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Future Meeting Dates

2013
April 3-7
Washington, DC

2014
March 26-30
San Diego, CA

2015
March 4-8
Chicago, IL

2016
March 2-6
Philadelphia, PA

2017
Dates TBD
San Diego, CA

OPENING/PLENARY SESSIONS

Wednesday, March 7 7:00 PM–9:00 PM

Opening General Session

Co-Moderators: Celeste Burg, University of Washington, Seattle and Steve Crews, University of North Carolina, Chapel Hill
Room: Sheraton/Chicago Center, Level 4
Presentations:

7:00 pm **Welcome and Opening Remarks.** Celeste Berg. University of Washington, Seattle.

7:15 pm **GSA Update/Awards.** Adam Fagen. Genetics Society of America, Bethesda, Maryland.

7:25 pm **Larry Sandler Award Presentation.** Richard Mann. Columbia University, New York.

7:30 pm **Larry Sandler Lecture.**

8:00 pm **Future Advances in Drosophila Research Featuring Hugo Bellen, Ross Cagan, Dan Kiehart and Trudy Mackay.** Steve Crews. Moderator, University of North Carolina, Chapel Hill.

Thursday, March 8 8:30 AM–12:00 NOON

Plenary Session I

Moderator: Kevin White, University of Chicago, Illinois
Room: Sheraton/Chicago Center, Level 4
Presentations:

8:30 am **Image Award Presentation.** Ross Cagan. Mt Sinai School of Medicine, New York.

8:35 am **Regulation of energy metabolism in *Drosophila*.** Carl S. Thummel. Dept of Human Genetics, Univ Utah School of Med, Salt Lake City, UT.

9:05 am **Behavioral and anatomical analysis of the neural circuits that drive fly grooming.** Julie H. Simpson. HHMI, Janelia Farm Res Campus, Ashburn, VA.

9:35 am **News from the Niche.** Stephen DiNardo. Dept Cell & Developmental Biol, Perelman Sch Medicine; Institute for Regenerative Medicine, Univ. Pennsylvania, Philadelphia, PA.

10:05 am **GSA Journals - Get Published.** R. Scott Hawley. Stowers Institute, Kansas City, MO.

10:10 am – **Break**

10:30 am **Lipoproteins in human and Drosophila Hedgehog signaling.** Suzanne Eaton. The Max Planck Institute of Molecular Cell Biology and Genetics, Germany.

11:00 am **3D video tracking of Drosophila behavior and GFP expression and predictive biomarkers of aging.** John Tower. Molecular and Computational Biology Program, University of Southern California, Los Angeles, CA.

11:30 am **The Neurobiology of Monarch Butterfly Migration.** Steven Reppert. UMass Medical School, Worcester, MA.

OPENING/PLENARY SESSIONS

Sunday, March 11 8:30 AM–12:00 PM NOON

Plenary Session II

Moderator: Erika Matunis, Johns Hopkins University, Baltimore
Room: Sheraton/Chicago Center, Level 4
Presentations:

8:30 am **Poster Award Presentation.** Erika Matunis. Johns Hopkins University, Baltimore, Maryland.

8:35 am **Oogenesis - where physiology and development meet.** Denise J. Montell. Dept Biological Chemistry, Center for Cell Dynamics, Johns Hopkins Sch Med, Baltimore, MD.

9:05 am **Evolution and Phenotypic Effects of New Genes in Drosophila.** Manyuan Long. Dept Ecology & Evolution, Univ Chicago, Chicago, IL.

9:35 am **PIPs control cell morphogenesis in Drosophila.** Julie A. Brill. Cell Biology Program, The Hospital for Sick Children, Toronto, ON.

10:05 am – **Break**

10:30 am **Spindle orientation in neural stem cells.** Chris Q. Doe. Inst Neuroscience, Univ Oregon, Eugene, OR.

11:00 am **Deciphering the *cis*-regulatory code.** Eileen E. Furlong. Genome Biology, EMBL, Heidelberg, Germany.

11:30 am **A mechanism of morphogen protein dispersion mediated at points of direct contact.** Thomas B. Kornberg. Cardiovascular Research Institute, University of California, San Francisco, CA.

Notes

CONCURRENT PLATFORM SESSIONS

THURSDAY, MARCH 8 4:30 pm – 6:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Cell Biology and Cytoskeleton

Co-Moderators: Mark Peifer, University of North Carolina Chapel Hill and Sally Horne-Badinovac, University of Chicago, Illinois
Room: Sheraton 4/5, Level 4

1 - 4:30
Evidence for monomeric α-catenin as a key regulator of adherens junctions in *Drosophila*. **Ridhdhi Desai[1], Ritu Sarpal[1], Milena Pellikka[1], Noboru Ishiyama[2], Mitsuhiko Ikura[2], Ulrich Tepass[1].** 1) Cell & Systems Biol, Univ Toronto, Toronto, Canada; 2) Division of signaling biol, Ontario cancer Institute, Canada.

2 - 4:45
Presenilin controls kinesin-1 and dynein activity in axonal transport. **Shermali Gunawardena[1], Ge Yang[2], Lawrence S. B. Goldstein[3], Kunsang Dolma[1], Elizabeth Spina[1].** 1) Biological Sciences, SUNY at Buffalo, Buffalo, NY; 2) Lane Center for Computational Biology & Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, 15213; 3) Howard Hughes Medical Institute, Department of Cellular and Molecular Medicine and Neuroscience, University of California, San Diego, La Jolla, CA, 92093.

3 - 5:00
Differential positioning of adherens junctions initiates epithelial folding during *Drosophila* gastrulation. **Yu-Chiun Wang[1,4], Zia Khan[2,3], Matthias Kaschube[3], Eric Wieschaus[1,4].** 1) Department of Molecular Biology; 2) Department of Computer Science; 3) Lewis-Sigler Institute for Integrative Genomics; 4) Howard Hughes Medical Institute, Princeton University, Princeton, NJ.

4 - 5:15
Talin: A Master Regulator of Cell-ECM Adhesion-Dependent Morphogenesis. **Stephanie J. Ellis, Michael J. Fairchild, Stefan Czerniecki, Mary Pines, Guy Tanentzapf.** Department of Cellular and Physiological Sciences, University of British Columbia, Vancouver, Canada.

5 - 5:30
Septins are required for the establishment of adherens junction at the exit of mitosis of polarized epithelial cells. **Nabila Founounou, Roland Le Borgne.** CNRS UMR 6061-Institut de Génétique et Développeme, Rennes. France.

6 - 5:45
Actin turnover balances forces between cells during epithelial invagination. **Adam C. Martin, Frank M. Mason, Mike Tworoger.** Biology, Massachusetts Institute of Technology, Cambridge, MA.

7 - 6:00
Mechanisms of Epithelial Wound Repair. **Jeffrey M. Verboon, Maria-Teresa Abreu-Blanco, James J. Watts, Raymond Liu, Susan M. Parkhurst.** Division of Basic Sciences. Fred Hutchinson Cancer Research Center, Seattle, WA 98109, USA.

8 - 6:15
A Novel Mechanism for Actin Filament Disassembly Mediated by the Semaphorin/Plexin Axon Guidance Signaling Protein Mical. **Ruei-Jiun Hung[1], Chi Pak[2], Jonathan Terman[1].** 1) Neuroscience; 2) Biochemistry, UT Southwestern Medical Center, Dallas, TX.

Immunity and Pathogenesis

Co-Moderators: Robert Schulz, University of Notre Dame, Indiana and Nancy Fossett, University of Maryland, Baltimore
Room: Chicago 6/7, Level 4

9 - 4:30
Ras-oncogenic *Drosophila* hindgut cells use an "inflammatory-like cell program" to migrate to distant sites. **Yiorgos Apidianakis[1,2], Erdem Bangi[3], Laurence Rahme[1], Ross Cagan[3].** 1) Department of Surgery, MGH, Harvard University, Boston, MA; 2) Department of Biological Sciences, University of Cyprus, Nicosia, Cyprus; 3) Department of Developmental and Regenerative Biology, Mt Sinai School of Medicine, New York, NY.

10 - 4:45
Mediating a balance between tolerance and resistance. **Moria C. Chambers, Karla L. Lightfield, David S. Schneider.** MicroBiol & Immunology, Stanford Univ, Stanford, CA.

11 - 5:00
Virus recognition by Toll-7 activates antiviral autophagy in *Drosophila*. **Ryan H. Moy, Margaret Nakamoto, Jie Xu, Shelly Bambina, Ari Yasunaga, Spencer S. Shelly, Beth Gold, Sara Cherry.** Department of Microbiology, Penn Genome Frontiers Institute, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA 19104.

12 - 5:15
Study of Pallbearer, an E3-ubiquitin ligase that regulates phagocytosis of apoptotic cells in *Drosophila*. **Hui Xiao, Nathalie Franc.** The Department of Genetics, The Scripps Research Institute, La Jolla, CA.

13 - 5:30
Calcium signaling plays a role in Drosophila cellular immunity and is antagonized by parasitoid wasp venom. **Nathan T. Mortimer, Todd A. Schlenke.** Department of Biology, Emory University, Atlanta, GA.

14 - 5:45
Beta-arrestin Kurtz regulates *Drosophila* Toll signaling and immune system homeostasis through an interaction with SUMO protease Ulp1. **Wenjian Xu[1], Saima G. Anjum[1], Niusha Nikkholgh[1], Sukanya Basu[1], Mary Thomas[1], Tony Ip[2], Alexey Veraksa[1].** 1) Biology Department, University of Massachusetts Boston, Boston, MA; 2) Program in Molecular Medicine, UMass Medical School, Worcester, MA.

15 - 6:00
Drosophila immune responses to entomopathogenic nematodes and their mutualistic bacteria. **Julio César Castillo, Ioannis Eleftherianos.** Department of Biological Sciences, The George Washington University, Washington DC 20052.

16 - 6:15
A model for intracellular parasitism in Drosophila. **Dominique X. Ferrandon, Sebastian Niehus, Adrien Franchet, Marie-Céline Lafarge, David Giacomini.** IBMC, CNRS UPR 9022, Université de Strasbourg, France.

CONCURRENT PLATFORM SESSIONS

THURSDAY, MARCH 8 4:30 pm – 6:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Drosophila Models of Human Disease

Co-Moderators: Charles Nichols, Louisiana State University Health Sciences Center, New Orleans and Udai Pandey, Louisiana State University Health Sciences Center, New Orleans
Room: Chicago 8-10, Level 4

17 - 4:30
Genome-wide Association Mapping of Resistance to Oxidative Stress in *Drosophila* Identifies Genes Involved in Complex Disease. **Allison L. Weber[1,2], George F. Khan[2,3], Michael M. Magwire[1], Crystal L. Tabor[1], Robert R. H. Anholt[1,2,3], Trudy F. C. Mackay[1,2].** 1) Department of Genetics, North Carolina State University, Raleigh, NC; 2) W. M. Keck Center for Behavioral Biology, North Carolina State University, Raleigh, NC; 3) Department of Biology, North Carolina State University, Raleigh, NC.

18 - 4:45
ATM kinase inhibition in glial cells activates the innate immune response and causes neurodegeneration. **Andrew Petersen, David Wassarman.** Cellular and Regenerative Biology, University of Wisconsin-Madison, Madison, WI.

19 - 5:00
A Drosophila Model Linking Diet-induced Metabolic Disease and Cancer. **Susumu Hirabayashi[1], Thomas Baranski[2], Ross Cagan[1].** 1) Mount Sinai School of Medicine, New York, NY; 2) Washington University School of Medicine, St. Louis, MO.

20 - 5:15
Drosophila - a useful model for anti-amyloid drug development. **Daniel Segal[1], Roni Scherzer-Attali[1], Ronit Shaltiel-Karyo[1], Sivan Peled[1], Moran Frenkel-Pinter[1], Dorit Farfara[2], Dan Frenkel[2], Ehud Gazit[1].** 1) Molecular Microbiol & Biotech, Tel Aviv Univ, Tel Aviv; 2) Neurobiology, Tel Aviv Univ, Tel Aviv.

21 - 5:30
Creating an epileptic fly by tipping the balance of *prickle* isoforms. **Salleh Ehaideb[1], Atsushi Ueda[1], Alexander G. Bassuk[1], Chun-Fang Wu[1], J. Robert Manak[1,2].** 1) Dept of Biology, Univ of Iowa, Iowa City, IA; 2) Dept of Pediatrics, Univ of Iowa, Iowa City, IA.

22 - 5:45
microRNAs Orchestrate Muscular Dystrophy in Drosophila. **April K. Marrone, Halyna R. Shcherbata.** Laboratory of Gene Expression and Signaling, Max Planck Institute for Biophysical Chemistry, Goettingen, Germany.

23 - 6:00
Cell-Specific MeCP2 expression changes Sleep Patterns and Aggressive Behavior in a Drosophila model of MeCP2 Spectrum Disorders. **Sarah J. Certel, Tarun Gupta, David Hess-Homeier, Conor Jacobs, Brittany Felgate.** Division of Biological Sciences, University of Montana, Missoula, MT.

24 - 6:15
Organotypic models for kidney disease: *Drosophila* gets kidney stones, too. **Julian A. T. Dow[1], Pablo Cabrero[1], Taku Hirata[2], Michael Romero[2].** 1) Institute of Molecular, Cell and Systems Biology, University of Glasgow, Glasgow, United Kingdom; 2) Physiology & Biomedical Engineering & O'Brien Urology Research Center, Mayo Clinic, Rochester, MN 55905 USA.

Notes

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 9 8:30 am – 10:15 am

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Regulation of Gene Expression I

Co-Moderators: Julia Zeitlinger, Stowers Institute, Kansas City, Missouri and Angela DePace, Harvard Medical School, Boston, Massachusetts
Room: Sheraton 4/5, Level 4

25 - 8:30
Patched together: sophisticated multi-modular *cis*-regulatory circuitry underlies a seemingly simple "constitutive" response to Hedgehog signaling. **Scott Barolo.** Department of Cell & Developmental Biology, University of Michigan Medical School, Ann Arbor, MI.

26 - 8:45
The spatial and temporal activity of enhancers depends on combinatorial binding of transcription factors. **Zhe Xu[1], Hongtao Chen[1], Paolo Struffi[2], Constance Mei[1], Darren Huang[1], Steve Small[1].** 1) Biology, New York University, New York, NY; 2) European Commission, Joint Research Center.

27 - 9:00
Assessing the basic building blocks necessary to generate *cis*-regulatory modules (CRMs) that regulate spatio-temporal expression. **Jelena Erceg, Charles Girardot, Eileen Furlong.** Genome Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany.

28 - 9:15
Juxtaposed *cis*-regulatory elements contradict simple definitions of enhancer modularity. **Tara L. Martin, Meghan Bragdon, Kelly Eckenrode, Zeba Wunderlich, Angela DePace.** Department of Systems Biology, Harvard Medical School, Boston, MA.

29 - 9:30
Temporal Coordination of Gene Networks by Zelda in the Early *Drosophila* Embryo. **Hsiao-Lan Liang[1], Chung-Yi Nien[1], Stephen Butcher[2], Yujia Sun[1], Shengbo Fu[1], Tenzin Gocha[1], Nikoai Kirov[1], J. Robert Manak[2], Christine Rushlow[1].** 1) Department of Biology, Center for Developmental Genetics, New York University, New York, New York, USA; 2) Departments of Biology and Pediatrics, Roy J. Carver Center for Genomics, University of Iowa, Iowa City, Iowa, USA.

30 - 9:45
The cis-regulatory code of Hox function in Drosophila. **Maria Polychronidou[1], Sebastian Sorge[1], Nati Ha[1], Jana Friedrich[1], Daniela Bezdan[2], Petra Kaspar[1], Martin Schaefer[2,3], Stephan Ossowski[2,4], Stefan R. Henz[2], Juliane Mundorf[1], Jenny Raetzer[1], Fani Papagiannouli[1], Ingrid Lohmann[1].** 1) Centre for Organismal Studies, Heidelberg, Heidelberg, Germany; 2) Max Planck Institute for Developmental Biology, Tübingen, Germany; 3) Max Delbrück Center for Molecular Medicine, Berlin, Germany; 4) Center for Genomic Regulation, Barcelona, Spain.

31 - 10:00
Unlocking specificity: Cofactor binding reveals latent differences in DNA binding specificity between Hox proteins. **Matthew Slattery[1,2], Todd Riley[3,4], Peng Liu[4,5], Namiko Abe[2], Pilar Gomez-Alcala[3,6], Iris Dror[7], Tianyin Zhou[7], Remo Rohs[7], Barry Honig[4,5], Harmen Bussemaker[3,4], Richard Mann[2].** 1) University of Chicago, Chicago, IL; 2) Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY; 3) Department of Biological Sciences, Columbia University, New York, NY; 4) Center for Computational Biology and Bioinformatics, Columbia University, New York, NY; 5) Howard Hughes Medical Institute, Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY; 6) Department of Electrical Engineering, Columbia University, New York, NY; 7) Molecular and Computational Biology Program, Department of Biological Sciences, University of Southern California, Los Angeles, CA.

Neural Development

Co-Moderators: Greg Bashaw, University of Pennsylvania, Philadelphia and Pelin Volkan, Duke University, Durham, North Carolina
Room: Chicago 6/7, Level 4

32 - 8:30
Dopaminergic precursor fate is established by *gsb-n* and *slp* at the intersection of Wg and Hh signaling. **Joseph D. Watson, Stephanie B. Stagg, Stephen T. Crews.** Department of Biochemistry and Biophysics, University of North Carolina at Chapel Hill.

33 - 8:45
Combinatorial input from two spatial axes generates neuronal diversity in the *Drosophila* medulla. **Ted Erclik, Xin Li, Claire Bertet, June Ng, Claude Desplan.** Department of Biology, New York University, New York, NY, USA.

34 - 9:00
Slit/Robo-mediated axon guidance in *Tribolium* and *Drosophila*: divergent genetic programs build insect nervous systems. **Tim Evans, Greg Bashaw.** Dept Neuroscience, Univ Pennsylvania Sch Med, Philadelphia, PA.

35 - 9:15
Axonal branching and synaptic connectivity of mechanosensory axons. **Derya Ayaz, Dan Dascenco, Olivier Urwyler, Dietmar Schmucker.** Vesalius Research Center, VIB, Leuven, BELGIUM.

36 - 9:30
Defining microRNA function during synapse development using the Drosophila microRNA sponge. **Elizabeth M. McNeill, Carlos Loya, Tudor Fulga, David Van Vactor.** Cell Biology, Harvard Medical School, Boston, MA.

37 - 9:45
Nucleotide sugar transporter Meigo regulates both dendrite and axon targeting of synaptic partners through Ephrin signaling in the olfactory system. **Sayaka Sekine[1], Liang Liang[6], Miki Yamamoto-Hino[4], Satoshi Goto[4], Hideyuki Okano[4], Liqun Luo[5,6], Masayuki Miura[1,2], Takahiro Chihara[1,3].** 1) Genetics, Grad Sch Pharm Sci, Univ. Tokyo, Japan; 2) CREST; 3) PRESTO; 4) Dept. Physiol, Keio Univ, Tokyo, Japan; 5) HHMI; 6) Dept. Biol. Stanford Univ, CA.

38 - 10:00
Ly6 related proteins in Drosophila Blood Brain Barrier. **Mubarak Hussain Syed[1], Alice Krudewig[2], Daniel Engelen[1], Tobias Stork[3], Christian Klambt[1].** 1) Institute for neurobiology, University of Muenster, Muenster, NRW, Germany; 2) Biozentrum, University of Basel, Klingelbergstrasse 70, CH-4056 Basel, Switzerland; 3) University of Massachusetts Medical School, Department of Neurobiology, 362 Plantation Street, LRB 740, Worcester, MA 01605.

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 9 8:30 am – 10:15 am

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Stem Cells

Co-Moderators: Todd Nystul, University of California, San Francisco and Allison Bardin, Institute Curie, Paris, France
Room: Chicago 8-10, Level 4

39 - 8:30
Gene regulatory networks controlling hematopoietic progenitor niche cell production and differentiation in the *Drosophila* lymph gland. **Tsuyoshi Tokusumi, Yumiko Tokusumi, Douglas A. Shoue, Robert A. Schulz.** Department of Biological Sciences, University of Notre Dame, Notre Dame, IN.

40 - 8:45
hedgehog regulates self-renewal and niche competition in the *Drosophila* testis. **Marc Amoyel[1], Michael Burel[1], Erika Bach[1,2].** 1) Pharmacology, New York University School of Medicine, New York, NY; 2) Kimmel Stem Cell Center.

41 - 9:00
A histone demethylase dUTX regulates crosstalk among different cell types in the *Drosophila* testis stem cell niche. **Xin Chen, Lama Tarayrah.** Dept Biol, Johns Hopkins Univ, Baltimore, MD.

42 - 9:15
robo2 is a JAK-STAT Target that Controls Stem Cell Maintenance in the *Drosophila* Testis Stem Cell Niche. **Rachel R. Stine, Erika L. Matunis.** Johns Hopkins Sch Med, Baltimore, MD.

43 - 9:30
A model for formation of the follicle stem cell niche in the Drosophila ovary. **Stephanie Vlachos[1], Ryan Conder[2], Todd Nystul[3], Nicholas Harden[1].** 1) Molec Biol & Biochem, Simon Fraser Univerisity, Burnaby, BC, Canada; 2) Institute of Molecular Biotechnology, Dr. Bohr Gasse 3, 1030, Vienna, Austria; 3) Department of Anatomy, University of California, San Francisco, CA 41943.

44 - 9:45
Piwi and the Polycomb Group Proteins interact to regulate Drosophila ovarian germline. **Jamy C. Peng, Na Liu, Haifan Lin.** Department of Cell Biology, Yale Stem Cell Center, Yale University School of Medicine, New Haven, CT.

45 - 10:00
Insulin levels control Delta-Notch signaling in the *Drosophila* female germline stem cell niche via the regulation of FOXO on *fringe*. **Sheng-An Yang, Hwei-Jan Hsu.** Institute of Cellular and Organismic Biology, Academia Sinica, Taipei City, Taiwan.

Notes

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 9 10:45 am – 12:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Regulation of Gene Expression II

Co-Moderators: Julia Zeitlinger, Stowers Institute, Kansas City, Missouri and Angela DePace, Harvard Medical School, Boston, Massachusetts
Room: Sheraton 4/5, Level 4

46 - 10:45
Tissue specific analysis of chromatin marks identify temporal enhancer activity in development
. **Robert P. Zinzen[1], Stefan Bonn[1], Charles Girardot[1], E. Hilary Gustafson[1], Alexis Perez Gonzalez[2], Nicolas Delhomme[1], Yad Ghavi-Helm[1], Bartek Wilczynski[1], Andy Riddell[2], Eileen E. M. Furlong[1].** 1) Genome Biology Unit, EMBL, Heidelberg, Germany; 2) Flow Cytometry Core Facility, EMBL, Heidelberg, Germany.

47 - 11:00
The transcriptional repressor Snail functions as activator during *Drosophila* mesoderm development. **Martina Rembold[1], Lucia Ciglar[2], Jorge Omar Yáñez Cuna[3], Charles Girardot[2], Robert Zinzen[2], Martina Braun[2], Alexander Stark[3], Eileen Furlong[2], Maria Leptin[1].** 1) Institute of Genetics, University of Cologne, Cologne, Germany; 2) European Molecular Biology Laboratory (EMBL), Heidelberg, Germany; 3) Research Institute of Molecular Pathology (IMP), Vienna, Austria.

48 - 11:15
Yan binding at the eve locus confers robustness. **Jemma L. Webber, Lauren Cote, Jie Zhang, Ilaria Rebay.** Ben May Department for Cancer Research, University of Chicago, Chicago, IL.

49 - 11:30
Why do transcriptional repressors recruit more than one corepressor? **Priyanka Upadhyai, Gerard Campbell.** Biological Sciences, University of Pittsburgh, Pittsburgh, PA.

50 - 11:45
Transcriptional arithmetic during gene regulatory evolution. **Albert J. Erives.** Dept of Biology, University of Iowa, Iowa City, IA, USA.

51 - 12:00
Ancestral sequence reconstruction of the *even-skipped* stripe 2 enhancer in *Drosophila*. **Carlos Martinez[1,2], Ah-Ram Kim[1,3], Joshua Rest[4], Kenneth Barr[5], Michael Ludwig[1,2], Kevin White[2], John Reinitz[1,2,6,7].** 1) Ecology & Evolution, UC, Chicago, IL; 2) Chicago Center for Systems Biology, UC, Chicago, IL; 3) Biochemistry & Cell Biology, SUNY, Stony Brook, NY; 4) Ecology & Evolution, SUNY, Stony Brook, NY; 5) Genetics, Genomics, & Systems Biology, UC, Chicago, IL; 6) Statistics, UC, Chicago, IL; 7) Molecular Genetics & Cell Biology, UC, Chicago, IL.

52 - 12:15
Evolution of Transcriptional Regulation in Early Embryos of the Drosophila Genus. **Mathilde Paris[1], Tommy Kaplan[1], Susan Lott[1], Xiao-Yong Li[2], Jacqueline Villalta[2], Michael Eisen[1,2].** 1) Molecular and Cellular Biology, QB3 Institute, BERKELEY, CA; 2) Howard Hughes Medical Institute, University of California Berkeley, Berkeley, CA.

Neurophysiology and Behavior

Co-Moderators: Dan Tracey, Duke University, Durham, North Carolina and Marta Zlatic, HHMI Janelia Farm Campus, Ashburn, Virginia
Room: Chicago 6/7, Level 4

53 - 10:45
The Drosophila vesicular monoamine transporter mutation provides a sensitized system to identify drugs that regulate aminergic neurotransmission. **Hakeem O. Lawal, Traci Biedermann, Filmon Mehanzel, David E. Krantz.** Psychiatry & Biobehavioral Sci, Univ California, Los Angeles, Los Angeles, CA.

54 - 11:00
A non-binary expression approach to generating brain-dopamine deficient Drosophila. **Karol Cichewicz[1], Magali Iché-Torres[2], Serge Birman[2], Jay Hirsh[1].** 1) Biology, University of Virginia, Charlottesville, VA; 2) CNRS, ESPCI, Paris.

55 - 11:15
Ryanodine receptor in neurons mediates volatile anesthetic sensitivity of Drosophila. **Shuying Gao, David Sandstrom, Qun Gu, Robert Scott, Howard Nash.** Laboratory of Molecular Biology, National Institute of Mental Health, NIH, Bethesda, MD.

56 - 11:30
stallone and *balboa* are DEG/ENaC genes required for mechanical nociception. **Stephanie Mauthner[1], Richard Hwang[2], Jason Caldwell[3], W. Daniel Tracey[1,2,3].** 1) Univ Prog in Genetics and Genomics; 2) Dept of Neurobiology; 3) Dept of Anesthesiology, Duke University, Durham, NC.

57 - 11:45
Analysis of escape and avoidance behavior in *Drosophila* larvae. **Tomoko Ohyama, James Truman, Rex Kerr, Marta Zlatic.** Janelia Farm Research Campus/HHMI, Ashburn, VA.

58 - 12:00
Decision-making neurons for feeding behavior revealed by genetic activation in *Drosophila*. **Motojiro Yoshihara[1], Thomas Flood[1], Michael Gorczyca[1], Shinya Iguchi[1], Benjamin White[2], Kei Ito[3].** 1) Neurobiology, UMass Medical School, Worcester, MA; 2) Laboratory of Molecular Biology, NIMH, Bethesda, MD; 3) Institute of Molecular and Cellular Biosciences, University of Tokyo, Tokyo, Japan.

59 - 12:15
A long-term memory circuit from mushroom bodies to central complex in the Drosophila brain. **Tsung-Pin Pai, Ann-Shyn Chiang.** Institute of Biotechnology/Brain Research Center, National Tsing Hua University, Hsinchu 30013, Taiwan.

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 9 10:45 am – 12:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Cell Cycle and Cell Death

Co-Moderators: Kristin White, Massachusetts General Hospital, Charlestown and Nam-Sung Moon, McGill University, Montreal, Canada
Room: Chicago 8-10, Level 4

60 - 10:45
How Do Endocycling Cells Block Apoptosis? **Bingqing Zhang, Christiane Hassel, Suozhi Qi, Brian R. Calvi.** Department of Biology, Indiana University, Bloomington, IN.

61 - 11:00
Lack of E2F activity protects cells from irradiation-induced cell death. **Aaron M. Ambrus[1], Abul B. M. M. K. Islam[2], Mary Truscott[1], Núria López-Bigas[2], Maxim V. Frolov[1].** 1) Department of Biochemistry & Molecular Genetics, University Illinois at Chicago, Chicago, IL; 2) Research Unit on Biomedical Informatics, Department of Experimental Health and Sciences, PRBB, Universitat Pompeu Fabra, Barcelona, Spain.

62 - 11:15
JNK and Draper regulate the engulfment of nurse cells by follicle cells during starvation induced mid-oogenesis cell death in the Drosophila ovary. **Jon Iker Etchegaray[1], Allison Timmons[1], Adam Klein[1], Tracy Pritchett[2], Elaine Welch[1], Kim McCall[1].** 1) Boston University, Boston, MA; 2) Boston University Medical School, Boston, MA.

63 - 11:30
A role for the Drosophila histone variant H2Av in mitotic chromosome segregation. **Giovanni Cenci[1,2], Fiammetta Verni[3].** 1) Dip. Biologia di Base ed Applicata, Università dell'Aquila, Via Vetoio, 67100 L'Aquila, Italy; 2) Sbarro Institute for Cancer Research and Molecular Medicine, Dept. of Biology, Temple University, PA 19122, USA; 3) Dip. di Biologia e Biotecnologie "C. Darwin", Sapienza Università di Roma, Roma 00185, Italy.

64 - 11:45
The Tumor Suppressor APC2 and the Chk2 DNA Damage Checkpoint Promote Genomic Stability in the Early Embryo. **John Poulton, Frank Mu, Mark Peifer.** Dept of Biology, Linberger Comprehensive Cancer Center, Univ North Carolina, Chapel Hill, NC.

65 - 12:00
A FISH-based RNAi screen identifies genes involved in somatic homolog pairing of heterochromatic regions. **Eric Joyce, Ting Wu.** Genetics, Harvard Medical School, Boston, MA.

66 - 12:15
Identification of factors that cooperate with rbf1 mutations. **Nam-Sung Moon, Kate Krivy, Mary-Rose Bradley-Gill.** Department of Biology, Developmental Biology Research Initiative, McGill University, Montreal, Quebec H3A 1B1, Canada.

Notes

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 9 4:30 pm – 6:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Physiology and Aging

Co-Moderators: Pankaj Kapahi, Buck Institute, Novato, California and Blanka Rogina, University of Connecticut Health Center, Farmington
Room: Sheraton 4/5, Level 4

67 - 4:30
Role of oenocytes in metabolic response to starvation. **Debamita Chatterjee, Heinrich Jasper.** Department of Biology, University of Rochester, Rochester, NY.

68 - 4:45
Juvenile hormone regulation of lipid metabolism through insulin signaling. **Hua Bai, Ping Kang, Marc Tatar.** Ecology & Evolutionary Biol, Brown University, Providence, RI.

69 - 5:00
An Interleukin-6 like cytokine regulates systemic insulin signaling by conveying the 'fed' state from the fat body to the brain. **Akhila Rajan[1], Norbert Perrimon[1,2].** 1) Department of Genetics, Harvard Medical School, Boston, MA; 2) Howard Hughes Medical Institute, 77 Ave Louis Pasteur, Boston, MA.

70 - 5:15
MASOP coordinates imaginal disc growth and maturation with developmental timing. **Julien Colombani, Ditte Andersen, Pierre Leopold.** Institute of Developmental Biology and Cancer, Nice, France.

71 - 5:30
Drosophila Lipoprotein Metabolism. **Wilhelm Palm, Julio Sampaio, Suzanne Eaton.** Max Planck Institute of Molecular Cell Biology , Dresden, Germany.

72 - 5:45
MPC1 plays an essential role in pyruvate metabolism in yeast, *Drosophila* and human disease. **Daniel K. Bricker[1], Thomas Orsak[2], John Schell[2], Yu-Chan Chen[2], Eric Taylor[2], Michele Brivet[3], Audrey Boutron[3], Jared Rutter[2], Carl S. Thummel[1].** 1) Dept of Human Genetics, University of Utah School of Medicine, Salt Lake City, UT; 2) Dept of Biochemistry, University of Utah School of Medicine, Salt Lake City, UT; 3) Laboratoire de Biochimie, AP-HP Hôpital de Bicêtre, Le Kremlin Bicêtre, France.

73 - 6:00
Mitochondrial genotype alters the nuclear transcriptional response to varied levels of hypoxia in Drosophila. **David M. Rand, Patrick A. Flight, Nicholas Jourjine, Lei Zhu.** Ecology & Evolutionary Biol, Brown Univ, Providence, RI.

74 - 6:15
Gustatory Regulation of Aging in *Drosophila melanogaster*. **Michael J. Waterson[1], Zachary M. Harvanek[2], Ivan Ostojic[3], Joy Alcedo[3], Scott D. Pletcher[1,4].** 1) Cellular and Molecular Biology Graduate Program, University of Michigan; 2) Medical Scientist Training Program, University of Michigan; 3) Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland; 4) Department of Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI.

Chromatin and Epigenetics

Co-Moderators: Leonie Ringrose, Institute of Molecular Biotechnology, Vienna, Austria and Nicole Francis, Harvard University, Cambridge, Massachusetts
Room: Chicago 6/7, Level 4

75 - 4:30
Dynamic and Tissue Specific Regulation of Gene Activation and Silencing by Noncoding PRE/TRE Transcription. **Leonie Ringrose[1], Adelheid Lempradl[1,2], Frank Ruge[1], Helena Okulski[1], Christina Altmutter[1], Gerald Schmaus[1], Karin Aumayr[1,3], Hasene Basak Senergin[1], Andrew Dimond[1,4].** 1) IMBA (Institute of Molecular Biotechnology), Vienna, Austria; 2) MPI (Max Planck Institute of Immunology and Epigenetics), Freiburg, Germany; 3) IMP (Institute of Molecular Pathology), Vienna, Austria; 4) Nuclear Dynamics ISP, Babraham Institute, Cambridge, UK.

76 - 4:45
An RNA Memory Mechanism to Inherit Epigenetic Marks. **Maria Cristina Onorati, Walter Arancio, Davide F. V. Corona.** STEMBIO, Telethon Dulbecco Institute c/o University of Palermo, Italy.

77 - 5:00
Insulators bring active genes into transcription factories in Drosophila. **Hua-Bing Li, Vincenzo Pirrotta.** Molecular Biology & Biochemistry, Rutgers University, Piscataway, NJ.

78 - 5:15
A genetic screen for recessive Polycomb group mutants. **James A. Kennison, Mark A. Mortin, Monica T. Cooper.** Program in Genomics of Differentiation, NIH, Bethesda, MD.

79 - 5:30
Mapping of chromosomal proteins of the bithorax complex in single parasegments. **Welcome Bender[1], Heber Domingues[1], Sarah Bowman[2], Robert Kingston[2].** 1) BCMP Dept, Harvard Medical Sch, Boston, MA; 2) Dept. of Molecular Biology, Massachusetts General Hospital, Boton, MA 02114.

80 - 5:45
Spliceosomal Dynamics is Required for Nurse-Cell Chromatin Dispersal In the *Drosophila* Germ Line. **Stephen M. Klusza, Shirelle Figueroa, Amanda Novak, Billy Palmer, Wu-Min Deng.** Dept Biological Sci, Florida State Univ, Tallahassee, FL.

81 - 6:00
Phylogenomic analysis of the Heterochromatin Protein 1 gene family defines new germline-restricted functions. **Mia Levine[1], Connor McCoy[1], Danielle Vermaak[1], Mary Alice Hiatt[1], Frederick Matsen[1], Harmit Malik[1,2].** 1) Fred Hutchinson Cancer Research Center, Seattle, WA; 2) Howard Hughes Medical Institute.

82 - 6:15
The Unusual Features of Active Genes on Drosophila melanogaster Chromosome Four: Reinterpreting the Roles of Chromatin Modifications. **Sarah CR Elgin[1], Nicole C. Riddle[1], Tingting Gu[1], Youngsook L. Jung[2], Monica Sentmanat[1], modENCODE Drosophila Chromatin Consortium.** 1) Washington Univ, St Louis, MO; 2) Harvard Medical School, Boston, MA.

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 9 4:30 pm – 6:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Pattern Formation

Co-Moderators: Seth Blair, University of Wisconsin, Madison and Trudi Schupbach, Princeton University, New Jersey
Room: Chicago 8-10, Level 4

87 - 4:30
Inverse Regulation of Target Genes Distant from the Dpp Morphogen Source. **Offer Gerlitz[1], Oren Ziv[1], Rutie Finkelstein[1], Yaron Suissa[1], Tama Dinur[1], Girish Deshpande[2].** 1) Developmental Biology and Cancer Research, IMRIC, The Hebrew University-Hadassah Medical School, Jerusalem; 2) Department of Molecular Biology, Princeton University.

83 - 4:45
The Tbx-20 transcription factor Midline functions as a localized negative regulator of epidermal growth factor receptor signaling. **Mariana Fregoso Lomas[1], Fiona Hails[1], Jean-François Boisclair Lachance[1,2], Laura Nilson[1].** 1) Biology, McGill University, Montreal, QC, Canada; 2) Biological Sciences, University of Chicago, Chicago, IL, USA.

84 - 5:00
Evolutionary variation in the Dorsal gradient distribution. **J. Sebastian Chahda[1], Claudia M. Mizutani[1,2].** 1) Case Western Reserve University, Cleveland, OH. Deparment of Biology; 2) Case Western Reserve University, Cleveland, OH. Deparment of Genetics.

