

WORKSHOPS

- Wednesday, March 29, 12:00 pm–6:30 pm

ECDYSONE WORKSHOP

Room: Lanier Grand Ballroom A, Level 4
Organizers: **Andrew J. Andres**, University of Nevada, Las Vegas
Robert Ward, University of Kansas, Lawrence

Summary: The Ecdysone Workshop welcomes all those interested in the biochemistry, molecular biology, and physiology of insect hormones. As such, we will discuss mechanisms of 20-hydroxyecdysone, juvenile hormone, and peptide hormone signaling in *Drosophila*, *Manduca*, *Aedes*, and other insect species. Platform talks of approximately 15 minutes will be grouped into sessions according to topic. Keeping with the spirit of a workshop, a discussion period will follow each session so that speakers and audience members will have an opportunity to exchange ideas and place the talks into a larger context. Topics for presentation/discussion include (but will not be limited to): receptor complex/target gene interactions, downstream tissue-specific responses, and global effects of hormone exposure. Programs will be supplied upon request by e-mail (andrew.andres@unlv.edu or robward@ku.edu) after March 20.

- Friday, March 31, 1:45 pm–3:45 pm

GENETICS AND LIFE SPAN

Room: Meeting Room 335 A, Level 3
Organizer: **Scott Pletcher**, Baylor College of Medicine, Houston, Texas

Summary: The workshop will focus on research into the genetic basis of longevity in *Drosophila melanogaster*. Topics to be covered include biological mechanisms that influence delayed behavioral aging and the role of stress-related kinases (JNK) and their interactions with insulin signaling and transcription factor dFOXO in the regulation of lifespan. The role of nutrient availability in influencing aging will also be examined including genetic analysis of the starvation response, the role of nutrient sensing, and the influence of p53 and Sir2 on longevity extension through dietary restriction.

Speakers:

Stephen Helfand, Brown University, Providence, RI

Henri Jasper, University of Rochester, NY

Mike Grotewiel, Virginia Commonwealth University, Richmond, VA

Bas Zwaan, Leiden University, The Netherlands

Pankaj Kapahi, Buck Institute for Aging Research, Novato, CA

- Friday, March 31, 1:45 pm–3:45 pm

STEM CELL WORKSHOP

Room: 335 B-C, Level 3
Organizers: **Haifin Lin**, Duke University Medical School, Durham, North Carolina
Sumana Datta, Visiting Professor, Emory University School of Medicine, Atlanta, Georgia

Summary: This workshop will focus on cutting edge discoveries in the control of stem cell division, maintenance of stem cell identity, analyses of stem cell lineage, and mechanisms of determining the identity of stem cell progeny. Stem cell biology continues to be a rapidly growing and fast moving field. Recent months have seen publication of major papers identifying new modulators of stem cell division and identity and evaluating the development and role of the stem cell “niche”. We are beginning to see common players as well as common issues in different stem cell systems. This highlights the importance of bringing the *Drosophila* stem cell community together at this workshop to continue the exchange of ideas, models and reagents begun at the first Stem Cell Workshop that we organized.

- Friday, March 31, 1:45 pm–3:45 pm

RNAi TECHNOLOGIES AND HIGH THROUGHPUT SCREENS

Room: Lanier Grand Ballroom C, Level 4
Organizer: **Bernard Mathey-Prevot**, Harvard Medical School, Boston, Massachusetts

Summary: The goal of the workshop is to discuss the growing use of RNAi technology, high throughput screens and genomics for discovery and characterization of gene function, both in tissue culture and in vivo. A special emphasis will be placed on looming challenges posed by this growing technology as well as on recent advances that broaden the scope of high throughput screens.

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- **Friday, March 31, 1:45 pm–3:45 pm**

LIVE CELL IMAGING AND DIGITAL MOVIE MAKING

Room: 337, Level 3

Organizer: **Steve Paddock**, University of Wisconsin, Madison

Summary: Live cell imaging has always been essential in understanding development. The approach is becoming more widely employed in combination with fluorescence techniques for localizing specific molecules over time and contemporary instrumentation including confocal, deconvolution and multiple photon microscopes. The workshop will address the relative merits of these approaches for imaging different stages of the life cycle of the fly in time scales from milliseconds to days.

