
32nd East Coast Nerve Net

Program



Marine Biological Laboratory
Woods Hole

March 31 - April 2, 2006

Friday p.m., March 31

5:30 pm **Welcome reception.** Meigs Room
Beer, wine, soft drinks, and hors d'oeuvres.

Reminder: please set up your posters before the Grass lecture.

6:30 pm **Dinner. Swope**

8:00 pm

Grass Foundation Lecture
Lillie Auditorium



Graeme Davis, Ph.D.

Department of Biochemistry and Biophysics, UCSF

“Maintaining the Stability of Neural Function”

9:00-11:00 **Friday Night Social.**
Poster area, Swope.
Beer, wine, and soft drinks provided.

Saturday a.m., April 1

7:00-8:15 *Breakfast in Swope*

8:30-10:15 *Session I: Regulation of Behavior. Lillie Auditorium*

8:30 SENSATIONAL EXPERIENCE: PRENATAL SOUND AFFECTS POSTNATAL SIGHT IN BIRDS. Rebecca Markham, Robert Lickliter. Florida International University

8:45 ODOR TRACKING BASED ON SIMPLE RULES: USING SIMULATIONS TO UNDERSTAND ANIMAL BEHAVIOR. Jennifer Talley, Hillel Chiel, Mark A. Willis. Case Western Reserve University

9:00 COMPLEX DECISIONS ABOUT SIMPLE OBSTACLES: COCKROACH CLIMBING AND TUNNELING. Cynthia Harley & Roy E. Ritzmann. Case Western Reserve University.

9:15 THERMAL CHANGE AND THE NEUROETHOLOGY OF THE LOBSTER *HOMARUS AMERICANUS*. Mary Kate Worden, Joseph Camacho & Syed Aman Qadri. University of Virginia.

9:30 SILENCED GUSTATORY NEURON POPULATIONS DEFINE PHEROMONE "CHANNELS" NECESSARY FOR *DROSOPHILA* COURTSHIP AND COURTSHIP MEMORY. Arpiar Saunders, John Tuthill, Jessie Whitfield & Kathleen Siwicki. Swarthmore College.

9:45 LEARNING AND MEMORY ASSOCIATED WITH CHANGES IN STATUS RESULTING FROM FRUIT FLY FIGHTS. Lulu Wang, Ali Yurkovic & Edward A. Kravitz. Harvard Medical School.

10:00 CIRCUIT-SPECIFIC IDENTIFICATION AND CHARACTERIZATION OF NEUROPEPTIDES IN *DROSOPHILA*. . Joanne Yew, Yun Wang, Natasha Barteneva, Lingjun Li, & Edward A. Kravitz. Harvard Medical School.

10:15-10:45 *Coffee Break*

10:45-12:15 *Session II: Central Pattern Generators and Modulation*

10:45 PEPTIDERGIC MODULATION OF Na^+ AND Ca^{+2} -DEPENDENT K^+ CURRENTS. Bruce Brown & Debra Wood. Case Western Reserve University.

11:00 PEPTIDE ACTIONS DEPEND UPON ITS MODE OF RELEASE AND PEPTIDASE ACTIVITY. Debra Wood. Case Western Reserve University.

11:15 IONIC CURRENT CHANGES DURING PYLORIC RHYTHM RECOVERY AFTER DECENTRALIZATION IN CRAB STG. Olga Khorkova, Jorge Golowasch. New Jersey Institute of Technology.

11:30 THE EFFECT OF NEUROMODULATOR ON THE RECOVERY OF RHYTHMIC PYLORIC ACTIVITY AFTER DECENTRALIZATION. Yili Zhang, Rosa Rodríguez, Jorge Golowasch. Rutgers University

11:45 A NEW PEPTIDERGIC PATHWAY TRIGGERS LONG-TERM ACTIVATION OF THE GASTRIC MILL RHYTHM. Rachel S. White, Dawn M. Blitz & Michael P. Nusbaum. University of Pennsylvania School of Medicine.

12:00 LONG-TERM PEPTIDERGIC ACTIVATION OF PROJECTION NEURONS. Dawn M. Blitz, Rachel S. White & Michael P. Nusbaum. University of Pennsylvania School of Medicine.

12:15-1:15 *Lunch in Swope*

Saturday p.m., April 1

1:30-3:00 *Session III: Motor Circuits and Control. Lillie Auditorium*

1:30 CabTRP ACTIVATION REVEALS DIFFERENCES BETWEEN THE EMBRYONIC AND ADULT STG IN *HOMARUS AMERICANUS*. Kris Rehm, Katherine Deeg & Eve Marder, Brandeis University.

1:45 INVESTIGATING PROJECTION NEURON AND NEUROMODULATOR EFFECTS ON THE OPERATION OF A RHYTHMIC NETWORK: A MODELING STUDY. Nickolas Kintos & Farzan Nadim. New Jersey Institute of Technology.