85 - 5:15
Computer-aided estimation of the motor neuron morphology patterns. **Xiao Chang[1], Ashutosh Kale[1], Lauren Dodge[1], Jennifer Brazill[2], Michael D. Kim[2], Gavriil Tsechpenakis[1].** 1) Computer and Information Science, Indiana University-Purdue University Indianapolis, Indianapolis, IN; 2) Department of Molecular and Cellular Pharmacology, University of Miami School of Medicine, Miami, FL.

86 - 5:30
Physical mechanisms shaping the *Drosophila* dorsoventral compartment boundary. **Christian Dahmann[1,2], Maryam Aliee[3], Jens-Christian Röper[1], Katharina Landsberg[1], Constanze Pentzold[1], Thomas Widmann[1], Frank Jülicher[3].** 1) Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany; 2) Institute of Genetics, Dresden University of Technology, Dresden, Germany; 3) Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.

88 - 5:45
Association Mapping to Identify New Leg Development Genes. **Megan Leach, Nathaniel Grubbs, Xin Su, Tiffany Petrisko, Catherine Longo, James Mahaffey.** Genetics Department, North Carolina State University, Raleigh, NC.

89 - 6:00
Domain specific E3 ubiquitin ligase mediated Wingless degradation promotes Dorso-Ventral lineage in the developing *Drosophila* eye. **Meghana Tare[1], Madhuri Kango-Singh[1,2,3], Amit Singh[1,2,3].** 1) Dept of Biology, Uninversity Dayton, 300 College Park Drive, Dayton OH; 2) Premedical Program, University of Dayton, 300 College Park Drive, Dayton OH; 3) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton,300 College Park Drive, Dayton OH.

90 - 6:15
Fat and Mitochondrial Complex I component NdufV2 interact to regulate planar cell polarity. **Anson Sing[1], Maïlis Bietenhader[2], Lacramioara Fabian[3], Robyn Rosenfeld[1], Julie Brill[3], G. Angus McQuibban[2], Helen McNeill[1].** 1) Molecular Genetics, University of Toronto, Toronto, ON, Canada; 2) Department of Biochemistry, University of Toronto, ON, Canada; 3) Program in Developmental & Stem Cell Biology, The Hospital for Sick Children, Toronto, ON, Canada.

Notes

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 10 8:30 am – 10:15 am

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

RNA Biology

Co-Moderators: Howard Lipshitz, University of Toronto, Canada and Jim Wilhelm, University of California, San Diego
Room: Sheraton 4/5, Level 4

91 - 8:30
oskar Translational Activation: a 5' Activating Region Directs Translational Activation throughout the oocyte. **Matt Kanke, Goheun Kim, Young Hee Ryu, Paul Macdonald.** Molecular Cell and Developmental Biology, University of Texas at Austin, Austin, TX.

92 - 8:45
Local trafficking sorts germ plasm RNPs into distinct cortical domains. **Jack J. Lee, Kristina S. Sinsimer, Shawn C. Little, Stephan Y. Thiberge, Eric F. Wieschaus, Elizabeth R. Gavis.** Princeton University, Princeton, NJ.

93 - 9:00
The Drosophila pan gu kinase complex regulates RNP stability via ubiquitin-dependent proteolysis. **Risa Broyer[1], Brian Sato[2], Jim Wilhelm[1].** 1) Section on Cell and Developmental Biology, UC San Diego, La Jolla, CA; 2) Dept of Molecular Biology and Biochemistry, UC Irvine, Irvine, CA.

94 - 9:15
Messenger RNA nuclear retention as a novel facet of the DNA damage response. **Eric Lecuyer[1,2,3], Mélanie Douziech[1], Carole Iampietro[1], Neal Cody[1], Xiaofeng Wang[1], Moineau-Vallée Karine[1,2], Henry Krause[4].** 1) Systems Biology Research Axis, IRCM, Montréal, QC, Canada; 2) Département de Biochimie, Université de Montréal, Montréal, QC, Canada; 3) Division of Experimental Medicine, McGill University, Montréal, QC, Canada; 4) Donnelly CCBR, University of Toronto, Toronto, ON, Canada.

95 - 9:30
Identification of chemical compounds that inhibit Ago2-mediated small RNA silencing in *Drosophila*. **Christophe Antoniewski[1], Caroline Jacquier[1], Anne-Laure Bougé[1], Fabrice de Chaumont[2], Jean-Christophe Olivo-Marin[2], Hélène Munier-Lehman[2], Clément Carré[1], Hélène Thomassin[1].** 1) Developmental Biology Laboratory, CNRS UMR 7622 - University Pierre & Marie Curie, 75252 Paris CDX 05, France; 2) Institut Pasteur, 25 rue du Docteur Roux 75724 Paris CDX 15, France.

96 - 9:45
Forward genetic screens for genes affecting nonsense mediated mRNA decay reveal Smg6 is not an essential decay factor. **Kimberly A. Frizzell, Shawn Rynearson, Mark M. Metzstein.** Dept Human Gen, Univ Utah, Salt Lake City, UT.

97 - 10:00
Zfrp8 and piRNA pathway components in Drosophila hematopoiesis. **Svetlana Minakhina, Ruth Steward.** Waksman Inst, Rutgers Univ, Piscataway, NJ.

Cell Biology and Signal Transduction I

Co-Moderators: Kristi Wharton, Brown University, Providence, Rhode Island and Matt Gibson, Stowers Institute, Kansas City, Missouri
Room: Chicago 6/7, Level 4

98 - 8:30
Essential and equivalent roles for ligands signaling through the EGFR in Drosophila development. **Christina L. Austin, Amanda A. Simcox.** Department of Molecular Genetics, The Ohio State University, Columbus, OH.

99 - 8:45
Trafficking of the EGFR ligand Spitz to distinct membrane domains regulates signaling capacity in polarized tissues. **Josefa Steinhauer[1], Jessica Treisman[2].** 1) Department of Biology, Yeshiva College, New York, NY; 2) Skirball Institute of Biomolecular Medicine, NYU Langone Medical Center, New York, NY.

100 - 9:00
Mechanisms of Evi/Wls mediated Wnt-secretion - novel pathways beyond bulk secretion. **Julia C. Gross, Varun Chaudhary, Michael Boutros.** Division Signaling and Functional Genomics, German Cancer Research Center (DKFZ), Heidelberg, Germany.

101 - 9:15
Wingless is secreted on exosome-like vesicles in *Drosophila* S2 cells. **Karen Beckett[1], Solange Monier[2], Hannah Green[1], Roland LeBorgne[2], Jean-Paul Vincent[1].** 1) Developmental Biology, National Institute for Medical Research, London, United Kingdom; 2) CNRS UMR 6061, Université de Rennes 1, 35043 Rennes Cedex, France.

102 - 9:30
Polarized biosynthesis and secretion of Collagen IV during organ morphogenesis. **Sally Horne-Badovinac, David Lerner, Darcy McCoy, Gary Gerlach II.** Department of Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL.

103 - 9:45
A Novel Role for UDP-GlcNAC in Dpp Signal Antagonism. **Gregory B. Humphreys, Kate Monroe, Molly Jud, Anthea Letsou.** Human Gen, Univ Utah, Salt Lake City, UT.

104 - 10:00
The classic fibrodysplasia ossificans progressiva mutation reveals the latent kinase activity of the *Drosophila* BMP type I receptor Saxophone. **Viet Le, Kristi Wharton.** MCB Dept, Brown University, Providence, RI.

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 10 8:30 am – 10:15 am

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Evolution and Quantitative Genetics I

Co-Moderators: Mohamed Noor, Duke Univeristy, Durham, North Carolina and Kelly Dyer, University of Georgia, Athens
Room: Chicago 8-10, Level 4

105 - 8:30
The impact of mutational biases and positive selection on the distribution of Copy Number Variants among five worldwide populations of *Drosophila melanogaster*. **Margarida Cardoso-Moreira, Jennifer K. Grenier, Andrew G. Clark.** Molecular Biology and Genetics, Cornell University, Ithaca, NY.

106 - 8:45
Variation in Genome Structure in *Drosophila yakuba*. **Rebekah L. Rogers, Kevin R. Thornton.** Ecology and Evolutionary Biology, Thornton Lab, Irvine, CA.

107 - 9:00
Evolution of New Genes with Essential Functions in Drosophila Development and Reproduction. **Sidi Chen, Manyuan Long.** Dept Ecology & Evolution, The University of Chicago, Chicago, IL 60637.

108 - 9:15
A genome wide association study reveals genetic evidence of the mutation accumulation theory of aging in age-specific fecundity in *Drosophila melanogaster*. **Mary F. Durham[1], Michael Magwire[2], Jeff Leips[1].** 1) Dept Biological Sci, Univ Maryland, Baltimore County, Baltimore, MD; 2) Department of Genetics, NC State University, Raleigh, NC.

109 - 9:30
Strong Purifying Selection at Synonymous Sites in *D. melanogaster*. **David S. Lawrie[1], Philipp W. Messer[2], Ruth Hershberg[3], Dmitri A. Petrov[2].** 1) Dept. of Genetics, Stanford University, Stanford, CA; 2) Dept. of Biology, Stanford University, Stanford, CA; 3) The Ruth and Burce Rappaport Faculty of Medicine, Technion - Israel Institute of Technology, Haifa, Israel.

110 - 9:45
Small-scale Hitchhiking Effects in *Drosophila* . **Grace Y. C. Lee, David J. Begun, Charles H. Langley.** Ctr Population Biol, Univ California, Davis, Davis, CA.

111 - 10:00
Molecular Evolutionary Analysis of Flightin Reveals a Novel Protein Motif unique to Pancrustacea. **Jim O. Vigoreaux[1], Pedro Alvarez-Ortiz[1], Felipe Soto[1,2].** 1) Department of Biology, University of Vermont, Burlington, VT; 2) Illinois Natural History Survey, Champaign, IL.

Notes

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 10 10:45 am – 12:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Systems and Quantitative Biology

Co-Moderators: David Arnosti, Michigan State University, East Lansing and Stas Shvartsman, Princeton University, New Jersey
Room: Sheraton 4/5, Level 4

112 - 10:45
The YAN Network is robust against YAN protein variation in the developing eye. **Nicolás Peláez[1,2,3], Hiba Eltahir[1,3], Alec Victorsen[3], Kevin White[3,4], Ilaria Rebay[3,4], Luís Amaral[1,2,3], Richard Carthew[1,3].** 1) Molecular Biosciences, Northwestern University, Evanston, IL; 2) Howard Hughes Medical Institute; 3) Chicago Center for Systems Biology, IL; 4) Universitry of Chicago, Dept. Human Genetics / Dept. for Cancer Research, IL.

113 - 11:00
Quantitative insights into enhancer architecture of dorsal-ventral patterning in Drosophila. **Rupinder Sayal[1], Jacqueline Dresch[2], Irina Pushel[1], David Arnosti[1].** 1) Biochem & Molec Biol, Michigan State Univ, East Lansing, MI; 2) Mathematics, Michigan State Univ, East Lansing, MI.

114 - 11:15
Increasing discriminative power in computational evaluation of the BMP activity distribution in wing disks. **Alexi Brooks[1,2], Tara Brosnan[1,2], Mohit Bahel[2,3], David Umulis[4], Laurel Raftery[1,2].** 1) School of Life Sciences, University of Nevada, Las Vegas, Las Vegas, NV; 2) CBRC, MGH/Harvard Medical School, Charlestown, MA; 3) New York University, New York, NY; 4) Department of Agriculture and Biological Engineering, Purdue University, Lafayette, IL.

115 - 11:30
Reverse-engineering the evolutionary and developmental dynamics of the gap gene system. **Johannes Jaeger, Karl Wotton, Anton Crombach, Damjan Cicin-Sain.** EMBL/CRG Research Unit in Systems Biology CRG - Centre de Regulació Genòmica Barcelona, Spain.

116 - 11:45
Consequences of enhancer architecture for gene expression dynamics and fitness. **Manu Manu[1], Michael Ludwig[1,2], Ralf Kittler[2,3], Kevin White[2,3], Martin Kreitman[1,2].** 1) Ecology and Evolution, University of Chicago, Chicago, IL; 2) Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL; 3) Human Genetics, University of Chicago, Chicago, IL.

117 - 12:00
Epithelial folding during eggshell morphogenesis. **Miriam Osterfield[1], XinXin Du[2], Trudi Schüpbach[4,5], Eric Wieschaus[4,5], Stanislav Shvartsman[1,3].** 1) Lewis-Sigler Institute, Princeton Univ, Princeton, NJ; 2) Department of Physics, Princeton University, NJ; 3) Department of Chemical and Biological Engineering, Princeton University, NJ; 4) Department of Molecular Biology, Princeton University, NJ; 5) Howard Hughes Medical Institute.

118 - 12:15
Quantifying the consistency of interactions in the NADP(H) enzyme network across varying environmental conditions. **Teresa Rzezniczak, Thomas J. S. Merritt.** Department of Chemistry & Biochemistry, Laurentian University, Sudbury, Ontario, Canada.

Cell Biology and Signal Transduction II

Co-Moderators: Kristi Wharton, Brown University, Providence, Rhode Island and Matt Gibson, Stowers Institute, Kansas City, Missouri
Room: Chicago 6/7, Level 4

119 - 10:45
The GEF Vav regulates collective cell migration downstream of guidance receptors by locally activating Rac at the leading edge. **Cecilia H. Fernandez-Espartero[1], Damien Ramel[2], Marganit Farago[3], Malartre Marianne[1,5], Carlos M. Luque[1,4], Shiran Limanovich[3], Shulamit Katzav[3], Gregory Emery[2], María D. Martín-Bermudo[1].** 1) Centro Andaluz de Biologia del Desarrollo (CABD), CSIC, Sevilla, Spain; 2) IRIC, Université de Montréal, Quebec, Canada; 3) IMRID, Jerusalem, Israel; 4) EMBL, Heidelberg, Germany; 5) Université Paris Sud, France.

120 - 11:00
Signal regulation by Rab5 GEFs in Drosophila melanogaster. **Katja L. Vogt, Martin P. Zeidler, Elizabeth Smythe.** Biomedical Sciences, University of Sheffield, Sheffield, United Kingdom.

121 - 11:15
Endocytic regulation of collective cell migration. **Gregory Emery[1], Damien Ramel[1], Xiaobo Wang[2], Denise Montell[2].** 1) IRIC, University of Montreal, Montreal, QC, Canada; 2) Department of Biological Chemistry,Center for Cell Dynamics, Johns Hopkins School of Medicine, Baltimore, MD.

122 - 11:30
Intercellular protein movement in syncytial Drosophila follicle cells. **Peter McLean, Stephanie Airoldi, Lynn Cooley.** Genetics, Yale School of Medicine, 333 Cedar St, New Haven, CT 06520.

123 - 11:45
Destabilization of Integrin-dependent adhesion leads to epidermal cell-cell fusion in *Drosophila* larvae. **Yan Wang, Michael Galko.** Biochemistry and Molecular Biology, University of Texas MD Anderson Cancer Center, Houston, TX.

124 - 12:00
Wunen, a *Drosophila* lipid phosphate phosphatase, is required for septate junction mediated barrier function. **Andrew D. Renault[1], Kristina E. Ile[1], Ratna Tripathy[1], Valentina Goldfinger[1,2].** 1) Max Planck Institute for Developmental Biology, Tübingen, Germany; 2) Department of Microbiology/Biotechnology, University of Tübingen, Tübingen, Germany.

125 - 12:15
Macroglobulin complement related is a secreted core septate junction protein whose localization is mediated through the transmembrane protein Neuroglian. **Sonia Hall, Robert Ward.** Molecular Biosciences, University of Kansas, Lawrence, KS.

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 10 10:45 am – 12:30 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Evolution and Quantitative Genetics II

Co-Moderators: Mohamed Noor, Duke University, Durham, North Carolina and Kelly Dyer, University of Georgia, Athens
Room: Chicago 8-10, Level 4

126 - 10:45
In a variable thermal environment selection favors greater plasticity of cell membranes in *Drosophila melanogaster*. **Brandon S. Cooper[1], Loubna A. Hammad[2], Nicholas P. Fisher[1], Jonathan A. Karty[2], Kristi L. Montooth[1].** 1) Department of Biology, Indiana University, Bloomington, IN; 2) METACyt Biochemical Analysis Center, Department of Chemistry, Indiana University, Bloomington, IN.

127 - 11:00
Epigenetics and evolution of TE control by piRNA: The significance of dose. **Justin P. Blumenstiel[1], Dean M. Castillo[1], Mauricio Galdos[1], Chris Harrison[1], Michelle Wickersheim[1], Kim S. Box[1], Alex Abdullayev[1], Dan Brown[1], Jianwen Fang[2].** 1) Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS; 2) Applied Bioinformatics Lab, University of Kansas, Lawrence, KS.

128 - 11:15
Probing Developmental Networks via Compensatory Evolution. **Sudarshan Chari, Ian Dworkin.** Zoology & EEBB, Michigan State University, East Lansing, MI.

129 - 11:30
Emergence and diversification of a Drosophila pigmentation pattern through the assembly and evolution of a novel gene regulatory module. **Benjamin Prud'homme.** IBDML, CNRS, Marseille, France.

130 - 11:45
The genetic architecture of hybrid inviability between Drosophila melanogaster and D. santomea. **Daniel R. Matute, Jerry Coyne.** Ecology & Evolution, Univ Chicago, Chicago, IL.

131 - 12:00
Mutations in the *neverland* gene turned *Drosophila pachea* into an obligate specialist species. **Virginie Orgogozo[1], Michael Lang[1], Sophie Murat[1], Géraldine Gouppil[1], Luciano Matzkin[3], Catherine Blais[2], Émilie Guittard[2], Takuji Yoshiyama-Yanagawa[4,5], Hiroshi Kataoka[5], Ryusuke Niwa[4,6], René Lafont[2], Chantal Dauphin-Villemant[2].** 1) Institut Jacques Monod, CNRS UMR7592, Paris, France; 2) UPMC, Univ Paris 06, Paris, France; 3) University of California San Diego, Section of Ecology, Behavior and Evolution, La Jolla, CA; 4) Graduate School of Life and Environmental Sciences, University of Tsukuba, Tennoudai, Japan; 5) Department of Integrated Biosciences, Graduate School of Frontier Sciences, The University of Tokyo, Kashiwa, Japan; 6) Initiative for the Promotion of Young Scientists' Independent Research, University of Tsukuba, Tsukuba, Japan.

132 - 12:15
Seasonal variation in life history traits in two species of Drosophila. **Emily Behrman, Katherine OBrien, Paul Schmidt.** University of Pennsylvania, Philadelphia, PA.

Notes

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 10 4:00 pm – 6:00 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Techniques and Functional Genomics

Co-Moderators: Marc Halfon, State University of New York at Buffalo and Michelle Arbeitman, Florida State University, Tallahassee
Room: Sheraton 4/5, Level 4

133 - 4:00
Synthetic Genetic Interactions of Cell Cycle Modulators in *Drosophila*. **Maximilian J. Billmann[1], Thomas Horn[1], Bernd Fischer[2], Thomas Sandmann[1], Wolfgang Huber[2], Michael Boutros[1].** 1) German Cancer Research Center (DKFZ), Division Signaling and Functional Genomics, Heidelberg, Germany; 2) EMBL, Genome Biology Program, Heidelberg, Germany.

134 - 4:15
The Transgenic RNAi Project at Harvard Medical School, The TRiP, is expanding the collection and is establishing the "Digital Red Book of RNAi". **LA Perkins[1,2], L. Holderbaum[1], D. Yang-Zhou[1], L. Jiang[1], R. Tao[1], C. Hu[1], R. Sopko[1], S. Ball[1], M. Foos[1], A. Miller[1], S. Randklev[1], I. Flockhart[1], B. McElvany[1], S. Mohr[1], JQ Ni[1,4], LP Liu[1,4], S. Kondo[1,5], N. Perrimon[1,3].** 1) Dept Genetics, Harvard Medical School, Boston, MA; 2) MGH, Boston, MA; 3) HHMI; 4) Tsinghua U Stock Center, China; 5) DGRC, Japan.

135 - 4:30
Building a community resource of GFP tagged *Drosophila melanogaster* transcription factors. **Rebecca F. Spokony[1], Alec Victorsen[1], Stacy L. Holtzman[2], Sarah El Mouatassim Bih[1], Rebecca Cholst[1], Nader Jameel[1], Koen J. T. Venken[3], Michael Z. Ludwig[1], Jennifer Moran[1], Nicolas Negre[1], Matthew Slattery[1], Hugo J. Bellen[3], Thomas C. Kaufman[2], Kevin P. White[1].** 1) Institute for Genomics & Systems Biology, University of Chicago, Chicago, IL; 2) Department of Biology, Indiana University, Bloomington, IN; 3) HHMI, Baylor College of Medicine, Houston, TX.

136 - 4:45
Tissue-Specific Translation State Array Analysis in Drosophila melanogaster. **Patrick W.-L. Li, Artem Zycovich, Guiping Du, Marysia Kolipinski, Pankaj Kapahi.** Buck Institute for Research on Aging, Novato, CA.

137 - 5:00
Accurate genome-wide identification of dynamic transcriptional enhancers during *Drosophila* development. **Daniel J. McKay[1], Jason D. Lieb[1,2].** 1) Dept of Biology, UNC Chapel Hill; 2) Carolina Center for Genome Sciences, UNC Chapel Hill, Chapel Hill, NC.

138 - 5:15
High resolution association mapping in an outbred *Drosophila melanogaster* population using Pool-Sequencing (NGS speed mapping). **Christian W. Schloetterer, Héloïse Bastide, Martina Visnovska, Raymond Tobler, Andrea Betancourt.** Inst f Populationsgenetik, Vetmeduni Vienna, Wien, Austria.

139 - 5:30
Super-Resolution Imaging of Regulatory Chromatin Dynamics in Developing Embryos. **Alistair N. Boettiger, Xiaowei Zhuang.** Chemistry and Chemical Biology, Harvard University, Cambridge, Ma.

140 - 5:45
Functional redundancy of the *Drosophila* p38 MAP kinases probed by mass spectrometry-based interaction proteomics. **Vladimir Belozerov[1,2], Zhen-Yuan Lin[3], Anne-Claude Gingras[3,4], Michael Siu[1], John McDermott[2].** 1) Department of Chemistry and Centre for Research in Mass Spectrometry, York University, Toronto, Ontario, Canada; 2) Department of Biology, York University, Toronto, Ontario, Canada; 3) Centre for Systems Biology, Samuel Lunenfeld Research Institute, Toronto, Ontario, Canada; 4) Department of Molecular Genetics, University of Toronto, Toronto, Ontario, Canada.

Cell Division and Growth Control

Co-Moderators: Bill Sullivan, University of California, Santa Cruz and Rachel Smith-Bolton, University of Illinois at Urbana-Champaign
Room: Chicago 6/7, Level 4

141 - 4:00
Pre-meiotic SOLO is required for sister chromatid cohesin, chromosome segregation, synaptonemal complex assembly, and DSB repair in Drosophila meiosis. **Rihui Yan[1], Bruce McKee[1,2].** 1) Dept Biochem, Cell, Molec Biol, Univ Tennessee, Knoxville, TN; 2) Genome Science and Technology Program, University of Tennessee, Knoxville, TN.

142 - 4:15
Control of centriole replication by centrosomin proteins. **Timothy Megraw[1], Ling-Rong Kao[1], Paul T. Conduit[2], Jordan W. Raff[2].** 1) Biomedical Sciences, Florida State University, Tallahassee, FL. USA; 2) Sir William Dunn School of Pathology, University of Oxford, Oxford, UK.

143 - 4:30
Spindle misorientation does not cause tumor-like phenotypes in the follicle cell epithelium. **Daniel T. Bergstralh, Daniel St. Johnston.** Gurdon Inst, Univ Cambridge, Cambridge.

144 - 4:45
Endocrine hormonal effects on neoplastic tumorigenesis. **Thu H. Tran, Katherine Pfister, Adrian Halme.** Department of Cell Biology, University of Virginia School of Medicine, Charlottesville, VA.

145 - 5:00
Polyploidy as a mechanism of tissue repair. **Vicki P. Losick[1], Don T. Fox[2], Allan C. Spradling[1].** 1) Dept Embryology, HHMI, Carnegie Institution for Science, Baltimore, MD; 2) Department of Pharmacology and Cancer Biology Duke University Medical Center, Durham, NC.

146 - 5:15
Homeodomain-interacting protein kinase inhibits Hippo signaling to promote growth during *Drosophila* development. **Joanna Chen, Esther Verheyen.** Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, British Columbia, Canada.

147 - 5:30
Tumor suppression by cell competition through regulation of the Hippo pathway. **Molly C. Schroeder[1,2], Chiao-Lin Chen[2], Madhuri Kango-Sing[3], Chunyao Tao[2], Georg Halder[2].** 1) Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030; 2) The University of Texas MD Anderson Cancer Center, 1515 Holcombe, Houston, TX 77030; 3) University of Dayton, Dayton, Ohio.

148 - 5:45
The cell adhesion molecule Echinoid functions as a tumor suppressor and upstream regulator of the Hippo signaling pathway. **Tao Yue, Aiguo Tian, Jin Jiang.** Developmental Biology, University of Texas Southwestern Medical Center, Dallas, TX.

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 10 4:00 pm – 6:00 pm

Program number is in **bold** above title. The first author is the presenter. Full abstracts can be found online

Gametogenesis and Organogenesis

Co-Moderators: Greg Beitel, Northwestern University, Evanston, Illinois and Lilach Gilboa, Weizmann Institute, Rhovot Israel
Room: Chicago 8-10, Level 4

149 - 4:00
Muscle size and myonuclear position are independently regulated by distinct Dynein pathways. **Victoria K. Schulman[1,2], Eric S. Folker[2], Mary K. Baylies[1,2].** 1) Weill Cornell Graduate School of Medical Sciences, New York, NY 10065; 2) Sloan-Kettering Institute, Memorial Sloan-Kettering Cancer Center, New York, NY 10065.

150 - 4:15
MiR-92b is a heart and muscle specific microRNA that regulates Mef2 level through a negative feedback loop in *Drosophila*. **Zhimin Chen[1], Shanshan Liang[1], Ying Zhao[1], Zhe Han[1,2].** 1) Department of Internal Medicine, Division of Molecular Medicine and Genetics, University of Michigan Medical School, Ann Arbor, MI; 2) Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI.

151 - 4:30
Mitotic Cell Rounding Accelerates Invagination of the *Drosophila* Tracheal Placode. **Takefumi Kondo, Shigeo Hayashi.** Lab. for morphogenetic signaling, RIKEN CDB, Kobe, Hyogo, Japan.

152 - 4:45
Without Children (Woc) affects cystoblast differentiation and proper soma-germ line association by modulating Stat target gene expression. **Lilach Gilboa, Iris Maimon, Malka Popliker.** Biological Regulation, Weizmann Institute of Science, Rehovot, Israel.

153 - 5:00
Regulation of pachytene checkpoint in *Drosophila* ovaries via Polo-mediated phosphorylation of Maelstrom. **Jun Wei Pek, Toshie Kai.** Temasek Life Science Laboratory, 1 Research Link National University of Singapore Singapore 117604.

154 - 5:15
Tribbles is a kinase that directs a switch in gene expression to trigger follicle cell migration. **Leonard L. Dobens, Rahul Das, Venessa Masoner, Laramie Pence.** School of Biological Science, University Missouri-Kansas City, Kansas City, MO.

155 - 5:30
Cell-type-specific translational control of *cycB* in the *Drosophila* male germline. **Catherine C. Baker, Byung Soo Gim, Margaret T. Fuller.** Dept Developmental Biol, Stanford Univ Sch Medicine, Stanford, CA.

156 - 5:45
Barriers to Male Transmission of Mitochondrial DNA in Sperm Development. **Steven A. DeLuca.** Dev Biol, UCSF, San Francisco, CA.

Notes

Poster Legend:

Cell Biology and Signal Transduction **157A-283A**

Cell Cycle and Checkpoints **284B-297C**

Cell Death **298A-313A**

Cell Division and Growth Control **314B-336C**

Chromatin and Epigenetics **337A-379A**

Drosophila Models of Human Diseases **380B-444C**

Evolution and Quantitative Genetics **445A-545B**

Gametogenesis and Organogenesis **546C-586A**

Immunity and Pathogenesis **587B-606C**

Neurophysiology and Behavior **607A-655A**

Neural Development **656B-692B**

Pattern Formation **693C-718A**

Physiology and Aging **719B-755B**

Regulation of Gene Expression **756C-808A**

RNA Biology **809B-827B**

Stem Cells **828C-847A**

Techniques and Functional Genomics **848B-866B**

Systems and Quantitative Biology **867C-886A**

Educational Initiatives **887B-892A**

Cell biology & signal transduction

157A
Regulation of epithelial polarity by the E3 ubiquitin ligase Neuralized and the Bearded inhibitors in Drosophila. **Soline Chanet, François Schweiguth.** Inst Pasteur - CNRS URA 2578, Paris.

158B
Wild-type Planar Cell Polarity requires the spatially restricted activity of Prickle protein isoforms. **Simon Collier, Meagan Valentine, Andrea Belalcazar.** Dept Biological Sci, Marshall Univ, Huntington, WV.

159C
aPKC regulates localization but not function of Numb during neuroblast asymmetric divisions. **Jill Haenfler[1], Chaoyuan Kuang[1,2], Cheng-Yu Lee[1,3,4,5].** 1) Program in Cell and Molecular Biology; 2) MSTP; 3) Dept of Cell and Dev Biology; 4) Div of Mol Med & Genetics, Dept of Int Med; 5) Center for Stem Cell Biology, Life Sciences Inst, Univ of Michigan, Ann Arbor, MI.

160A
Functions of a helix-loop-helix transcription factor, Extramacrochaetae, in development of left-right asymmetry in the *Drosophila* embryonic hindgut. **Ryo Hatori, Kiicrhio Taniguchi, Takashi Okumura, Naotaka Nakazawa, Reo Maeda, Kenji Matsuno.** Tokyo University, Department of Biological Science and Technology Noda, Chiba Yamazaki 2641.

161B
Epithelial cell polarity in the hindgut of the *Drosophila* embryo. **Alexandra Kumichel, Elisabeth Knust.** Max Planck Institute of Molecular Cell Biology and Genetics, Pfotenhauerstr. 108, Dresden, Germany.

162C
Drosophila Planar Polarity Gene Multiple Wing Hairs Interacts with formin to Locally Inhibit Actin Cytoskeleton. **Qiuheng Lu, Paul Adler.** University of Virginia, Charlottesville, VA.

163A
Separating planar cell polarity and Hippo signaling activities of the protocadherins Fat and Dachsous. **Hitoshi Matakatsu, Seth Blair.** Dept Zoology, Univ Wisconsin, Madison, WI.

164B
Short stop in rhabdomere terminal web is essential for Drosophila photoreceptor morphogenesis. **Sang-Chul Nam, Uyen Ngoc Mui, Christina M. Lubczyk.** Dept Biol, Baylor Univ, Waco, TX.

165C
Impact of retinal disease-causing missense mutations in the extracellular domain of Crumbs on photoreceptor development and survival in *Drosophila*. **Milena Pellikka, Ulrich Tepass.** Dept Cell & Systems Biology, University of Toronto, Toronto, ON.

166A
Crumbs supports apical delivery in the developing photoreceptor. **Rhian F. Walther, Franck Pichaud.** MRC LMCB, University College London, London, United Kingdom.

167B
An shRNA screen for genes involved in epithelial polarity identifies a novel member of the Par polarity complex. **Frederik Wirtz-Peitz[1], Dong Yan[1], Takashi Nishimura[2], Norbert Perrimon[1].** 1) Department of Genetics, Harvard Medical School, Boston, MA; 2) RIKEN Center for Developmental Biology, Kobe, Japan.

168C
Determining the mechanisms of CTP synthase filament (cytoophidia) formation. **Gabriel N. Aughey, Ji-long Liu.** MRC Functional Genomics Unit, University of Oxford, Oxford, United Kingdom.

169A
Coordination between stable and dynamic microtubule networks determines and maintains Drosophila bristle shape. **Amir Bitan, Uri Abdu.** Department of life sciences, Ben Gurion University, Beer Sheva, Israel.

170B
JNK signaling regulates the actin-binding protein Profilin in *Drosophila* larval wound closure. **Amanda R. Brock[1,2], Yan Wang[1], Susanne Berger[3], Violet C. Han[1], Yujane Wu[1,2], Renate Renkawitz-Pohl[3], Michael J. Galko[1,2].** 1) Biochem & Molec Bio, UT MD Anderson Cancer Ctr, Houston, TX; 2) Genes & Development Graduate Program, UT GSBS, UTMDACC, Houston, TX; 3) Fachbereich Biologie, Philipps-Universitat Marburg, Germany.

171C
Cytoskeletal polarization during collective cell migration in the Drosophila egg chamber. **Maureen P. Cetera, Sally Horne-Badovinac.** DRSB, University of Chicago, Chicago, IL.

172A
Distinguishing spectrin gain-of-function and loss-of-function effects in the larval fat body of Drosophila. **Bianca Diaconesea, Ron Dubreuil.** Dept. of Biological Sciences, University of Illinois Chicago, Chicago, IL.

173B
The Putative Ena Interacting Protein, SKIP, is Required for Border Cell Migration. **Julie Gates, Kate Bowen, Lindsay Regruto, Kara Weichler.** Biology Dept, Bucknell University, Lewisburg, PA.

174C
Narrowing regions of chromosome two that genetically interact with Abl kinase during embryonic development. **Terri Hale[1], Daniella Kawa[1], Adam O-Neil[1], April Peterson[1], Andrew Simmons[1], Traci Stevens[2].** 1) Cosby High School, Midlothian, VA; 2) Biology Dept, Randolph-Macon College, Ashland, VA.

175A
The integrin effectors, PINCH and RSU1, modulate actomyosin contractility in mutants of the myosin phosphatase *flapwing* via independent mechanisms. **Julie L. Kadrmas[1,2], Stephen M. Pronovost[2].** 1) Oncological Sci; 2) Huntsman Cancer Institute, Univ Utah, Salt Lake City, UT.

176B
Dissecting the regulation, interactions, and activity of the APC2-Dia complex in the formation of actin pseudocleavage furrows in the Drosophila syncytial embryo. **Ezgi Kunttas Tatli[1], Vince Stepanik[1], Richa Jaiswal[2], Bruce L. Goode[2], Brooke M. McCartney[1].** 1) Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 2) Department of Biology and Rosenstiel Basic Medical Sciences Research Center, Brandeis University, Waltham, Massachusetts.

177C
Analysis of cell overstretching induced by microtubule depolymerization during tracheal morphogenesis. **Pierre-Marie Le Droguen, Antoine Guichet, Veronique Brodu.** Institut Jacques MONOD, Paris, Paris, France.

POSTER SESSIONS See page 16 for presentation schedule

Poster board number is in **bold** above title. The first author is the presenter. Full abstracts can be found online at drosophila-conf.org

178A
Both Capulet and Slingshot restrict actin polymerization through regulating Twinstar activity during Drosophila eye morphogenesis. **Chiao-Ming Lin, Pei-Yi Lin, Yu-Chiao Li, Yu-Huei Ho, Jui-Chou Hsu.** Institute of Molecular Medicine, Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan 30034, Republic of China.

179B
Dissecting the domains of APC2 required for cortical actin association. **Olivia Molinar[1], Molly Berntsen[2,3], Paige Davison[2,3], Terrence Wong[2,3], Ezgi Kunttas-Tatli[1], Gordon Rule[1,2], Brooke McCartney[1].** 1) Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 2) HHMI-Summer Research Institute; 3) equal contribution.

180C
Does *htsN4* RNA localization matter for developing oocytes? **Nancy J. Pokrywka, Lita Sacks, Huadi Zhang, Kathleen M. Raley-Susman.** Dept. of Biology, Vassar College, Poughkeepsie, NY.

181A
Genetic interactions between Clic, Cdc42 and Cdc42 effectors in filopodia formation. **Regan Price[1], Soichi Tanda[1], Mark Berryman[2].** 1) Biological Sciences, Ohio University, Athens, OH; 2) Biomedical Sciences, Ohio University, Athens, OH.

182B
Drosophila nurse cell dumping reveals a novel interaction between prostaglandin signaling and Fascin. **Tina Tootle, Christopher Groen, Andrew Spracklen, Tiffany Fagan.** Anatomy and Cell Biology, University of Iowa, Iowa City, IA.

183C
Polymerization, Metabolic Regulation, and the Origins of the Cytoskeleton. **James E. Wilhelm, Chalongrat Noree, Dane Samilo, Risa Broyer, Brian Sato.** Section on Cell and Developmental Biology, Univ California San Diego, La Jolla, CA.

184A
The role of CTP Synthase during CNS development. **Omur Y. Tastan, M. Ghows Azzam, Kemian Gou, Mayte Siswick, Ji-Long Liu.** MRC Functional Genomics Unit Department of Physiology, Anatomy and Genetics, University of Oxford, United Kingdom.

185B
A BMP-dependent feedback loop regulates *dpp* expression by direct and indirect mechanisms in the *Drosophila* wing imaginal disc. **Maryanna M. Aldrich, Lorena Soares, Kristi Wharton.** MCB Department, Brown University, Providence, RI.

186C
A *Drosophila* cell culture model for Dpp-induced epithelial plasticity. **David J. Casso[1], Björn Gärtner[2], J. Alex Rondon[1,4], Aiguo Tian[1,3], Rik Derynck[1], Julia Zeitlinger[2], Katja Brückner[1].** 1) University of California San Francisco, San Francisco, CA; 2) Stowers Institute for Medical Research, Kansas City, MO; 3) Present Address: Univ Texas Southwestern Medial Center, Dallas, TX; 4) Present Address: Genentech, South San Francisco, CA.

187A
A Molecular Competition between Wingless and BMP Signaling Controlled by Mad Phosphorylations. **Edward V. Eivers[1], Hadrien Degmany[2], Edward DeRobertis[2].** 1) Department of Biological Sciences, California State University, Los Angeles, CA 90032-8201; 2) Howard Hughes Medical Institute, University of California, Los Angeles, CA 90095-1662.