- **Saturday, April 1, 6:45 pm–8:45 pm**

RNA BIOLOGY

Room: 335 B, Level 3

Organizer: **William Mattox**, University of Texas, M.D. Anderson Cancer Center, Houston, Texas

Summary: The goal of this workshop is to bring together Drosophilists who study different aspects of RNA biology for informal presentations and discussions of common interest. Topics covered include the regulation of RNA processing, export, localization and stability, RNA binding proteins, microRNAs and other non-coding RNAs.

Speakers:

SPF45 is critical for Sex-lethal splicing autoregulation and DNA repair, Helen Salz and Sami Chauki, Case Western Reserve University, Cleveland, OH.

Isoform-specific expression of Doa kinase reveals a downstream autoregulatory loop under the control of the sex-determination pathway and a potential role for TRA and TRA2 in males, Leonard Rabinow and Arlette Kpebe, University of Paris XI, Orsay, France.

Bic-C and the regulation of NOS expression during oogenesis, Chiara Gamberi, Miltiadis Paliouras and Paul Lasko, McGill University, Montreal, Canada.

Trafficking of Fragile X protein and associated mRNAs in neural development, Daniela Zarnescu, Marianna Pinter and Patty Estes, University of Arizona, Tuscon, AZ.

Glutamine-rich repeats specify the activity of Drosophila Argonaute2, H. Arno J. Müller¹, Wibke J. Meyer¹, Silke Schreiber¹, Yi Guo², Thorsten Volkman¹ and Michael A. Welte², Heinrich Heine Universität Düsseldorf, Düsseldorf, Germany¹; Brandeis University, Waltham, MA².

rasiRNA biogenesis in the *Drosophila melanogaster* germ line, Vasily Vagin^{1,2} Alla Sigova¹, Vladimir Gvozdev² and Phillip Zamore¹. BMP, UMASS, Worcester, MA¹; DAMG, IMG, Moscow, Russia².

No nonsense: RNA surveillance in *Drosophila melanogaster*, Erika Meyer and Elizabeth Gavis, Princeton University, NJ.

Genetic analysis of nonsense mediated decay in *Drosophila*, Mark Metzstein, University of Utah, Salt Lake City, Mark Krasnow, Stanford University Medical Center, CA.

- **Saturday, April 1, 6:45 pm–8:45 pm**

GAS SENSING AND RESPONSES IN DROSOPHILA

Room: 335 A, Level 3

Organizer: **Gabriel G. Haddad**, University of California, San Diego

Summary: In this workshop, we will focus on the acute and long term adaptation of *Drosophila* to low oxygen (hypoxia). Speakers will address the effect of hypoxia on gene expression, through transcriptional activation of the hypoxia-inducible factor or via other gene regulation. A number of pathways have also been described and will be discussed in this workshop. An interesting relation between oxygenation and immunity/infection, based on NO mediation, will be presented. Evidence will also be shown that genetic mechanisms are involved when progressive hypoxia is induced over many generations and an experimental selection for survival at extremely low oxygen was attained. In some of these acute or long term experiments, gene expression profiling is performed to identify altered transcript levels and evidence will be presented that mutations in corresponding genes confer the ability to survive under extremely low O₂ conditions.

Speakers:

Regulation of the *Drosophila* Hypoxia Inducible Factor by hypoxic and non-hypoxic stimuli, Pablo Wappner, Fundacion Instituto Leloir, Universidad de Buenos Aires, Argentina.

Characterization of the regulatory network controlling diverse responses to hypoxia, Erik Johnson, Wake Forest University, Winston-Salem, North Carolina.

Genetic basis for hypoxia tolerance and long term adaptation in *Drosophila*, Dan Zhou, University of California Department of Pediatrics, San Diego.

Hypoxia Activates a Nitric Oxide-Mediated Pathway with an Input Into Innate Immunity, Pascale Dijkers, University of California Department of Biochemistry and Biophysics, San Diego.

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- **Saturday, April 1, 6:45 pm–8:45 pm**

LEARNING AND MEMORY

Room: Lanier Grand Ballroom C, Level 4
Organizer: **Scott Waddell**, University of Massachusetts Medical School, Worcester

Summary: This is the second learning and memory workshop at the ADRC. The goal of this workshop is to bring researchers in the learning and memory field together to discuss current unpublished work and foster collaboration and communication. We also hope this workshop will encourage the larger fly community, and graduate students in particular, to become interested in this stimulating area of research. The workshop will primarily focus on olfactory learning and memory.

