

PROGRAM

EAST COAST NERVE NET - TWENTIETH ANNUAL MEETING

APRIL 8,9,10, 1994

Sponsored by The Grass Foundation and The Marine Biological Laboratory.

Friday, April 8

- 5:30 P.M. Cocktails and Dinner - Swope Center
- 8:00 Plenary Session - Whitman Auditorium
- Dr. Alcino Silva, Cold Spring Harbor Laboratory**
"Transgenic Mice and the Study of Learning and Memory"

Saturday, April 9

- 8:30 A.M. Motor Pattern Selection by a Modulatory Proctolin Neuron
Dawn M. Blitz, Univ. Alabama at Birmingham
- 8:45 Motor Pattern Selection by Another Modulatory Proctolin Neuron
Melissa J. Coleman, Univ. Alabama at Birmingham
- 9:00 Motor Pattern Selection by a Modulatory Non-Proctolin Neuron
Brian J. Norris, Univ. Alabama at Birmingham
- 9:15 Effect of Serotonin on the Lateral Giant Tailflip Circuit in Dominant
 and Subordinate Crayfish
Shih-Rung Yeh and Donald H. Edwards, Georgia State Univ.
- 9:30 From Worms to Humans: Where Did the β -Amyloid Peptide Go?
Isabelle Daigle and Chris Li, Boston Univ.
- 9:45 Back to Allatostatin II
Petra Skiebe, Brandeis Univ.
- 10:00 BREAK

- 10:30 Retrograde Regulation of the Probability of Presynaptic Transmitter Release in the Cricket CNS
Graeme W. Davis, Univ. Massachusetts at Amherst
- 10:45 The Effects of Electrotonic Structure on Quantal Size at a Distributed Central Synapse
Andrew A. Hill, Univ. Massachusetts at Amherst
- 11:00 Dopamine Modulation of the A-type Potassium Current in LP and PY Cells in the Lobster
Lisa Coniglio, Cornell Univ.
- 11:15 Molecular Approaches to Understanding the Role of K⁺ Channels in Pyloric Neurons
Deb Baro, Cornell Univ.
- 11:30 Calcium and Calcium-activated Inward Currents Underlying Plateau Potentials in a Crab Motoneuron
Bing Zhang and Ronald Harris-Warrick, Cornell Univ.
- 11:45 Serotonin Depletion by 5, 7 DHT Alters Deutocerebral Development in Embryonic Lobsters
Jean Benton, Simone Helluy, Barb Beltz, Wellesley College
- 12:00 LUNCH
- 1:30 Stimulus Integration Time of Lobster Olfactory Receptor Neurons
George Gomez, Marine Biological Laboratory
- 1:45 Chemoreception in the Front Walking Leg of the Adult Spider Crab Libinia emarginata
Heidi Wennemer, Marine Biological Laboratory
- 2:00 A Comparison of the Tuning Properties of Chemoreceptors in the Front and Hind Walking Legs of Female American Lobsters
Keith M. Bayha, BUMP, Marine Biological Laboratory
- 2:15 Reciprocally Inhibitory Neural Networks I: Theoretical and Experimental Mechanisms
Frances Skinner, Brandeis Univ.

- 2:30 Reciprocally Inhibitory Neural Networks II: Effects of Variations in
 Synaptic and Intrinsic Parameters
 Andrew Sharp, Brandeis Univ.
- 2:45 Maturation of a Proprioceptive Pathway in the Locust Flight System
 Jack Gray and R.M. Robertson, Queen's Univ.
- 3:00 BREAK
- 3:30 Factors Affecting Cycling Frequency of the CPG for Locust Flight
 Hongjuan Xu and R.M. Robertson, Queen's Univ.
- 3:45 Absolute Steepness of Ramps as an Essential Cue for Auditory Pattern
 Recognition in a Grasshopper
 Dagmar von Helversen, McGill Univ.
- 4:00 Visual Feature Detectors and Prey Pursuit in the Dragonfly
 Mark Frye and Kurt Venator, Union College
- 4:15 Limulus Vision: From Neurons to Behavior
 Erik Herzog, Syracuse Univ.
- 4:30 Directional Hearing in Large and Small Animals, and the Case of the
 Parasitoid fly Ormia ochracea
 Daniel Robert, Cornell Univ.
- 6:00-9:00 EVENING POSTER SESSION - SWOPE CENTER
 (Followed by a social organized by Dr. Edward Kravitz)