188B
JNK Signaling Antagonism: The role of Raw during Drosophila dorsal closure. **Molly C. Jud, Melissa Ratcliffe, Matt Higley, Gregory B. Humphreys, Anthea Letsou.** Department of Human Genetics, University of Utah, Salt Lake City, UT.

189C
Eggshell patterning by Wishful thinking: signaling with positive feedback. **Rob Marmion[1], Milica Jevtic[2], George Pyrowolakis[2], Nir Yakoby[1].** 1) Department of Biology and Center for Computational and Integrative Biology, Rutgers University, Camden, NJ; 2) Institute for Biology I, Albert-Ludwigs-University of Freiburg, Freiburg, Germany.

190A
Connections between dorsal closure and head involution. **Matthew J. Moulton, Anthea Letsou.** Department of Human Genetics, University of Utah, Salt Lake City, UT.

191B
Identification of genes that interact with *Drosophila auxilin*. **Susan M. L. Banks, William R. Stoutt, Janice A. Fischer.** ICMB, MCDB, University of Texas at Austin, Austin, TX.

192C
Friend of Echinoid (Fred) and Echinoid (Ed) regulate EGFR trafficking. **Qian Nie, Susan Spencer.** Department of Biology, Saint Louis University, St Louis, MO.

193A
A transmembrane RING ubiquitin E3 ligase, Godzilla, regulates endosomal trafficking. **Yasuo Yamazaki, Gaurav Varshney, Christina Schönherr, Murat Dogru, Bengt Hallberg, Ruth Palmer.** Department of Molecular Biology, Umeå University, Umeå, Sweden.

194B
Expression and Function of Glutactin in Drosophila Larvae and Adults. **Pedro Alvarez-Ortiz, Bryan Ballif, Shawna Guillemette, Rachel Humphrey, Jim Vigoreaux.** Biology, University of Vermont, Burlington, VT.

195C
Gon1 is a matrix metalloproteinase required for migrating cells to detach from the ECM. **Afshan Ismat, Alan Cheshire, Deborah Andrew.** Dept Cell Biol, Johns Hopkins Sch Med, Baltimore, MD.

196A
Genetic interaction between POSH and Zasp52. **Ashley Lennox, Rebecca Garlena, Beth Stronach.** Univ of Pittsburgh Sch Med, Pittsburgh, PA.

197B
Gliotactin functionally interacts with Discs-Large through phosphotyrosine signaling and a PDZ binding motif. **Mojgan Padash-Barmchi, Kendra Sturgeon, Vanessa J. Auld.** Dept. of Zoology, Health Science Institute, University of British Columbia, Vancouver, Canada V6T1Z3.

198C
Spatial and temporal regulation of cell adhesion in Drosophila is mediated by the bHLH transcription factor Delilah. **Adi Salzberg, Atalya Nachman, Nirit Egoz, Naomi Halachmi, Moran Toder.** Rappaport Fac Medicine, Technion-Israel Ins Technology, Haifa, Israel.

199A
Regulation of integrin turnover by force in vivo. **Guy Tanentzapf[1], Mary Pines[1], Stefan Czerniecki[1], Stephanie Ellis[1], Raibatak Das[2], Daniel Coombs[2].** 1) CPS Dept, Univ British Columbia, Vancouver, BC; 2) Mathematics Dept. Univ British Columbia, Vancouver, BC.

POSTER SESSIONS See page 16 for presentation schedule

Poster board number is in **bold** above title. The first author is the presenter. Full abstracts can be found online at drosophila-conf.org

200B
Expression and functions of Drosophila Mmp1 and Mmp2 in Drosophila oogenesis. **Xiaoxi Wang, Kimberly LaFever, Andrea Page-McCaw.** Department of Cell and Developmental Biology, Vanderbilt University Medical Center, Nashville, TN.

201C
The extracellular loops of Smoothened play a regulatory role in Hedgehog signaling. **Candace E. Carroll, Marada Suresh, Daniel Stewart, J. Xiaoxi Oyang, Stacey K. Ogden.** Biochemistry, St Jude Children's Research Hospital, Memphis, TN.

202A
A sensitized suppressor/enhancer screen for Hedgehog pathway components identifies the kinase *Darkener of apricot* as a direct regulator of the transcription factor Ci. **Ryan R. Hurtado[1], Cheng Du[2], Leonard Rabinow[3], Robert Holmgren[1].** 1) Northwestern University, Evanston, IL; 2) Univ. Nebraska Medical Center, Omaha, Nebraska; 3) Université de Paris XI, Paris, France.

203B
Altered localization of activating Smoothened mutants. **Suresh Marada, Candace Carroll, Daniel Stewart, Jessica Ouyang, Stacey Ogden.** Biochemistry, St. Jude Children's Research Hospital, Memphis, TN.

204C
The Hedgehog-induced Smoothened conformational switch assembles a signaling complex that activates Fused by promoting its dimerization and phosphorylation. **Qing Shi[1], Shuang Li[1], Jianhang Jia[2], Jin Jiang[1].** 1) Department of Developmental Biology, UT Southwestern Medical Center at Dallas, Dallas, TX 75390, USA; 2) Markey Cancer Center and Department of Molecular and Cellular Biochemistry, University of Kentucky, Lexington, KY 40536, USA.

205A
A dsRNA Based Screen Identifies Novel Proteins Involved in Drosophila Hedgehog Signaling Pathway. **Maggie Sledd, Ryan Hurtado, Robert Holmgren.** Molecular Biosciences, Northwestern University, Evanston, IL.

206B
USP8 promotes Smoothened signaling by preventing its ubiquitination and changing its subcellular localization. **Ruohan Xia, Hongge Jia, Junkai Fan, Yajuan Liu, Jianhang Jia.** Department of Molecular and Cellular Biochemistry, Markey Cancer Center,University of Kentucky, Lexington, KY 40536, USA.

207C
Rab GTPase mediated Golgi trafficking as a potential major orchestrator of Autophagy in *Drosophila melanogaster*. **Carlos I. Ayala-Navarro, Thomas P. Neufeld.** Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN.

208A
Investigating the Role of PI4P in Lysosome-related Organelle Biogenesis in the *Drosophila* Eye. **Lauren M. Del Bel[1,2], Ronit Wilk[2], Jason Burgess[1,2], Gordon Polevoy[2], Ho-Chun Wei[2], Julie A. Brill[1,2].** 1) Molecular Genetics, University of Toronto, Toronto, Ontario; 2) Cell Biology Program, Hospital for Sick Children, Toronto, Ontario.

209B
Notch signaling from *vps25* mutant cells confers apoptotic protection to neighboring cells via Yorkie activation in *Drosophila*. **Hillary K. Graves[1], Sarah E. Woodfield[1,2], Georg Halder[1,2], Andreas Bergmann[1,2,3].** 1) Biochemistry & Molecular Biology, MD Anderson Cancer Center, Houston, TX, USA; 2) Baylor College of Medicine, Graduate Program in Developmental Biology, Houston, TX, USA; 3) Department of Cancer Biology, University of Massachusetts Medical School, Worcester, MA, USA.

210C
The molecular basis of airway maturation in Drosophila. **Chie Hosono, Rho Matsuda, Christos Samakovlis.** Developmental Biology, The Wenner-Gren Institute, Stockholm, Sweden.

211A
Searching for substrates of the MAST kinase homolog Drop out using SILAC based phospho-proteomics. **Alistair J. Langlands, Daniel Hain, H.-Arno J. Muller.** Division of Cell & Developmental Biology, University of Dundee, Scotland, UK.

212B
Moesin is required for trafficking of Crumbs in the follicular epithelium. **Kristin Sherrard, Richard Fehon.** Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL.

213C
The chocolate and maroon genes are involved in intracellular transport. **Rishi Singhal[1], Aminah Wali[1,2], Paaqua Grant[1], Diana Johnson[1].** 1) Biological Sciences, George Washington University, Washington, DC; 2) University of Maryland, Baltimore County.

214A
PP2A binds to β_H-spectrin and modulates endosomal maturation and *zonula adherens* stability. **Graham Thomas[1], Seung-Kyu Lee[1], Elizabeth Klipfell[2], Joanna Sandilos[1].** 1) Dept Biology/BMB, Penn State, University Park, PA; 2) Cleveland Clinic, Cleveland, OH.

215B
V0-ATPase subunit a1 regulates vesicle sorting through binding to t-SNARE acceptor complexes. **Dong Wang[1,4], W. Ryan Williamson[1,4], Sankaranarayanan Srinivasan[2], Daniel Epstein[1], Florante A. Quiocho[2], P. Robin Hiesinger[1,3].** 1) Dept Physiology, UT Southwestern Med Ctr, Dallas, Texas 75390; 2) Verna and Marrs McLean Department of Biochemistry and Molecular Biology Baylor College of Medicine, Houston, Texas 77030; 3) Green Center Division for Systems Biology, University of Texas Southwestern Med Ctr, Dallas, Texas 75390; 4) Equal contribution.

216C
The interaction between two JAK signaling ligands: Upd and Upd3. **Qian Chen, Douglas Harrison.** Dept Biol, Univ Kentucky, Lexington, KY.

217A
Refinement of the JAK/STAT Genetic Circuit in Border Cell Recruitment and Detachment. **Amanda J. Monahan, Michelle Starz-Gaiano.** Department of Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, 21250.

218B
The Distribution of the JAK/STAT Ligand Unpaired (Upd) During Oogenesis. **Dustin W. Perry, Travis R. Sexton, Douglas A. Harrison.** Department of Biology, University of Kentucky, Lexington, KY.

219C
Elucidating the mechanism by which Apontic inhibits JAK/STAT activity. **Afsoon Saadin, Michelle Starz-Gaiano.** University of Maryland Baltimore County, Baltimore, MD.

220A
The effect of Upd3 on stem cells in Drosophila testes. **Lingfeng Tang, Douglas Harrision.** Department of Biology, University of Kentucky, Lexington, KY.

221B
Transcriptional regulation of the *unpaired3* gene in *Drosophila* development. **Yu-Chen Tsai, Hsin-Yi Huang.** Dept Life Science, Tung-hai Univ, Taichung, Taiwan.

222C
Characterization of tracheal remodeling in third instar larvae through sequential imaging. **Alexandru S. Denes, Oguz Kanca, Emmanuel Caussinus, Markus Affolter.** Biozentrum, University of Basel, Basel, Switzerland.

223A
Computer simulation and live-imaging support a stochastic model of ventral furrow formation. **Philipp Spahn, Rolf Reuter.** University of Tuebingen, Tuebingen, Germany, Interfaculty Institute for Cell Biology, Division of Animal Genetics.

224B
Candidate-based *in vivo* RNAi Screen to Identify Novel Genes Regulating Collective Border Cell Migration. **George Aranjuez[1,3], Elizabeth Kudlaty[2], Jocelyn A. McDonald[3].** 1) Genetics, Case Western Reserve University, Cleveland, OH; 2) Biological Sciences, Northwestern University, Evanston, IL; 3) Molecular Genetics, Cleveland Clinic Foundation, Cleveland, OH.

225C
TGF-β/Activin signaling mediates border cell migration during Drosophila oogenesis. **Sameen Babur, Maryanna Aldrich, Takuya Akiyama, Kristi Wharton.** Department of Molecular Biology, Cell Biology, & Biochemistry , Brown University, Providence, RI.

226A
Genetic screening to identify enzymes affecting the spread of ovarian cancer. **Neville Cobbe, Sarah Forrester, Jenny Horend, Hussain Jaffery, Sally Quine, Amy Rothwell, Shaun Speldewinde, Sarah Taylor, Adriana Guillermo Wiesinger, Helen Young, Daimark Bennett.** School of Biological Sciences, University of Liverpool, Liverpool.

227B
The role of fd64a in salivary gland migration. **Caitlin D. Hanlon, Deborah J. Andrew.** Cell Biol, Johns Hopkins Med Inst, Baltimore, MD.

228C
Par-1 Controls Non-Muscle Myosin II Activity Through Myosin Phosphatase to Regulate Collective Border Cell Migration. **Pralay Majumder[1], Aranjuez George[1,2], McDonald Jocelyn[1,2].** 1) Molecular Genetics, Lerner Research Institute, Cleveland Clinic, Cleveland, OH; 2) Genetics, Case Western Reserve University School of Medicine, Cleveland, OH.

229A
WASH, a Rho1 effector, functions through the Arp2/3 complex in hemocyte migration. **James J. Watts, Evelyn Rodriguez-Mesa, Susan M. Parkhurst.** Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA.

230B
Fkbp14 is Required for *Drosophila* Development and Interacts with the Notch Pathway. **Julia M. Bonner[1,2], Diana L. van de Hoef[1,2], Gabrielle L. Boulianne[1,2].** 1) Developmental and Stem Cell Biology, Hospital for Sick Children, Toronto, Ontario, Canada; 2) Department of Molecular Genetics, University of Toronto.

231C
Interactions between MEF2, SD, VG and the Notch pathway during Indirect Flight Muscle development. **Charlotte Caine, Joel Silber, Alexis Lalouette.** Develomental And Molecular Biology, Institut Jacques Monod, PARIS, France.

232A
The role of Notch signaling in primary pigment cell formation. **Yu-Huei Ho[1], Jui-Chou Hsu[1,2].** 1) Institute of Molecular Medicine, Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan 30013, Republic of China; 2) Department of Biological Science and Technology, National Chiao Tung University, Hsinchu,Taiwan 30013, Republic of China.

233B
Monosaccharide *O*-fucosylation of Notch receptor is required for Notch signaling in *Drosophila*. **Akira Ishio[1], Tomonori Ayukawa[1], Naoki Aoyama[1], Hiroyuki O. Ishikawa[1], Tomoko Yamakawa[1], Takeshi Sasamura[1], Tetsuya Okajima[2], Kenji Matsuno[1].** 1) Department of Biological Science and Technology, Tokyo University of Science, Chiba; 2) Nagoya University Graduate School of Medicine.

234C
Regulation of *broad* expression by Notch signaling during the mitotic/endocycle switch in *Drosophila* follicle cells. **Dongyu Jia, Yoichiro Tamori, Wu-Min Deng.** Department of Biological Science, Florida State University, Tallahassee, FL.

235A
Xylose: A Novel Modulator of Notch Signaling. **Tom V. Lee[1], Maya Sethi[2], Jessica Leonardi[1,4], Nadia Rana[3], Robert Haltiwanger[3], Hans Bakker[2], Hamed Jafar-Nejad[1,4].** 1) University of Texas Health Science Center, Houston, TX; 2) Hannover Medical School, Hannover, Germany; 3) Stony Brook University, Stony Brook, NY; 4) Baylor College of Medicine, Houston, TX.

236B
Investigating the role of the NHR2 domain of Neuralized in Notch Signaling. **Sili Liu[1,2], Julia Maeve Bonner[1,2], Gabrielle Boulianne[1,2].** 1) Stem Cell & Developmental Biology, Hospital For Sick Children, Toronto, ON, Canada; 2) Department of Molecular Genetics, University of Toronto, Toronto, ON, Canada.

237C
Importin-α3 mediates nuclear import of Notch and it displays synergistic effect with Notch activation on cell proliferation. **Nalani Sachan, Abhinava Mishra, Mousumi Mutsuddi, Ashim Mukherjee.** Department of Molecular & Human Genetics, Banaras Hindu University, Varanasi, India.

238A
Mutual bi-directional Notch activation represses fusion competence in swarming adult Drosophila myoblasts. **Eyal D. Schejter, Boaz Gildor, Ben-Zion Shilo.** Dept. Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel.

239B
Function of a neurogenic gene, *pecanex* in Notch signaling. **Tomoko Yamakawa[1], Kenta Yamada[1], Takeshi Sasamura[1], Naotaka Nakazawa[1], Maiko Kanai[1], Emiko Suzuki[2], Mark E. Fortini[3], Kenji Matsuno[1].** 1) Dept of Biol Sci/Tec, Tokyo Univ of Sci, Chiba, Japan; 2) Gene Network Lab, National Institute of Genetics, Mishima, Japan; 3) Dept of Biochem and Mol Biol, Kimmel Cancer Center, Thomas Jefferson Univ, Philadelphia, PA, USA.

240C
Dynamics of the Rho family small GTPases in Single Cell Wound Repair. **Maria Teresa Abreu-Blanco, Susan M. Parkhurst.** Basic Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA.

241A
Septate junctions play an unexpected role in the cell division of polarized epithelia. **Vanessa J. Auld, Kristi Charish.** Dept Zoology, Life Sciences Institute, Univ British Columbia, Vancouver, BC, Canada.

POSTER SESSIONS See page 16 for presentation schedule

Poster board number is in **bold** above title. The first author is the presenter. Full abstracts can be found online at drosophila-conf.org

242B
Distinct subcellular distributions of three CTP synthase isoforms in *Drosophila*. **Ghows Azzam, Ji-Long Liu.** MRC Functional Genomics Unit, Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, Oxfordshire, United Kingdom.

243C
Dissection of the NR box-dependent interaction between the bHLH-PAS paralogs MET and GCE and the FTZ-F1 nuclear receptor. **Travis J. Bernardo, Edward B. Dubrovsky.** Fordham University, Bronx, NY.

244A
Regulation of autophagy by the Atg1/Ulk family of protein kinases in *Drosophila melanogaster*. **Christopher R. Braden, Thomas P. Neufeld.** University of Minnesota, Minneapolis, MN.

245B
The effects of PKA in Drosophila fat body. **Yu-Yun Chang, Thomas Neufeld.** Gen & Cell Development, Univ Minnesota, Minneapolis, MN.

246C
Characterization of a novel testis-specific mitochondrial protein in sperm formation. **Jieyan Chen, Timothy Megraw.** Biomedical Sciences, Florida State University, Tallahassee, FL.

247A
Natural variation provides a rich source of new genes for ER stress response. **Clement Y. Chow, Mariana F. Wolfner, Andrew G. Clark.** Dept Mol Bio & Gen, Cornell Uiv, Ithaca, NY.

248B
Cell signalling mechanisms in epithelial stress and immune responses. **Shireen A. Davies, Gayle Overend, Sujith Sebastian, Pablo Cabrero, Selim Terhzaz.** Institute of Molecular Cell and Systems Biology, University of Glasgow, Glasgow, United Kingdom.

249C
Multiple screening approaches suggest novel interaction partners for Eyes absent in the nucleus and cytoplasm. **Trevor L. Davis[1,2], Ilaria Rebay[1,2].** 1) Ben May Department for Cancer Research, University of Chicago, Chicago, IL; 2) Committee on Development, Regeneration, and Stem Cell Biology, University of Chicago, Chicago, IL.

250A
Akt is Negatively Regulated by Hippo Signaling for Growth Inhibition in Drosophila. **Yaoting Deng[1], Xin Ye[2], Zhi-Chun Lai[1,2,3].** 1) Biochemistry and Molecular Biology; 2) Graduate Degree Program in Genetics; 3) Department of Biology, Penn State University, University Park, PA.

251B
Characterization of cytoplasmic Eyes absent function in *Drosophila* eye development. **Charlene Hoi, Fangfang Jiang, Wenjun Xiong, Ilaria Rebay.** Ben May Department of Cancer Research, University of Chicago, Chicago, IL.

252C
Ligand-binding properties of the juvenile hormone receptor, Methoprene-tolerant. **Marek Jindra[1], Jean-Philippe Charles[2], Thomas Iwema[3], V. Chandana Epa[4], Keiko Takaki[1], Jan Rynes[1].** 1) Biology Center ASCR, Ceske Budejovice, Czech Republic; 2) Université de Bourgogne, Dijon, France; 3) University of La Réunion, Ste Clotilde, Réunion, France; 4) CSIRO, Parkville, Victoria, Australia.

253A
PKA upstream factors regulating autophagy in *Drosophila melanogaster*. **Jung Kim, Thomas Neufeld.** GENETICS, CELL BIOLOGY AND DEVELOPMENT, UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MN.

254B
Steroid-induced microRNA let-7 acts as a spatio-temporal code for neuronal cell fate in Drosophila learning centers. **Mariya M. Kucherenko, Halyna R. Shcherbata.** Gene expression and signaling, Max Planck Institute for biophysical chemistry, Goettingen, Germany.

255C
ULTImate Yeast Two-Hybrid: From High Quality Protein Interaction Mapping to Single Chain Antibody Analysis. **Philippe le Clerc[1], Stephanie Miserey-Lenkei[2], Ole Vielemeyer[2], Petra Tafelmeyer[1], Franck Perez[2], Arnaud Echard[2,3], Bruno Goud[2], Jacques Camonis[2], Etienne Formstecher[1], Jean-Christophe Rain[1].** 1) Hybrigenics Services SAS, Paris, France; 2) Institut Curie, Paris, France; 3) Institut Pasteur, Paris, France.

256A
Patterning the Drosophila eggshell along two axes by the glypican Dally. **David J. Lemon[1], Nir Yakoby[1,2].** 1) Biology Department, Rutgers University, Camden, NJ; 2) Center for Computational and Integrative Biology, Rutgers University, Camden, NJ.

257B
New roles for the Elmo-Moleskin complex in muscle-tendon attachment. **Ze (Cindy) Liu, Erika R. Geisbrecht.** School of Biological Science , University of Missouri-Kansas City, Kansas City , MO.

258C
Characterizing the role of a novel gene in the regulation Fat signaling in *Drosophila*. **Robyn Rosenfeld[1,2], Helen McNeill[1,2].** 1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, ON, Canada; 2) Molecular Genetics, University of Toronto, Toronto, ON, Canada.

259A
Dissection of an ecdysone-inducible type II transmembrane serine protease-signaling pathway in imaginal discs. **Sienna M. Sartori, Cynthia Bayer, Laurence von Kalm.** Department of Biology and Biomolecular Sciences Center, University of Central Florida, Orlando, FL.

260B
MAP3K molecular chimeras for the study of jun kinase pathway signaling specificity. **Beth Stronach.** Dept Micro & Mol Genetics, Univ Pittsburgh Sch Medicine, Pittsburgh, PA.

261C
Regulation of Hippo signaling by Jun kinase signaling during Drosophila wing discs regeneration and in neoplastic tumors. **Gongping Sun, Kenneth Irvine.** Waksman Institute of Microbiology, Rutgers, the State University of New Jersey, Piscataway, NJ.

262A
Using *Drosophila* to Understand the Biology of Deubiquitinating Enzymes. **Sokol V. Todi, Wei-ling Tsou, Kelly M. McGregor.** Departments of Pharmacology & Neurology, Wayne State University School of Medicine, Detroit, MI USA.

263B
Dissecting the Fat/Dachsous pathway's role in planar cell polarity using chromatin immunoprecipitation to find targets of Atrophin. **Kelvin Yeung[1,2], Helen McNeill[1,2].** 1) Research, Samuel Lunenfeld Res Inst, Toronto, Ontario, Canada; 2) Molecular Genetics, University of Toronto, Toronto, Ontario, Canada.

264C
Activating transcription factor-3 regulates stem cell homeostasis in the Drosophila intestine. **Jun Zhou, Anna-Lisa Boettcher, Michael Boutros.** German Cancer Research Center (DKFZ), Div. Signaling and Functional Genomics and Heidelberg University, D-69120 Heidelberg.

265A
Characterization of novel epidermal growth factor receptor target genes implicated in *Drosophila* egg and wing development. **Jacquelyn Gallo, Luke Dombert, Bethany Guarilia, David Marr, Erica Naperkowski, Nicholas Sweeney, Lisa Kadlec.** Dept. of Biology, Wilkes University, Wilkes-Barre, PA.

266B
Identifying novel nuclear targets for MAPK/Erk2. **Rona Grossman[1], Tatyana Shestkin[1], David Engelberg[2], Gerardo Jiménez[3], Ze'ev Paroush[1].** 1) Developmental Biology and Cancer Research, IMRIC, Faculty of Medicine, The Hebrew University, Jerusalem, Israel; 2) Biological Chemistry, The Alexander Silberman Institute of Life Sciences, The Hebrew University, Jerusalem, Israel; 3) Institut de Biologia Molecular de Barcelona-CSIC and Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain.

267C
In vivo analysis of the Midkine/Pleiotrophin fly homologues Miple1 and Miple2. **Fredrik Hugosson[1], Camilla Sjögren[1], Ludmilla Hedlund[1], Anna Birvé[2], Ruth H. Palmer[1].** 1) Department of Molecular Biology, Umeå University, Umeå, Sweden; 2) Department of Medical Bioscience, Umeå University, Umeå, Sweden.

268A
Dynamic regulation of the transcriptional repressor Capicua by localized receptor tyrosine kinase signaling. **Victoria M. Sanchez[1], Oliver Grimm[2], Yoosik Kim[1], Jordi Casanova[3], Eric Wieschaus[2], Stas Shvartsman[1].** 1) Chemical and Biological Engineering, Princeton University, Princeton, NJ; 2) Department of Molecular Biology, Princeton University,Princeton, NJ; 3) Institut de Biologia Molecular de Barcelona, Parc Cientific de Barcelona, Spain.

269B
Regulation of midgut metamorphosis via coordinated action between receptor tyrosine phosphatase Ptp52F and TER94/VCP. **Abirami Santhanam[1,2,3], Guang-Chao Chen[1,2,3], Tzu-Ching Meng[1,2,3].** 1) Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan; 2) Institute of Biochemical Sciences, National Taiwan University, Taipei, Taiwan; 3) Taiwan International Graduate Program, Academia Sinica, Taipei, Taiwan.

270C
FGF and EGF signaling pathway act together to regulate Drosophila adult muscle patterning. **Kumar Vishal, Carli Calderon, Zachary Jump, Brian Gallagher, Joyce Fernandes.** Dept Zoology, Maimi Univ, Oxford, OH.

271A
RhoGAP68F inhibits endocytic recycling to promote epithelial elongation during metamorphosis. **Beatriz Hernandez de Madrid, Lina Greenberg, Victor Hatini.** Anatomy and Cell Biology, Tufts University, Boston, MA.

272B
crinkled reveals a new role for Wingless signaling in Drosophila denticle formation. **Amy Bejsovec, Anna T. Chao.** Dept of Biology, Duke University, Durham, NC.

273C
Polarized secretion of Wnt/Wg in *Drosophila* wing imaginal discs. **Varun Chaudhary, Julia Gross, Michael Boutros.** German Cancer Research Center (DKFZ), Division Signaling and Functional Genomics and University of Heidelberg, Im Neuenheimer Feld 580, D-69120 Heidelberg, Germany.

274A
Pebble RhoGEF acts as a negative regulator of Wg/Wnt signaling. **Elisabeth R. Greer, Kieran R. Hendricksen, Anna T. Chao, Amy Bejsovec.** Dept of Biology, Duke University, Durham, NC.

275B
A developmental function of dWNK kinase in the regulation of canonical Wnt/β-catenin signaling. **Andreas Jenny[1], Ekatherina Serysheva[2], Hebist Berhane[1], Kubilay Demir[3], Michael Boutros[3], Marek Mlodzik[2].** 1) Dept Molec & Dev Biol, Albert Einstein Col Med, New York, NY; 2) Dept. of Developmental and Regenerative Biology, Mount Sinai School of Medicine, New York, NY; 3) Signaling and Functional Genomics, German Cancer Research Center, Heidelberg, Germany.

276C
Role of Wingless in pigment rim formation. **Sudha R. Kumar, Hinaben Patel, Andrew Tomlinson.** Department of Genetics & Development, Columbia University, NY.

277A
Characterisation of the trafficking route taken by Wingless in secreting cells. **Lucy Palmer, Cyrille Alexandre, Karen Beckett, Jean-Paul Vincent.** Developmental Biology, NIMR, London, United Kingdom.

278B
The microRNA-310/13 cluster antagonizes β-catenin function in *Drosophila*. **Felix Peng[1], Raluca Pancratov[1], Peter Smibert[2], Jr-Shiuan Yang[2], Emily R. Olson[1], Ciaran Guha-Gilford[1], Eric C. Lai[2], Ramanuj DasGupta[1].** 1) New York University School of Medicine, Department of Pharmacology and the NYU Cancer Institute; 522 First Ave, SRB #1211, New York NY 10016; 2) Sloan-Kettering Institute, Department of Developmental Biology, 1275 York Ave Box 252, New York NY 10065.

279C
Screening the *Drosophila* kinome and phosphatome *in vivo* to identify novel regulators of the Wnt/Wg signaling pathway. **Tirthadipa Pradhan, Sharan Swarup, Esther Verheyen.** SSB7152,MBB, Simon Fraser Unversity, Burnaby, BC.

280A
The destruction complex in the Wnt pathway: APC's mechanism of action in βcatenin degradation. **Mira I. Pronobis[1], David M. Roberts[2], John S. Poulton[1], Mark Peifer[1].** 1) Biology, UNC, Chapel Hill, NC; 2) Biology, F&M, Lancaster, PA.

281B
Frizzled 2 is critical for the regulation of vitellogenesis in the mosquito Aedes aegypti. **Shin-Hong Shiao.** Department of Parasitology, National Taiwan University, Taipei, Taipei, Taiwan.

282C
A screen for mutations that affect Drosophila eye development identifies new regulators of signaling pathways. **Annabelle Y. T. Suisse[1], Josepha Steinhauer[1,2], Jessica E. Treisman[1].** 1) Developmental Genetics, Skirball Institute of Biomolecular Medicine, New York, NY; 2) Department of Biology, Yeshiva University, New York, NY.

283A
Role of kinesin II - Armadillo interaction in Wingless signaling pathway. **Linh Thuong Vuong, Kwang Wook Choi.** Department of Biological Sciences, KAIST, Graduate School of Nanoscience and Technology, Daejeon, Korea.

Cell cycle and checkpoints

284B
The Role of Cyclin B3 in Drosophila Female Meiosis. **Mohammed R. Bourouh, Rajdeep Dhaliwal, Andrew Swan.** Biological Sciences, University of Windsor, Windsor, Ontario, Canada.

285C
Checkpoint defects reveal specific requirements for T14 and Y15-mediated Cdk1 inhibitory phosphorylation during Drosophila development. **Joseph O. Ayeni[1], Oindrila Mukherjee[1], Ramya Varadarajan[1], David T. Stuart[2], Frank Sprenger[3], Shelagh Campbell[1].** 1) Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada; 2) Department of Biochemistry, University of Alberta, Edmonton, Alberta, Canada; 3) Institute for Biochemistry, Genetic and Microbiology, NF III, University of Regensburg, 93049 Regensburg, Germany.

286A
Examination of Arf1 GTPase activity on mitotic events in early *Drosophila* embryos. **Rabab Khodary, Blake Riggs.** San Francisco State University ,1600 Holloway Avenue, San Francisco , CA, 94132.

287B
Role of SCF^{Skp2} in Maintaining Genome Stability. **Biju Vasavan, Nilanjana Das, Andrew Swan.** Biological Sciences, University of Windsor, Windsor, Ontario.

288C
Characterization of Caprin Phosphorylation at the mid-blastula transition. **Xi Chen, Ophelia Papoulas.** The Section of Molecular Cell and Developmental Biology, The University of Texas at Austin, Austin, TX.

289A
mu2 affects mitosis and meiosis by regulating BubR1 expression in *Drosophila melanogaster*. **James M. Mason[1], Raghuvar Dronamraju[1,2].** 1) Laboratory of Molecular Genetics, NIH/NIEHS, Research Triangle Park, NC; 2) Department of Biochemistry and Biophysics, UNC, Chapel Hill, NC.

290B
Distinct roles for multiple translesion polymerases during DNA double-strand break repair. **Mitch McVey[1], Daniel P. Kane[1], Michael Shusterman[1], Kelly Beagan[1], Yikang Rong[2].** 1) Biology, Tufts University, Medford, MA; 2) Laboratory of Biochemistry and Molecular Biology, National Cancer Institute, Bethesda, MD.

291C
Establishing linkage between GINS complex sub-unit Sld5 and checkpoint protein Chk2*(loki)* using *Drosophila melanogaster* as the model organism. **Divya Devadasan, Tim Christensen.** East Carolina University, Greenville, NC.

292A
Regulation of Replication Initiation and Fork Progression during *Drosophila* Follicle Cell Gene Amplification. **Brian Hua, Jessica L. Alexander*, Terry Orr-Weaver.** Whitehead Institute, Cambridge, MA.

293B
Mutation of the lethal(2)denticless gene results in larval lethality and sterility. **S. Catherine S. Key[1], Roketa Sloan[1], Christina Swanson[2], Maryonne Snow-Smith[1], Kristen Smith[1].** 1) Department of Biology, North Carolina Central University, Durham, NC; 2) Department of Biology, University of North Carolina-Chapel Hill, Chapel Hill, NC.

294C
Integrins are required for proper cell cycle progression and differentiation. **Maria J. Gomez-Lamarca, Laura Cobreros, Maria D. Martin-Bermudo.** Centro Andaluz de Biologia del Desarrollo (CABD), Univ. Pablo Olavide-CSIC, SEVILLA, Spain.

295A
Tissue Growth Coordination in the Drosophila Brian via Glia Polyploidization. **Yingdee Unhavaithaya, Terry Orr-Weaver.** Whitehead Institute and Dept. of Biology, Massachusetts Institute of Technology, Cambridge MA 02142.

296B
Role of p8 during spermatogenesis and the early embryonic development of *Drosophila melanogaster*. **Grisel L. Cruz, Enrique A. Reynaud, Mario E. Zurita.** Department of Developmental Genetics and Molecular Physiology, Institute of Biotechnology, Cuernavaca, Morelos, Mexico.

297C
Mitotic Reorganization of the Endoplasmic Reticulum is dependent on the Microtubule Network. **Justin D. Mclaurin, Blake Riggs PhD.** San Francisco State University, 1600 Holloway ave. San Francisco, CA. 94132.

Cell death

298A
A screening for autophagic genes in *Drosophila melanogaster*. **Ahrum Jin[1,2], Joonho Choe[1], Thomas Neufeld[2].** 1) Department of Biological Sciences, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; 2) Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN.

299B
Regulation of neural stem cell fate in Drosophila cell death mutants. **Richa Arya, Ying Tan, Hsiao-Yu Huang, Megumu Yamada-Mabuchi, Kristin White.** CBRC, MGH/HARVARD, CHARLESTOWN, MA.

300C
Investigating a role of dHb9-positive motor neurons in eclosion behavior. **David S. Conway, Soumya Banerjee, Marcus Toral, Alexander Busch, Joyce Fernandes.** Zoology, Miami Univ, Oxford, OH.

301A
A Genetic Screen to Identify Cell Death Regulators In the *Drosophila* Ovary. **Tatevik Keshishyan, Jeremy Nguyen, Olivia Rudnicki, Michelle Gammill, Jemma Taipan, Sarah Durrin, Luz Ceballos, Aileen Leung, Elizabeth Tanner, Jeanne Peterson, Kim McCall.** Boston University, Boston, MA.

302B
Determination of the contributions of caspases and autophagy to cell death in the ovary. **Jeanne S. Peterson, Kim McCall.** Dept Biol, Boston Univ, Boston, MA.

303C
An EMS genetic screen to identify mutations that modulate loss of Rb phenotypes. **Tianyi Zhang, Zhentao Sheng, Wei Du.** Ben May Department for Cancer Research, University of Chicago, Chicago, IL.

304A
Screening for genes regulating mitochondrial dynamics in Drosophila apoptosis. **Eltyeb Abdelwahid[1], Michael Thomenius[2], Sally Kornbluth[2], Kristin White[1].** 1) Cutaneous Biology Research Center, Massachusetts General Hospital/Harvard Medical School, Charlestown, MA, USA; 2) Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC, USA.

305B
The *corp* gene regulates cell fate following DNA damage. **Riddhita Chakraborty, Kent Golic.** Department of Biology, University of Utah, Salt Lake City, UT.

306C
Loss of TBP function causes developmental arrest and apoptosis in Drosophila melanogaster. **Tun-Chieh Hsu, Chin Sern Yong, Ming-Tsan Su.** Department of Life Science-National Taiwan Normal University, Taipei, Taiwan.

307A
Genetic characterization of a Drosophila DUB involved in apoptosis. **Levente Kovács[1], Olga Nagy[1], Margit Pál[1], Octavian Popescu[2], Péter Deák[1].** 1) Institute of Biochemistry, Hungarian Academy of Sciences Biological Research Centre, Szeged, Hungary; 2) Molecular Biology Center, Interdisciplinary Research Institute on Bio-Nano-Sciences, Cluj-Napoca, Romania.

308B
Fzy/Cdc20 promotes neural stem cell survival. **Chaoyuan Kuang[1], Cheng-Yu Lee[1,2,3,4].** 1) Cellular and Molecular Biology Graduate Program; 2) Department of Cell and Developmental Biology; 3) Division of Molecular Medicine and Genetics, Department of Internal Medicine; 4) Center for Stem Cell Biology, Life Sciences Institute, University of Michigan Medical School, Ann Arbor, MI 48109.

309C
Induction of IAP-antagonist and apoptosis in Drosophila and mosquito larvae following virus infection. **Bo Liu[1], James Becnel[2], Rollie Clem[3], Lei Zhou[1].** 1) Dept. Molecular Genetics and Microbiology, College of Medicine, University of Florida, Gainesville, FL; 2) United States Department of Agriculture, ARS, Gainesville, FL; 3) Division of Biology, Kansas State University, Manhattan, KS.

310A
NMDA receptor and protein tyrosine phosphatase Ptpmeg implicate calcium signaling in the control of developmental cell death in *Drosophila*. **Brandy C. Ree, Yanling Liu, Michael Lehmann.** University of Arkansas, Fayetteville, AR.

