

Program

East Coast Nerve net --23rd Annual Meeting

April 4-6, 1997

Sponsored by the Grass Foundation and The Marine Biological Laboratory

Friday, April 4

- 5:30 Cocktails and Dinner-Swope Center
- 8:00 Grass Foundation Lecture
Whitman Auditorium (followed by informal social, Swope Center)

Extrinsic and Intrinsic Neuromodulation: Physiological mechanisms for Behavioral Plasticity

Dr. Paul Katz
Georgia State University

Saturday, April 5

- 9:00 Modulation of the crab stomatogastric network by a recently identified crustacean tachykinin-related peptide
Andrew Christie, Debbie Wood and Michael Nusbaum, University of Pennsylvania School of Medicine
- 9:15 Motor pattern selection by a dual-transmitter neuron: distinct functions for each co-transmitter
Dawn Blitz and Michael P. Nusbaum, University of Pennsylvania School of Medicine
- 9:30 Frequency regulation of a slow rhythm by periodic input from a fast rhythm in a model gastric mill network
Yair Manor, Farzan Nadim, M.P. Nusbaum and Eve Marder, University of Pennsylvania School of Medicine and Brandeis University
- 9:45 Frequency regulation of a slow rhythm by periodic input from a fast rhythm in the crab stomatogastric ganglion
Marlene Bartos and Michael P. Nusbaum, University of Pennsylvania School of Medicine
- 10:00 Pyloric muscle response to changing neuronal input in the lobster
Lee G. Morris, T.A. Ellis, T. Koehnle, J.B. Thuma and S.L. Hooper, Ohio University
- 10:15 BREAK

- 10:45 Activity-dependent regulation of cells and networks
Jorge Golowasch, Michel Casey, Larry Abbott and Eve Marder, Brandeis University
- 11:00 Effects of activity-dependent regulation of conductances on network dynamics
Michel Casey, Jorge Golowarch, Eve Marder and Larry Abbott, Brandeis University
- 11:15 Rhythm generation and network interaction in the isolated respiratory network
J.M. Ramirez, F.P. Elsen and P. Telgkamp, University of Chicago
- 11:30 Quantal docking determines the strength of facilitation of the neuromuscular junction
Mary Kate Worden, Maria Bykhovskaia and John Hackett, University of Virginia
- 11:45 Effects of neuromodulation on synaptic transmission of phasic and tonic motorneurons: quantal analysis
Robin L. Cooper and M.E. Crider, University of Kentucky
- 12:00 LUNCH
SET UP POSTERS
- 2:00 Manipulation of the nicotinic responses of *Manduca sexta* motorneurons using DNA antisense oligomers
David Fickbohm and Barry Trimmer, Tufts University
- 2:15 Regulation of octopamine biosynthesis in the CNS of the moth *Manduca sexta*
Herman Lehman, Hamilton College
- 2:30 Octopaminergic modulation of synaptic transmission at the *Drosophila* larval neuromuscular junction
Melissa J. Coleman and Leslie C. Griffith, Brandeis University
- 2:45 Circuit breaking using genetics I
Ping Jin, R.K. Murphey, Suman Reddy and Phyllis Caruccio, University of Massachusetts
- 3:00 Circuit-breaking using genetics II
James R. Trimarchi and R.K. Murphey, University of Massachusetts
- 3:15 BREAK
- 4:00 Hot flashes in the middle of the night: synchrony in the N. American firefly *Photinus carolinus*
**Jason W. Metcalfe, Andrew Moiseff, Jonathan Copeland and Francesco Palmieri, University of Connecticut
- ** Recipient of a Mary Grass Undergraduate Research Scholarship

- 4:15 Effect of heat-shock on locust flight circuitry
Chris Gee, B.S. Wu, J.A. Lague, M. Dural, R.M. Tangway and R.M. Robertson, Queen's University, Ontario
- 4:30 Discrimination of looming object trajectory by a right/left pair of movement detector interneurons in the locust
Jack Gray and R. Meldrum Robertson, Queen's University, Ontario
- 4:45 Analysis of sound frequency in a cricket auditory interneuron
Zen Faulkes and Gerald Pollack, McGill University
- 6:00 COCKTAILS AND POSTER SESSION
- 7:00 DINNER
- 8:00 POSTER SESSION
(and social organized by Ed Kravitz)

Sunday, April 6 (*remember to change your clocks!*)

