lab: Zhang)
11:45	Nathan Schroeder Branching out: Extensive remodeling of IL2 neurons during the dauer stage	(Lab: Barr)
12:00	Komudi Singh Notch Signaling Regulates Lethargus Quiescence and Behavioral Adaptation to Stress	(Lab: Hart)
12:15	Akitoshi Inoue The P38/JNK MAP kinase pathway regulates forgetting in <i>Caenorhabditis elegans</i>	(Lab: Ishihara)
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12:30 pm – 2:00 pm	Luncheon Buffet	Tripp Commons
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2:00 pm – 5:30 pm	Joint Oral Session #5 (Abstracts 43-53) Circuits II: Mating and Locomotion Chairs: Mark Alkema and Arantza Barrios	Union Theater
2:00 – 2:30	Invited Lecturer: Douglas Portman Sex and the single neuron: Sexual differentiation of the <i>C. elegans</i> nervous system	
2:30	Scott Emmons Neural Circuits for Mating in the <i>C. elegans</i> Male Posterior Nervous System	(Lab: Emmons)

2:45	Robyn Lints Modulation of A- and B-Ray Neuron Activity Controls Male Navigation of the Hermaphrodite Surface During <i>C. elegans</i> Mating.	(Lab: Lints)
3:00	Yishi Liu The Design of the <i>C. elegans</i> Male Spicule Circuit Determines the Behavior Pattern to Ensure Effective Copulation	(Lab: Garcia)
3:15	Brigitte LeBoeuf Transient Starvation Produces Lasting Effects on Behavior via EAG K ⁺ channel Expression and Interaction with CaMKII	(Lab: Garcia)

3:30 – 4:00 **Refreshment Break** **Union Theater Lobby**

4:00	Shangbang Gao Action Potentials Drive Body Wall Muscle Contractions in <i>C. elegans</i>	(Lab: Zhen)
4:15	Menachem Katz Synaptic Activity Controlling Locomotory Pattern, Pausing Frequency and Speed is Regulated by <i>C. elegans</i> CEPsh Glia	(Lab: Shaham)
4:30	Quan Wen Propagation of the Undulatory Wave in <i>C. elegans</i> Locomotion is Modulated by Stretch-sensitive Feedback	(Lab: Samuel)
4:45	Michelle Po UNC-7 and UNC-9 Innexins Coordinate Neuronal Communication of the <i>C. elegans</i> Motor Circuit	(Lab: Zhen)
5:00	Hilary Prescott Molecular mechanisms underlying cross-inhibitory signaling in the <i>C. elegans</i> locomotory circuit	(Lab: Barr)
5:15	Daniel Bumbarger Synaptic Connectivity in the Pharynx of <i>Pristionchus pacificus</i>	(Lab: Sommer)

5:30 pm – 7:00 pm **Dinner Buffet** **Tripp Commons**

7:00 pm – 10:00 pm **Poster Session #2 & Refreshments**
(**ODD** numbered Neuro posters and all Male posters present)

CE Neuro posters in Great Hall/Reception Room (4th floor)
Axon outgrowth and pathfinding (65-77)
Circuits and Behavior: (78-118)
Neural cell differentiation: (119-123)
Neural diseases and regeneration: (124-136)
Neurobiology of other nematodes: (137-142)
Sensory function: (143-159)
Synaptic function and modulation: (160-187)
Synaptogenesis: (188-191)
Technical advances: (77, 192-204)

Male meeting posters in Main Lounge (2nd floor)

10:30 PM – 12:30 am Dance Tripp Commons

Wednesday, June 30th

7:30 am – 9:00 am Breakfast Buffet Tripp Commons

9:00 am – 12:30 pm **Joint Oral Session #6 (Abstracts 54-64)** Union Theater

New Approaches and Frontiers

Chairs: Sreekanth Chalasani and Brigitte LeBoeuf

9:00 – 9:30

Invited Lecturer: Shawn Lockery

A stochastic model of command neuron function

9:30

Vincent O'Connor

(Lab: O'Connor)

Modelling neuroadaptive plasticity underpinning ethanol withdrawal in *C. elegans*

9:45

Jeffrey Stirman

(Lab: Lu)

Spatial and temporal optical activation of neurons in freely behaving worms

10:00

Theodore Lindsay

(Lab: Lockery)

Fast Synaptic Transmission Drives Rapid Escape Behaviors in *C. elegans*.

10:15

Christian Schultheis

(Lab: Gottschalk)

Using Channelrhodopsin-2 Slow Mutants To Complement The Optogenetics Toolbox

10:30 – 10:50

Refreshment Break

Union Theater Lobby

11:00

Sung Jin Park

(Lab: Goodman)

Behavioral Thresholds for Force-sensation Determined by an Integrated Video-tracking and Force-clamp System

11:15

Andrew Giles

(Lab: Rankin)

High Throughput Behavioral Characterization of Habituation in Wild-type *C. elegans* and a Mutant Library of Nervous-system-biased Strains

11:30

Matthew Attreed

(Lab: Buelow)

Visualizing Heparan Sulfate Domains in Living *C. elegans*

11:45

Takayuki Uozumi

(Lab: Ishihara)

Live imaging of Ras activity in the olfactory system in *C. elegans*

12:00	Jan Krajniak Repeated High-Resolution Long-Term Imaging without Anesthetics Using Microfluidics and Thermally Controllable Gels	(Lab: Lu)
12:15	Jeffrey Stirman High-Throughput Study of Synaptic Transmission Enabled by Optogenetics and Microfluidics	(Lab: Lu)
12:20 pm	Closing remarks, meeting evaluation, passing of the torch	
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12:30 pm – 2:00 pm	Luncheon Buffet	Tripp Commons
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