311B
Translational repression by reaper is mediated by targeted degradation of a translation factor. **Rolando Rivera-Pomar[1,2], Carlos Bertoncini[3], M. Paula Vazquez-Pianzola[4], Diego Vaisman[1,5], Paola Ferrero[1,5].** 1) Centro de Bioinvestigaciones,, UNNOBA, Pergamino, Buenos Aires, Argentina; 2) Centro Regional de Estudios Genómicos, UNLP, Florencio Varela, Buenos Aires, Argentina; 3) University of Cambridge, Cambridge, UK; 4) University of Bern, Bern, Switzerland; 5) Departamento de Ciencias Básicas y Experimentales, UNNOBA, Pergamino, Argentina.

312C
An epigenetically regulated enhancer region mediates cell competition - induced cell death. **Can Zhang[1], Sergio Casas Tintó[2], Michelle Chang[1], Eduardo Moreno[3], Lei Zhou[1].** 1) Dept of Molecular Genetics and Microbiology, Univ of Florida, Gainesville, FL; 2) Cajal Institute, CSIC, Madrid, Spain; 3) Molecular Oncology Program, CNIO, Madrid, Spain.

313A
Identification of CDK7 as a protein required for IAP-antagonist-induced apoptosis. **Jun Morishita Funabiki, Min-Ji Kang, Kevin Fidelin, Hyung Don Ryoo.** Cell Biology, New York Univ Sch Medicine, New York, NY.

Cell division and growth control

314B
The Role of JNK in Cell Competition. **John F. Fullard, Wei Li, Nicholas E. Baker.** Department of Genetics, Albert Einstein College of Medicine, Bronx, NY.

315C
Cell competition during adult gut homeostasis. **Golnar Kolahgar, Enzo Poirier, Sarah Mansour, Eugenia Piddini.** The Gurdon Institute, University of Cambridge, Cambridge, United Kingdom.

316A
A model to study the influence of Hippo signaling on local cell-cell interactions. **Indrayani Waghmare[1], Shilpi Verghese[1], Katelin Hanes[1], Alyssa Lesko[2], Amit Singh[1,3,4], Madhuri Kango-Singh[1,3,4].** 1) Department of Biology, University of Dayton, Dayton, OH; 2) Department of Chemistry, University of Dayton, Dayton OH; 3) Pre Medical Programs, University of Dayton, Dayton OH; 4) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, Dayton OH.

317B
Regulation of Drosophila glial cell proliferation by Merlin-Hippo signaling. **Venu Bommireddy venkata, Ken Irvine.** Waksman Institute, Piscataway, NJ.

318C
Hippo signaling controls Dronc activity to regulate organ size in Drosophila. **Shilpi Verghese[1], Shimpi Bedi[1], Madhuri Kango-Singh[1,2,3].** 1) Department of Biology, University of Dayton, Dayton, OH; 2) Pre-Med Programs, University of Dayton, Dayton, OH, USA;; 3) Centre for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, 300 College Park Dayton, OH 45469 USA.

319A
A ciliopathy model to test the regenerative capacity of primary cilia and to screen small molecule therapies. **Jieyan Chen, Timothy Megraw.** Biomedical Sciences, Florida State University, Tallahassee, FL.

320B
Heterochromatin-mediated pairing and segregation of achiasmate chromosomes depends on HP1. **Christopher C. Giauque, Justin J. Gaudet, Sharon E. Bickel.** Department of Biological Sciences, Dartmouth College, Hanover, NH.

321C
Nondisjunctional segregation in *Drosophila* female meiosis I is preceded by homolog malorientation at metaphase arrest. **William Gilliland, Shane Gillies, Khateriaa Pyrtel, Wonbeom Paik, Nneka Wallace.** Department of Biological Sciences, DePaul University, Chicago, IL.

322A
Chromosome axis proteins regulate synapsis initiation in Drosophila oocytes. **Kathryn Landy, Mercedes Gyruicza, Kim McKim.** Waksman Institute of Microbiology, Rutgers University, Piscataway, NJ.

323B
Heterologous segregation during *Drosophila* female meiosis I is preceded by heterologous coorientation at metaphase arrest. **Ashley Snouffer, Wonbeom Paik, William Gilliland.** Biological Science Department, DePaul University, Chicago, IL.

324C
Genome-wide functional analysis of cyclic transcription in the developing *Drosophila* wing. **Liang Liang[1,2], Matthew Gibson[1].** 1) Stowers Institute for Medical Research, Kansas City, MO, USA; 2) OU program, UK.

325A
Cytokinesis-deficient binucleation in *Drosophila* accessory gland for providing plasticity of organ size. **Kiichiro Taniguchi[1], Akihiko Kokyuryo[1,2], Takao Imano[1,2], Rumi Sakata[1], Ryunosuke Minami[3], Hideki Nakagoshi[3], Takashi Adachi-Yamada[1,2].** 1) Dept of Life Sci, Gakushuin Univ, Japan; 2) Dept of Biol, Grad Sch of Sci, Kobe Univ, Japan; 3) Dept of Biol, Grad Sch of Nat Sci/Tech, Okayama Univ, Japan.

326B
Identifying mutations in the chromosomal passenger complex and associated regulators of spindle assembly. **Arunika Das[1], Shital Shah[2], Kim McKim[1].** 1) Waksman Institute, Rutgers University, Piscataway, NJ; 2) University of Medicine and Dentistry, New Jersey.

327C
The Regulation of Microtubule Dynamics is Essential for Meiotic Spindle Organization in Drosophila Females. **Sarah Radford, Andrew Harrison, Kim McKim.** Waksman Institute, Rutgers University, Piscataway, NJ.

328A
The Hippo Pathway targets the Cdh1/fzr inhibitor Rae1 to regulate mitosis and establish organ size homeostasis. **Maryam Jahanshahi[1], Kuangfu Hsiao[2], Andreas Jenny[3], Cathie Pfleger[1].** 1) Department of Oncological Sciences, Mount Sinai School of Medicine, New York, NY; 2) Department of Neuroscience, Mount Sinai School of Medicine, New York, NY; 3) Department of Developmental and Molecular Biology, Albert Einstein College of Medicine, Bronx, NY.

329B
Translationally Controlled Tumour Protein (TCTP) regulates 14.3.3s function during *Drosophila* organ development. **Phuong Thao Le.** KAIST, Daejeon, South Korea.

330C
uninflatable and *Matrix metalloproteinase 1* are required for tissue specific growth in the larval trachea of *Drosophila melanogaster*. **Paulo Leal, Joshua Neff, Robert Ward.** Molecular Biosciences, University of Kansas, Lawrence, KS.

331A
The role of the AP-4 transcription factor *cropped* in imaginal disc growth and regeneration. **Sutton Matt, Halme Adrian.** Department of Cell Biology, University of Virginia School of Medicine, Charlottesville, VA.

332B
Non-autonomous tumor progression driven by mitochondrial dysfunction. **Shizue Ohsawa[1], Yoshitaka Sato[1], Masato Enomoto[1], Mai Nakamura[1], Aya Betsumiya[1], Tatsushi Igaki[1,2].** 1) Department of Cell Biology, G-COE, Kobe University Graduate School of Medicine, Kobe; 2) PRESTO, Japan Science and Technology Agency, Japan.

333C
Identification of the gene disrupted in *fried* mutants. **Kimberley Seoane, Henrique Valim, Jason Morris.** Dep't of Natural Sciences, Fordham University, New York, NY.

334A
Regulation of the archipelago ubiquitin ligase subunit by a dynein light chain. **Daniel Allyn Barron, Kenneth Moberg.** Dept Cell Biol, Emory Univ Sch Med, Atlanta, GA.

335B
Non-Cell Autonomous Regulation of Hippo signaling in Drosophila by the Hedgehog receptor Patched. **Jacob Daniel Kagey[1,2], Jordan Brown[2], Kenneth Moberg[2].** 1) Biology, University of Detroit Mercy, Detroit, MI; 2) Cell Biology, Emory University School of Medicine, Atlanta, Ga.

336C
Identifying novel components of the Fat cadherin pathway. **Srdjana Ratkovic, Helen McNeill.** Samuel Lunenfeld Research Institute, Mt. Sinai Hospital, Toronto, Ontario.

Chromatin and epigenetics

337A
Lipid droplets control histone levels and promote mitotic fidelity in syncytial embryos. **Michael A. Welte[1], Zhihuan Li[1], Dipak Manna[1], Katharina Thiel[3], Mathias Beller[2,3].** 1) Dept Biol, Univ Rochester, Rochester, NY; 2) Inst Math Modeling Biol Systems, Heinrich-Heine Univ, Düsseldorf, Germany; 3) Max Planck Inst for Biophys Chem, Göttingen, Germany.

338B
Psf2: A Role in Chromosome Condensation. **Jeffrey P. Chmielewski[1], Laura Henderson[2], Tim Christensen[1].** 1) Biology, East Carolina University, Greenville, NC; 2) Howard Hughes Medical Institute, Janelia Farm Research Campus, Ashburn, VA.

339C
Multiple interactions between Heterochromatin Protein 1 (HP1) and nucleosomes. **Diane E. Cryderman[1], Abd Elhamid M. Azzaz[2], Michael W. Vitalini[1], Andrew H. Thomas[1], Adrian H. Elcock[1], Michael A. Shogren-Knaak[2], Lori L. Wallrath[1].** 1) Dept Biochemistry, Univ Iowa, Iowa City, IA; 2) Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University, Ames, IA.

340A
Understanding the Role of *Topoisomerase 2* in Chromosome Associations. **Amber M. Hohl[1,2,3], Pamela K. Geyer[2], Ting Wu[3].** 1) Genetics Program, University of Iowa, Iowa City, IA; 2) Department of Biochemistry, University of Iowa, Iowa City, IA; 3) Department of Genetics, Harvard Medical School, Boston, MA.

341B
HP1b is a non-essential protein enriched at TSSs that positively affects transcription. **Nicole C. Riddle, Artyom A. Alekseyenko, Tingting Gu, Youngsook L. Jung, Aki Minoda, Michael Y. Tolstorukov, Mitzi I. Kuroda, Vincenzo Pirrotta, Peter J. Park, Sarah C. R. Elgin, Gary H. Karpen.** Drosophila modENCODE Chromatin Group.

342C
Investigating the impact of an invading B chromosome on nuclear dynamics in N. vitripennis. **Megan Swim, Patrick M. Ferree.** Keck Science Department, Scripps College, 925 N. Mills Ave. Claremont, CA.

343A
Characterizing Chromosome Territory Formation in Drosophila Primary Spermatocytes. **Sheng (Jimmy) Tang[1], Tom Hartl[1,2], Matthew Scott[1,2].** 1) Stanford University, Stanford, CA; 2) Stanford University School of Medicine, Stanford, CA.

344B
Telomere dynamics and organization in early embryonic development. **Natalia Wesolowska[1,2], Yikang Rong[1].** 1) Lab of Biochemistry and Molecular Biology, National Institutes of Health, Bethesda, MD; 2) NIH Graduate Partnership Program with the CMDB Program, Johns Hopkins University, Baltimore, Bethesda.

345C
Role of Drosophila's HKMTs in the recruitment of HP1. **Margarida Figueiredo, Anna-Mia Johansson, Jan Larsson.** Department of Molecular Biology, Umeå University, Umeå, Umeå, Sweden.

POSTER SESSIONS See page 16 for presentation schedule

Poster board number is in **bold** above title. The first author is the presenter. Full abstracts can be found online at drosophila-conf.org

346A
Co-ordinate regulation of heterochromatic genes in *Drosophila melanogaster* males. **S. Kiran Koya, Xinxian Deng, Ying Kong, Victoria Meller.** Dept of Biological Sciences, Wayne State University, Detroit, MI.

347B
Modifiers of X recognition: exploring the secrets of sex chromosome identity. **Debashish Menon, Victoria Meller.** Department of Biological Science, Wayne State University, Detroit, MI.

348C
The H3K36 Demethylase KDM4A is a Novel Regulator of Heterochromatin Organization and Dynamics. **Serafin U. Colmenares[1,2], Sasha Langley[1,2], Cameron Kennedy[1,2], Joel Swenson[1,2], Irene Chiolo[1,2], Gary Karpen[1,2].** 1) Genome Dynamics, Life Sciences Division, Lawrence Berkeley National Lab, Berkeley, CA; 2) Molecular and Cell Biology, University of California, Berkeley, CA.

349A
Functions of the RNAi system and heterochromatin components in heterochromatin formation. **Tingting Gu, Sarah Elgin.** Biology, Washington University, St Louis, MO.

350B
dSet1 acts as the main global H3K4 di- and tri-methyltransferase throughout Drosophila development. **Graham Hallson, Robert E. Hollebakken, Taosui Li, Monika Syrzycka, Inho Kim, Shawn Cotsworth, Kathleen A. Fitzpatrick, Donald A. R. Sinclair, Barry M. Honda.** Dept MBB, Simon Fraser Univ, Burnaby, BC.

351C
Loss of heterochromatic repression with age in Drosophila. **Nan Jiang, Guyu Du, Ethan Tobias, Stephen Helfand.** Molecular Biology, Cell Biology and Biochemistry, Brown University, Providence, RI.

352A
Separation of stem cell maintenance and transposon silencing functions of Piwi protein. **Mikhail S. Klenov, Olesya A. Sokolova, Evgeny Y. Yakushev, Sergey A. Lavrov, Vladimir A. Gvozdev.** Dept Molecular Gen of Cell, Inst Molecular Genetics, Moscow, Russia.

353B
Functional Characteristics of HP1a. **Deanna L. Mendez[1], Sepideh Khorasanizadeh[2], Sarah CR Elgin[1].** 1) Department of Biology, Washington University, CB-1137, St. Louis, MO 63130; 2) Sanford-Burnham Medical Research Institute, 6400 Sanger Road, Orlando, FL 32827.

354C
Identifying Proteins that Interact with Drosophila melanogaster Heterochromatin Protein 2 (HP2) and Characterizing Their Contribution to Heterochromatin Formation. **Patrick C. Ng[1], Elizabeth E. Slawson-Tempel[1], Hien P. Nguyen[2], Chris D. Shaffer[1], Sarah C. Elgin[1].** 1) Biology, Washington Univ, St. Louis, MO; 2) Biochemistry and Molecular Biology, Saint Louis Univ, St. Louis, MO.

355A
Studying the functions of the hybrid lethality proteins- LHR and HMR. **Satyaki P. Rajavasireddy, Nathan L. Clark, Tawny Cuykendall, Shuqing Ji, Hojoong Kwak, Daniel Barbash.** Molecular Biology and Genetics, Cornell University, Ithaca, NY.

356B
A dissection of Mcm10's functions in *D. melanogaster*. **Michael C. Reubens, Casi Strickland, Tim W. Christensen.** Biology Dept, East Carolina University, Greenville, NC.

357C
HP1a Mediates the DNA Damage Response in Heterochromatin. **Joel Swenson[1,2], Serafin Colmenares[2], Irene Chiolo[2], Cameron Kennedy[2], Sylvain Costes[2], Gary Karpen[2].** 1) Molec & Cell Biol, Univ California-Berkeley, Berkeley, CA; 2) Genome Dynamics, Lawrence Berkeley National Lab, Berkeley, CA.

358A
Chromatin remodeling during aging and dietary restriction in Drosophila melanogaster. **Jason G. Wood[1], Peter V. Kharchenko[2], Sara Hillenmeyer[1], Chengyi Chang[1], Meyrolin Garcia[1], Priyan Wickremesinghe[1], Nan Jiang[1], Peter J. Park[2], Nicola Neretti[1], Stephen L. Helfand[1].** 1) Molecular Bio, Cell Bio, and Biochemistry, Brown University, Providence, RI; 2) Center for Biomedical Informatics, Harvard Medical School and Children's Hospital, Boston, MA.

359B
Invadolysin plays a role in the functioning of the SAGA complex. **Michal M. Janiszewski[1], Shubha Gururaja Rao[2], Edward Duca[1], Margarete M. S. Heck[1].** 1) University/BHF Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, United Kingdom; 2) Department of Molecular, Cell and Developmental Biology, University of California, Los Angeles, California, USA.

360C
Investigating the Potential Interaction of SIN3 with Methionine Metabolism. **Mengying Liu, Valerie L. Barnes, Lori A. Pile.** Department of Biological Sciences, Wayne State University, Detroit, MI.

361A
The role of Lid in mediating the cellular response to oxidative stress. **Xingyin Liu, Christina Greer, Julie Secombe.** Department of Genetics, Albert Einstein College of Medicine of Yeshiva University, Bronx, NY.

362B
Epigenetic Regulation of Replication Origins. **Neha P. Paranjape, Jun Liu, Brian R. Calvi.** Department of Biology, Indiana University, Bloomington, IN.

363C
Interaction of the SIN3 histone deacetylase complex with the histone demethylase LID. **Lori A. Pile, Ambikai Gajan.** Dept Biological Sci, Wayne State Univ, Detroit, MI.

364A
Studies into functional aspects of two isoforms of Drosophila SIN3. **Nirmalya Saha, Lori Pile.** Wayne State University, Detroit, MI.

365B
Elucidating the contribution of distinct Su(Hw) zinc fingers in DNA association and female fertility. **Ryan M. Baxley[1], Alexey A. Soshnev[1], Michael W. Klein[2], Ashley B. Gaeth[2], Joel A. Morales-Rosado[2], Bing He[3], Kai Tan[3], Pamela K. Geyer[1,2].** 1) Molecular and Cellular Biology Program, University of Iowa, Iowa City, IA; 2) Biochemistry Department, University of Iowa, Iowa City, IA; 3) Internal Medicine Department, University of Iowa, Iowa City, IA.

366C
In vivo function of Homie, the *eve* insulator: Is it a PRE blocker? **Miki Fujioka, James B. Jaynes.** Dept Biochem & Molec Biol, Thomas Jefferson Univ, Philadelphia, PA.

367A
A Role for dCAP-D3/Condensin II in Preventing Natural Transposon Mobilization. **Michelle Longworth, Andrew Schuster.** Department of Molecular Genetics, Cleveland Clinic Lerner Research Institute, Cleveland, OH.

368B
Variegated transvection by the enhancer *GMR*. **Jack R. Bateman, Justine E. Johnson, Melissa N. Locke.** Dept Biol, Bowdoin College, Brunswick, ME.

369C
Histone Recognition and Nuclear Receptor Coactivator Functions of Drosophila Cara Mitad, a Homolog of the N-terminal Portion of Mammalian MLL2/3. **Andrew K. Dingwall, Chhavi Chauhan, Megan Parilla, Manuel O. Diaz, Claudia B. Zraly.** Stritch School of Medicine, Oncology Inst & Dept Pathology, Loyola Univ Med Ctr, Maywood, IL.

370A
The piRNA is sufficient to guide Piwi to specific genomic sites to induce epigenetic changes. **Xiao Huang, Haifan Lin.** Yale Stem Cell Center, New Haven, CT.

371B
PNUTS-PP1 associates with transcriptionally active sites on interphase chromosomes and is required for cell survival. **Louise Rebecca Rawling[1], Anita Lucaci[1], Andrey Rudenko[2], Peter Glenday[1], Luke Alphey[2], Daimark Bennett[1].** 1) Inst Integrative Biology, Univ Liverpool, Liverpool; 2) Dept Zoology, Oxford University, Oxford.

372C
Mapping the *Telomere elongation* mutation in Drosophila. **Hemakumar M. Reddy, James M. Mason.** Laboratory of Molecular Genetics, NIH/NIEHS, Research Triangle Park, NC.

373A
An RNA-seq screen for allele-specific parent-of-origin effects in *Drosophila melanogaster*. **Kevin H. C. Wei[1], Julien F. Ayroles[1,2], Daniel A. Barbash[1], Andrew G. Clark[1].** 1) Molecular Biology and Genetics, Cornell, Ithaca, NY; 2) Harvard Society of Fellows, Harvard, Cambridge, MA.

374B
De novo establishment of Polycomb-mediated repression. **Jumana AlHaj Abed, Siddhi Desai, Judith Benes, Richard Jones.** Biology, Southern Methodist University, Dallas, TX.

375C
Stuxnet destabilizes Polycomb-associated PRC1 complex to facilitate Notch receptor gene transcription. **Juan Du[1], Junzheng Zhang[1], Feng Tie[2], Ying Su[1], Min Liu[1], Peter Harte[2], Alan Zhu[1].** 1) Department of Cell Biology, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, USA; 2) Department of Genetics, Case Western Reserve University, Cleveland, OH, USA.

376A
Epigenetically-confused, an unusual Trithorax Group SET domain-containing protein, functions like a Polycomb Group gene. **Hector Rincon-Arano, Jessica Halow, Jeff Delrow, Jorja Henikoff, Steven Henikoff, Susan Parkhurst, Mark Groudine.** Basic Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA.

377B
The histone demethylase UTX and the chromatin remodeler BRM bind to Drosophila CBP and modulate the acetylation of histone H3 lysine 27. **Feng Tie, Rakhee Banerjee, Patty Conrad, Peter Scacheri, Peter Harte.** Dept Genetics, Case Western Reserve Univ, Cleveland, OH.

378C
Drosophila Myb interacts with NURF to repress cell cycle genes and transposons in non-mitotic tissues. **Juan Santana[1], Stephen Butcher[1], Scott McDermott[1], Mrutyunjaya Parida[1], Kristen Jogerst[1], J. Robert Manak[1,2].** 1) Dept of Biology, Univ of Iowa, Iowa City, IA; 2) Dept of Pediatrics, Univ of Iowa, Iowa City, IA.

379A
Brahma (SWI/SNF) complex regulation of transcript elongation and pre-mRNA splicing is mediated by the SNR1 regulatory subunit. **Claudia B. Zraly.** Oncology Institute and Department of Pathology, Stritch School of Medicine, Loyola University of Chicago, Maywood, IL.

Drosophila models of human diseases

380B
CREB transcription factors and drug tolerance. **Benjamin R. Troutwine, Yan Wang, Nigel Atkinson.** ICMB, University of Texas, Austin, TX.

381C
Investigating the role of MRL proteins in invasive border cell migration. **Lauren Dodgson, Eleanor Taylor, Daimark Bennett.** University of Liverpool, Institute of Intergrative Biology, Liverpool, United Kingdom.

382A
Analyzing cancer stem cells using the Drosophila ovary. **Rebecca L. Frederick[1], Allan Spradling[1,2].** 1) Carnegie Institution for Science, Department of Embryology, Baltimore, MD; 2) Howard Hughes Medical Institute.

383B
Tumor suppressor mutations in *pebble*/*Ect2* activate Rac1 and reveal a mechanism of autoregulation. **Jin-Yu (Jim) Lu[1], Michelle Pirruccello[2], Ming Wu[1], Jose C. Pastor-Pareja[1], Tian Xu[1].** 1) Dept. Genetics; 2) Cell Biology, Yale Sch Medicine/HHMI, New Haven, CT.

384C
Tumorigenesis in the absence of the spindle assembly checkpoint. **Sara Morais da Silva, Ricardo J. Sousa, Claudio E. Sunkel.** Laboratory of Molecular Genetics, Instituto de Biologia Molecular e Celular, Porto, Portugal.

385A
Loss of Rabex-5 displays leukemia-like hematopoietic defects that involve dysregulation of Ras, Notch and groucho. **Theresa Reimels.** Oncological Sciences, Mount Sinai School of Medicine, New York, NY.

386B
Gene expression profiling in Drosophila models of human cancers associated with modulation of DCC/frazzled signaling. **Joseph Sarro[1], Charles Tessier[2], Molly Duman-Scheel[1,2].** 1) Biological Sciences and Harper Cancer Inst, Univ of Notre Dame, Notre Dame, IN; 2) Med and Molec Genetics, Indiana Univ Sch Medicine, South Bend, IN.

387C
Delineating the function of PRL-1 in *Drosophila*. **Leslie J. Saucedo, Jake Goodchild, Krystle Pagarigan, Travis Edlefsen.** Biology, University of Puget Sound, Tacoma, WA.

388A
Neurofibromin (*Nf1*) function in Drosophila: Genetic and Physical Interactions Screens. **James A. Walker[1,2], Jean Y. Gouzi[1], Robert Maher[1], Andre Bernards[1,2].** 1) Massachusetts General Hospital Cancer Center, Harvard Medical School, MA; 2) Center for Human Genetic Research, Massachusetts General Hospital, Harvard Medical School, MA.

389B
Suppression of DiscsLarge ovarian tumor invasion and growth by a novel class of "wounded tumor" loci. **Min Zhao, Scott Goode.** Dept Pathology, Baylor Col Medicine, Houston, TX.

390C
Using *Drosophila* to study functional relevance of conserved heart genes. **James H. Catterson[1], Pierre O. Bagnaninchi[2], Anthony J. Harmar[1], Margarete MS Heck[1], Paul S. Hartley[1].** 1) Centre for Cardiovascular Science, Queen's Medical Research Institute, University Of Edinburgh, 47 Little France Crescent, Edinburgh, United Kingdom, EH16 4TJ; 2) MRC Centre for Regenerative Medicine, Chancellor's Building, University Of Edinburgh, 49 Little France Crescent, Edinburgh, United Kingdom, EH16 4SB.

391A
DHR96 regulates cellular cholesterol homeostasis via the Niemann-Pick disease Type C genes. **Akila Gopalakrishnan, Kirst King-Jones.** CW405 Biological Sciences Building, University of Alberta, Edmonton, Alberta, Canada.

392B
The Role of *slowpoke* Encoded BK Channel in Heart Function. **Santiago Pineda[1], Karen Ocorr[1], Diane Fatkin[2], Rolf Bodmer[1].** 1) Sanford Burnham Medical Research Institute, La Jolla, CA; 2) Victor Chang Cardiac Research Institute, Darlinghurst, NSW 2010.

393C
Modeling reductive stress induced heart disease in flies. **Heng Xie, Kent Golic.** Dept Biol, Univ Utah, Salt Lake City, UT.

394A
The inwardly rectifying potassium channel, Irk2, contributes to development of the adult wing in *Drosophila*. **Emily A. Bates[1], Giri Dahal[1], Joel Rawson[2], Brandon Gassaway[1], Ben Kwok[1], Emily Bates[1].** 1) Chemistry and Biochemistry, Brigham Young University, Provo, UT; 2) UT Health Science Center, San Antonio, TX.

395B
Interactions between the HuD homolog *fne* and the *dNab2* polyadenosine RNA binding factor in a fly model of human intellectual disability. **Rick Stephen Bienkowski[1], Callie Wigington[2], Anita Corbett[2], Ken Moberg[1].** 1) Cell Biology, Emory University, Atlanta, GA; 2) Biochemistry, Emory University, Atlanta, GA.

396C
Modeling Degenerative Disc Disease in Drosophila melanogaster. **Megan C. Donegan, Joseph A. Chiaro, Hemlata Mistry.** Department of Biology, Widener University, Chester, PA.

397A
The mechanism of nuclei positioning during muscle development in Drosophila. **Hadas Tamir, Talila Volk, Yaxun V. Yu, Michael Welte.** Molecular Genetics, Weizmann Institute, Rehovot, Israel.

398B
A Drosophila Model of Friedreich's Ataxia and Autophagic Heart Disease. **Luan Wang.** Inst Environmental Hlth Sci, Wayne State Univ, Detroit, MI.

399C
A Maternal High Sugar Diet Leads to Metabolic Defects in *Drosophila* Offspring. **Jessica Buescher[1], Laura Musselman[2], Riddhi Mitra[1], Breckyn Robinson[1], Thomas Baranski[2], Jennifer Duncan[1].** 1) Department of Pediatrics, Washington University, St Louis, MO; 2) Department of Medicine, Washington University, St Louis, MO.

400A
Using Drosophila to Explore The Architecture of Natural Variations Influencing a Complex Disease Trait. **Bin He[1], Michael Ludwig[1], Soo-Young Park[2], Pengyao Jiang[1], Cecelia Miles[1], Levi Barse[1], Desiree Dickerson[1], Sarah Carl[1], Honggang Ye[2], Graeme Bell[2], Martin Kreitman[1].** 1) Department of Ecology and Evolution, The University of Chicago, Chicago, IL; 2) Department of Medicine, The University of Chicago, Chicago, IL.

401B
Intermittent hypoxia alters the metabolism of Drosophila on a high-fat diet. **Erilynn T. Heinrichsen[1], Gabriel G. Haddad[1,2].** 1) Pediatrics Dept, University of California, San Diego, La Jolla, CA; 2) Rady Children's Hospital, San Diego, CA.

402C
The fat body controls nutrient flux via transcriptional and biochemical mechanisms. **Laura Palanker Musselman, Jill L. Fink, Thomas J. Baranski.** Endocrinology, Metabolism, and Lipid Research, Washington University School of Medicine, St. Louis, MO.

403A
Lipid and carbohydrate analysis on a Drosophila melanogaster Type 2 Diabetes model. **Alejandro Reyes De la Torre, Juan Riesgo-Escovar.** Developmental neurobiology and neurophysiology, Instituto de Neurobiologia, UNAM, Queretaro, Mexico.

404B
Identifying Genes Involved in Central Nervous System Control of Obesity. **Irene Trinh[1,2], Oxana Gluscencova[1], Gabrielle Boulianne[1,2].** 1) Hospital for Sick Children, Toronto, Ontario, Canada; 2) University of Toronto, Toronto, Ontario, Canada.

405C
The effect of three types of diets on the phenotype of Drosophila melanogaster. **Xiangpei Zeng, Sean Mendez, Laura Reed.** Department of Biological Sciences, University of Alabama, Tuscaloosa, AL.

406A
Suppression of progressive motor neuron degeneration by Diferuloylmethane (Curcumin) in transgenic Drosophila expressing mutant human gene of neurodegenerative disease. **Namita Agrawal, Anjalika Chongtham, Nidhi Paliwal.** Dept of Zoology, University of Delhi, Delhi.

407B
A Parkinson's Disease Model for the Characterization of Long Term Effects of Early Exposure to Environmental Toxins. **James W. Anderson, Arati Inamdar, O'Neil Wright, Janis O'Donnell.** Biological Sciences, University of Alabama, Tuscaloosa, AL.

408C
Mutations that Destabilize Helix-3 Induce Aberrant Processing of the Prion Protein. **Daniela Arbelaez[1,2], Jonatan Sanchez[2], Pedro Fernandez-Funez[2], Diego Rincon-Limas[2].** 1) College of Liberal Arts and Sciences; 2) Department of Neurology, University of Florida, Gainesville, FL.

409A
Drosophila β-secretase and the cleavage of the fly Amyloid Precursor Protein are required for glial survival. **Bonnie J. Bolkan[1], Tilman Triphan[2], Doris Kretzschmar[1].** 1) CROET, L606, Oregon Hlth & Sci Univ, Portland, OR; 2) Institut für Zoologie III, Universitaet Mainz, 55099 Mainz, Germany.

410B
Assessing the ability of nicotine to increase lifespan and rescue olfactory and motor deficits in parkin loss-of-function Drosophila melanogaster. **Lori M. Buhlman, Raegan P. Chambers, Gerald B. Call.** Biomedical Sciences, Midwestern University, Glendale, AZ.

411C
Human LRRK2 expression increased animal lifespan and enhanced the resistance to oxidative stress in the Drosophila. **Hui-Yun Chang, Hung-Cheng Wang, Franziska Wolter.** Institute of Systems Neuroscience, National Tsing Hua University, Hsinchu, Taiwan.

412A
The role of Superoxide Dismutase 2 in a *Drosophila* model of Machado-Joseph Disease. **Natalie M. Clark, John M. Warrick.** Department of Biology, University of Richmond, Richmond, VA.

413B
The neurodegenerative AMPK mutant *loe* interferes with the RHO pathway and actin dynamics. **Mandy Cook, Jill Wentzell, Doris Kretzschmar.** CROET, Oregon Health and Science University, Portland, OR.

414C
Characterizing mitochondrial dysfunction in a Drosophila model for TBI. **Vanessa T. Damm[1,2], Rachel T. Cox[1,2].** 1) Biochemistry, Uniformed Services University of the Health Sciences, Bethesda, MD; 2) Center for Neuroscience and Regenerative Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD.

415A
Screen for common genetic modifiers of polyglutamine diseases in Drosophila. **Javier R. Diaz, Ismael Al-Ramahi, Juan Botas.** Molecular and Human Genetics, Baylor College of Medicine, Houston, TX.

416B
The role of Swiss cheese, the *Drosophila* homologue of Neuropathy target esterase, in glia development. **Sudeshna Dutta[1,2], Doris Kretzschmar[1].** 1) Center for Research on Occupational and Environmental Toxicology, Oregon Health and Science University, Portland, OR; 2) Department of Integrative Biosciences, Oregon Health and Science University, Portland, Oregon.

417C
Oxidative Stress in a Drosophila Model of TPI deficiency. **Isaac J. Fisher[1], Daniel Long[1], Joshua Hutton[1], Zhaohui Liu[1], Sarah Johnson[1], Michael J. Palladino[2], Stacy L. Hrizo[1,2].** 1) Department of Biology, Slippery Rock University, Slippery Rock, PA; 2) University of Pittsburgh S.O.M. Department of Pharmacology and Chemical Biology, Program in Neurodegenerative Diseases, Pittsburgh, PA.

418A
Sleep defects in Drosophila models of Huntington's Disease reflect altered PKA signaling. **Erin D. Gonzales[1,2], Jerry C.-P. Yin[1,3].** 1) Dept. of Genetics, University of Wisconsin-Madison, Madison, WI; 2) Program in Cellular & Molecular Biology, University of Wisconsin-Madison, Madison, WI; 3) Dept of Neurology, University of Wisconsin-Madison, Madison, WI.

419B
Fatty acid activation and neurodegeneration. **Hannah B. Gordon, Anna Sivachenko, PhD, Anthea Letsou, PhD.** Department of Human Genetics, University of Utah, Salt Lake City, UT.

420C
Survival motor neuron protein controls stem cell division, proliferation and growth. **Stuart J. Grice, Sian E. Davies, Jilong Liu.** MRC Functional Genomics Unit, University of Oxford, Oxford, United Kingdom.

421A
Genes *Sema-1a* and *Sema-2a* as modifiers of dystrophin gene function in *Drosophila melanogaster*. **Olena Holub, Yaroslava Chernyk, Nataliya Holub.** Genetics and Biotechnology, Ivan Franko National University of Lviv, Lviv, Ukraine.

422B
TPI[sgk] is degraded by the proteasome in a chaperone dependent manner. **Stacy Hrizo[1,2], Daniel Long[1], Michael Palladino[2].** 1) Department of Biology, Slippery Rock University, Slippery Rock, PA; 2) Department of Pharmacology and Chemical Biology, University of Pittsburgh SOM, Pittsburgh, PA.

423C
Neurodegeneration in a Temporally-Controlled Fly Model of Huntington's Disease. **Kurt Jensen[1], Diego Rincon-Limas[1], Pedro Fernandez-Funez[1,2].** 1) Neurology, University of Florida, Gainesville, FL; 2) Neurosciences, University of Florida, Gainesville, FL.

424A
A Drosophila model of Multisystem proteinopathy caused by VCP/p97 mutation. **Nam Chul Kim, J. Paul Taylor.** Developmental Neurobiology, St. Jude Children's Research Hospital, Memphis, TN.

425B
Accumulation of insoluble forms of FUS protein correlates with toxicity in drosophila. **Magalie Lecourtois, Laetitia Miguel, Tracey Avequin, Morgane Delarue, Sébastien Feuillette, Thierry Frébourg, Dominique Campion.** UMR Inserm U614, IFRMP23, Rouen Institute for Medical Research and Innovation, Faculty of Medicine, University of Rouen, 22 Boulevard Gambetta, 76183 Rouen Cedex 01, France.

426C
Use of *Drosophila* cultured cells to investigate homeostasis and toxicity of metals such as copper, manganese and zinc. **Stephanie E. Mohr[1], Quentin Gilly[1], Benjamin McElvany[1], Claire Y. Hu[1], Ian T. Flockhart[1], Donghui Yang-Zhou[1], Norbert Perrimon[1,2].** 1) Dept Gen, Harvard Med Sch, Boston, MA; 2) HHMI, Harvard Med Sch, Boston, MA.

427A
The Etiology of Brain Degeneration in drd Mutant Flies. **Sreejith Perinthottathil, Wijeong Jang, Jiyoung Kim, Changsoo Kim.** Chonnam National University, Gwangju, South Korea.

428B
Identification of protective and pathogenic residues in the prion protein. **Jonatan Sanchez-Garcia, Daniela Arbelaez, Kurt Jensen, Yan Zhang, Diego Rincon-limas, Pedro Fernandez-Funez.** Department of Neurology, Univ of Florida, Gainesville, FL.

429C
Tau-induced neurotoxicity and apoptosis in a Drosophila model. **Tzu-Kang Sang[1], Chien-Ping Hsieh[1], Ren-Huei Shiu[1], Hui-Yun Chang[2].** 1) Institute of Biotechnology, National Tsing Hua University, Hsinchu, Taiwan; 2) Institute of Systems Neuroscience,, National Tsing Hua University, Hsinchu, Taiwan.

430A
Glia-Mediated Neurodegeneration in the *Drosophila melanogaster* CNS. **Ivan J. Santiago[1], Israel C. Nnah[1], Amandeep Kaur[1], Rosa Mino[3], Tadmiri R. Venkatesh[1,2].** 1) Biology, The City College of New York, New York, NY; 2) The Graduate Center of the City University of New York, New York, NY; 3) The University of North Carolina, Chapel Hill, NC.

431B
Integrating Human and Fly Genetics to Understand Alzheimer's Disease Susceptibility. **Joshua M. Shulman[1,2], Selina Imboywa[1,2], Allison E. Diamond[1,2], Portia I. Chipendo[1,2], Philip L. De Jager[1,2], Mel B. Feany[1,2].** 1) Brigham and Women's Hospital, Boston, MA; 2) Harvard Medical School, Boston, MA.

432C
Effects of HDAC inhibitor treatment on motor deficits and lethality in a *Drosophila* model of Parkinson's disease. **Robyn St. Laurent, S. Tariq Ahmad.** Department of Biology, Colby College, Waterville, ME.