- 9:30 Central peptide neuromodulation of feeding-related motor programs in aplysia
Ray Perrins, Peter T. Morgan and Klaudiusz R. Weiss, Mt. Sinai School of Medicine
- 9:45 The distribution of putative diuretic factors in the CNS and gut of the blood-feeding bug *Rhodnius prolixus*
V.A. TeBrugge, I. Orchard, D.A. Schooley, G.M. Coast and D.R. Nässel, University of Toronto
- 10:00 Coincidence detection by voltage-sensitive electrical synapses onto the lateral giant neuron of crayfish
Shih-Rung Yeh and Donald H. Edwards, Georgia State University
- 10:15 Mechanisms of coincidence detection by voltage-sensitive electrical synapses
Donald H. Edwards and Shih-Rung Yeh, Georgia State University
- 10:30 BREAK
- 11:00 How many olfactory glomeruli does it take to make a sensitive crab?
Kashka Piech and Barb Beltz, Wellesley College
- 11:15 Understanding neural development and post-embryonic plasticity: Neurogenesis in the lobster nervous system
Julie Miller and Barb Beltz, Wellesley College
- 11:30 Characterization of aminergic neurons in dominant and subordinate lobsters
Henning Schneider and Ed Kravitz, Harvard Medical School
- 11:45 Brief Business/Planning Meeting
- 12:00 LUNCH/END OF ANOTHER GREAT MEETING

Posters

Recipients of Mary Grass Undergraduate Research Scholarships:

Control of salivary duct cilia by neuropeptides in the Nudibranch mollusc *Tritonia diomedea*

Michelle Gaston and Dennis Willows, Friday Harbor Laboratories

Neutral red staining cell bodies in the central nervous system of the crayfish, *Procambarus clarkii*

Alyssa Bushey and F. harriet Gray, Hollins College

Distribution of receptor subtypes involved with the regulation of aggression

Rada Moldavsky and Kristie Reilly, Kean College of New Jersey

Dopamine-immunoreactive sensory neurons in the epidermis of the earthworm

U. Spörhase-Eichmann and F.W. Schürmann, University of Göttingen

Sensory stimulation enhanced 5-HT immunolabelling of hindgut secretory efferent neurons of the crayfish

Barbara E. Musolf, Holly S. Cate, Ulrike Spörhase-Eichmann and Donald H. Edwards, Georgia State University

Role of NO in modulating muscle tension in the larval *Manduca sexta*

S. Qazi and B. A. Trimmer, Tufts University

Synaptic activation and propagation of action potentials in the processes of individual neurons

Srdjan Antic and Dejan Zecevic, Yale University School of Medicine

Cloning of an amine receptor from the American lobster

Henning Schneider, Christine Couture, Pradisha Budhiraja and Edward Kravitz, Harvard Medical School

The development and mutation of specific sensory neurons in *Drosophila*

Michael Beland and R.K. Murphey, University of Massachusetts

Some like it hot: locust flight motor patterns in response to infrared

Kelly Shoemaker and R. Meldrum Robertson, Queen's University, Ontario

Bat-like sounds interrupt thermal avoidance in tethered flying locusts

Craig Willis, Jeff Dawon and R. Meldrum Robertson, Queen's University, Toronto

Big moths vs. moths: auditory correlates to body size for bat detection

Evelyn Forrest, James Fullard Annemarie Surlykke and Mads Filskov, University of Toronto

Membrane ion currents and functional properties of spiking and nonspiking *Aplysia* buccal muscles

Marsha L. Scott, Vladimir Brezina and Klaudiusz R. Weiss, Mt. Sinai School of Medicine

Do FMRFamide-related peptides play a role in the control of locust salivary glands?

Megumi Fuse and Ian Orchard, University of Toronto

Possible tachykinin and kinin involvement in the control of locust oviduct contractions

Rod Kwok, D.R. Nässel and I. Orchard, University of Toronto

The innervation of salivary glands

Spilios Asimakopoulos and Ian Orchard, University of Toronto

Electrophysiological analysis of olfactory receptor neurons in wild-type and mutant *Drosophila*

Marien de Bruyne, Peter Clyne and John Carlson, Yale University

Plasticity at multiple loci in the neural network mediating tentacle withdrawal in *Helix aspersa*

Steve A. Prescott and Ronald Chase, McGill University

Electron microscopic study of procerebral interneurons in *Helix aspersa*

Stéphanie Ratté and Ronald Chase, McGill University

GABA as a proctolin-cotransmitter in the crab stomatogastric ganglion

A. Swensen, J. Golowasch, E. Marder, M.J. Coleman and M.P. Nusbaum, Brandeis University

NO switches the swimming motor program to a feeding pattern in the nudibranch *Malibe leonina*

Win Watson, University of New Hampshire