- **Saturday, April 1, 6:45 pm–8:45 pm**

POPULATION GENOMICS WORKSHOP

Room: 335 C, Level 3
Organizer: **David Begun**, University of California, Davis

Summary: *Drosophila* has a long history as a model system for population genetics and will have a unique role in the developing field of population genomics. The purposes of this workshop are to i) discuss current population genomic projects, ii) discuss more broadly which future population genomic projects might have the greatest scientific impact, iii) identify projects that generate genomic sequence vs. other data types, iv) discuss sampling strategies, stock creation and stock maintenance, v) discuss high-throughput phenotyping.

Speakers:

Chuck Langley, University of California, Davis

Andy Clark, Cornell University, Ithaca, NY

Mike Eisen, University of California, Berkeley

- **Saturday, April 1, 9:30 pm–11:30 pm**

IMMUNITY, HEMATOPOIESIS AND PATHOGENESIS

Room: 335 A, Level 3
Organizers: **Neal Silverman**, University of Massachusetts Medical School, Worcester
Todd Schlenke, Emory University, Atlanta, GA

Summary: This workshop will address such topics as natural pathogens of *Drosophila* and their virulence mechanisms, molecular biology of hematopoiesis, blood clot formation, and immune signaling cascades, and the determinants of immunocompetence variation among individual flies.

Speakers:

Polymorphism for virulence in entomopathogenic bacteria of the genus *Providencia*, Brian P. Lazzaro, Punita Juneja.

The local immune response and phagocytosis play crucial roles in the *Drosophila* host defense against *Serratia marcescens* oral infections, N. Nehme, E. Pradel, J. J. Ewbank, J. A. Hoffmann, D. Ferrandon.

Role of the GATA transcription factor family in the *Drosophila* immune response, Kate Senger.

Collier/Knot is required for PSC formation and control of blood cell homeostasis, Alain Vincent, Joanna Krezmien, Rami Makki, Laurence Dubois, Jean Michel Ubeda, Marie Meister, Michèle Crozatier.

Local activation of PO at the clot, Gawa Bidla, Mitch Dushay, Uli Theopold.

A RHIM-like domain required for signaling by PGRP-LC and PGRP-LE, Kamna Aggarwal, Takashi Kaneko, Tamaki Yano, Min-Sung Kim, Byung-Ha Oh, Shoichiro Kurata, Neal Silverman.

Lesswright regulates *Drosophila* larval hematopoiesis by SUMOylating Dorsal and Dif, Liang Huang, Jinu Abraham, Soichi Tanda.

Infection induced wasting in the fly, Marc Dionne, Linh Pham, Michele Shirasu-Hiza, David Schneider.

Gene expression determinates of immunocompetence in the innate immune system of *Drosophila melanogaster*. T. B. Sackton, B. P. Lazzaro, A. G. Clark.

Natural genetic variation in the effect of age on immune response in *Drosophila melanogaster*, Jeff Leips.

WORKSHOPS

- Saturday, April 1, 9:30 pm–11:30 pm

**DROSOPHILA RESEARCH AND PEDAGOGY AT
PRIMARILY UNDERGRADUATE INSTITUTIONS**

Room: 335 C, Level 3

Organizer: **Susan Halsell**, James Madison
University, Harrisonburg, VA

Summary: This workshop focuses on increasing visibility of research performed at primarily undergraduate institutions and to facilitate faculty and students in their endeavors.

The goals include:

- 1) encouraging undergraduate research by providing a forum in which undergraduate students make oral presentations;
- 2) connecting people interested in this career path with people already in primarily undergraduate institution (PUI) faculty positions;
- 3) connecting PUI faculty for discussions and support on professional issues that differ from those at large institutions; and
- 4) sharing ideas for using *Drosophila* as teaching tools in the classroom and laboratory. The workshop is divided into two components: Research presentations made by undergraduate students followed by break-out discussion groups.

- Saturday, April 1, 9:30 pm–11:30 pm

**PROGRESS, UPDATES AND PROSPECTS FOR
THE SPECIES GENOME SEQUENCING
PROJECT**

Room: 335 B, Level 3

Organizer: **Thom Kaufman**, Indiana University,
Bloomington

Summary: The current status of the sequencing, assembly, alignment and annotation of the 12 *Drosophila* species genomes will be discussed. We will also make plans for the publication of the Sequencing Center/Community overview publication concerning these data. We also welcome participation by individuals who are interested in publishing ancillary analyses of the data in conjunction with the overview paper.