433A
TDP-43 and FUS proteinopathies: biochemical studies and animal models. **Mengxue Yang[1,2], Kazuo Fushimi[1], Xiaoping Chen[1], Tanya Monahiem[1], Jianghong Liu[2], Li Zhu[2], Jane Wu[1,2].** 1) Northwestern University, Chicago, IL; 2) Institute of Biophysics, CAS, China.

434B
Exploring the Pathogenic Role of Phosphorylated TDP in Drosophila Nervous System. **Po-An Yeh, Pang-hsien Tu.** Biomedical Sciences, Taipei.

435C
A combinatorial drug cocktail rescues Prion Protein neurotoxicity in flies. **Yan Zhang[1], Pedro Fernandez-Funez[1,2], Diego Rincon-Limas[1].** 1) Neurology, University of Florida, Gainesville, FL; 2) Neuroscience,University of Florida, Gainesville, FL.

436A
Axonal Transport in Drosophila models of Parkinson's Disease. **Eric Anderson, Delnessaw Hirpa, Shermali Gunawardena.** Department of Biological Science, The State University of New York at Buffalo, BUFFALO, NY.14260.

437B
SERF1 gene function in Drosophila melanogaster. **Swagata Ghosh, Josh Titlow, Robin Cooper, Douglas Harrison, Brian Rymond.** Biology, University of Kentucky, Lexington, KY.

438C
Exposure to fungal volatile organic compound, 1-octen-3-ol leads to induction of NOS-mediated inflammatory response in larval respiratory system. **Arati A. Inamdar, Joan Bennett.** Department of Plant Biology and Pathology, Rutgers, The State University of New Jersey, New Brunswick, NJ.

439A
Oxidative stress contributes to outcome severity in a *Drosophila melanogaster* model of classic galactosemia. **Patricia P. Jumbo-Lucioni[1], Marquise Hopson[1], Bill Liang[2], Dean Jones[2], Judith Fridovich-Keil[1].** 1) Dept. Human Genetics, Emory University School of Medicine, Atlanta, GA; 2) Pulmonary Division, Dept. Medicine, Emory University School of Medicine, Atlanta, GA.

440B
In Vivo Exposure Impacts of Nano Silver on "Drosophila melanogaster". **Denise K. Reaves[1], John J. Bang[2], Catherine S. Silver Key[1].** 1) Biology, North Carolina Central University, Durham, NC; 2) Departments of Environmental, Earth, and Geospatial Science, North Carolina Central, University, Durham, NC 27707, USA.

441C
Muscle defects associated with human A-type lamin revealed by studies in Drosophila. **Om K. Shrestha[1], George Dialyans[1], Monika Zwerger[2], Dylan Thiemann[1], Diane E. Cryderman[1], Jan Lammerding[2], Liping Yu[1], Lori L. Wallrath[1].** 1) Department of Biochemistry, University of Iowa, Iowa city, IA; 2) Cell and Molecular Biology and Department of Biomedical Engineering, Cornell University, Ithaca, NY.

442A
dtorsin, the *Drosophila* ortholog of the early-onset dystonia *TOR1A* (*DYT1*), plays a novel role in dopamine metabolism. **Noriko Wakabayashi-Ito[1,4], Olugbenga Doherty[2], Hideaki Moriyama[3], James Gusella[4], Xandra Breakefield[1], Janis O'Donnell[2], Naoto Ito[1,4].** 1) Dept Neurology, Massachusetts General Hosp, Charlestown, MA; 2) Dept Biological Science, University of Alabama, Tuscaloosa, AL; 3) School of Biological Science, University of Nebraska-Lincoln, Lincoln, NE; 4) CHGR, Massachusetts General Hosp, Boston, MA.

443B
Rejuvenation of meiotic cohesion: a conserved mechanism to combat age related chromosome segregation errors? **Katherine A. Weng, Charlotte A. Jeffreys, Sharon E. Bickel.** Biological Sciences, Dartmouth College, Hanover, NH.

444C
A new *Drosophila* model of Spinal Muscular Atrophy highlights the importance of non-snRNP related functions of Survival Motor Neuron in disease pathology. **Kavita Praveen[1], Ying Wen[2], T. K. Rajendra[2], A. Gregory Matera[1,2].** 1) Genetics and Molecular Biology, University of North Carolina, Chapel Hill, NC; 2) Department of Biology, University of North Carolina, Chapel Hill, NC.

Evolution and quantitative genetics

445A
Comparative studies of chromosomes of the tripunctata Species Group of Drosophila. **Mitsue Taukeuti Brianti, Galina Ananina, Louis Bernad Klaczko.** Universidade Estadual de Campinas, Campinas, São Paulo, Brazil.

446B
Deciphering B chromosome sequence of *Drosophila albomicans* by short-read sequencing. **Li Zhao[1,2], Yue Zhang[2], Qi Zhou[2], Ruoping Zhao[2], Wen Wang[2].** 1) Department of Ecology and Evolution, University of California - Davis, Davis, CA; 2) CAS-Max Planck Junior Research Group, Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming, China.

447C
Characterization of the RNase T2 gene from *Drosophila melanogaster* and the evolution of this RNase family in protosomes. **Linda Ambrosio, Ryan Bailey, Stephanie Moriss, Gustavo MacIntosh.** Department of Biochemistry, Biophysics and Molecular Biology, Iowa State Univ, Ames, IA.

448A
Comparative genetic architectures of similar and independently evolved morphological novelties. **Laurent Arnoult, Caroline Minervino, Benjamin Prud'homme, Nicolas Gompel.** IBDML, UMR CNRS 6216, Case 907, Parc Scientifique de Luminy, 13288 Marseille Cedex 9, France.

449B
Forces shaping a Hox morphogenetic gene-network during evolution. **James Castelli-Gair Hombria, Sol Sotillos, Mario Aguilar, Filippo Foglia.** CABD, CSIC/JA/UPO, Seville, Sevilla, Spain.

450C
vestigial ectodermal function is not limited to wing development in *Tribolium*. **Courtney M. Clark, Yoshinori Tomoyasu.** Zoology Department, Miami University, Oxford, OH.

451A
Modeling allometry using lessons from *Drosophila*. **Austin P. Dreyer, Eli M. Swanson, Alexander W. Shingleton.** Dept Zoology, Michigan State Univ, East Lansing, MI.

452B
Expression and Function of *fushi tarazu* in Diptera. **Amanda Field, Leslie Pick.** University of Maryland, 4112 Plant Sciences Building, College Park, MD.

453C
Genome-wide comparison among *melanogaster* sibling species reveals novel genes involved in myogenesis diversification. **Ryan M. Haskins, Yunyi Yang, Youngmin Chu, Juan S. Chahda, Joseph Schinaman, Mirela Belu, Lyndsie Haefke, Rui Sousa-Neves, Claudia M. Mizutani.** Biology, Case Western Reserve University, Cleveland, OH.

POSTER SESSIONS See page 16 for presentation schedule

Poster board number is in **bold** above title. The first author is the presenter. Full abstracts can be found online at drosophila-conf.org

454A
A Homeodomain-dependent Function in a Rapidly Evolving *Hox* Gene in Insects. **Alison Heffer, Leslie Pick.** Dept Entomology, Univ Maryland, College Park, MD.

455B
How different are mosquitoes and Drosophila?—Evolution of mosquito early zygotic genes. **Wanqi Hu, James Biedler, Zhijian Tu.** Biochemistry, Virginia Tech, Blacksburg, VA.

456C
Functional genomic analysis of eye development in the red flour beetle *Tribolium castaneum*. **Zahabiya Husain[1], Anura Shrivastava[1], Arun K. Sasikala -Appukuttan[1], Bryce Daines[2], Rui Chen[2], Markus Friedrich[1].** 1) Wayne State University, Detroit, MI; 2) (2) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA.

457A
New models to Diptera development: Clogmia albipunctata and Megaselia abdita. **Eva Jimenez, Karl R. Wotton, Yogi Jaeger.** Systems Biology Unit, Centre de Regulacio Genomica, PRBB, Barcelona, Spain.

458B
Common and distinct roles of juvenile hormone signaling genes in metamorphosis of holometabolous and hemimetabolous insects. **Marek Jindra[1], Barbora Konopova[1], Vlastimil Smykal[2].** 1) Biology Center ASCR, Ceske Budejovice, Czech Republic; 2) University of South Bohemia, Ceske Budejovice, Czech Republic.

459C
High Hemocyte Load Is Associated With Increased Resistance Against Parasitoids in Drosophila suzukii, A Relative of D. melanogaster. **Balint Z. Kacsoh, Todd A. Schlenke.** Department of Biology, Emory University, Atlanta, GA.

460A
The effects of temperature on developmental timing in species with different optimal growth temperatures. **Steven G. Kuntz[1], Michael B. Eisen[1,2].** 1) Department of Molecular and Cell Biology, University of California, Berkeley, CA; 2) Howard Hughes Medical Institute, University of California, Berkeley, CA.

461B
Evolution of Mesoderm Invagination in the Insect Order Diptera. **Steffen Lemke[1], Silvia Urbansky[1], Thomas Sandmann[2].** 1) Centre for Organismal Studies (COS), Universität Heidelberg, Heidelberg, Germany; 2) Deutsches Krebsforschungszentrum (DKFZ), Heidelberg, Germany.

462C
Exploring the molecular basis of insect wing evolution: a comparison of beetle and fly wing development. **David M. Linz, Yoshinori Tomoyasu.** Zoology Department, Miami University, Oxford, OH.

463A
Evolution of Shape by Multiple Regulatory Changes to a Growth Gene. **David Loehlin, John Werren.** Biology, University of Rochester, Rochester, NY.

464B
Region specific patterning function of Pax6 in the developing embryonic head of Tribolium Castaneum. **Qing Luan[1], Arun Sasikala-Appukuttan[1], Markus Friedrich[1,2].** 1) Biological science, Wayne State University, Detroit, MI; 2) Department of Anatomy and Cell Biology, Wayne State University, School of Medicine,Detroit, MI.

465C
X-linkage and the evolution of sex-biased gene expression. **Richard P. Meisel[1], John H. Malone[2], Andrew G. Clark[1].** 1) Dept Molec Biol & Gen, Cornell Univ, Ithaca, NY; 2) Dept Biol Sci, Florida State Univ, Tallahassee, FL.

466A
Expression pattern evolution of three parent genes and their retrogene copies in *Drosophila* species. **Ryan S. O'Neill, Denise V. Clark.** Biology Dept, University of New Brunswick, Fredericton, NB, Canada.

467B
The molecular basis of speciation in Drosophila. **Nitin Phadnis, Harmit Malik.** Division of Basic Science, Fred Hutchinson Cancer Research Center, Seattle, WA.

468C
A possible contribution of *abrupt* in the evolution of beetle elytra. **Padmapriyadarshini Ravisankar, Nagraj Sambrani, Yoshinori Tomoyasu.** Zoology Department, Miami University, Oxford, OH.

469A
Ecdysone Signaling in Starvation Resistant *Drosophila*. **Lauren A. Reynolds, Allen G. Gibbs.** University of Nevada Las Vegas, Las Vegas, NV.

470B
Keeping males and females the right size: A closer look at the mechanisms behind sexual size dimorphism. **Nicholas D. Testa, Shampa Ghosh-Modak, Alexander W. Shingleton.** Zoology, Michigan State University, East Lansing, MI.

471C
Diverged developmental mechanisms underlying the conserved morphological structures in insect wings. **Yoshinori Tomoyasu, Tingjia Lao, Matthew Korth.** Dept Zoology, Miami Univ, Oxford, OH.

472A
Dramatic Expansion and Expression Diversification of the Methuselah Gene Family During Recent *Drosophila* Evolution. **Mark F. VanBerkum, Meghna Patel, Dana Hallal, Jeffery Jones, Denise Bronner, Rami Zein, Jason Caravas, Zahabiya Husain, Markus Friedrich.** Dept Biological Sciences, Wayne State University, Detroit, MI.

473B
Evolution of morphology and behavior in *Drosophila melanogaster* in response to predation. **Michael DeNieu, Ian Dworkin.** Zoology & Ecology, Evolution and Behavior, Michigan State University, East Lansing, MI.

474C
Alcohol consumption as self-medication against parasitic wasps In Drosophila melanogaster. **Todd A. Schlenke, Neil F. Milan, Balint Z. Kacsoh.** Biology Dept, Emory Univ, Atlanta, GA.

475A
Transcriptional profile during pachytene in Drosophila melanogaster females. **Andrew Adrian, Josep Comeron.** Biology, University of Iowa, Iowa City, IA.

476B
Tracing causative polymorphisms for allele-specific expression in Drosophila melanogaster. **Daniel Campo[1], Justin Fear[2], Lauren McIntyre[2], Sergey Nuzhdin[1].** 1) University of Southern California, Los Angeles, CA; 2) University of Florida, Gainesville, FL.

477C
Deficiency of X-linked inverted duplicates with male-biased expression and the underlying evolutionary mechanisms in the Drosophila genome. **Zhen-Xia Chen.** Center for Bioinformatics, State Key Laboratory of Protein and Plant Gene Research, College of Life Sciences, Peking University, Beijing, PR China.

478A
Neo-Y chromosome divergence among populations of Drosophila albomicans. **Chia-Hao Cheng, Hwei-yu Chang.** Entomology department, NTU, Taipei, Taiwan.

479B
Comparative and functional analysis of CTCF binding site divergence in the Drosophila genome. **Eldon Emberly[1], Joyce Stamm[2], Nickodemo Pavoni[3], Kyrillos Awad[3], Amy Lloyd[3], Brittany Pasierb[3], Carlos Ortiz[3], Sheryl Smith[3].** 1) Physics, Simon Fraser University, Burnaby, BC, Canada; 2) Biology, University of Evansville, Evansville, IN; 3) Biology, Arcadia University, Glenside, PA.

480C
Identification of transcriptional regulatory networks using structural equation modeling along with priori biological knowledge. **Justin M. Fear[1], Daniel Campos[2], Sergey V. Nuzhdin[2], Lauren McIntyre[1,3].** 1) Genetics & Genomics, Univ Florida, Gainesville, FL; 2) Section of Molecular and Computational Biology, Department of Biological Sciences, University of Southern California, Los Angeles, CA 90089; 3) Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL 32611.

481A
Genomic evidence that heightened gene duplicate accumulation gave a boost to the energy metabolism of the higher Diptera. **Markus H. Friedrich, Riyue Bao.** Dept Biological Sci, Wayne State Univ, Detroit, MI.

482B
Premature Stop Codon Mutations and Evolution in the Drosophila pseudoobscura Complex. **Kenneth B. Hoehn, Mohamed AF Noor.** Biology Dept, Duke University, Durham, NC.

483C
Birth, death, and replacement of importins in Drosophila. **Emily Hsieh[1,2], Nitin Phadnis[2], Harmit Malik[2].** 1) University of Washington, Seattle, WA; 2) Fred Hutchinson Cancer Research Center, Seattle,WA.

484A
A second generation assembly of the *Drosophila simulans* genome and its implications for genome evolution studies. **Tina Hu[1], Michael Eisen[2], Kevin Thornton[3], Peter Andolfatto[1].** 1) Department of Ecology and Evolutionary Biology and the Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ; 2) Howard Hughes Medical Institute and the Lawrence Berkeley Laboratory, University of California Berkeley, Berkeley, CA; 3) Department of Ecology and Evolutionary Biology, University of California Irvine, Irvine, CA.

485B
Genomic satellite DNA repeats and small RNAs: An evolutionary analysis of the *Responder* satellite in the *Drosophila melanogaster* genome. **Amanda M. Larracuente, Daven C. Presgraves.** Biology Department, University of Rochester, Rochester, NY.

486C
Experimental study of evolutionary conflict between the mitochondrial and nuclear genomes. **Aimee J. Littleton[1], Maulik R. Patel[1], Ganeshkumar Miriyala[1], Ala Soofian[1], Harmit S. Malik[1,2].** 1) Basic Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA; 2) Howard Hughes Medical Institute, Seattle, WA.

487A
Sex-specific embryonic expression at different stages of sex chromosome evolution. **Susan E. Lott[1], Jacqueline E. Villalta[2], Doris Bachtrog[3], Michael B. Eisen[1,2,3].** 1) Molecular and Cell Biology, Univ California, Berkeley, CA; 2) Howard Hughes Medical Institute, Univ California, Berkeley, CA; 3) Department of Integrative Biology, Univ California, Berkeley, CA.

488B
Is the Drosophila X chromosome demasculinized? **Colin D. Meiklejohn, Daven C. Presgraves.** Dept Biol, Univ Rochester, Rochester, NY.

489C
Adaptive Evolution and the Birth of CTCF binding events in the Drosophila genomes. **Xiaochun Ni[1,2], Yong Zhang[1], Nicolas Negre[2,3], Sidi Chen[1], Manyuan Long[1], Kevin White[1,2,3].** 1) Department of Ecology & Evolution, University of Chicago, Chicago, IL; 2) Institute for Genomics and Systems Biology, University of Chicago , Chicago, IL; 3) Department of Human Genetics, University of Chicago, Chicago, IL.

490A
Strong evidence of biased gene conversion in *Drosophila melanogaster*. **Matthew C. Robinson, Eric A. Stone, Nadia D. Singh.** Genetics Dept, NCSU, Raleigh, NC.

491B
Mutation accumulation reveals a large duplication bias and substantial variation in substitution rates in *Drosophila melanogaster*. **Daniel R. Schrider[1,2], Michael Lynch[1], David Houle[3], Matthew W. Hahn[1,2].** 1) Department of Biology, Indiana University, Bloomington, IN; 2) School of Informatics and Computing, Indiana University, Bloomington, IN; 3) Department of Biological Science, Florida State University, Tallahassee, FL.

492C
Classifying the evolutionary causes of nucleotide fixation. **Alexander Shanku[1], Andrew Kern[2].** 1) BioMaPS Institute, Rutgers University, Piscataway, NJ; 2) Department of Genetics, Rutgers University, Piscataway, NJ.

493A
Characterizing the homomorphic sex chromosomes of *Aedes aegypti*. **Melissa A. Toups[1], Matthew W. Hahn[1,2].** 1) Biology, Indiana University, Bloomington, IN; 2) School of Informatics and Computing, Indiana University, Bloomington, IN.

494B
Methodological studies on development and duplicate datasets revealed new evidence for Meiotic Sex Chromosomal Inactivation. **Maria Vibranovski[1], Jun Wang[1], Timothy Karr[2], Manyuan Long[1].** 1) Ecology & Evolution, Univ Chicago, Chicago, IL; 2) Biodesign Institute, Arizona State University, Tempe, AZ.

495C
Conservation and expression pattern of overlapping genes in the *Drosophila* genome. **Luyi Wo[1,2], Yihan Li[3], Stephen Schaeffer[1,2].** 1) Department of Biology, Penn State University, University Park, PA 16802; 2) Intercollege Program of Genetics, Penn State University, University Park, PA 16802; 3) Department of Statistics, Penn State University, University Park, PA 16802.

496A
Insights into the Mechanisms of Intron Gain and Loss Using Drosophila Genomes. **Paul Yenerall[1], Leming Zhou[2,3].** 1) Department of Biological Sciences; 2) Department of Health Information Management; 3) Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA.

497B
Statistical models for RNA-seq data. **Rhonda L. Bacher[1], Justin Dalton[2], Rita M. Graze[3], Kurt Jensen[4], Jonatan Sanchez-Garcia[4], Pedro Fernandez-Funez[4], Diego E. Rincon-Limas[4], Michelle N. Arbeitman[2], Ann L. Oberg[5], Sergey V. Nuzhdin[6], Lauren M. McIntyre[3].** 1) Departments of Statistics and Mathematics, University of Florida, Gainesville, Florida, USA; 2) Department of Biomedical Sciences, College of Medicine, Florida State University, Tallahassee, Florida, USA; 3) Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, Florida, USA; 4) Department of Neurology, McKnight Brain Institute, University of Florida, Gainesville, Florida, USA; 5) Department of Health Sciences Research, Division of Biomedical Statistics and Informatics, Mayo Clinic, Rochester, Minnesota, USA; 6) Molecular and Computational Biology, Department of Biological Sciences, University of Southern California, Los Angeles, California, USA.

498C
Laboratory selection on Drosophila melanogaster using Bacillus cereus spores: direct response to selection and correlated life history trait responses. **Lawrence Harshman, Junjie Ma, Andrew Benson, Stephen Kachman, Zhen Hu.** Univ Nebraska - Lincoln, Lincoln, NE.

499A
Computational modeling of *cis*-regulatory modules from 3D expression data in a *Drosophila* blastoderm atlas. **Soile V. E. Keränen, Oliver Rübel, Mark D. Biggin, David W. Knowles.** Lawrence Berkeley Natl Lab, Berkeley, CA.

500B
RNA-seq: the challenge. **Lauren M. McIntyre[1], Rita Graze[1], Luis Novello[2], George Casella[2], Kenny Lopiano[2], Linda Young[2], Ann Oberg[3], Sergey V. Nuzhdin[4].** 1) Dept Molec Gen & Micro, Univ Florida, Gainesville, FL; 2) Dept Statistics, Univ Florida, Gainesville, FL; 3) Mayo Clinic Rochester, MN; 4) University of Southern California.

501C
Male-specific effects of mitochondrial-nuclear genetic interactions. **Katelyn Mika, Sonya Joseph, Kristi Montooth.** Biology, Indiana University, Bloomington, IN.

502A
The how of the Y: Direct versus indirect effects of heterospecific Y chromosomes on gene expression in Drosophila. **Timothy Sackton, Daniel Hartl.** Organismic & Evol Bio, Harvard Univ, Cambridge, MA.

503B
Mitochondrial-nuclear incompatibilities are worse when temperature accelerates the rate of life. **Mohammad Siddiq, Luke Hoekstra, Kristi Montooth.** Biology, Indiana University, Bloomington, IN.

504C
Zinc finger proteins and the distribution of meiotic recombination events. **Caiti Smukowski, Mohamed Noor.** Duke University, Durham , NC.

505A
Men are messy: *Wolbachia* stem cell niche tropism in *Drosophila* is evolutionary conserved only in females. **Michelle E. Toomey[1,2], Eva Fast[1], Horacio M. Frydman[1,2].** 1) Dept. of Biology, Boston University, Boston, MA; 2) National Emerging Infectious Diseases Laboratory, Boston University, Boston, MA.

506B
Recessive lethal accumulation increases chromosomal inversion polymorphisms in *Drosophila melanogaster*. **Shir-Fan Tung[1], Takahiro Miyo[2], Hsin-Yi Chi[3], Chau-Ti Ting[1,2,4,5], Shu Fang[3].** 1) Institute of Ecology and Evolutionary Biology, National Taiwan University, Taiwan, ROC; 2) Department of Life Science, National Taiwan University, Taiwan, ROC; 3) Biodiversity Research Center, Academia Sinica, Taiwan, ROC; 4) Institute of Zoology, National Taiwan University, Taiwan, ROC; 5) Research Center for Developmental Biology and Regenerative Medicine, National Taiwan University, Taiwan, ROC.

507C
Evolution of the Hippo signaling pathway. **Stuart J. Newfeld[1], Charlotte E. Konikoff[2], Billie J. Swalla[2].** 1) Sch Life Sci, Arizona State Univ, Tempe, AZ; 2) Biology Dept, Univ Washington, Seattle, WA.

508A
Genetic Population Structure of the Emergent Invasive Fruit Pest *Drosophila suzukii*. **Jeffrey Adrion, Nick Haddad, Hannah Burrack, Nadia Singh.** North Carolina State University, Raleigh, NC.

509B
Temporal and spatial dynamics of adaptive evolution in temperate Drosophila. **Alan O. Bergland[1], Katherine O'Brien[2], Emily Behrman[2], Paul Schmidt[2], Dmitri Petrov[1].** 1) Dept. of Biology, Stanford University, Stanford, CA; 2) Dept. of Biology, University of Pennsylvania, Philadelphia, PA.

510C
Genotype Evolution In Mimetic Ex Situ Conditions. **Gallia A. Butnaru, Cristina Chelu, Hildegard Herman.** Dept Genetics, Box 136, PO 1, Banat Univ Agricultural Sci, Timisoara, Banat.

511A
Geographic subdivision among Drosophila melanogaster populations revealed by whole genome sequencing. **Daniel Campo, Courtney Fjeldsted, Tade Souaiaia, Joyce Kao, Kjong Lehmann, Sergey Nuzhdin.** University of Southern California, Los Angeles, CA.

512B
The role of chromosome in the evolution of gene regulation, regulatory variation on the X. **Rita M. Graze[1], Lauren M. McIntyre[1,2], Alison M. Morse[1], Sergey V. Nuzhdin[3], Marta L. Wayne[4].** 1) MGM, University of Florida, Gainesville, FL; 2) Department of Statistics, University of Florida, Gainesville, FL; 3) MCB, University of Southern California, Los Angeles, CA; 4) Biology, University of Florida, Gainesville, FL.

513C
Polymorphisms in chromatin accessibility state within *D.melanogaster*. **Aaron Hardin[1], Xiao-Yong Li[2], Michael Eisen[1,2,3].** 1) Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA; 2) California Institute of Quantitative Biology, University of California, Berkeley, Berkeley, CA; 3) Howard Hughes Medical Institute, University of California, Berkeley, Berkeley, CA.

514A
Unpacking Estimates of Cis-regulatory Variation. **Bradley J. Main[1], Andrew Smith[1], Rita Graze[2], Marta Wayne[2], Lauren McIntyre[2], Sergey Nuzhdin[1].** 1) MCB, Univ Southern California, Los Angeles, CA; 2) Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL 32611.

515B
Population genomics of sub-Saharan Drosophila melanogaster: African diversity and non-African admixture. **John E. Pool[1], Kristian A. Stevens[2], Marc Crepeau[2], Charis M. Cardeno[2], James J. Emerson[3], Russell Corbett-Detig[4], Pablo Duchen[5], David J. Begun[2], Charles H. Langley[2].** 1) Laboratory of Genetics, University of Wisconsin - Madison, Madison, WI; 2) Department of Evolution and Ecology, University of California - Davis, Davis, CA; 3) Department of Integrative Biology, University of California - Berkeley, Berkeley, CA; 4) Department of Organismal and Evolutionary Biology, Harvard University, Cambridge, MA; 5) Section of Evolutionary Biology, Ludwig Maximilians Universitat Munchen, Munich, Germany.

516C
Patterns of natural variation unravel strong ongoing genomic conflict in *Drosophila mauritiana*. **Christian W. Schloetterer, Viola Nolte, Ram Vinay Pandey, Robert Kofler.** Inst f Populationsgenetik, Vetmeduni Vienna, Wien.

517A
Parallel Latitudinal Differentiation in Drosophila simulans. **Alisa Sedghifar, David Begun.** Evolution and Ecology, University of California, Davis, Davis, CA.

518B
Intraspecific structure of *D. littoralis* Meigen (Diptera: Drosophilidae). **Svetlana Y. Sorokina[1], Boris V. Andrianov[2], Denis A. Romanov[2], Prohor A. Proshakov[1], Vladimir G. Mitrofanov[1].** 1) Dept Genetics, Koltsov Inst Dev Biology, Moscow, Russian Federation; 2) Dept Animal Genetics, Vavilov Inst Gen Genetics, Moscow, Russian Federation.

519C
Two types of *cis-trans* compensation in the evolution of transcriptional regulation. **Toshiyuki Takano-Shimizu[1,2,3], K. Ryo Takahasi[1,4], Takashi Matsuo[5,6].** 1) Population Genetics, National Institute of Genetics, Mishima, Japan; 2) Department of Genetics, Graduate University for Advanced Studies (SOKENDAI), Mishima, Japan; 3) Department of Biological Sciences, Graduate School of Science, University of Tokyo, Tokyo, Japan; 4) Faculty of Life Sciences, Kyoto Sangyo University, Kyoto, Japan; 5) Department of Biological Sciences, Tokyo Metropolitan University, Tokyo, Japan; 6) Department of Agricultural and Environmental Biology, University of Tokyo, Tokyo, Japan.

520A
Resequencing artificially selected populations to determine the genetic basis of quantitative traits. **Thomas L. Turner, Andrew D. Stewart, Paige Miller.** Ecology, Evolution, and Marine Biology Department, University of California Santa Barbara.

521B
Adaptation to mustard oils in the *Drosophila* radiation: ecological, genetic, biochemical, and metabolomics evidence across a specialization gradient. **Andrew Gloss[1], Timothy Rast[1], Rick Lapoint[1], Michael Reichelt[3], Katharina Schramm[3], Daniel Vassao[3], Jonathan Gershenzon[3], Bill Montfort[2], Noah Whiteman[1].** 1) Dept of Ecology and Evolutionary Biology, Univ of Arizona, Tucson, AZ; 2) Dept of Chemistry and Biochemistry, Univ of Arizona, Tucson, AZ; 3) Dept of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany.

522C
Identifying 'soft sweeps' in egg size variation by re-sequencing experimentally evolved populations of Drosophila melanogaster. **Aashish R. Jha[1,3], Cecelia Miles[2], Cristopher D. Brown[1,3], Kevin P. White[1,2,3], Martin Kreitman[2,3].** 1) Department of Human Genetics, The University of Chicago, Chicago, IL; 2) Department of Ecology and Evolution, The University of Chicago, Chicago, IL; 3) Institute of Genomics and Systems Biology, The University of Chicago, Chicago, IL.

523A
Emergence of essential mitotic function in the young gene Umbrea. **Benjamin Ross[1], Leah Rosin[2], Danielle Vermaak[1], Mary Alice Hiatt[1], Barbara Mellone[2], Harmit Malik[1,3].** 1) MCB/Basic Sciences Dept, University of Washington/FHCRC, Seattle, WA; 2) MCB Dept, University of Connecticut, Storrs, CT; 3) Howard Hughes Medical Institute.

524B
Genetic basis for DDT resistance associated with CYP6g1 in Drosophila simulans. **Julianna Bozler, Todd Schlenke.** Emory University, Atlanta, GA.

525C
The Influence of Feeding Rate on Dietary Restriction Treatments in Drosophila. **Payal Daya, Mary Durham, Jeff Leips.** Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD.

526A
Genome-wide association analysis of natural variation in tergite melanization in *Drosophila melanogaster*. **Lauren Dembeck[1,2], Michael Magwire[1,2], Faye Lawrence[1], Richard Lyman[1], Trudy Mackay[1,2].** 1) Department of Genetics, North Carolina State University, Raleigh, NC; 2) W M Keck Center for Behavioral Biology, North Carolina State University, Raleigh, NC.

527B
High levels of sex-specific additive genetic variation has strong implications for the heritability of lifespan in *Drosophila melanogaster*. **Urban Friberg[1], Anne Lehtovaara[2], Holger Schielzeth[3], Ilona Flis[4].** 1) Ageing Research Group, Evolutionary Biology, Uppsala university, Uppsala, Sweden; 2) Anne.Lehtovaara@gmail.com; 3) Evolutionary Biology, Uppsala university, Uppsala, Sweden; 4) anolis.silf@gmail.com.

528C
Correlated changes in body melanization and mating success in *Drosophila melanogaster*. **Babita Kajla, Ravi Parkash, Vineeta Sharma, Jyoti Chahal, Chanderkala Lambhod.** Lab no 19 Department of Genetics, M. D.UNIVERSITY, ROHTAK, Haryana, India.

529A
Pleiotropy effects of *Syndecan* on innate immune responses and life span of *Drosophila melanogaster*. **Chia-Hua Lue[1], Maria De Luca[2], Jeff Leips[1].** 1) Biological Sciences, University of Maryland Baltimore County, Baltimore, MD; 2) Department of Nutrition Sciences, University of Alabama at Birmingham.

530B
Naturally Occurring Mutational Variation in Sleep Traits in *Drosphila melanogaster*. **Rachel A. Lyman[1], Trudy F. C. Mackay[2,3], Mary Anna Carbone[2,3], Susan T. Harbison[2,3], Matthew Jones-Rhoades[1], Richard F. Lyman[2,3].** 1) Dept of Biology, Knox College, Galesburg, IL; 2) Dept of Genetics, NCSU, Raleigh, NC; 3) W M Keck Center for Behavioral Biology, NCSU, Raleigh, NC.

531C
A Surprisingly Complex Genetic Architecture for Starvation Resistance Revealed by Multiple QTL Mapping Designs. **Casey McNeil, Clint Bain, Stuart Macdonald.** Molecular Biosciences, University of Kansas, Lawrence, KS.

532A
The impact of artificial selection for the wing shape on fluctuating asymmetry in four Drosophila species. **Bianca F. Menezes, Blanche Bitner-Mathé.** UFRJ, Rio de Janeiro, Brazil.

533B
Extending Association-Mapping: Genomics meets Phenomics. **William R. Pitchers[1], Eladio Marquez[2], Jessica Nye[2], David Houle[2], Ian Dworkin[1].** 1) Zoology, Michigan State University, East Lansing, MI; 2) Department of Biological Science Florida State University Tallahassee, FL 32306.

534C
Body melanisation plasticity in generalist, cold and warm adapted *Drosophila* species. **Seema Ramniwas, Ravi Parkash, Chanderkala Lambhod, Babita Kajla.** Lab No 19, Dept of GENETICS, M. D.UNIVERSITY, ROHTAK, Rohtak, HARYANA, India.

535A
Phenotypic McDonald-Kreitman tests of mitochondrial genotype effects on nuclear gene expression. **David M. Rand, Patrick A. Flight, Nicholas Jourjine, Lei Zhu.** Ecology & Evolutionary Biol, Brown Univ, Providence, RI.

536B
Comparative analysis of sex-specific pigmentation identifies novel genes involved in phenotypic evolution. **Sarah A. Signor, Arytom Kopp.** University of California, Davis, Davis, CA.

537C
Tipping the Scales: Artificial Selection on the Slope of a Wing Size-Body Size Scaling Relationship in *Drosophila*. **R. Craig Stillwell[1], Alexander W. Shingleton[1], Ian Dworkin[1], W. Anthony Frankino[2].** 1) Department of Zoology, Michigan State University, East Lansing, MI; 2) Department of Biology and Biochemistry, University of Houston, Houston, TX.

538A
Polymorphisms Associated with Natural Variation in Olfactory Behavior in Drosophila melanogaster. **Shilpa Swarup[1,3], Trudy F. C. Mackay[1,3], Robert R. H. Anholt[1,2,3].** 1) Department of Genetics,; 2) Department of Biology,; 3) W. M. Keck Center for Behavioral Biology, North Carolina State University, Raleigh, NC.

539B
The genetic architecture of diet-dependent immune defense in *Drosophila*. **Robert L. Unckless[1], Susan M. Rottschaefer[1], Pavel Korniliev[2], Chloe Ota[1], Illana Porges[3], Jason G. Mezey[2], Brian P. Lazzaro[1].** 1) Department of Entomology, Cornell University, Ithaca, NY; 2) Department of Biological Statistics and Computational Biology, Cornell University, Ithaca, NY; 3) Jericho High School, Jericho, NY.

540C
Introgression of Nuclear-Encoded Mitochondrial Proteins in *Drosophila yakuba* and *D. santomea*. **Emily Beck[1], Aaron C. Thompson[2], Joel Sharbrough[2,3], Ana Llopart[1,2,3].** 1) Interdisciplinary Graduate Program in Genetics, University of Iowa, Iowa City, IA; 2) Department of Biology, University of Iowa, Iowa City, IA; 3) The Biosciences Graduate Program, University of Iowa, Iowa City, IA.

541A
Screens to identify novel hybrid incompatibility genes in *D. melanogaster/D. simulans* interspecific hybrids. **Tawny Cuykendall, Daniel Barbash.** Molecular Biology & Genetics, Cornell University, Ithaca, NY.

542B
Dissecting behavioral isolation in nature: Evolution of mate choice in the closely related species *Drosophila subquinaria* and *D. recens*. **Kelly A. Dyer[1], Erin Giglio[1], Jacqueline Sztepanacz[2], Brooke E. White[1], Emily R. Peeden[1], Howard D. Rundle[2].** 1) Dept Genetics, Univ Georgia, Athens, GA; 2) Dept Biology, Univ Ottawa, Ottawa, Canada.

543C
Testing the potential role of small RNAs in satellite DNA-based hybrid incompatibility between Drosophila melanogaster and D. simulans. **Karina E. Gomez, Patrick M. Ferree.** W M Keck Science Department, Claremont McKenna College, 925 N. Mills Ave, Claremont, CA 91711.

544A
The effect of the X chromosome on regulation of gene expression in hybrids between *Drosophila yakuba* and *D. santomea*. **Ana Llopart, Evgeny Brud, Emily Beck.** Dept Biol, Univ Iowa, Iowa City, IA.

545B
Design and construction of a new Drosophila species, D.synthetica, by synthetic regulatory evolution. **Eduardo Moreno.** Cell Biology, University of Bern, Bern.

Gametogenesis and organogenesis

546C
The Misshapen kinase negatively regulates integrins to promote follicle cell migration during egg chamber development. **Lindsay K. Lewellyn, Sally Horne-Badovinac.** Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL.

547A
MIPP regulates tracheal morphogenesis through cell intercalation. **Yim Ling Cheng, Deborah Andrew.** Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD.

548B
Tracheal Development in *Drosophila* Visual System. **Wei-Chen Chu[1,2], Yuan-Ming Lee[1,3], Yi Henry Sun[1,2,3].** 1) Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan; 2) Graduate Institute of Life Sciences, National Defense Medical Center, Taipei,Taiwan; 3) Department of Life Sciences and Institute of Genome Sciences, National Yang Ming University, Taipei, Taiwan.

549C
The role of Cad99C in apical membrane dynamics. **Se-Yeon Chung, Deborah Andrew.** Dept Cell Biol, Johns Hopkins Univ, Baltimore, MD.

550A
A gradient of the transcription factor Cut programs patterning and growth of *Drosophila* airways. **Chrysoula Pitsouli[1], Norbert Perrimon[1,2].** 1) Dept Gen, Harvard Med Sch, Boston, MA; 2) HHMI.