2:00 SIMILAR MOTOR OUTPUT INDUCED BY DIFFERENT MODULATORS IN THE CARDIAC GANGLION OF THE CRAB, *C. BOREALIS*. Nelson D. Cruz-Bermúdez, & Eve Marder, Brandeis University.

2:15 DIVERGENT COTRANSMITTER ACTIONS MEDIATE SENSORIMOTOR INTEGRATION. Nicholas DeLong, Michael Nusbaum & Farzan Nadim. University of Pennsylvania School of Medicine.

2:30 SYNTHESIS AND CONTROL OF CPGS WITH NEURONS BASED ON PRINCIPLES OF NONLINEAR DYNAMICS. Daniel P. Knudsen, Nikolai Rulkov, & Joseph Ayers, Northeastern University.& University of California San Diego.

2:45 BAYESIAN CLASSIFICATION OF *APLYSIA* FEEDING MOTOR PROGRAMS *IN VIVO* BASED ON THEIR NEUROMUSCULAR ACTIVITY PATTERNS. Vladimir Brezina, Jane Wong, Yuriy Zhurov, Michael R. Due & Alex Proekt. Mt. Sinai School of Medicine

3:00-3:15 *Coffee Break*

3:15-4:30 *Session IV: Sensorimotor Structure and Function*

- 3:15 BURSTING FOR BATS: SENSORY BURSTS ELICIT BEHAVIORAL RESPONSES IN CRICKETS.** Gary Marsat, Gerald S. Pollack. McGill University.
- 3:30 MOVEMENT ENCODING BY MECHANOSENSORS IN *MANDUCA SEXTA*.** Michael Simon & Barry A. Trimmer. Tufts University.
- 3:45 THE CAPACITY FOR FAST SPIKING IN A DESCENDING INTERNEURON.** Tomas Money, & R. Meldrum Robertson, Queen's University.
- 4:00 POWER BRAKES? THE ROLE OF A SLOW, STRETCHY MUSCLE IN CATERPILLAR CRAWLING.** William A. Woods Jr., Steven J. Fussillo & Barry A. Trimmer. Tufts University.
- 4:15 SLOW VOLTAGE-DEPENDENT MODULATION OF SPIKE THRESHOLD IN A CRUSTACEAN MOTORNEURON.** Jean-Marc Goillard, Stefan Pulver, Adam Taylor & Eve Marder. Brandeis University.
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4:30 -6:00 *Posters and coffee and refreshments in Swope Center*

6:00-7:00 *Cocktails in Meigs room*
Beer, wine, soft drinks, and hors d'oeuvres.

7:00-8:30 *Dinner in Swope Center*

9:00-11:00 *Ed and Barry's Annual Exercise in Swank Sociality*
Poster Area
Margaritas, beer, wine, soft drinks provided.

THE
BIOLOGICAL
BULLETIN

The MBL's journal, *Biological Bulletin* (www.biobull.org), welcomes submissions from East Coast Nerve Net authors.

For more information, please contact the editor James Olds at jolds@mbl.edu.

Posters

GAP JUNCTION POSITION CAN BE ESTIMATED FROM SOMATIC RECORDINGS.

Diana Martínez, Matt Malej, Angelie Mascarinas, Amitabha Bose, Jorge Golowasch, Farzan Nadim. New Jersey Institute of Technology.

THE EFFECT OF NITRIC OXIDE IN THE RECURRENT NERVE OF THE TOBACCO HORNWORM, *MANDUCA SEXTA*. Nina Mallozzi & Barry A. Trimmer. Tufts University

SEXUAL SIGNALING AND FEMALE PREFERENCE IN WEAKLY ELECTRIC FISH, *APTERONOTUS LEPTORHYNCHUS*. Olivia Bargelletti. McGill University

SIFAMIDE ACTIVATION IN THE STOMATOGASTRIC NERVOUS SYSTEM OF DECAPOD CRUSTACEANS. Braulio Peguero, Madeleine Pott, Whitney Rabacal & Patsy S. Dickinson. Bowdoin College

FROM DUSK TILL DAWN: BEHAVIOURAL CORRELATES FOR A PHYSIOLOGICALLY CONTROLLED LIFE HISTORY TRADE-OFF BETWEEN DISPERSAL AND REPRODUCTION. Patrick A. Guerra & Gerald S. Pollack. McGill University

CATERPILLAR LOCOMOTION: MUSCLE ACTIVATION AND SHORTENING DURING *MANDUCA* CRAWLING. Steven Fusillo, William Woods, Jr., & Barry A. Trimmer. Tufts University

OCTOPAMINE MODULATES BETWEEN COMPLEX SOCIAL BEHAVIORS: AGRESSION AND COURTSHIP. Dana Schlegel, Sarah Certel, Mary Grace Savella & Edward A. Kravitz. Harvard Medical School.