Sunday, April 10

- 9:00 Mitogenic Signal From Peripheral Organ Conveyed by Identified Neurons
to the Central Nervous System
Gerald Bothe, Columbia Univ.
- 9:15 Interactions Between Segmental Homologues and Between Different
Branches of the Same Neuron Regulate the Formation of Sensory
Terminal Fields
Wenbiao Gan, Columbia Univ.
- 9:30 Growth Cone Morphology and Terminal Branching of Motor Axons
Kathleen Egid, SUNY Albany
- 9:45 PY Cell Subtypes in the Pyloric Network
Rob Levini, Cornell Univ.
- 10:00 Mapping the *Drosophila* Nervous System
Susan Boynton, Univ. Massachusetts at Amherst
- 10:15 BREAK
- 11:00 Muscarinic Receptors and Modulation of Second Messengers in *Manduca*
Sanjive Qazi, Tufts Univ.
- 11:15 Oscillations in the Heart Interneurons of the Leech
Farzan Nadim, Emory Univ.
- 11:30 Optimum Receptive Field Size in Linear Neural Networks
Marco Idiart, Brandeis Univ.
- 11:45 Coordinate Transformations in Networks with Hebbian Connections
Emilio Salinas, Brandeis Univ.
- 12:00 END OF ORAL PRESENTATIONS

Saturday Evening
April 9
POSTERS - SWOPE CENTER

Mapping the fly sensory system using enhancer traps
Suman Reddy, Univ. of Massachusetts at Amherst

Cell culture and characteristics of *Hermisenda crassicornis* neurons.
Catherine Tamse, Alan Kuzirian, Carlos Collin, Peter Smith, Marine Biological Lab

Inputs to multi-tasking neurons in the crayfish cortex.
David Sandeman, Barbara Belz, Renate Sandeman, Univ. New South Wales and
Wellesley College

Macintosh computers and MacLab data acquisition units in physiology teaching laboratories.
Philip J. Stephens, Villanova Univ.

Effects of varying ionic and synaptic currents in simulated heart interneurons of the leech.
Oystein Haug Olsen, Emory Univ.

Activity-dependent changes in voltage-sensitive calcium channels.
S.J. Hong and G.A. Lnenicka, SUNY Albany

Analysis of ion currents mediating modulation of contractions of the arc muscle of *Aplysia*
by simultaneous on-line length measurement and current/voltage clamp.
Vladimir Brezina, Mt. Sinai School of Medicine

Cloning, expression and characterization of two dopamine receptors from *Aplysia*
californica.
Xinmian Lo, Mt. Sinai School of Medicine

Coding of information into cricket courtship song.
Rohini Balakrishnan, McGill Univ.

The neuroethology of sound production in tiger moths (Lepidoptera: Arctiidae) III. The
tymbal response of *Cycnia tenera*, an open and close looped response.
Mark Northcott, Univ. Toronto (Erindale campus)

DC electrical stimulation of the pterothoracic ganglion elicits tymbal CPG activity in the
dogbane tiger moth, *Cycnia tenera*.
Jeff Dawson, Univ. Toronto (Erindale campus)

Neurometamorphosis of the moth ear: implications for insect auditory evolution.
Francine Lewis and James Fullard, Univ. Toronto (Erindale campus)

GUSSTO: A neural network model of quality and intensity coding in the mammalian
gustatory midbrain.
Frank Grasso, Boston Univ.

The *Drosophila* tumor suppressor gene dlg is required for normal synaptic structure.
Timothy Lahey, Univ. Massachusetts at Amherst

Anatomical changes in the lateral antennule of early larval stages of *Homarus americanus*.
Lynda Farley, B.U. Marine Program

Evidence for a synapsin I immunoreactive protein at crayfish motor terminals.
Richard Dearborn, SUNY Albany

Urine as a chemical signal in lobster dominance recognition.
Thomas Breithaupt, Christy Karavanich, and Jelle Atema, B.U. Marine Program

MacRetina 2: Simulated mapping of retinal ganglion cells.
Richard Olivo, CECI, MIT, and Smith College

C. elegans transgenic and knock-out animals: What do they reveal about FLRFamide?
Laurie Nelson and Theresa Foley, Boston Univ.

Measuring olfactory stimulus samples of lobsters orienting in a turbulent plume.
Jennifer Basil and Jelle Atema, B.U. Marine Program

Effects of maturation on EPSPs in the locust flight system.
Chris Gee and R.M. Robertson, Queen's Univ.

Thermokinesis in flying locusts.
Chris Kuhnert, Jack Gray, and Mel Robertson, Queen's Univ.

Maturation and functional recovery of the locust flight system.
Victoria Russell, Chris Gee, R.M. Robertson, Queen's Univ.

Two dimensional vibrating specific ion probe for Ca⁺⁺, K⁺ and Cl⁻.
Joseph Kunkel, Marine Biological Lab

Free-radical induced perturbation of neuronal physiology and morphology.
Peter J.S. Smith, Marine Biological Lab

Role of the mesodermal cell fate gene tinman on axon pathfinding in *Drosophila*.
Michael Gorczyca, Univ. Massachusetts at Amherst

A novel nervous-system-specific protein from *Aplysia californica*.
Sybil Lockhart, Brandeis Univ.

Ultrastructural peptidergic localization in stomatogastric ganglion of *Cancer borealis*.
V. Kilman, Brandeis Univ.

The neurosecretory paramedial nervous system in lobsters.
Ismeni Walter, Harvard Medical School