551B
The dynein motor complex and Whacked RabGAP/Rab35 regulate seamless tube morphogenesis in *Drosophila* terminal cells. **Jodi Schottenfeld, Amin Ghabrial.** Cell & Dev Biol, Univ Pennsylvania, Philadelphia, PA.

552C
Src42A-dependent polarized cell shape changes mediate epithelial tube elongation. **Dominique Foerster, Stefan Luschnig.** Institute of Molecular Life Sciences and PhD Program in Molecular Life Sciences, University of Zurich, 8057 Zurich, Switzerland.

553A
Orthogonal illumination microscopy live imaging of *Drosophila* embryo. **Dmitri V. Novikov[1], Gordon L. Kindlmann[2], Kevin P. White[1].** 1) Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL; 2) Department of Computer Science, University of Chicago, Chicago, IL.

554B
Investigating a mesenchymal to epithelial tranisition during development of the testis niche. **Lindsey Wingert[1,2], Stephen DiNardo[2].** 1) Cell and Molecular Biology, University of Pennsylvania, Philadelphia, PA; 2) Cell and Developmental Biology, University of Pennsylvania, School of Medicine, Philadelphia, PA.

555C
Hoi polloi is a specific regulator of somatic muscle differentiation. **Aaron N. Johnson, Eric N. Olson.** Department of Molecular Biology, University of Texas Southwestern Medical Center at Dallas, Dallas, TX.

556A
JAK/Stat signaling regulates heart precursor diversification in *Drosophila*. **Aaron N. Johnson, Mayssa H. Mokalled, Thomas N. Haden, Eric N. Olson.** Department of Molecular Biology, University of Texas Southwestern Medical Center at Dallas, Dallas, TX.

557B
A role for *Drosophila* Cyclin J in oogenesis is uncovered in piRNA pathway mutants. **Paul Michael Albosta, Govindaraja Atikukke, Huamei Zhang, Russell Finley.** Ctr Molecular Medicine & Genetics, Wayne State Univ Sch Medicine, Detroit, MI.

558C
Reorganization of germline P bodies and microtubules in response to nutrient stress. **Katherine M. Burn, Lynn Cooley.** Gen, Cooley Lab, Yale Sch Med I-359, New Haven, CT.

559A
Within the female germline, *ovo* promotes the expression of oogenesis genes while *otu* inhibits the expression of male-biased genes. **Amy C. Cash, Justen Andrews.** Department of Biology, Indiana University, Bloomington, IN.

560B
Female-sterile mutants in purity of essence. **Paromita Gupta[1], Janet Rollins[2], Christopher Bazinet[1].** 1) Biological Sciences, St John's University, New York, NY; 2) College of Mount Saint Vincent,New York,NY.

561C
Zfrp8, a conserved stem cell factor, interacts with the MAGUK family protein Dlg5. **Eve Hardy, William Tan, Svetlana Minakhina, Ruth Steward.** Waksman Institute of Microbiology, Rutgers University, Piscataway, NJ.

562A
Investigation of Snail family proteins in cell death during *Drosophila* oogenesis. **Victoria Kathryn Jenkins, Kim McCall.** Department of Biology, Boston University, Boston, MA.

563B
The Diverse Function of PAPI, a Tudor-Domain-Containing Interactor of PIWI Proteins, in Oogenesis and Embryogenesis. **Li Liu, Na Liu, Sneha Mani, Haifan Lin.** Yale University, New Haven, CT.

564C
Wnt4 regulates germline follicle formation. **Lucy Morris, Joan Pulupa, Allan Spradling.** Carnegie Institution, Baltimore, MD.

565A
The Role of Translational Regulation in Meiotic Chromosome Segregation in Oocytes. **James G. Ruggero, Sarah J. Radford, Kim S. McKim.** Genetics, Waksman Institute of Microbiology, Rutgers, Piscataway, NJ.

566B
PI4KIIIα is required for cortical integrity and cell polarity during *Drosophila* oogenesis. **Julie Tan[1,2], Jason Burgess[1,2], Karen Oh[3,4], David Hipfner[3,4], Julie Brill[1,2].** 1) Program in Cell Biology, Hosp Sick Children, Toronto, ON, Canada; 2) Dept of Molecular Genetics, University of Toronto, Toronto, ON, Canada; 3) Epithelial Cell Biology, Institut de Recherches Cliniques de Montreal, Montreal, QC, Canada; 4) Department of Medicine, University of Montreal, Montreal, QC, Canada.

567C
The role of follicle cells in developmental nurse cell death and clearance in late oogenesis. **Allison Timmons, Jon Iker Etchegaray, Claire Schenkel, Kim McCall.** Biology, Boston University, Boston, MA.

568A
The bHLH protein, Sage, provides tissue specificity to FoxA/Fork head. **Rebecca M. Fox, Aria Vaishnavi, Rika Maruyama, Deborah J. Andrew.** Dept Cell Biol, Johns Hopkins Univ, Baltimore, MD.

569B
oak gall and conjoined alter Branching Morphogenesis and Tube Formation in the Drosophila Tracheal System. **Deanne M. Francis, Amin Ghabrial.** Cell and Developmental Biology, University of Pennsylvania School of Medicine, Philadelphia, PA.

570C
The role of the exocyst in subcellular morphogenesis. **Tiffani A. Jones, Mark M. Metzstein.** Human Gen, Univ Utah, Salt Lake City, UT.

571A
Tramtrack69 Regulates Gene Expression During Tube Morphogenesis in the *Drosophila* Ovary. **Nathaniel C. Peters, Celeste A. Berg.** Deptartment of Genome Sciences and the Molecular and Cellular Biology Program, University of Washington, Seattle, WA.

572B
Characterization of $Pkn^{dlnΔ5}$, a derivative allele of the *delorean* mutation associated with the *Protein kinase N* gene in *Drosophila melanogaster*. **Georgette Sass, Allison Burke, Sarah VanOeveren, Bruce Ostrow.** Grand Valley State University, Allendale, MI.

573C
larval translucida regulates growth and morphogenesis of the Malpighian tubules. **Milan Szuperak[1], Matthew Gibson[1,2].** 1) Stowers Institute for Medical Research, Kansas City, MO; 2) Department of Anatomy and Cell biology, KUMC, Kansas City, KS.

574A
Investigating mechanisms of tubulogenesis using tandem mass spectrometry and FISH. **Sandra G. Zimmerman, Celeste A. Berg.** Department of Genome Sciences, University of Washington, Seattle, WA.

575B
Patterns of molecular evolution of germ line specification genes in *Drosophila*. **Abha Ahuja, Victor Zeng, Cassandra Extavour.** Department of Organismic and Evolutionary Biology, Harvard University, Cambridge, MA.

576C
A surprising role for the Anaphase Promoting Complex in sex determination. **Osamah Batiha, Varsha Padmanaban, Eric Fifield, Rami Mechael, Alison Petrie, Andrew Swan.** Biological sciences, University of Windsor, Windsor.

577A
Hrp48 functions as a moderator of Sxl expression to allow for proper Notch expression and signaling in monomorphic organ development. **Dvora Burshtein[1], Yaron Suissa[1], Yossi Kalifa[2], Tama Dinur[1], Patricia Graham[3], Girish Deshpande[3], Paul Schedl[3], Offer Gerlitz[1].** 1) Developmental Biology and Cancer Research, IMRIC, The Hebrew University-Hadassah Medical School, Jerusalem; 2) Department of Molecular Genetics, Weizmann Institute of Science, Rehovot Israel; 3) Department of Molecular Biology, Princeton University, Princeton, NJ 08540, USA.

578B
Jak-STAT regulation of Drosophila germ cell sex determination. **Matthew J. Wawersik, Andrea Lin, Tigist Tamir, Rebecca Obniski.** Biology Dept, Col William & Mary, Williamsburg, VA.

579C
microRNA miR-7 targets Tramtrack69 to regulate a developmental switch in Drosophila follicle cells. **Yi-Chun Huang, Laila Smith, John Poulton, Wu-Min Deng.** Dept Biological Sci, Florida State Univ, Tallahassee, FL.

580A
Genetic Probing of Drosophila glycine requirements. **Christopher W. Bazinet, Ujwala Gosavi, Debaki Sarkar.** Dept Biological Sci, Saint John's Univ, Queens, NY.

581B
tut coordinates proliferation and differentiation of spermatogonia in Drosophila. **Di Chen[1,2], Bangxia Suo[1], Shaowei Zhao[1,2], Qing Geng[1,2], Yu Gao[1,2], Zhaohui Wang[1].** 1) Institute of Genetics and Developmental Biology, Beijing; 2) Graduate University of Chinese Academy of Sciences.

582C
Screening for dominant enhancers of Segregation distortion. **Kaylie Church, Janna McLean.** Olivet Nazarene University, Bourbonnais, IL.

583A
Phosphoinositides regulate nuclear morphogenesis in Drosophila. **Lacramioara Fabian[1], Julie Brill[1,2].** 1) Cell Biology, The Hospital for Sick Children, Toronto, Ontario, Canada; 2) Molecular Genetics, University of Toronto, Ontario, Canada.

584B
A testis-enriched predicted ATP synthase subunit required for mitochondrial shaping during spermatogenesis. **Yihharn Hwang, Lauren Ivey, Karen G. Hales.** Department of Biology, Davidson College, Davidson, NC.

585C
Loss of *Odysseus* function affects male fertility by decreasing germ cell numbers in *Drosophila melanogaster*. **Chau-Ti Ting[1], Ya-Jen Cheng[2], Shun-Chern Tsaur[3], Shu Fang[4].** 1) Department of Life Science; Institute of Ecology and Evolutionary Biology; Institute of Zoology; Research Center for Developmental Biology and Regenerative Medicine, National Taiwan University, Taiwan, ROC; 2) Institute of Molecular and Cellular Biology, National Tsing Hua University, Taiwan, ROC; 3) Department of Life Sciences & Institute of Genome Sciences, National Yang-Ming University, Taiwan, ROC; 4) Biodiversity Research Center, Academia Sinica, Taiwan, ROC.

586A
Determining the molecular roles of *CG4701* and *nmd* in *Drosophila melanogaster* spermatogenesis through analysis of β-tubulin and anillin localization. **Bethany L. Wagner, Sarah C. Pyfrom, Karen G. Hales.** Department of Biology, Davidson College, Davidson, NC.

Immunity and pathogenesis

587B
Transcriptional Pausing Orchestrates A Rapid Antiviral Immune Response in *Drosophila*. **Jie Xu[1], Gregory Grant[1], Leah Sabin[3], Beth Gold[1], Rui Zhou[2], Gregory Hannon[3], Sara Cherry[1].** 1) School of Medicine, University of Pennsylvania, Philadelphia, PA; 2) Dept. of Genetics, Harvard Medical School, Howard Hughes Medical Institute, Boston, MA; 3) Watson School of Biological Sciences, Howard Hughes Medical Institute, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

588C
Food poisoning: *lam* larvae with melanotic masses are sensitive to frassfood. **Mitchell S. Dushay, Yi Cui, Samiat Jinadu, Harshit Khasa, Neena Majumdar, Thomas Matthews, Monica Samelson.** BCHS, Illinois Institute of Technology, Chicago, IL.

589A
Streptococcus gordonii is virulent and enhances the virulence of *Porphyromonas gingivalis* in *Drosophila melanogaster*. **Christina Igboin[1], Ann Griffen[2], Eugene Leys[1].** 1) Division of Oral Biology; 2) Division of Pediatric Dentistry, Ohio State University College of Dentistry, Columbus, OH.

590B
The anti-wasp immune response across the genus Drosophila. **Balint Z. Kacsoh, Todd A. Schlenke.** Department of Biology, Emory University, Atlanta, GA.

591C
S-Nitrosylation in Immunity and Fertility: A Mechanism Conserved in Plants and Animals. **Krieng Kanchanawatee[1], Gary Loake[1], David Finnegan[2].** 1) Institute of Molecular Plant Sciences , Univeristy of Edinburgh, Edinburgh, United Kingdom; 2) Institute of Cell Biology, Univeristy of Edinburgh, Edinburgh, United Kingdom.

592A
Characterization of a candidate immune receptor in Drosophila. **Erin S. Keebaugh, Todd A. Schlenke.** Dept Biol, Emory Univ, Altanta, GA.

593B
Altered metabolism influences survival from infection. **Karla L. Lightfield, David Schneider.** Microgiology and Immunology, Stanford University, Stanford, CA.

594C
Recovery from Infection. **Alexander Louie, David Schneider.** Microbiology and Immunology, Stanford University, Stanford, CA.

595A
Fat metabolic effects to immune responses in Drosophila melanogaster. **Kyung Han Song, David Schneider.** Microbiology and Immunology, Stanford University, Stanford, CA.

596B
Spiroplasma in *Drosophila melanogaster* populations: prevalence, male-killing, molecular identification and no association with *Wolbachia*. **Iuri M. Ventura[1], Ayana B. Martins[1,2], Mariana L. Lyra[1,3], Carlos C. A. Andrade[4], Klélia A. Carvalho[1], Louis B. Klaczko[1].** 1) Dept. Genética e Evolução, Universidade Estadual de Campinas, SP, Brazil; 2) Dept. de Ecologia, USP, SP; 3) Dept. de Zoologia, UNESP, SP; 4) Dept. de Biologia Marinha, UFF, RJ.

597C
The *Drosophila* protein Mustard regulates targets of Relish. **Paula Ivonne Watnick, Zhipeng Wang, Cristin Berkey.** Division of Infectious Diseases, Children's Hospital Boston, Boston, MA. 02115.

598A
Priming with S. pneumoniae infection causes changes in gene expression in Drosophila melanogaster. **Junaid Ziauddin, David Schneider.** Microbiology & Immunology, Stanford Univ SOM, Stanford, CA.

599B
Modeling the effects of altered gravity on the immune response using Drosophila. **D. Kimbrell[1], C. Fuller[1], L. von Kalm[2], K. Beckingham[3], M. George[1], J. Parker[4], M. Thomson[5], D. Hoshizaki[6], A. Gibbs[6], J. Alley[7], K. Taylor[1], P. Fuller[1], K. Kleinhesselink[1], A. Hammonds[8], R. Morgan[2], T. Smallwood[2], A. Kloehn[1].** 1) Univ California, Davis; 2) Univ Central Florida, Orlando; 3) Rice Univ, Houston, TX; 4) Expression Analysis, Inc; 5) Vanderbilt Univ, TN; 6) Univ Nevada, Las Vegas; 7) Laverlam Inter Corp, MT; 8) Lawrence Berkeley Nat Lab, CA.

600C
Trade-offs and immune defense: the effect of mating and reproduction on immunity in female *D. melanogaster*. **Sarah M. Short, Mariana F. Wolfner, Brian P. Lazzaro.** Field of Genetics & Development, Cornell University, Ithaca, NY.

601A
Investigating the alleles responsible for immune natural variation of Drosophila melanogaster. **Alejandra Guzman, David Schneider.** Microbiology and Immunology, Stanford University, Stanford, CA.

602B
Regulation of Hematopoietic Stem-Like Cell Multipotency in *Drosophila*. **Hongjuan Gao, Xiaorong Wu, Nancy Fossett.** Center for Vascular and Inflammatory Diseases, University of Maryland School of Medicine, Baltimore, MD.

603C
Steroid modulation of immune function in *Drosophila*. **Jeanette E. Natzle, Patrick Finnegan, Damian Kuo, Phi Nguyen, Deborah Kimbrell.** Dept Molec & Cellular Biol, Univ California, Davis, Davis, CA.

604A
Wolbachia show asymmetric localization to embryonic and larval neuroblasts and target specific neuronal cell bodies in the D. melanogaster adult brain. **Roger Albertson[1], Rachel Leads[1], William Sullivan[2].** 1) Albion College, Albion, MI; 2) University of California at Santa Cruz, Santa Cruz, CA.

605B
Evolutionary analysis of the *bag of marbles* gene reveals an interaction with *Wolbachia*. **Heather A. Flores, Daniel A. Barbash, Charles F. Aquadro.** Dept Molec Biol & Gen, Cornell Univ, Ithaca, NY.

606C
Density of *Wolbachia* in the host insect impacts antiviral protection. **Karyn N. Johnson[1], Sheree E. Osborne[1], Jeremy C. Brownlie[2].** 1) School of Biological Sciences, The University of Queensland, Brisbane, Queensland, Australia; 2) School of Biomolecular and Physical Sciences, Griffith University, Brisbane, Australia.

Neurophysiology and behavior

607A
A new model of chronic social defeat in *Drosophila melanogaster*. **David Popovic[1], Jill Penn[1], Justin Dalton[2], Michelle Arbeitman[2], Edward Kravitz[1].** 1) Neurobiology, Harvard Medical School, Boston, MA; 2) College of Medicine, Florida State University, Tallahassee, FL.

608B
Effects of RNAi-Mediated Suppression of Odorant binding protein 56h on Aggression and Mating Behaviors. **John R. Shorter[1], Kavita Sharma[2], Anandasankar Ray[2], Robert R. Anholt[3], Trudy F. Mackay[1].** 1) Genetics, North Carolina State, Raleigh, NC; 2) Entomology, University of California, Riverside, CA; 3) Biology, North Carolina State, Raleigh, NC.

609C
Drosophila olfactory-related preferences to diverse yeast volatiles profiles. **J. R. Arguello[1], Carolina Sellanes Parodi[2], Yann-Ru Lou[3], Andrew Clark[1], Robert Raguso[4].** 1) Mol Bio & Genetics, Cornell, Ithaca, NY; 2) Laboratorio de Ecología Química, Universidad de la República, Uruguay; 3) Dept. Of Plant Biology,Cornell, Ithaca, NY; 4) Dept. of Neurobio and Behavior,Cornell, Ithaca, NY.

610A
The circadian neuropeptide PDF couples preferentially to a specific adenylate cyclase isoform. **Laura B. Duvall, Paul H. Taghert.** Department of Anatomy & Neurobiology, Washington University in St Louis, St Louis, MO.

611B
Extreme Light Sensitivity in *Drosophila*. **P. Fozdar, J. Coupar, S. Hughes, P. Vinayak, W. Brasher, J. Kilby, J. Hirsh.** Dept. of Biology, University of Virginia, Charlottesville, VA 22904.

612C
Calcium and cAMP signaling in the prothoracic gland and its role in the circadian timing of Drosophila emergence. **Angelina Palacios-Muñoz, John Ewer.** Laboratory of Neurogenetics and Development, Interdisciplinary Center of Neuroscience of Valparaíso, University of Valparaíso, Chile.

613A
The transcription factor Mef2 is a key link between central clock, neuronal firing and the circadian regulation of axonal remodeling in Drosophila. **Anna Sivachenko, Yue Li, Katherine Abruzzi, Michael Rosbash.** Dept Biol, Brandeis Univ, Waltham, MA.

614B
Identification of sex-specific transcriptome differences by RNA-sequencing. **Michelle N. Arbeitman[1], Simon Knott[3], Justin Fear[2], Lauren McIntyre[2], Justin Dalton[1].** 1) College of Medicine, Florida State Univ, Tallahassee, FL; 2) Molecular Genetics and Mircobiology, Genetics Institute, University of Florida, Gainesville, FL; 3) Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

615C
Requirement of the Flightin Amino Terminal Sequence for Flight and Species-Specific Courtship Song in *Drosophila melanogaster*. **Samya Chakravorty, Veronica Foelber, Bertrand Tanner, Jim Vigoreaux.** Department of Biology, University of Vermont.

616A
Drosophila female precopulatory behavior is modulated by ecdysteroids. **Geoffrey Ganter[1], Joseph Desilets[1], Jessica Davis-Heim[1], Alexandra Panaitiu[1], Mark Sweezy[2], Joseph Sungail[1], Leonard Tan[1], Aurora Adams[1], Elizabeth Fisher[1], Joselle O'Brien[1], Kelsey Kincaid[1], Ralf Heinrich[3].** 1) Department of Biology, College of Arts and Sciences, University of New England, Biddeford, Maine, 04005, USA; 2) Department of Pharmaceutical Sciences, School of Pharmacy, Saint Joseph College, West Hartford, Connecticut, 06117, USA; 3) Department of Cellular Neurobiology, Institute for Zoology, Georg-August-University, Göttingen, Germany.

617B
The seminal protein, ovulin, increases ovulation behavior through signaling of OA neurons. **Clifford D. Rubinstein, Mariana F. Wolfner.** Department of Molecular Biology & Genetics, Cornell University, Ithaca, NY.

618C
Behavioral Plasticity of Drosophila melanogaster in response to varying social experiences. **Sehresh Saleem, Ginger Carney.** Texas A&M University, College Station, TX.

619A
Investigating the role of a fourth chromosome mutation in courtship receptivity and decisionmaking. **Joseph Schinaman, Rui Sousa-Neves.** Department of Biology, Case Western Reserve University, Cleveland, OH.

620B
The role of Juvenile Hormone in *Drosophila melanogaster* male courtship behavior. **Thilini P. Wijesekera, Brigitte Dauwalder.** Biology and Biochemistry, University of Houston, Houston, Texas.

621C
Drosophila sNPF regulates feeding through the dFOXO post-translational modification. **Kyu-Sun Lee[1,2], Seung-Hyun Hong[1], Su-Jin Kwak[1], Ae-Kyeong Kim[1], Hua Bai[3], Marc Tatar[3], Kweon Yu[1].** 1) Aging Res Ctr, KRIBB, Daejeon; 2) Functional Genomics Program, University of Science and Technology, Daejeon; 3) Department of Ecology and Evolutionary Biology, Brown University, Providence, RI.

622A
The Role of Odorant Binding Proteins in Aversive Taste Perception in *Drosophila melanogaster*. **Sruthipriya Sridhar[1,2], Michael Nokes[1,2,4], Shilpa Swarup[2,3], Tatiana V. Morova[1,2], Robert R. H. Anholt[1,2,3].** 1) Department of Biology; 2) W. M. Keck Center for Behavioral Biology; 3) Department of Genetics, NCSU, Raleigh NC; 4) University of Notre Dame, Notre Dame IN.

623B
Identification of regulatory elements impacting AKH signaling. **Jason T. Braco, Greg E. Alberto, Emily L. Gillespie, Erik C. Johnson.** Biology, Wake Forest University, Winston-Salem, NC.

624C
The Role of Hormones in the Stress Response. **Kathryn J. Argue, Wendi S. Neckameyer.** Pharmacological and Physiological Sciences, Saint Louis University School of Medicine, St. Louis, MO.

625A
The membrane-bound ecdysteroid receptor DopEcR plays a unique role in the regulation of behavioral response to ethanol in Drosophila. **Emily Petruccelli, Toshihiro Kitamoto.** 51 Newton Rd, University of Iowa, Iowa City, IA.

626B
A genetic RNAi screen for G-protein coupled receptors regulating *Drosophila* flight. **Tarjani Agrawal, Gaiti Hasan.** Natinal Centre for Biological Sciences, TIFR, Bangalore, INDIA.

627C
Characterization of three ligand gated ion channel subunits - Potential pesticide targets? **Daniel Feingold, Stephanie Bourque, Patrick Janukavicius, Saima Sidik, Laura Nilson, Joseph Dent.** Biol, McGill Univ, Montreal, QC, Canada.

628A
The role of glia in axonal degeneration. **Bibhudatta Mishra, Catherine A. Collins.** Molecular,Cellular and Developmental Biology, University of Michigan, Ann Abor, MI.

629B
Probing the regulatory mechanisms of AKH cell excitability. **Rebecca J. Perry, Jason T. Braco, Erik C. Johnson.** Department of Biology, Wake Forest University, Winston-Salem, NC.

630C
CREB results in memory enhancement for a conditioned place preference and courtship suppression task in Drosophila melanogaster. **Eugenia Friedman[1], Toshihiro Kitamoto[2], Jerry Yin[3].** 1) Neuroscience Training Program, University of Wisconsin-Madison, Madison, WI; 2) Dept. of Anesthesiology, University of Iowa, Iowa City, Iowa; 3) Dept. of Genetics, University of Wisconsin-Madison, Madison, WI.

631A
Dopamine neurons signal reward for odour memory in Drosophila. **Chang Liu[1,2], Anja Friedrich[1], Igor Siwanovicz[1], Hiromu Tanimoto[1].** 1) Max-Plank Institute of Neurobiology, Martinsried, Germany; 2) Kunming Institute of Zoology, Chinese Academy of Science, Kunming, China.

632B
Effect of LIMK1 isoform ratio on Drosophila melanogaster courtship behavior. **Ekatherina Nikitina, Alena Kaminskaya, Dmitry Molotkov, Gennady Zakharov, Tatyana Payalina, Elena Savvateeva-Popova.** Dept Neurogenetics, Pavlov Inst Physiology, St Petersburg, Russian Federation.

633C
Tip60 HAT activity regulates synaptic plasticity: Implications for epigenetics in learning and memory. **Jessica Sarthi, Felice Elefant.** Biology, Drexel Univ, Philadelphia, PA.

634A
An epigenetic role for dTip60 in locomotion and axonal vesicle transport. **Ashley Zervos, William Reube, Felice Elefant.** Dept Biol, Drexel Univ, Philadelphia, PA.

635B
ROS-mediated detection of epidermal mechanical stress by larval peripheral nociceptors. **Wayne A. Johnson, Justin Carder.** Dept Molec Physiol/Biophysics, Univ of Iowa Carver College of Medicine, Iowa City, IA.

636C
The temporal pattern of neural activity underlying ecdysis behavior is regulated by neuropeptides downstream of Ecdysis Triggering Hormone. **John Ewer, Wilson Mena.** Centro Interdisciplinario de Neurociencias, Universidad de Valparaiso, Valparaiso, CHILE.

637A
Differential Recruitment of Dopamine Neurons into the Stress Response Circuitry. **Kathryn J. Argue, Wendi S. Neckameyer.** Pharmacological and Physiological Sciences, Saint Louis University School of Medicine, St. Louis, MO.

638B
Dissection of the Dopaminergic Circuitry Regulating Sleep/Wake in *Drosophila*. **Qili Liu[1], Sha Liu[1], Lay Kodama[1], Maria Driscoll[1], Shahnaz Lone[1], Mark Wu[1,2].** 1) Department of Neurology, Johns Hopkins University, Baltimore, MD; 2) Department of Neuroscience, Johns Hopkins University, Baltimore, MD.

639C
Using natural variation to investigate *Drosophila*- yeast interactions. **Kelly M. Schiabor.** Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA.

640A
Structural evidence supporting a conserved role for sleep in synaptic homeostasis. **Daniel B. Bushey, Giulio Tononi, Chiara Cirelli.** Dept Psychiatry, Univ Wisconsin, Madison, Madison, WI.

641B
Virtual Fly Brain. **Marta Costa[1], David Osumi-Sutherland[1], Simon Reeve[1], Nestor Milyaev[2], Cahir O'Kane[1], J. Douglas Armstrong[2].** 1) Department of Genetics, University of Cambridge, Cambridge, United Kingdom; 2) University of Edinburgh, School of Informatics, Institute for Adaptive and Neural Computation, Edinburgh, United Kingdom.

642C
Walking parameters in adult wild type and sensory impaired *Drosophila melanogaster*. **César S. Mendes[1], Imre Bartos[2], Turgay Akay[1], Szabolcs Márka[2], Richard S. Mann[1].** 1) Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY; 2) Department of Physics, Columbia University, New York, NY.

643A
Egg laying decisions in Drosophila depend on the size of the oviposition substrate and are consistent with optimal larval foraging strategies. **Nicholas U. Schwartz[1], Lixian Zhong[2], Andrew Bellemer[3], W. Daniel Tracey[1,2,3,4,5].** 1) Neuroscience Program, Duke University, Durham, NC; 2) Pharmacology Science Training Program, Duke University Medical Center, Durham, NC; 3) Department of Anesthesiology, Duke University Medical Center, Durham, NC; 4) Department of Cell Biology, Duke University Medical Center, Durham, NC; 5) Department of Neurobiology, Duke University Medical Center, Durham, NC.

644B
The "secondary cells" of the D. malanogaster male accessory gland make products that prolong the female's post mating response. **Jessica L. Sitnik[1], Dragan Gligorov[2], Robert K. Maeda[2], François Karch[2], Mariana Wolfner[1].** 1) Molecular Biology and Genetics, Cornell, Ithaca, NY; 2) Department of Genetics & Evolution and NCCR Frontiers in Genetics, University of Geneva, Geneva, Switzerland.

645C
Identification of interneurons involved in Drosophila larval reactions to distinct somatosensory stimuli. **Marta Zlatic, Tomoko Ohyama, Tihana Jovanic.** HHMI Janelia Farm Research Campus, Ashburn, VA.

646A
Neural representations of courtship song in the *Drosophila* brain. **Philip Coen[1], Sina Tootoonian[2,3], Mala Murthy[1].** 1) Molecular Biology and Princeton Neuroscience Institute, Princeton University, Princeton, NJ; 2) Computation and Neural Systems Program and Division of Biology, California Institute of Technology, Pasadena, CA; 3) Max Planck Institute for Brain Research, Frankfurt, Germany.

647B
Screening of Central Pain Circuits. **Wijeong Jang, Sunwoo Kim, Changsoo Kim.** Sch Biological Sci, Chonnam National Univ, Gwangju-Si, South Korea.

648C
Analgesic Drugs Relive Pain in Drosophila. **Sunwoo Kim, Myungsuk Oh, Eunhee Cho, Wijeong Chang, Changsoo Kim.** Chonnam National University, Gwangju, South Korea.

649A
Drosophila exhibit active avoidance behavior in response to a predator. **Claire J. Manson-Bishop[1,2], Gregg W. Roman[1,2].** 1) Biology and Biochemistry, University of Houston, Houston, TX; 2) Biology of Behavior Institute, University of Houston, Houston, TX.

650B
A functional genomic screen for phototransduction genes in *Tribolium* . **Arun K. Sasikala-Appukuttan[1], Matthew Kulpa[1], Zahabiya Husain[1], Magdalena Jackowska[1], Bryce Daines[2], Jason Caravas[1], Rui Chen[2], Heinrich Jasper[3], Markus Friedrich[1,4].** 1) Department of Biological Sciences, Wayne State University, 5047 Gullen Mall, Detroit, MI 48202, USA; 2) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA; 3) Department of Biological Sciences, University of Rochester, River Campus Rochester, New York 14627, USA; 4) Department of Anatomy and Cell Biology, Wayne State University, School of Medicine, 540 East Canfield Avenue, Detroit, MI 48201, USA.

651C
The Prion Protein Binds to Synapsin and Syntaxin in the Presynaptic Neuromuscular Junction. **Jose E. Herrera[1,2], Diego Rincon-Limas[2], Pedro Fernandez-Funez[2,3].** 1) éMaster's Program in Translational Biotechnology, University of Florida, Gainesville, FL; 2) Neurology, University of Florida, Gainesville, FL; 3) Neuroscience, University of Florida, Gainesville, FL.

652A
Myosin VI contributes to synaptic transmission and development at the Drosophila neuromuscular junction. **Marta Kisiel[1], Bryan Stewart[1,2].** 1) Cell and System Biology, University of Toronto, Toronto, Canada; 2) Department of Biology, University of Toronto Mississauga, Mississauga, Canada.

653B
Rugose, a Drosophila homologue of the mammalian Neurobeachin, is involved in larval locomotion, adult habituation, learning and activity patterns. **Emma Schatoff[1], Julian Flores[1], Alexandria Wise[2], Tadmiri Venkatesh[1].** 1) Biology, City University of New York The City College, New York, NY; 2) The Graduate Center, City University of New York, New York, NY.

654C
Dube3a differentially regulates mEJPs in a ubiquitin dependent manner. **Reese Scroggs[1], Rachel Chassen[2], Lawrence Reiter[1,3].** 1) Anatomy and Neurobiology, UTHSC, Memphis, TN; 2) IPBS Program, UTHSC, Memphis, TN; 3) Neurology, UTHSC, Memphis, TN.

655A
The synaptic vesicle-associated Ca^{2+} channel Flower couples synaptic exo-endocytosis cycle and regulates synaptic growth. **Chi-Kuang Yao[1,2,3], Yong Qi Lin[2,3], Claire Haueter[2,3], Hugo J. Bellen[2,3].** 1) Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan; 2) Department of Molecular and Human genetics, Baylor college of medicine, Houston, TX, USA; 3) HHMI.

Neural development

656B
Characterization of the neural expression and roles of the Ret tyrosine kinase receptor. **Daniel Perea, Irene Miguel-Aliaga.** Zoology, Cambridge University, Cambridge, Cambridge, United Kingdom.

657C
Disassembling F-actin Networks Through Manipulations of Mical and Actin Bundling Proteins. **Jimok Yoon, Heng Wu, Jonathan Terman.** Center for Basic Neuroscience, UTSouthwestern Medical Center at Dallas, Dallas, TX.

658A
The fate of identified dHb9-positive larval motor neurons during metamorphosis. **Soumya Banerjee, Marcus Toral, Matthew Siefert, Joyce Fernandes.** Zoology, Miami Univ, Oxford, OH.

659B
Neurotrophic actions of dopamine on the development of a serotonergic feeding circuit in *Drosophila melanogaster*. **Parag Bhatt, Wendi Neckameyer.** Pharmcological and Physiological Science, Saint Louis University School of Medicine, St Louis, MO.

660C
RNA-seq reveals diverse neurosecretory properties of the CNS-midline cells in *Drosophila*. **Joseph R. Fontana[1], Stephen T. Crews[1,2].** 1) Molecular Biology, Univ North Carolina, Chapel Hill, Chapel Hill, NC; 2) Dept. of Biochemistry and Biophysics, Univ North Carolina, Chapel Hill, Chapel Hill, NC.

661A
Genome-wide expression profiling identifies genes regulated by JAK/STAT in the *Drosophila* optic lobe. **Hong Luo, Hongbin Wang.** School of Life Sciences, Tsinghua University, Beijing, China.

662B
Identification of novel maternal neurogenic genes that are potential components of Notch signaling in *Drosophila*. **Kenjiroo Matsumoto[1], Naoki Aoyama[1], Takahiro Seto[1], Ryo Hatori[1], Akira Ishio[1], Takahiro Maeda[1], Tamiko Itou[1], Syusuke Shimaoka[1], Hironao Iida[1], Takuma Gushiken[1], Yuu Atsumi[1], Tomoko Yamakawa[1], Takeshi Sasamura[1], Kenji Matsuno[1,2].** 1) Dept. Biol Sci/Tec, Tokyo Univ of Science; 2) Res Inst Sci/Tec, Tokyo Univ of Science.

663C
The Role of Dscam in Dendrite Development of an identified Drosophila Motoneuron. **Katie M. Hutchinson, Carsten Duch.** Arizona State University, Interdisciplinary Graduate Program in Neuroscience, Tempe, AZ 85287-4501.

664A
NMNAT protects against hypoxia-induced dendrite degeneration. **Yuhui Wen, Grace Zhai, Michael Kim.** Molecular and Cellular Pharmacology, University of Miami, Miller School of Medicine, Miami, FL.

665B
RNAi screen to identify genes involved in retinal basal glia (RBG) cells in Drosophila. **Yen-Ching Chang[1,2], Y. Henry Sun[1,2].** 1) Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, Republic of China; 2) Department of Life sciences and Institute of Genome sciences, National Yang-Ming University, Taipei, Taipei, Taiwan.

666C
Study of Cell Lineage in Drosophila Retinal Basal Glia. **Yu Fen Huang[1,2], Y. Henry Sun[1,2].** 1) Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan; 2) Department of Life Science and Institute of Genome Science, National Yang-Ming University, Taipei, Taiwan.

667A
Degeneration of optic lamina caused by defective endocytic function in glial cells. **Yuan-Ming Lee[1,2], Y. Henry Sun[1,2].** 1) Inst Molecular Biology, Academia Sinica, Taipei, Taiwan; 2) Inst Genomic Science, National Yang-Ming University, Taipei, Taiwan.

668B
Number Matching Between Ommatidia and Retinal Basal Glial Cells (RBGs) during *Drosophila* Eye Development. **Par B. Pun[1,2], Yi Henry Sun[1,2].** 1) Molecular and Cell Biology, Taiwan International Graduate Program, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan; 2) Graduate Institute of Life Science, National Defense Medical Center, Taipei, Taiwan.

669C
Glial remodeling during reorganization of the peripheral nervous system. **Matthew Siefert, Soumya Banerjee, Bridget Hartman, Tara Fallah, Todd Simmons, John Wilber, Dorothy Lakis.** Zoology, Miami University, Oxford, OH.

670A
Dissecting the regulation of a novel gene cg11910 in the longitudinal glial cells of drosophila embryos. **Pavithra Vivekanand[1], Jaclyn Malat[2].** 1) Biology, Dickinson College, Carlise, PA; 2) Franklin and Marshall College, Biology Department, Lancaster, PA 17604.

671B
The actions of gonadotropic hormones on the development and mature function of a defined neural circuit in *Drosophila melanogaster*. **Selma Avdagic, Bhatt Parag, Neckameyer Wendi.** Pharmacological and Physiological Science, Saint Louis University School of Medicine, St. Louis, MO.

672C
Sexual identity affects the development and mature function of a defined neural circuit in *Drosophila* melanogaster. **Parag Bhatt, Selma Avdagic, Wendi Neckameyer.** Pharmcological and Physiological Science, Saint Louis University School of Medicine, St Louis, MO.

673A
jim lovell, a BTB-POZ domain protein implicated in neural differentiation and embryonic pattern formation. **Kathleen M. Beckingham, Sonia Bjorum, Rebecca A. Simonette, William J. Deery, Raul Alanis, Benjamin Lewis.** Dept Biochem & Cell Biol, Rice Univ, Houston, TX.

674B
Identification of a novel suppressor of Crumbs and its role in growth regulation. **Eunbyul Yeom, Kwang-Wook Choi.** Department of Biological Sciences, Graduate School of Nanoscience and Technology, KAIST, Daejeon, South Korea.