WING LENGTH AND PREDATOR DETECTION: ULTRASOUND SENSITIVITY IN A WING-DIMORPHIC CRICKET. Ruben Martins & Gerald Pollack. McGill University

ESTABLISHMENT AND CHARACTERIZATION OF A RELIABLE LONG-TERM MEMORY COURTSHIP CONDITIONING PARADIGM IN *DROSOPHILA MELANOGASTER*. Lauren Ullrich & Kathleen King Siwicki. Swarthmore College.

SIMULTANEOUS GENE EXPRESSION MAPPING OF TWO NEUROPEPTIDES IN THE CNS OF *APLYSIA CALIFORNICA*. Clarissa Martínez-Rubio, Geidy Serrano, Nietzell Vazquez, Dalynes Reyes, Sheila Rolón, José San Miguel, Nilsa Rivera, Sami Jezzini, Andrea Kohn, Andreas Heyland, Mark W. Miller, & Leonid Moroz. University of Puerto Rico and Whitney Lab, University of Florida.

INITIAL PHENOTYPIC CHARACTERIZATION OF SERINE RACEMASE KNOCKOUT MICE. Alo C. Basu, Amy Lawson-Yuen, Julie A. Kurek, Liqun Han, Zhichun I. Jiang, Guochuan E. Tsai, & Joseph T. Coyle. Harvard Medical School

DEVELOPMENTAL EXPRESSION OF SEMAPHORIN IN THE CRICKET. Kristen Maynard, Elizabeth Sheldon, Sarah McCarthy & Hadley Wilson Horch. Bowdoin College

TEMPERATURE AND ACID-BASE REGULATION IN THE AMERICAN LOBSTER *HOMARUS AMERICANUS*. Aman Qadri, Joseph Camacho Martin Grosell & Mary Kate Worden. University of Virginia

CARRIER FREQUENCY DEPENDENT TEMPORAL PROCESSING IN AN IDENTIFIED AUDITORY INTERNEURON. Patrick Sabourin, Heather Gottlieb & Gerald S. Pollack. McGill University

GENERATION OF VARIANTS OF A MOTOR ACT IN A MODULAR AND HIERARCHICAL MOTOR NETWORK. Jian Jing, Klaudiusz R. Weiss. Mt Sinai School of Medicine

THE ROLE OF GUSTATORY RECEPTOR NEURONS IN NAIVE COURTSHIP BEHAVIOR AND COURTSHIP CONDITIONING IN *DROSOPHILA MELANOGASTER*. Makiko Mizutani & Kathleen Siwicki. Swarthmore College

[K+] HOMEOSTASIS AND TEMPERATURE SENSITIVITY OF A CENTRAL PATTERN GENERATOR. Corinne I. Rodgers & R. Meldrum Robertson.. Queen's University

DEVELOPMENT OF SEROTONIN RECEPTOR EXPRESSION IN ZEBRAFISH. Henning Schneider & Alicia Dudley.. DePauw University

THE EXPRESSION AND CHARACTERIZATION OF ZEBRAFISH SEROTONIN RECEPTOR. Elisabeth Garland, Erin Andrade, Taron Davis & Henning Schneider. DePauw University.

INVOLVEMENT OF GLUTAMATE IN SPECIFICATION OF PROTRACTION PHASE DURATION IN FEEDING MOTOR PROGRAMS OF *APLYSIA*. Michael R. Due, V. Alexeeva, J. Jing, K.R. Weiss & F.S. Vilim. Mt. Sinai School of Medicine

TEMPERATURE ACCLIMATION ALTERS CARDIAC PERFORMANCE IN THE LOBSTER *HOMARUS AMERICANUS*. Joseph A. Camacho, Syed Aman Qadri, Hongkun Wang & Mary Kate Worden. University of Virginia

MOLECULAR CHARACTERIZATION OF A CDNA ENCODING VAL1-SIFAMIDE FROM THE LOBSTER *HOMARUS AMERICANUS*. Braulio Peguero¹, Henry Brennan¹, Whitney Rabacal¹, Patsy Dickinson¹, Andrew Christie², Christopher Goiney², Szymon Rus¹, Vijay Kotecha¹, Thu-Nga Ho¹, Rachel Donahue¹ & David Towle³. 1-Bowdoin College, 2-University of Washington, 3- Mount Desert Island Biological Laboratory.

MODULATION OF INTERCIRCUIT INTERACTIONS BY MULTIPLE TRANSMITTERS. Melissa Varrecchi, Denise Cook, Devon Crawford & Debra Wood. Case Western Reserve University

CREATION AND REDUCTION OF A MORPHOLOGICALLY DETAILED MODEL OF A LEECH HEART INTERNEURON. Anne-Elise Tobin & Ronald L. Calabrese. Brandeis University and Emory University.

Presenters

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