675C
scalloped expression during Drosophila embryogenesis. **Michael Benson[1], Nicholas Gubitosi[1], Elizabeth Norris[1], Chelsea Gurvis[1], Elena Brandano[1], Karrie Brondell[1], Rachel Yonker[1], James Skeath[2], Kirsten Guss[1].** 1) Biology, Dickinson College, Carlisle, PA; 2) Genetics, Washington University School of Medicine, St. Louis, MO.

676A
CHARACTERIZATION OF *aaquetzalli (aqz)*, A GENE REQUIRED FOR DEVELOPMENT OF THE NERVOUS SYSTEM DURING *Drosophila melanogaster* EMBRYOGENESIS. **Miguel Mendoza-Ortiz, Juan Riesgo-Escovar.** Dep. de Neurobiología del Desarrollo y Neurofisiología, Inst. Neurobiología, UNAM, Campus Juriquilla, Querétaro, México.

677B
Dissecting the *cis*-regulatory enhancers that control the POU-domain transcription factor genes, *pdm-1* and *pdm-2*. **Jermaine Ross, Thomas Brody, Mukta Kundu, Alexander Kuzin, Ward F. Odenwald.** NINDS, NIH, Bethesda, MD.

678C
Molecular basis of the production of neuronal diversity in the Drosphipha visual center. **Takumi Suzuki, Masako Kaido, Rie Takayama, Makoto Sato.** Frontier Science Organization, Kanazawa University, Kanazawa, Japan.

679A
Drosophila motor neuron retraction mediated by inputs from TGF-β/BMP signaling and orphan nuclear receptors. **Jean-Maurice Dura[1], Ana Boulanger[1], Morgane Farge[1], Christophe Ramanoudjame[1], Kristi Wharton[1,2].** 1) Inst of Human Genetics, CNRS/UPR 1142, Montpellier , France; 2) Dept of Molecular Biology, Brown University, Providence, RI, USA.

680B
Axonal transport and synaptic function are linked in two Drosophila disease models of neurodegeneration. **Shermali Gunawardena[1], Min Jung Kang[1], Monique Michiewicz[2], Hong Bao[1], Samantha Fye[1], Tadeusz J. Kaczynski[2], Bing Zhang[1], Shermali Gunawardena[1].** 1) Biological Sciences, SUNY at Buffalo, Buffalo, NY; 2) Department of Zoology, University of Oklahoma, Norman, Oklahoma 73019.

681C
Spatial and Temporal Analysis of Axonal Transport Defects in Primary Neuronal Cultures from Drosophila Larvae. **Gary Iacobucci, Shermali Gunawardena.** Biological Sciences, State University of New York at Buffalo, Buffalo, NY.

682A
The memory gene nalyot (Adf-1) functions downstream of CaMKII to regulate activity-dependent dendritic plasticity. **Christina Timmerman, Subhabrata Sanyal.** Cell Biology, Emory University, Atlanta, GA.

683B
Comparative Analysis of larval Locomotion Activity and neuromuscular junction formation among Drosophilids. **Yunyi Yang, Mirela Belu, Claudia Mizutani.** Department of Biology, Case Western Reserve University, Cleveland, OH.

684C
The Microtubule Regulatory Protein Stathmin is Essential for Axonal Transport. **Alfredo Zuniga, Tori Pagel, Jason Duncan.** Department of Biology, Willamette University, Salem, OR, 97301.

685A
The T-box transcription factor *midline* collaborates with the insulin-regulated *dFOXO* transcription factor to regulate cell-fate specification in the developing eye of *Drosophila melanogaster*. **Sudeshna Das[1], Deepak Kumar[1], Yan Zong[2], Brandon Drescher[1], Sarah Morgan[2], Sandra Leal[1].** 1) Biological Sciences, University Of Southern Mississippi, Hattiesburg, MS; 2) School of Polymers and High Performance Materials, University of Southern Mississippi, Hattiesburg, MS.

686B
The SUMO pathway promotes bHLH proneural factor activity via a direct effect on the Zn finger protein, Senseless. **Lynn M. Powell[1], Yan Chang Huang[2], Angela Chen[2], Andrew P. Jarman[1].** 1) Centre for Integrative Physiology, University of Edinburgh, George Square, Edinburgh, EH8 9XD, United Kingdom; 2) Institute of Biomedical Sciences, National Sun Yat-Sen University, Kaohsiung, Taiwan.

687C
Tre1 GPCR signaling orients stem cell divisions in the *Drosophila* central nervous system. **Shigeki Yoshiura, Nao Ohta, Fumio Matsuzaki.** RIKEN CDB, Kobe, Hyogo, Japan.

688A
Drosophila Neto is essential for clustering of glutamate receptors at neuromuscular junction. **Young-Jun Kim[1], Hong Bao[2], Liana Bonanno[1], Bing Zhang[2], Mihaela Serpe[1].** 1) NICHD, NIH, Bethesda, MD; 2) Univ. of Oklahoma, Norman, OK.

689B
Drosophila Mitofusin regulates function and development of the neuromuscular junction. **Hector Sandoval[1], Chi-Kuang Yao[2], Kuchuan Chen[1,3], Yong Qi Lin[6], Taraka Donti[1], Manish Jaiswal[1], Vafa Bayat[1,3,4], Ke Zhang[5], Claire Hauter[6], Bo Xiong[1,3], Wu-Lin Charng[1,3], Shinya Yamamoto[1,3], Brett Graham[1], Hugo Bellen[1,3,6].** 1) Human and Molecular Genetics, Baylor College of Medicine, Houston, TX 77030; 2) Institute of Biological Cehmistry, Academia Sinica, Nankang,Taipei 115, Taiwan; 3) Program in Development Biology, Baylor College of Medicine, Houston, TX 77030; 4) Medical Scientist Training Program, Baylor College of Medicine, Houston, TX 77030; 5) Structural and Computational Biology and Molecular Biophysics, Baylor College of Medicine, Houston, TX 77030; 6) Howard Hughes Medical Institute, Baylor College of Medicine, Houston, TX 77030.

690C
Liquid facets (Lqf) plays novel roles in BMP signaling and retrograde transport. **Phillip Vanlandingham, Lerin Luckett-Chastain, Taylor Fore, Hong Bao, Bing Zhang.** Dept. of Zoology, University of Oklahoma, Norman, OK.

691A
Phosphorylation of Hts at the MARCKS domain inhibits its ability to regulate Dlg postsynaptic targeting during neuromuscular junction development. **Simon Wang[1], Amy Tsai[2], Charles Krieger[2], Nicholas Harden[1].** 1) Department of Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, British Columbia, Canada; 2) Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Burnaby, British Columbia, Canada.

692B
Drosophila Cyfip regulates synaptic growth and endocytosis by suppressing F-actin assembly. **Lu Zhao, Dan Wang, Qifu Wang, Yongqing Zhang.** Institute of Genetics and Developmental Biology CAS, Beijing, China.

Pattern Formation

693C
Reduced TOR Activity Promotes Cap-Independent Translation of Gurken During Drosophila Oogenesis. **Malachi A. Blundon, Cara L. Doyle, Scott B. Ferguson.** Department of Biology, SUNY Fredonia, Fredonia, NY.

694A
The role of the two promoter regions of *hunchback* in its RNA expression pattern in *Drosophila melanogaster* . **Maira A. Cardoso[1], Márcio Fontenele[2], Helena Araujo[2], Michelle Diniz[1], Paulo M. Bisch[1], Francisco J. P. Lopes[1].** 1) Institute of Biophysics Carlos Chagas Filho, University of Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil; 2) Institute of Biological Sciences, University of Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil.

695B
Functional Convergence in Embryonic Patterning Determinants. **Rhea R. Datta, Jackie Moore, Gozde Yucel, Stephen Small.** Department of Biology, New York University, New York, NY.

696C
Negative regulation of Epidermal Growth Factor Receptor signalling in the ovary. **Scott De Vito[1], Jean-François Biosclair Lachance[1,2], Mariana Fregoso Lomas[1], Laura Nilson[1].** 1) Department of Biology, McGill University, Montreal, Quebec, Canada; 2) Department of Biological Sciences, University of Chicago, Chicago, IL, USA.

697A
Pattern formation by graded and uniform signals: gene regulation by Dorsal and Zelda in the *Drosophila* embryo. **Bomyi Lim[1], Jitendra S. Kanodia[1], Hsiao-Lan Liang[2], Yoosik Kim[1], Mei Zhan[3], Hang Lu[3], Christine A. Rushlow[2], Stanislav Y. Shvartsman[1].** 1) Department of Chemical and Biological Engineering and Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ 08544; 2) Center for Developmental Genetics, Department of Biology, New York University, New York City, NY 10003; 3) School of Chemical and Biomolecular Engineering and Parker H. Petit Institute for Bioengineering and Bioscience, Georgia Institute of Technology, Atlanta, GA 30332.

698B
Bonus is required maternally for dorsal-ventral pattern formation. **Stuart Newfeld, Janine Quijano, Estela Arciniega, Nancy Tran, Ashley Castillo, Michael Stinchfield.** Sch Life Sci, Arizona State Univ, Tempe, AZ. 85287-4501.

699C
defective proventriculus (*dve*), a new member of DV patterning in the eye. **Oorvashi Roy G. Puli[1], Takeshi Yorimitsu[3], Hideki Nakagoshi[3], Amit Singh[1,2,4].** 1) Department of Biology, University of Dayton, 300 College Park Drive, Dayton, OH; 2) Premedical Program, University of Dayton, 300 College Park Drive, Dayton, OH; 3) School of Natural Science and Technology, Okayama University, 3-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530, Japan; 4) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, Dayton, OH.

700A
Specification of Drosophila corpora cardiaca neuroendocrine cells by Daughterless homodimer. **Sangbin Park[1], Seung K. Kim[1,2].** 1) Developmental Biology, Stanford University, Stanford, CA; 2) HHMI.

701B
Conserved MAPK and CK2 sites in E(spl)-M8 regulate repression of Atonal. **Mohna Bandyopadhyay, Adam Majot, Bhaskar Kahali, Clifton Bishop, Ashok Bidwai.** Biology, West Virginia University, Morgantown, WV.

702C
A Novel function of Muscle Myosin II in Drosophila melanogaster Eye Development. **Carlos Cano, Landry E. Nfonsam, Jennifer Curtiss.** Biology, New Mexico State University, Las Cruces, NM.

703A
Novel function of the kinase Nemo in the negative regulation of Atonal expression in the *Drosophila* eye. **Vilaiwan Fernandes, Esther Verheyen.** Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, British Columbia.

704B
Homeodomain-interacting protein kinase interacts with the retinal determination gene network and is required for development of the *Drosophila* compound eye. **Jessica A. Gardner[1], Wendy Lee[2], Esther Verheyen[1].** 1) Molecular Biology and Biochemistry, Simon Fraser University, Burnaby BC, BC, Canada; 2) Dept Cell Biology, Harvard, Boston, MA, USA.

705C
Study the functions of eye selector genes in Drosophila eye-antenna disc primordium. **Hui-Yu Ku[1,2], Henry Sun[1,2].** 1) Institute of Molecular Biology,Academia Sinica, Taipei, Taiwan; 2) Department of Life Sciences and Institute of Genome Sciences, National Yang-Ming University, Taipei, Taiwan.

706A
Alleles of *CK2* and *EGFR* modulate the neural defects of *Nspl* and *E(spl)D*. **Adam Majot, Mohna Bandyopadhyay, Christa Bryan, Bhaskar Kahali, Clifton Bishop, Ashok Bidwai.** Biology, West Virginia University, Morgantown, WV.

707B
Functional analysis of Abd-B protein. **Jesús R. Curt[1], Nagraj Sambrani[2], Samir Merabet[2], Ernesto Sánchez-Herrero[1], Yacine Graba[2].** 1) Centro de Biología Molecular Severo Ochoa (CSIC-UAM), Universidad Autónoma de Madrid, Nicolás Cabrera 1, Cantoblanco, Madrid, Spain; 2) Institut de Biologie du Développement de Marseille Luminy, CNRS, Université de la Mèditerranée, Marseille, France.

708C
A missense allele in the evolutionarily-conserved octapeptide motif of Sex combs reduced, a Drosophila Homeotic selector gene, represents the first of a novel class of mutant alleles. **Lovesha Sivanantharajah, Anthony Percival-Smith.** Dept. of Biology, The University of Western Ontario, London, Ontario, Canada.

709A
The role of disco in specification of the Drosophila leg. **Juan Bautista Rosario.** Genetics Dept, North Carolina State Univ, Raleigh, NC.

710B
New allele of *engrailed* associated with three spermathecae in *Drosophila melanogaster* female. **Masanobu Itoh[1,2], Akiko Sawada[3].** 1) Center for Bioresource Field Science, Kyoto Inst Tech, Kyoto, Japan; 2) Insect Biomedical Research Center, Kyoto Inst Tech, Kyoto, Japan; 3) Dept. Applied Biology, Kyoto Inst Tech, Kyoto, Japan.

711C
Identification of the gene responsible for the *wings apart* phenotype in *Drosophila melanogaster*. **Ginny Morriss, Carmelita Jaramillo, Bianca Garcia, Richard Cripps.** Biol, Univ New Mexico, Albuquerque, NM.

712A
An interdisciplinary approach to studying the evolution of BMP signaling. **Matthew G. Niepielko[1,2], Kuhn Ip[2,3], Jitendra S. Kanodia[4], Desmond S. Lun[2,3], Nir Yakoby[1,2].** 1) Biology Department, Rutgers University, Camden, NJ 08102, USA; 2) Center for Computational and Integrative Biology, Rutgers University, Camden, NJ, 08102, USA; 3) Department of Computer Science, Rutgers University, Camden, NJ 08102, USA; 4) Department of Chemical and Biological Engineering, Lewis Sigler Institute for Integrative Genomics, Carl Icahn Laboratory, Princeton University, Princeton, NJ 08544, USA.

713B
Patterning potential of the terminal system in segmentation of the *Drosophila* embryo. **Yoosik Kim, Kate M. Fitzgerald, Stanislav Y. Shvartsman.** Department of Chemical and Biological Engineering and Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ 08544, USA.

714C
Description and visualization of motor neuron morphology in three dimensions. **Prateep Mukherjee[1], Jennifer Brazill[2], Michael D. Kim[2], Gavriil Tsechpenakis[1].** 1) Computer and Information Science, Indiana University-Purdue University Indianapolis, IN; 2) Department of Molecular and Cellular Pharmacology, University of Miami School of Medicine, FL.

715A
Using a variable expressivity mutant to study pair-rule gene regulation via evolution *in silico*. **Alexander V. Spirov[1,2], Francisco J. P. Lopes[3], David M. Holloway[4].** 1) The I. M. Sechenov Institute of Evolutionary Physiology and Biochemistry, St-Petersburg, Russia; 2) Computer Science and CEWIT, State Univ New York, Stony Brook, NY; 3) Instituto de Biofisica, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; 4) Mathematics, British Columbia Institute of Technology, Burnaby, BC, Canada.

716B
Odd-skipped genes organize growth and patterning along the notum anterior-posterior axis. **Steven J. DelSignore, Victor Hatini.** Cell, Molecular & Developmental Biol, Tufts Univ Sackler School Biomedical Sciences, Boston, MA.

717C
A calibrated examination of the influence of dosage variance in *brinker* on multivariate wingshape. **Anne Sonnenschein, David Arnosti, Ian Dworkin.** Michigan State University, East Lansing, MI.

718A
Identification of BMP target genes in the Drosophila larval wing precursor. **Alexander Springhorn[1], Milica Jevtic[1], Marco Blanchette[2], Britta Hartmann[3], Giorgos Pyrowolakis[1].** 1) Department of Developmental Biology, Institute of Biology 1, Freiburg, Germany; 2) Stowers Institute for Medical Research, Kansas City, USA; 3) Center for Biological Systems Analysis (ZBSA), Freiburg, Germany.

Physiology and aging

719B
Establishing a caloric restriction paradigm in *Drosophila*. **Sany Hoxha, Sarah Rollins, William Ja.** Metabolism & Aging, The Scripps Research Institute, Jupiter, FL.

720C
The effect of resveratrol and diet on lifespan and nutrient storage in Drosophila. **Michael J. Polen[1], Nikolai J. Kolba[2], Andrew Montgomery[3], Neha Sirohi[3], Timothy Rudolph[2], Hemlata Mistry[2,3], Justin R. DiAngelo[4], Alexis Nagengast[1,2].** 1) Dept Chemistry; 2) Dept Biochemistry; 3) Dept Biology, Widener University, Chester, PA; 4) Dept Biology, Hofstra University, Hempstead, NY.

721A
Steroid control of the mid-oogenesis checkpoint in Drosophila. **Martina Galikova, Peter Klepsatel, Thomas Flatt, Chantal Dauphin-Villemant.** Institute of Population Genetics, Vienna, Austria.

722B
Localized Tissue Damage Disrupts Ecdysteroid Biosynthesis and Developmental Progression in Drosophila. **Jennifer Hackney, Omid Zolali-Meybodi, Peter Cherbas.** Department of Biology, Indiana University, Bloomington, IN.

723C
The Nuclear Receptor dHNF4 Regulates Carbohydrate Metabolism During Metamorphosis and Adulthood in *Drosophila*. **William E. Barry, Jason M. Tennessen, Carl S. Thummel.** Department of Human Genetics, University of Utah, Salt Lake City, UT.

724A
The Let-7 microRNA Complex Extends Longevity and Alters Fat Metabolism in *Drosophila Melanogaster*. **Christi Gendron, Scott Pletcher.** Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI.

725B
Biosynthesis and regulation of *Drosophila* molybdoenzymes. **Marina L. Georgiou[1], Zvonimir Marelja[2], Silke Leimkühler[2], Fanis Missirlis[1].** 1) School of Biological and Chemical Sciences, Queen Mary, University of London, London, UK; 2) Institute of Biochemistry and Biology, University of Potsdam, Potsdam, Germany.

726C
Identification of metabolic phenotypes and mechanisms of metabolic regulation by TGF-β signaling in *Drosophila melanogaster*. **Arpan Ghosh, Michael O'Connor.** GCD, University of Minnesota, Minneapolis, MN.

727A
The *Drosophila PGC1*-α Homolog *spargel* Modulates the Physiological Effects of Endurance Exercise. **Lindsey Healy, Martin Tinkerhess, Matthew Morgan, Erin Matthys, Li Zheng, Robert Wessells.** Univ Michigan, Ann Arbor, MI.

728B
Effects of dietary fatty acids and temperature on mitochondrial function. **Marissa A. Holmbeck[1], David M. Rand[2].** 1) Molecular Biology, Cell Biology, and Biochemistry Dept, Brown University, Providence, RI; 2) Ecology and Evolutionary Biology Dept, Brown University, Providence, RI.

729C
Catalytically Inactive Triosephosphate Isomerase Rescues TPI Deficiency. **Bartholomew P. Roland[1,2,3], Kimberly Stuchul[1], Michael J. Palladino[1,3].** 1) Pittsburgh Institute for Neurodegenerative Diseases, Pittsburgh, PA; 2) University of Pittsburgh Graduate Program in Molecular Pharmacology, Pittsburgh, PA; 3) University of Pittsburgh Department of Pharmacology & Chemical Biology, Pittsburgh, PA.

730A
The regulation of fat storage by *Mio* in *Drosophila*. **Eric D. Sassu, Jacqueline E. McDermott, Brendan J. Keys, Justin R. DiAngelo.** Department of Biology, Hofstra University, Hempstead, NY.

731B
Transgenerational Inheritance of Metabolic State in *Drosophila*. **Rebecca A. Somer, Matt Sieber, Carl Thummel.** University of Utah, Salt Lake City, UT.

732C
dFatp Regulates Nutrient Distribution and Long-term Physiology in *Drosophila*. **Alyson Louise Sujkowski, Samantha Morley, Joanna Jennens, Nicole Piazza, Lindsey Healy, Martin Tinkerhess, Li Zheng, Robert Wessells.** Univ Michigan, Ann Arbor, MI.

733A
Impact of Glutamate Dehydrogenase (GDH) and Isocitrate Dehydrogenase (IDH) on Lifespan and Starvation Resistance in Varying Nutrient Conditions. **Brittany Barnett, Matthew Talbert, Walter Eanes.** Ecology and Evolution, SUNY Stony Brook, Stony Brook, NY.

734B
Role of Conventional Odorant Receptors in *D.melanogaster* Lifespan and Aging Physiology. **Ceyda Bilgir[1], Xiaowen Chu[2], Yuzhong Liu[1], Brian Y. Chung[1], Scott D. Pletcher[1].** 1) Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI; 2) Huffington Center on Aging, Baylor College of Medicine, Houston, TX.

735C
Spargel, a mammalian PGC-1 homologue is involved in nutrient sensing pathway acting downstream to TOR and S6k. **Subhas Mukherjee, Claudette Davis, Atanu Duttaroy.** Biology Department, Howard University, Washington, DC.

736A
Impact of Supplementing Taurine in the diet of *Drosophila*. **Lee A. Smith[1], Feras Alhourani[1], Ishtiaq Habib[1], Brian Talon[1], Stephanie Shirkey[1], Jeremy Nadolski[2].** 1) Dept Biological Sci, Benedictine Univ, Lisle, IL; 2) Dept Mathematical and Computational Sci, Benedictine Univ, Lisle, IL.

737B
Genome wide association study for visual decline in a population of aging *Drosophila melanogaster*. **Mary A. Carbone[1,2], Tess A. Brune[1], Akihiko Yamamoto[2,3], Michael M. Magwire[1,2], Trudy F. C. Mackay[1,2], Robert R. H. Anholt[2,3].** 1) Department of Genetics, North Carolina State University, Raleigh, NC; 2) W. M. Keck Center for Behavioral Biology, North Carolina State University, Raleigh, NC; 3) Department of Biology, North Carolina State University, Raleigh, NC.

738C
Cellular and Physiological Basis of Thermal Plasticity of Body and Organ Size in *Drosophila melanogaster* . **Shampa Ghosh Modak, Alexander W. Shingleton.** Zoology, Michigan State University, East Lansing, MI.

739A
Life history Variation and Reproductive Senescence in Three Recently Caught Wild-type Populations of Drosophila melanogaster. **Peter Klepsatel, Martina Galikova, Nicola de Maio, Christian Schlötterer, Thomas Flatt.** Institute of Population Genetics, Vienna, Austria.

740B
Quantifying main ecdysteroides throughout the *Drosophila* developmental cycle. **Oksana Lavrynenko, Maria Carvalho, Jonathan Rodenfels, Julio Sampaio, Suzanne Eaton, Andrej Shevchenko.** MPI CBG, Dresden, Germany.

741C
The Involvement of the Electron Transport Chain in the Isoflurane Response in Drosophila melanogaster. **Christopher R. Pope[1], Gerald B. Call[2].** 1) Department of Biomedical Sciences, College of Health Sciences, Midwestern University, Glendale, AZ; 2) Department of Pharmacology, Arizona College of Osteopathic of Medicine, Midwestern University, Glendale, AZ.

742A
The Involvement of Ion Channels in the Response to Isoflurane. **Ryan Stopher-Mitchell[1], Krista Pearman[2], Erik Nelson[1], Michael J. Murray[3], Gerald B. Call[2].** 1) Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ; 2) Department of Pharmacology, Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ; 3) Department of Anesthesiology, Mayo Clinic, Scottsdale, AZ.

743B
Arginine kinase function in adult tissues. **Glen E. Collier.** Dept Biological Sci, Univ Tulsa, Tulsa, OK.

744C
Genetic and imaging analyses of Drosophila sperm storage. **Xiangyi Lu, Benjamin Burger.** Wayne State Univ, Detroit, MI.

745A
Female reproductive glands play essential roles in reproduction that may have been conserved during evolution. **Jianjun Sun, Allan Spradling.** Howard Hughes Medical Institute, Department of Embyology, Carnegie Institution for Science, Baltimore, MD. 21218.

746B
dJun and Vri/dNFIL3 regulate age related cardiac senescence in Drosophila. **Herve Tricoire[1], Veronique Monnier[1], Magali Iche-Torres[2], Michael Rera[1], Vincent Contremoulins[3], Nathalie Lalevee[2], Laurent Perrin[2].** 1) Unité de Biologie Fonctionnelle et Adaptative (BFA, Univ Paris Diderot, Sorbonne Paris Cité, PARIS, France; 2) IBDML, UMR 6216 Campus de Luminy, 13288 Marseille Cedex 9 France; 3) Institut Jacques Monod, CNRS-University Paris Diderot 75205 Paris cedex 13, France.

747C
Identification and Characterization of Upstream Regulators of Nrf2 Signaling in *Drosophila melanogaster*. **Nirmalya Chatterjee[1], Kerstin Spirohn[2], Michael Boutros[2], Dirk Bohmann[1].** 1) Dept. of Biomedical Genetics, University of Rochester Medical Center, Rochester, NY; 2) Division Signaling and Functional Genomics, German Cancer Research Center, Heidelberg, Germany.

748A
Transcriptional down regulation of two nuclear genes with *Frag1* and *Protein Kinase* motifs confers oxidative stress resistance and extends lifespan. **Atanu Duttaroy, Dondra Bailley, Sanjay Nag.** Dept Biol, Howard Univ, Washington, DC.

749B
Nitric oxide signals developmental delay during regeneration. **Jacob Jaszczak, Adrian Halme.** Department of Cell Biology, University of Virginia School of Medicine, Charlottesville, VA.

750C
Potential role of V-ATPases in autophagy regulation. **Caroline C. Mauvezin, Thomas Neufeld.** Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN.

751A
Drosophila, an *in vivo* model to evaluate reprotoxic damage. **Patricia Ramos[1,2], Blanca Hernandez[2], Olga Ramirez[1].** 1) Lab Genética y Toxicología Ambiental, Depto. Biología, Facultad de Ciencias, CU, Universidad Nacional Autónoma de México, DF, Coyoacan; 2) Drosophila Stock Center México, Facultad de Ciencias, UNAM, México.

752B
Drosophila melanogaster as a model system to study macrophage migration inhibitory factor (MIF). **Blanka Rogina[1], Tahereh Ziafazeli[1], Maria Renna[2], Danny Soares[2], Cynthia Staber[3], Richard Bucala[4], George Kuchel[2], Robert Reenan[3].** 1) Dept Gen & Dev Biol, Univ Connecticut Hlth Ctr, Farmington, CT; 2) UConn Ctr Aging, Division of Geriatric Medicine, Univ Connecticut Hlth Ctr, Farmington, CT; 3) Dept Mol Biol, Cell Biol and Biochemistry, Brown University, Providence, RI; 4) Dept Medicine, Yale Univ School of Medicine, New Haven, CT.

753C
Sexual dimorphism for water balance mechanisms in montane populations of Drosophila kikkawai. **Vineeta Sharma[1,2], Ravi Parkash[1], Bhawna Kalra[1].** 1) Genetics, Maharshi Dyanand,University, Rohtak, India; 2) Centre for Cellular and Molecular Biology,Uppal Road, Hyderabad,India.

754A
A Novel p38 MAPK/Mef2/MnSOD Regulatory Mechanism in Aging and Oxidative Stress. **Alysia D. Vrailas-Mortimer[1,2], Subhabrata Sanyal[1,2].** 1) Cell Biology, Emory University, Atlanta, GA; 2) Center for Behavioral Neuroscience, Atlanta, GA.

755B
Dose dependent stress response to high levels of Sir2 over-expression in flies. **Rachel E. Whitaker, Shakeela Faulkner, Reika Miyokawa, Lucas Burhenn, Will Donovan, Stephen Helfand.** Molecular Biology, Cell Biology, and Biochemistry, Brown University, Providence, RI.

Regulation of gene expression

756C
Drosophila GAGA Factor is required for full activation of dE2F1 and Yki/Sd common targets in the wing. **Battuya Bayarmagnai[1], Brandon Nicolay[1], Abul Islam[2], Nuria Lopez-Bigas[2], Maxim Frolov[1].** 1) Biochem & Mol Gen, Univ Illinois-Chicago, Chicago, IL; 2) Research Unit on Biomedical Bioinformatics, Dept of Experimental and Health Sciences, Universitat Pompeu Fabra, Barcelona 08003, Spain.

757A
X-Signal amplification by Runt mediated antagonism of Groucho. **Sharvani Mahadevaraju, James W. Erickson.** Dept of Biol, Texas A&M Univ, College Station, TX.

758B
Nemo phosphorylates Eyes absent and enhances output from the Eya-Sine oculis transcriptional complex during Drosophila retinal determination. **Santiago A. Morillo[1], Lorena Braid[2], Esther M. Verheyen[2], Ilaria Rebay[1,3].** 1) Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL; 2) Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC, Canada; 3) Ben May Dept for Cancer Research, University of Chicago, Chicago, IL.

759C
Involvement of Polycomb/Trithorax group proteins in the regulation of the sex determination master switch, *Sex-lethal*. **Janel Rodriguez, Jamila Horabin.** Biomedical Sciences, Florida State University, Tallahassee, FL.

760A
Retinal determination factor Eyeless and type I bHLH protein Daughterless directly induce onset of *atonal* expression and synergistically induce retinal development. **Miho Tanaka-Matakatsu, Wei Du.** Ben May Dept Cancer Res, Univ Chicago, Chicago, IL.

761B
Transcriptional and Metabolic Adaptation to Hypoxia is Driven by HIF-Independent Actions. **Keith D. Baker[1], Yan Li[1], Divya Padmanabha[1], Luciana B. Gentile[1], Catherine I. Dumur[2].** 1) Biochemistry and Molecular Biology, VCU School of Medicine, Richmond, VA; 2) Pathology, VCU School of Medicine, Richmond, VA.

762C
The *Drosophila melanogaster* gene *tfiia-s-2* encodes a male germline-expressed homolog of the small subunit of the TFIIA general transcription factor. **Amory Brandt, Cameron Jernigan, Margaret Wood, Cynthia Cain, Mark Hiller.** Biological Sciences, Goucher College, Baltimore, MD.

763A
The investigation of a novel Y chromosome specific gene in *Anopheles stephensi*. **Frank Criscione, Yumin Qi, Zhijian Tu.** Department of Biochemistry, Virginia Tech, Blacksburg, VA.

764B
The transcription factor network patterning Drosophila photoreceptors. **Hui-Yi Hsiao, Robert Johnston, Dave Jukam, Claude Desplan.** Dept Biol, New York Univ, New York, NY.

765C
Characterizing the Transcriptional and Metabolic Response to Hypoxia in *Drosophila Melanogaster*. **Yan Li[1], Catherine Dumur[2], Keith Baker[1].** 1) Department of Biochemistry and Molecular Biology, Virginia Commonwealth University, Richmond, VA, 23298; 2) Department of Pathology, Virginia Commonwealth University, Richmond, VA, 23298.

766A
Examining the role of EcR binding sites on ecdysone inducible polytene chromsome puffs. **Alexander D. Ostapenko, Rebecca F. Spokony, Dmitri Novikov, Kevin P. White.** Institute for Genomics & Systems Biology, University of Chicago, Chicago, IL.

767B
Molecular analysis of 5' regulatory region of *Lim3* locus associated with *D. melanogaster* lifespan control. **Olga Y. Rybina, Elena G. Pasyukova.** Inst Molec Gen RAS, Moscow, Russian Federation.

768C
Sequential activation of Pointed isoforms during eye development amplifies EGFR signaling. **Arkadi Shwartz, Eyal D. Schejter, Ben-Zion Shilo.** Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel.

769A
Identification of a *wingless* pair rule response element. **Kimberly Bell[1,2], Kevin Chen[1], J. Peter Gergen[1].** 1) Department of Biochemistry and Cell Biology and the Center for Developmental Genetics, Stony Brook University, Stony Brook, NY; 2) Graduate Program in Genetics, Stony Brook University, Stony Brook, NY.

770B
EvoPrinter and *cis*-Decoder Facilitate Analysis of Enhancer Structure. **Thomas Brody, Alexander Kuzin, Mukta Kundu, Jermaine Ross, Ward F. Odenwald.** Neural Cell-Fate Determinants, NINDS/NIH, Bethesda, MD.

771C
A machine learning approach for identifying novel cell type-specific transcriptional regulators of myogenesis. **Brian Busser[1], Leila Taher[2], Yongsok Kim[1], Terese Tansey[1], Ivan Ovcharenko[2], Alan Michelson[1].** 1) National Heart Lung and Blood Institute, Bethesda, MD; 2) National Library of Medicine, Bethesda, MD.

772A
Regulatory DNA of the engrailed and invected genes. **Yuzhong Cheng, Judith Kassis.** Program in Genomics of Differentiation, NICHD, Bethesda, MD.

773B
A Common Sequence Motif Regulates *broad* and *pipe* Expression in Response to EGFR Signaling. **Lily S. Cheung[1,2], Alisa Fuchs[3], Enrica Charbonnier[3,4], Stanislav Y. Shvartsman[1,2], George Pyrowolakis[3,4].** 1) Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ 08544; 2) Department of Chemical and Biological Engineering, Princeton University, Princeton NJ 08544; 3) Institute for Biology I, Faculty of Biology, Albert-Ludwigs-University of Freiburg, Hauptstrasse 1, 79104 Freiburg, Germany; 4) BIOSS Centre for Biological Signalling Studies, Albert-Ludwigs-University of Freiburg, 79104 Freiburg, Germany.

774C
An In Vivo Titration of Transcription Factors in the Drosophila Embryo. **Matthew D. Davis[1], Michael B. Eisen[2].** 1) Department of Molecular and Cell Biology UC Berkeley, Berkeley, CA; 2) Howard Hughes Medical Institute Department of Molecular and Cell Biology UC Berkeley, Berkeley, CA.

775A
The *Drosophila Niemann-Pick Type C-2 (NPC2c)* gene is a direct target of VP16-DHR96 protein. **Niloofar Farboodi.** Biological Sciences, University of Alberta, Edmonton, Alberta, Canada.

776B
REDfly: The Regulatory Element Database for *Drosophila*. **Marc S. Halfon[1,2,3,4], Steven M. Gallo[2,5], Michael Simich[1,2], Benjamin Des Soye[1,2], Casey M. Bergman[6].** 1) Department of Biochenistry, SUNY at Buffalo, Buffalo, NY; 2) NYS Center of Excellence in Bioinformatics & Life Sciences, Buffalo, NY; 3) Department of Biological Sciences, SUNY at Buffalo, Buffalo, NY; 4) Molecular, Cellular, & Developmental Biology Department, Roswell Park Cancer Institute, Buffalo, NY; 5) Center for Computational Research, SUNY at Buffalo, Buffalo, NY; 6) Faculty of Life Sciences, University of Manchester, Manchester, UK.

777C
Cis-regulatory contributions to the regulation of sloppy-paired-1 transcription initiation and elongation. **Saiyu Hang, J. Peter Gergen.** Biochemistry and Cell Biology and the Center for Developmental Genetics, Stony Brook University, Stony Brook, NY.

778A
Overlapping but distinct roles for Odd-paired and Unpaired in transcription activation in the Drosophila blastoderm embryo. **Michael L. Higgins[1,2], Liujing Xing[1], J. Peter Gergen[1].** 1) Department of Biochemistry and Cell Biology and the Center for Developmental Genetics, Stony Brook University, Stony Brook, NY; 2) Graduate Program in Biochemistry and Structural Biology, Stony Brook University, Stony Brook, NY.

779B
A systems-level analysis of *giant* regulation in *Drosophila melanogaster*. **Astrid Hoermann, Damjan Cicin-Sain, Hilde Janssens, Johannes Jaeger.** EMBL/CRG Research Unit in Systems Biology, Centre de Regulació Genòmica, 08003 Barcelona, Spain.

780C
Decoding transcriptional control at the IAB7b *cis*-regulatory module in the bithorax complex. **Jessica S. Kurata, Michael J. Nevarez, Robert A. Drewell.** Harvey Mudd College, Claremont, CA.

781A
Spatial regulation of *achaete* via global activation and repression by Hairy and Delta. **Ji Inn Lee, Meghana Joshi, Teresa Orenic.** Dept Biological Sci, Univ Illinois, Chicago, Chicago, IL.

782B
A post-blastoderm role of Zelda as regulator of CNS midline and tracheal gene expression. **Joseph C. Pearson, Joseph D. Watson, Stephen T. Crews.** Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC.

783C
Distinct transcription factor binding strategies at the intersection of growth and patterning in the Hippo signaling pathway. **Matthew Slattery[1,2], Roumen Voutev[2], Lijia Ma[1], Nicolas Negre[1], Kevin White[1], Richard Mann[2].** 1) Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL; 2) Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY.

784A
Sculpting the insect abdomen: molecular characterization of sexually dimorphic regulation of Wingless by Abd-B and Doublesex. **Wei Wang, John Yoder.** Department of Biological Sciences, The University of Alabama, Tuscaloosa, AL.

785B
Disentangling the Sources of Species-Specific Gene Expression Patterns in Drosophila Embryos. **Zeba Wunderlich[1], Meghan Bragdon[1], Kelly Eckenrode[1], Charless Fowlkes[2], Angela DePace[1].** 1) Systems Biology, Harvard Medical School, Boston, MA; 2) Computer Science, University of California, Irvine, CA.

786C
Regulation of the Sex-determination Transcription Factor Doublesex by the Hox protein Abdominal-B. **Shun Yan[1], Wei Wang[1], Michelle Arbeitman[2], John H. Yoder[1].** 1) University of Alabama, Tuscaloosa, AL; 2) College of Medicine, The Florida State University, Tallahassee, FL 32306.

787A
Identification of regulatory elements mediating trans-interactions at metabolic loci in Drosophila melanogaster. **Xinyang Bing, Thomas Merritt.** Chemistry and Biochemistry, Laurentian University, Sudbury, Ontario, Canada.

788B
REMSA and mutational analysis reveal a novel role for full-length dADAR in *Drosophila rnp-4f* 5'-UTR alternative splicing regulation during embryogenesis. **Sushmita Ghosh, Girija Lakshmi, John Cook, Gabriel Jones, Roshni Parikh, Bridgette Rawlins, Jack Vaughn.** Zoology, Miami University, Oxford, OH.

789C
The role of *Drosophila* ATF4(crc) in the Unfolded Protein Response. **Min-Ji Kang, Josepher Li, Dowhan Kim, Hyung Don Ryoo.** Dept Cell Biol, New York Univ Sch Med, New York, NY.

790A
Sub-type specific regulation of *Drosophila* glutamate receptor production by the novel receptor mRNA associated genes *optimus-prime* (*opr*) and *bumblebee* (*bbe*). **Julie E. Karr[1], Subhashree Ganesan[2], Magdalena M. Paces[3], David E. Featherstone[4].** 1) Science and Mathematics , Columbia College Chicago, Chicago, IL; 2) Neurosciences Institute, Stanford School of Medicine, Stanford, CA; 3) Loyola University Chicago, Chicago, IL; 4) Biological Sciences, University of Illinois at Chicago, Chicago, IL.

791B
Investigating Duplicated Ribosomal Proteins Reveals Differential Post-Translational Modification of the RpL22e Family in the Male Germline: Evidence for SUMOylation of RpL22. **Michael Kearse, Jill Ireland, Vassie Ware.** Department of Biological Sciences, Lehigh University, Bethlehem, PA.

792C
The evolutionarily canalized expression of *eve* stripe 2 in *Drosophila* and the Sepsidae. **Ah-Ram Kim[1,2], Carlos Martinez[1], Bin He[1], Michael Ludwig[1], Martin Kreitman[1], John Reinitz[1,3].** 1) Department of Ecology and Evolution, Chicago Center for Systems Biology, University of Chicago, IL, USA; 2) Department of Biochemistry and Cell Biology, Stony Brook University, NY, USA; 3) Departments of Statistics and Molecular Genetics & Cell Biology, University of Chicago, IL, USA.

793A
Turning off Bruno-dependent Translational Repression. **Goheun Kim[1], Keiji Sato[2], Akira Nakamura[2], Paul Macdonald[1].** 1) Molecular Cell & Developmental Biology Dept, University of Texas at Austin, Austin, TX; 2) Laboratory for Germline Development, RIKEN Center for Developmental Biology, Kobe, Japan.

794B
Dose dependent buffering effects in Drosophila melanogaster. **Lina E. Lundberg, Per Stenberg, Margarida Figueiredo, Jan Larsson.** Dept. of molecular biology, Umeå, Umeå, Sweden.

795C
A Global Transcriptomics Approach Identifies Sex-Specific and Immune-System Changes in Gene Expression and pre-mRNA Splicing Induced by Doa and fne Mutations. **Leonard Rabinow[1], Marie-Laure Samson[1], David Sturgill[2], Xia Sun[1], John Malone[2], Yunpo Zhao[1], Brian Oliver[2].** 1) University Paris Sud, UMR 8195, Orsay, France; 2) Laboratory of Developmental Genomics NIDDK, NIH, Bethesda MD USA.

796A
Regulation of *twin-of-eyeless*, a *Drosophila Pax6* gene. **John Skottheim Honn, Linn Jacobsson, Karin Ekström, Åsa Rasmuson-Lestander.** Dept. of Molecular Biology, Umeå University, Umeå, Sweden.

797B
Effect of matrix and nucleocapsid on multimerization of gypsy structural protein Gag. **Boris V. Syomin[1,2], Tatjana A. Trendeleva[1,2], Yurii V. Ilyin[2], Vladimir I. Popenko[2].** 1) Russian Institute of Experimental Vet Medicine, Moscow; 2) Institute of Molecular Biology, Russian Academy of Sciences, Moscow, 119991 Russia.

798C
Molecular mechanism of the miRNA machinery responding to serum deprivation in Drosophila. **Pei-Hsuan Wu, Richard Carthew.** Northwestern University, Department of Molecular Biosciences, 2205 Tech Drive, Hogan 2-100, Evanston, IL60208.

799A
Drosophila miR-9a guards organism's homeostasis by regulating stress response protein Dystroglycan. **Andriy S. Yatsenko, Halyna R. Shcherbata.** Gene Expression and Signaling, Planck Institute for Biophysical Chemistry, Goettingen, Germany.

800B
Autoregulation and context-specific regulation of the Yan/Pnt bistable network. **Lauren Cote, Jie Zhang, Jemma L. Webber.** Univ Chicago, Ben May Dept Cancer Research, Chicago, IL.

801C
Bicaudal-C represses *nanos* mRNA in *Drosophila* oogenesis through a direct association with a 3' UTR motif distal to the translational control element. **Chiara Gamberi.** Biology, McGill University, Montreal, Canada.

802A
The DEAD-box RNA helicase, *belle*, provides post-transcriptional control to steroid-triggered responses during *Drosophila* metamorphosis. **Robert Ihry[1,2], Arash Bashirullah[1].** 1) Division of Pharmaceutical Sciences, University of Wisconsin-Madison, Madison, WI; 2) Graduate Program in Cellular and Molecular Biology, University of Wisconsin-Madison, Madison, WI.

803B
Protein interacting with Ttk69 and Sin3A (Pits) acts as a mediator to repress *tailless* expression. **Gwo-Jen Liaw.** Dept Life Sci, Natl Yang-Ming Univ, Taipei, Taiwan.

804C
Functional analysis of Blimp-1during pupal developmental stage in *Drosophila*. **Abdel-Rahman Sayed Sultan[1], Hitoshi Ueda[1,2].** 1) The Graduate School of Natural Science and Technology, Okayama University, Japan; 2) Department of Biology Faculty of Science, Okayama University, Japan.

805A
Role of *Drosophila* retinoblastoma proteins in insulin signaling pathway regulation. **Yiliang Wei[1], Pankaj Acharya[2], Liang Zhang[3], William Henry[1], David Arnosti[1].** 1) Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI; 2) Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI; 3) Cell and Molecular Biology Graduate Program, Michigan State University, East Lansing, MI.

806B
The Instability Element of Retinoblastoma Proteins in Drosophila: Functional Overlap between Protein Turnover and Activity. **Liang Zhang[1], Nitin Raj[2], Yiliang Wei[3], William Henry[3], David Arnosti[1,3].** 1) Cell and Molecular Biology Program, Michigan State University, East Lansing, MI; 2) Genetics Program, Michigan State University, East Lansing, MI; 3) Dept of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI.

807C
dNIAM: A chromatin protein that negatively regulates cell proliferation. **Olivia E. Jones[1], Diane E. Cryderman[1], Kristen E. Syring[1], Shannon R. Mackey[1], Sara Reed[2], Dawn E. Quelle[2], Lori L. Wallrath[1].** 1) Department of Biochemistry, University of Iowa, Iowa City, IA; 2) Department of Pharmacology, University of Iowa, Iowa City, IA.

808A
Functional characterization of dmyc downstream promoter element in transgenic Drosophila. **Jasmine Kharazmi[1,2], Cameron Moshfegh[1].** 1) Molec Biol Lab, Biotech Ctr Zurich, Zurich; 2) University of Zurich-Irchel, Switzerland.

RNA biology

809B
The regulation and function of microRNAs during the maternal-to-zygotic transition in *Drosophila*. **Shengbo Fu[1], Chung-Yi Nien[1], Hsiao-Lan Liang[1], Stephen Butcher[2], John Manak[2], Christine Rushlow[1].** 1) Department of Biology, New York University, New York, NY; 2) Department of Biology, University of Iowa, Iowa City, IA.

810C
miRNA function in a stress response in Drosophila S2 cells. **Mamiko Isaji, Pei-Hsuan Wu, Richard Carthew.** Molecular Biosciences, Northwestern University, Evanston, IL.

811A
Sensitivity to nicotine: Can a Regulated Mechanim's microRNAs? **Ivan Sanchez Diaz, Veronica Narvaez Padilla, René Hernandez Vargas, Enrique Reynaud Garza.** Genetica del Desarrollo y Fisiologia Molecular, Instituto de Biotecnologia, Cuernavaca, Cuernavaca, Mexico.

812B
mir-11 limits the pro-apoptotic function of its host gene, *dE2f1*. **Mary Truscott[1], Abul Islam[2], Núria López-Bigas[2], Maxim Frolov[1].** 1) Department of Biochemistry & Molecular Genetics, University of Illinois at Chicago, Chicago, IL; 2) Department of Experimental and Health Sciences, Barcelona Biomedical Research Park, Univ Pompeu Fabra, Barcelona, Spain.

813C
Genetic analysis of a pseudogene and its parent gene in Drosophila melanogaster. **G. Elizabeth Sperry, Denise V. Clark.** University of New Brunswick, Fredericton, New Brunswick, Canada.

814A
The roles of *Drosophila RNase Z[L]* in mitochondrial function and dysfunction. **Xie Xie, Veronica Dubrovskaya, Nancy Yacoub, Tara Gleason, Joanna Walska, Edward Dubrovsky.** Biological Sciences, Fordham University, Bronx, NY.

815B
The role of piRNAs in genome stability and germline maintenance in *Drosophila virilis*. **Mauricio Galdos[2], Chris Harrison[1], Kim Box[1], Michelle Wickersheim[1], Christine Yoder[1], Jianwen Fang[3], Justin Blumenstiel[1].** 1) Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS; 2) Molecular Biosciences, University of Kansas, Lawrence, KS; 3) Applied Bioinformatics Lab, University of Kansas, Lawrence, KS.

816C
U bodies respond to nutrient stress in *Drosophila*. **Mickey Buckingham, Ji-Long Liu.** MRC Functional Genomics Unit, Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom.

817A
Characterization of in vivo targets of the nuclear RNA-binding protein Lark during oogenesis. **Christopher Ferrari[1], Gerard McNeil[1,2].** 1) Doctoral Program in Biology, The Graduate Center, The City University if New York, New York, NY; 2) Department of Biology, York College, The City University if New York, Jamaica, NY.

818B
An analysis of maternally contributed mRNAs in early Drosophila embryogenesis and germ cell specification. **Michelle A. Kowanda[1], Stephanie Yee[1], Eric Lécuyer[2], Paul Lasko[1].** 1) McGill University, Montreal, Canada; 2) Institut de recherches cliniques de Montréal, Montreal, Canada.

819C
Genome wide analysis of mRNA sub-cellular localization in embryos and larvae, with a focus on all the *Drosophila* Nuclear Receptors. **Ronit Wilk[1,2,3], Jack Hu[1,2], Henry Krause[1,2,3].** 1) Donnelly Centre for Cellular and Biomolecular Research, University of Toronto, Toronto, ON, Canada; 2) Banting and Best Department of Medical Research, University of Toronto, Toronto, ON, Canada; 3) Molecular and Medical Genetics, University of Toronto, Toronto, ON, Canada.

820A
The role of the NMD pathway in endogenous gene regulation. **Alex Chapin, Mark Metzstein.** Human Gen, Univ Utah, Salt Lake City, UT.

821B
A suppression screen for required targets of the nonsense mediated mRNA decay pathway. **Jonathan O. Nelson, Mark M. Metzstein.** Department of Human Genetics, University of Utah, Salt Lake City, UT.

822C
Exploring *Drosophila* Genes Involved in the Oxidative Stress Pathway and the Response to Hypergravity. **Husein Badani, Oana Marcu, Ravikumar Hosamani, Sharmila Bhattacharya.** NASA Ames Research Center, Moffett Field, CA.

823A
Characterization of TSE and its Role in the piRNA Pathway. **Arlise P. Andress, Yanxia Bei, Richard Carthew.** Molecular Biosciences, Northwestern University, Evanston, IL.

824B
Using functional proteomic approach to study Spindle-E function. **Yanxia Bei[1], Bryan Fonslow[2], Arlise Andress[1], John Yates[2], Richard Cathew Cathew[1].** 1) BMBCB, Northwestern Univ, Evanston, IL; 2) Department of Chemical Physiology, SR11 The Scripps Research Institute La Jolla, CA.

825C
Germline Silencing of Transposable Elements. **Sidney Wang, Kiri Ulmschneider, Sarah Elgin.** Biology, Washington University in St Louis, St Louis, MO.

826A
The Control of Lipid Metabolism by mRNA Splicing in Drosophila. **Nicole M. Chichearo[1], Michelle E. Warren[3], Robert M. Gingras[3], Thomas Carr[2], Timothy Rudolph[2], Justin R. DiAngelo[3], Alexis Nagengast[2].** 1) Dept Biology, Widener University, Chester, PA; 2) Dept Biochemistry, Widener University, Chester, PA; 3) Dept Biology, Hofstra University, Hempstead, NY.

827B
A truncated *Drosophila dADAR* mRNA isoform which is evolutionarily conserved but not translated into protein potentially regulates full-length isoform expression during embryogenesis. **John A. Cook, Lea N. Chhiba, Dana L. Doctor, Jack C. Vaughn.** Zoology, Miami University, Oxford, OH.

Stem cells

828C
Examining the role of the fat body in the ovarian response to diet. **Alissa R. Armstrong[1], Leesa LaFever[2], Kaitlin Laws[1], Robert Cole[3], Daniela Drummond-Barbosa[1].** 1) Biochemistry and Molecular Biology, Bloomberg School of Public Health, Baltimore, MD; 2) Division of Experimental Hematology and Cancer Biology, Children's Hospital Research Foundation, University of Cincinnati, Cincinnati, OH; 3) Mass Spectrometry and Proteomics Facility, Johns Hopkins School of Medicine, Baltimore, MD.

829A
The LEM-D protein Otefin regulates niche signaling cascades to maintain female germline stem cell homeostasis. **Lacy J. Barton[1], Belinda S. Pinto[2], Pamela K. Geyer[1].** 1) Dept Biochemistry, Univ Iowa, Iowa City, IA; 2) Whitehead Institute, MIT, Cambridge, MA.

830B
Investigating the Role of Hr39 in the Germline Stem Cell Lineage. **Grace H. Hwang, Elizabeth T. Ables, Daniela Drummond-Barbosa.** Dept. of Biochemistry and Molecular Biology, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD.

831C
in vitro analyses of cellular interactions among germline stem cells, cap cells and escort cells in *Drosophila*. **Yuzo Niki, Takuya Sato, Yusuke Iizumi.** Dept. Biology, Faculty of Science, Ibaraki University, Mito, Ibaraki, Japan.

832A
PointedP1 connects the establishment and maintenance of intermediate neural progenitor cell fate in *Drosophila* neural stem cell lineages. **Derek H. Janssens[1,4], Hideyuki Komori[4], Xiao Qi[2,4], Cheng-Yu Lee[1,2,3,4].** 1) Cellular and Molecular Biology Graduate Program; 2) Department of Cell and Developmental Biology; 3) Division of Molecular Medicine and Genetics, Department of Internal Medicine; 4) Center for Stem Cell Biology, Life Sciences Institute, University of Michigan Medical School, Ann Arbor, MI 48109.

833B
The Landscape of Drosophila *cis*-Regulation as Revealed by *EvoPrinter* Analysis. **Mukta R. Kundu[1], Alexander Kuzin[1], Tzu-Yang Lin[2], Chi-Hon Lee[2], Thomas Brody[1], Ward F. Odenwald[1].** 1) Neural Cell Fate Determinants, NINDS, Bethesda, MD; 2) Section on Neuronal Connectivity, NICHD, NIH, Bethesda, MD.

834C
The *Drosophila* gene *clueless* is required for mitochondrial function and dynamics in larval neuroblasts. **Aditya Sen, Vanessa Damm, Rachel Cox.** Biochemisty and Mol Biology, Uniformed Services Univ, Bethesda, MD.

835A
Klumpfuss (*klu*) encodes a novel regulator of neuroblast identity during larval brain neurogenesis. **Qi Xiao[1,3], Cheng-Yu Lee[1,2,3].** 1) Department of Cell and Developmental Biology; 2) Division of Molecular Medicine and Genetics, Department of Internal Medicine; 3) Center for Stem Cell Biology, Life Sciences Institute, University of Michigan Medical School, Ann Arbor, MI 48109.

836B
Piwi is a key regulator of the testicular stem cell niche in *Drosophila*. **Jacob M. Gonzalez, Haifan Lin.** Yale Stem Cell Center, Yale University, New Haven, CT.

837C
Asrij maintains the hematopoietic stem cell niche, controls blood cell homeostasis and is required for *Drosophila* immunity. **Rohan J. Khadilkar, Vani Kulkarni, Srivathsa M. S., Maneesha S. Inamdar.** Molecular Biology and Genetics Unit, JNCASR, Bangalore, Karnataka, India.

838A
Control of *Drosophila* female germline stem cell niche formation by insulin signaling. **Chun-Ming Lai, Hwei-Jan Hsu.** Institute of Cellular and Organismic Biology, Academia Sinica, Taipei, Taiwan.

839B
Activin signaling affects niche formation and stem cell establishment in the larval gonad through interaction with Ecdysone signaling. **Tamar Lengil, Lilach Gilboa.** Biological Regulation, Weizmann Institute of Science, Rehovot, Israel.

840C
Characterization of the Follicle Stem Cell Niche. **Pankaj G. Sahai-Hernandez, Todd G. Nystul.** Anatomy Dept, UCSF, San Francisco, CA.

841A
magu is required for germline stem cell self-renewal through BMP signaling in the Drosophila testis. **Qi Zheng[2,3], Yiwen Wang[1], Eric Vargas[1], Stephen DiNardo[1,3].** 1) Department of Cell and Developmental Biology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA; 2) Department of Biology, School of Arts and Sciences, University of Pennsylvania, Philadelphia, PA; 3) Penn Institute for Regenerative Medicine, University of Pennsylvania, Philadelphia, PA.

842B
The centrosome positioning checkpoint monitors centrosome interaction with cortical Bazooka. **Mayu Inaba[1,2], Yukiko Yamashita[1,2].** 1) Center for stem cell biology, Life Sciences Institute, University of Michigan, Ann Arbor, MI; 2) Department of Cell and Developmental Biology, School of Medicine, University of Michigan.

843C
Zfrp8/PDCD2 a new stem cell gene. **Ruth Steward, Neha Changela, Svetlana Minakhina.** Waksman Inst, Rutgers Univ, Piscataway, NJ.

844A
The role of the adiponectin receptor homolog in Drosophila melanogaster oogenesis. **Kaitlin Laws[1], Leesa LaFever[2], Daniela Drummond-Barbosa[1,3].** 1) Department of Biochemistry and Molecular Biology, Division of Reproductive Biology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; 2) Division of Experimental Hematology and Cancer Biology, Children's Hospital Research Foundation, University of Cincinnati, Cincinnati, OH; 3) Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

845B
Elucidating the mechanism of asymmetric division within the epithelial follicle stem cell niche. **Angela Castanieto, Todd Nystul.** University of California San Francisco, San Francisco, CA.

846C
Apontic controls somatic stem cell numbers in the testis by inhibiting the JAK/STAT signaling pathway. **Michelle Starz-Gaiano, Archana Murali, Kathryn Bus.** Biological Sciences, University of Maryland Baltimore County, Baltimore, MD.

847A
Trio regulates midgut stem cell proliferation and differentiation. **Longze Zhang, Heinrich Jasper.** Biology Department, University of Rochester, Rochester, NY.

Techniques and functional genomics

848B
FlyExpress: A Platform for Discovering Co-expressed Genes via Comparative Image Analysis of Spatial Patterns in Drosophila Embryogenesis. **Michael E. McCutchan[2], Sudhir Kumar[1,2], Stuart J. Newfeld[1,2].** 1) School of Life Sciences, Arizona State Univ, Tempe, AZ; 2) Center for Evolutionary Medicine and Informatics, Biodesign Institute, Arizona State Univ, Tempe, AZ.

849C
Machine Learning Approaches for Drosophila Expression Image Analysis. **Lei Yuan, Cheng Pan, Shuiwang Ji, Sudhir Kumar, Jieping Ye.** Arizona State University, Tempe, AZ.

850A
Targeted Gene Conversion, an efficient method to engineer endogenous genes. **Manasi Apte[1], Victoria Moran[1], Richard Kelley[2], Victoria Meller[1].** 1) Biological Sciences, Wayne State University,MI; 2) Molecular and Human Genetics, Baylor College of Medicine,TX.

851B
Comparing TALENS with Zinc Finger Nucleases in Drosophila. **Kelly J. Beumer[1], Michelle Christian[2], Jon Trautman[1], Daniel F. Voytas[2], Dana Carroll[1].** 1) Dept Biochem, Univ Utah, Salt Lake City, UT; 2) Dept GCD, Univ Minnesota, Minneapolis, MI.

852C
Epitope labeling of histidine decarboxylase in *Drosophila melanogaster*. **Benjamin Fair[1], Marc Vander Vliet[2], Stephanie Payne[3,4], Martin Burg[2,3].** 1) Biology, Grand Valley State Univ, Allendale, MI; 2) Biomedical Sciences, Grand Valley State Univ, Allendale, MI; 3) Cell & Molecular Biology, Grand Valley State Univ, Allendale, MI; 4) Biology, Johns Hopkins Univ, Baltimore, MD.

853A
Fluorescent fusion protein knockout mediated by anti-GFP nanobody. **Oguz Kanca, Emmanuel Caussinus, Markus Affolter.** Cell Biology, Biozentrum of University of Basel, Basel, Basel-Stadt, Switzerland.

854B
Construction of Drosophila strains expressing affinity-tagged Ubiquitins: Investigating the regulation of Epsin by ubiquitination in Notch signaling cells. **Kristin D. Patterson, Janice A. Fischer.** Molecular, Cell and Developmental Biology, The University of Texas at Austin, Austin, TX.

855C
Microarray-based Capture of Novel Expressed Cell type-specific Transcripts (CoNECT) to annotate tissue-specific transcript isoforms. **Xiaojing Hong[1], Harshavardhan Doddapaneni[2], Matthew Rodesch[3], Heather Halvensleben[3], Raghu Metpally[1], Todd Richmond[3], Bolei Fu[1], Thomas Albert[3], J. Robert Manak[1,2,4].** 1) Dept of Biology, Univ of Iowa, Iowa City, IA; 2) Carver Center for Genomics, Univ of Iowa, Iowa City, IA; 3) Roche NimbleGen, Madison, WI; 4) Dept of Pediatrics, Univ of Iowa, Iowa City, IA.

856A
Developing a quantitative, cellular resolution morphology and gene expression atlas for *Drosophila* embryogenesis: A digital 'Campos-Ortega and Hartenstein'. **Soile V. E. Keränen[1], Jonathan T. Barron[2], Pablo Arbelaez[2], Jitendra Malik[2], Mark D. Biggin[1], David W. Knowles[1].** 1) Lawrence Berkeley Natl Lab, Berkeley, CA; 2) Electrical Engineering and Computer Science, UC Berkeley, Berkeley, CA.

857B
Efficient phenotypic analysis using unfixed, uncoated adult Drosophila for scanning electron microscopy. **Nicholas J. Tardi, Kevin A. Edwards.** Biological Sciences, Illinois State Univ, Normal, IL.

858C
OpenSPIM - an open hardware project to bring Selective Plane Illumination Microscopy to the hands of the Drosophila researchers. **Pavel Tomancak, Peter Pitrone, Johannes Schindelin.** MPI-CBG, Dresden, Germany.

859A
Morphogen gradients quantified by sub-single embryo RNA-seq. **Peter A. Combs[1], Michael B. Eisen[2,3].** 1) Biophysics Grad Group, UC Berkeley, Berkeley, CA; 2) Department of Molecular and Cell Biology, Univ California, Berkeley, CA; 3) Howard Hughes Medical Institute, Univ California, Berkeley, CA.

860B
New Tool in the lab: a Robotic System to process *Drosophila* samples. **Joana Branco[1], António Lopes[1], João Salgado[1], Rui Cortesão[2], Jorge Batista[2], Nuno André Faustino[1].** 1) Gene PreDiT, SA Núcleo 4 - Lote 4-A, Ed. Biocant II 3060-119 Cantanhede Portugal; 2) Institute of Systems and Robotics Electrical and Computer Engineering Department, University of Coimbra 3030-290 Coimbra Portugal.

861C
Accessing fly data from the modENCODE project: modMine, GBrowse and dataset search. **Sergio Contrino[1], Daniela Butano[1], Seth Carbon[2], Adrian Carr[1], Fengyuan Hu[1], Ellen Kephart[2], Paul Lloyd[2], Rachel Lyne[1], Marc Perry[3], Peter Ruzanov[3], Richard Smith[1], E. O. Stinson[2], Radek Stepan[1], Julie Sullivan[1], Alex Kalderimis[1], Zheng Zha[3], Suzanna Lewis[2], Gos Micklem[1], Lincoln Stein[3].** 1) Department of Genetics, University of Cambridge, Cambridge, UK; 2) Lawrence Berkeley National Laboratory; Genomics Division, Berkeley, CA, USA; 3) Ontario Institute for Cancer Research, Toronto, ON, Canada.

862A
Organically Modified Silica nanoparticles are biocompatible and can be targeted to Drosophila neurons in vivo. **Shermali Gunawardena[1,2], Farda Barandeh[1], Phuong-Lan Nguyen[1], Rajiv Kumar[1], Gary Iacobucci[1], Michelle L. Kuznicki[1], Andrew Kosterman[1], Earl J. Bergey[2], Paras N. Prasad[2], Shermali Gunawardena[1,2].** 1) Biological Sciences, SUNY at Buffalo, Buffalo, NY; 2) 2Institute of Laser, Photonics and Biophotonics, The State University of New York at Buffalo, Buffalo, NY, 14260.

863B
pΔTubHA4C: a new versatile vector for constitutive expression in *Drosophila*. **Barbara Perez[1,2,4], Stephanie Arcia[1,3,4], Yan Zhang[4], Pedro Fernandez-Funez[4], Diego Rincon-Limas[4].** 1) Undergraduate Dept of Microbiology; 2) McNair Scholar; 3) HHMI/Science for Life Program; 4) Dept of Neurology, University of Florida, Gainesville, FL.

864C
The FlyMine Project: New Developments and Interoperation. **Julie Sullivan, Daniela Butano, Adrian Carr, Sergio Contrino, Hu Fengyuen, Alex Kalderimis, Rachel Lyne, Mike Lyne, Richard Smith, Radek Stêpán, Gos Micklem.** Genetics Dept, University of Cambridge, Cambridge, UK.

865A
The TRiP: The Transgenic RNAi Project at Harvard Medical School. **D. Yang-Zhou[1], L. Holderbaum[1], J. Ni[1,4], L. Liu[1,4], S. Kondo[1,5], R. Tao[1], L. Jiang[1], Y. Hu[1], R. Sopko[1], A. Miller[1], S. Randklev[1], M. Foos[1], S. Ball[1], B. McElvany[1], I. Flockhart[1], S. Mohr[1], N. Perrimon[1,2], L. Perkins[1,3].** 1) Dept. of Genetics, HMS, Boston, MA; 2) HHMI; 3) MGH, Boston, MA; 4) Tsinghua, China; 5) DGRC, Japan.

866B
Metabolomic characterization of *Sod1* null flies using Liquid Chromatography/Mass Spectrometry. **Jose M. Knee, Thomas J. S. Merritt.** Department of Chemistry and Biochemistry, Laurentian University, Sudbury, Ontario, Canada.

Systems and quantitative biology

867C
Causes and Consequences of Genetic Background effects: Re-integrating genetic background into mutational analysis. **Ian M. Dworkin.** Dept Zoology, Michigan State Univ, East Lansing, MI.

868A
Different Patterns of H3K27me3 in Four *Drosophila* Species Revealed Through ChIP-seq. **Robert Arthur[1,2], Matthew Slattery[2], Rebecca Spokony[2], Jennifer Zebia[2], Lijia Ma[2], Xiaochun Ni[1,2], Sarah Suchy[2], Nicolas Negre[2], Joelle Perusse[2], Ilya Ruvinsky[1,2], Kevin White[1,2].** 1) Ecology and Evolution, University of Chicago, Chicago, IL; 2) Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL.

869B
Correlating gene expression patterns with gene, protein, and RNA interaction networks in Drosophila. **Thilakam Murali, Russell Finley.** Ctr Molecular Medicine and Genetics, Wayne State Univ Med School, Detroit, MI.

870C
Prediction of Orthologous Gene Function: Experimental Verification of I_D Test Results. **Anna James[1], Sudhindra R. Gadagkar[1], Ellen D. Tarr[2], Gerald B. Call[3].** 1) Department of Biomedical Sciences, College of Health Sciences, Midwestern University, Glendale, AZ; 2) Department of Microbiology & Immunology, Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ; 3) Department of Pharmacology, Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ.

871A
Vibration-sensing circuitry of Drosophila larva with synaptic resolution. **Albert Cardona[1,2], Casey Schneider-Mizell[2].** 1) HHMI Janelia Farm, Ashburn, VA; 2) Institute of Neuroinformatics, University of Zurich and ETH Zurich, Switzerland.

872B
The Rabome of *Drosophila melanogaster*. **Sebastian Dunst, Marko Brankatschk, Andreas Sagner, Beate Brankatschk, Marie Hannusa, Tom Kazimiers, Pavel Tomancak, Suzanne Eaton.** MPI-CBG, Dresden, Germany.

873C
Knockdown of bicoid interrogates models for combinatorial control of gene expression. **Max V. Staller, Zeba Wunderlich, Meghan D. Bragdon, Kelly B. Eckenrode.** Dept Systems Biology, Harvard Medical School, Boston, MA.

874A
Systematic Characterization of Genetic Interactions in Tumorigenesis using Combinatorial RNAi in Drosophila Melanogaster. **Xiaoyue Wang, Jennifer Moran, Kevin White.** Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL.

875B
Region-specific interpretation of MAPK signaling in the *Drosophila* embryo. **Yoosik Kim[1], Antonina Iagovitina[1,2], Dimitri Papatsenko[3], Keisuke Ishihara[1], Kate M. Fitzgerald[1], Bart Deplancke[2], Stanislav Y. Shvartsman[1].** 1) Department of Chemical and Biological Engineering and Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ 08544, USA; 2) Ecole Polytechnique Fédérale de Lausanne, School of Life Sciences, Institute of Bioengineering, Station 15, 1015 Lausanne, Switzerland; 3) Department of Developmental and Regenerative Biology, Black Family Stem Cell Institute, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574, USA.

876C
Natural Variation in Olfactory Discrimination in the Drosophila Genetic Reference Panel. **Gunjan H. Arya[1,2], Michael M. Magwire[2,3], Yazmin L. Serrano Negron[1,2], Trudy F. C. Mackay[2,3], Robert R. H. Anholt[1,2,3].** 1) Dept. of Biology, NC State Univ, Raleigh, NC; 2) W. M. Keck Ctr. for Behavioral Biology, NC State Univ, Raleigh, NC; 3) Dept. of Genetics, NC State Univ, Raleigh, NC.

877A
Label-Free Imaging of Lipid-Droplet Intracellular Motion in Early Drosophila Embryos Using Femtosecond Stimulated Raman Loss Microscopy. **Wei Dou[1], Delong Zhang[2], Yookyung Jung[3], Ji-Xin Cheng[2,3], David Umulis[1,3].** 1) Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, IN; 2) Department of Chemistry, Purdue University, West Lafayette, IN; 3) Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN.

878B
Dpp Signaling Activity Requires Pentagone to Scale with Tissue Size in the Growing Drosophila Wing Imaginal Disc. **Fisun Hamaratoglu[1], Aitana Morton de Lachapelle[2,3], George Pyrowolakis[4,5], Sven Bergmann[2,3], Markus Affolter[1].** 1) Growth and Development, Biozentrum, University of Basel, Basel; 2) Department of Medical Genetics, University of Lausanne, Lausanne, Switzerland; 3) Swiss Institute of Bioinformatics, Lausanne, Switzerland; 4) Institute for Biology I, Albert-Ludwigs-University of Freiburg, D-79104 Freiburg, Germany; 5) Centre for Biological Signaling Studies (BIOSS), Albert-Ludwigs-University of Freiburg, D-79104 Freiburg, Germany.

879C
Screening for recessive suppressors of ectopic Wnt/Wg signaling in the Drosophila eye. **Fabian H. Jenny[1,2], Monika Hediger Niessen[1], Carla Baenziger[1], Corinna Schuett[1], Luca Mariotta[1], Konrad Basler[1].** 1) Institute of Molecular Life Sciences, University of Zurich, Zurich, Zurich, Switzerland; 2) Zurich PhD Program in Molecular Life Sciences, Life Science Zurich, Zurich, Zurich, Switzerland.

880A
The Genetic Basis for Natural Variation in Alcohol Sensitivity in Drosophila. **Tatiana V. Morozova[1,3], Michael M. Magwire[2,3], Trudy F. C. Mackay[2,3], Robert R. H. Anholt[1,2,3].** 1) Dept. Biology; 2) Dept. Genetics; 3) M. W. Keck Center for Behavior Biology, NCSU, Raleigh, NC.

881B
Direct Quantification of Transcriptional Regulation at the Single Gene Level. **Heng Xu, Anna Sokac, Ido Golding.** Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, TX.

882C
Phenotypic Plasticity of the Drosophila Transcriptome. **Shanshan Zhou, Terry Campbell, Eric Stone, Trudy Mackay, Robert Anhot.** Dept Biology, North Carolina State Univ, Raleigh, NC.

883A
Transcriptional mechanisms that compensate for the cost of bistability. **Alistair N. Boettiger[1], Jacques Bothma[2,3], Michael Perry[3], Michael Levine[3].** 1) Chemistry and Chemical Biology, Harvard University, Cambridge, Ma; 2) Biophysics Grad. Group, UC Berkeley, Berkeley CA; 3) Molecular and Cell Biology, UC Berkeley, Berkeley CA.

884B
Topological Dynamics of the Gap Gene System in *Drosophila Melanogaster*. **Lena Panok[1,2], Konstantin Kozlov[6], Svetlana Surkova[6], Vitaly Gursky[7], John Reinitz[1,3,4,5].** 1) Department of Ecology and Evolution, University of Chicago; 2) Department of Applied Mathematics and Statistics, and Center for Developmental Genetics, Stony Brook University, Stony Brook, New York; 3) Department of Statistics, University of Chicago; 4) Department of Molecular Genetics and Cell Biology, University of Chicago; 5) Chicago Center for Systems Biology, University of Chicago; 6) Department of Computational Biology, Center for Advanced Studies, St. Petersburg State Polytechnical University, St. Petersburg, Russia; 7) Theoretical Department, The Ioffe Physico-Technical Institute of the Russian Academy of Sciences, St. Petersburg, Russia.

885C
New Applications of Synthetic DNA Technology: Testing the Combinatorial Effects of Co-Occurring Cancer Genes through RNAi Double Knockdown. **Jennifer R. Moran, Xiaoyue Wang, Kevin P. White.** Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL.

886A
Design and validation of novel gene regulatory functions by perturbing existing cis-regulatory elements. **Ben Vincent[1], Tara Martin[1], Garth Isley[2], Zeba Wunderlich[1], Meghan Bragdon[1], Kelly Eckenrode[1], Nick Luscombe[2], Angela DePace[1].** 1) Department of Systems Biology, Harvard Medical School, Boston, MA; 2) European Bioinformatics Institute, Cambridge UK.

Educational Initiatives

887B
Adapting the "Fly Lab" for primary research in the genetics classroom. **Derek M. Dean, Luana S. Maroja.** 59 Lab Campus Drive, Dept. of Biology, Williams College, Williamstown, MA 01267.

888C
An Inquiry-Based Approach to Teaching Undergraduate Students Advanced Molecular Genetics. **Jason E. Duncan, Biol350 Molecular Genetics 2011, Biol350 Molecular Genetics 2012.** Department of Biology, Willamette University, Salem, OR, 97301.

889A
The Genomics Education Partnership (GEP): Comparative Analysis of the Drosophila Dot Chromosome by Undergraduate Students. **SCR Elgin[1], W. Barshop[1], H. Yuan[1], M. Burg[2], C. Coyle-Thompson[3], J. DiAngelo[4], D. Johnson[5], C. Jones[6], L. Kadlec[7], SC Silver Key[8], NP Kokan[9], G. McNeil[10], A. Nagengast[11], DW Paetkau[12], K. Saville[13], S. Smith[14], J. Stamm[15], M. Wawersik[16], L. Zhou[17], D. Lopatto[18].** 1) Washington U MO; 2) Grand Valley State U MI; 3) CSU-Northridge CA; 4) Hofstra U NY; 5) George Washington U DC; 6) Moravian C PA; 7) Wilkes U PA; 8) NC Central U NC; 9) Cardinal Stritch U WI; 10) York/CUNY NY; 11) Widener U PA; 12) St Mary's C IN; 13) Albion C MI; 14) Arcadia U PA; 15) Evansville IN; 16) William & Mary VA; 17) U Pittsburgh PA; 18) Grinnell C IA.

890B
Integration of Transmission Genetics and Molecular Biology in a Genetics Lab Course Using Drosophila Neurologic Mutants. **Pat C. Lord, Erik C. Johnson.** Dept Biol, Wake Forest Univ, Winston-Salem, NC.

891C
Mapping and cloning recessive wing mutants and dominant bristle mutations in an undergraduate course. **Eric P. Spana, Arun Augustine, Ruvi Chauhan, Rupen Desai, Gabriella Dimarco, Benjamin Hoover, Angela Jiang, Tony Jiang, Ben Joseph, Arjun R. Khanna, Temistocles Molinar Jr., Lily Pham, Carter Suryadevara, Allison Umfress, Nikolaos A. Valilis, Kristie Vu, Eli Wilber, Yi Dong, Jason Klein, Arun Sharma.** Department of Biology, Duke University, Durham, NC.

892A
Darwin Synthetic Interview and Horse Feet - Teaching Evolution through engagement and interactivity. **John A. Pollock, David J. Lampe.** Biological Sci, Duquesne Univ, Pittsburgh, PA.