55th Annual Drosophila Research Conference 2014

Drosophila Genetics

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OPENING AND PLENARY SESSIONS

Wednesday, March 26 7:00 PM–9:15 PM

Opening General Session

Co-Moderators: Mark Van Doren, Johns Hopkins University, Baltimore, Maryland and Elissa Lei, NIH/National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Maryland

Room: Atlas Ballroom

Presentations:

7:00 pm **Welcome and Opening Remarks.** Mark Van Doren. Johns Hopkins University, Baltimore, Maryland. N/A

7:10 pm **GSA Welcome and Update.** Adam Fagen. Genetics Society of America, Bethesda, Maryland. N/A

7:20 pm **Larry Sandler Award Presentation.** Ken Irvine. Rutgers University, Waksman Institute, Piscataway, New Jersey. N/A

7:25 pm **Larry Sandler Lecture.** N/A

7:55 pm **Keynote Introduction.** Elissa Lei. NIH/National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Maryland. N/A

8:00 pm **Science, Biology, and the World's Future.** Bruce Alberts. UCSF, San Francisco, CA. pg. 3

9:00 pm **Presentation of George W. Beadle Award to Hugo Bellen,** Baylor College of Medicine/HHM). N/A

Thursday, March 27 8:30 AM–12:00 NOON

Plenary Session I

Moderator: Daniela Drummond-Barbosa, Johns Hopkins University, Baltimore, Maryland

Room: Atlas Ballroom

Presentations:

8:30 am **Image Award Presentation.** David Bilder. University of California, Berkeley. N/A

8:35 am **Controlling Morphogen Gradients.** Arthur D. Lander. Dept Dev Cell Biol and Dept of Biomedical Engineering, Univ California, Irvine, Irvine, CA. pg. 3

9:05 am **Fat Cadherins in Growth, Planar Polarity and Mitochondrial Activity.** Helen McNeill. Lunenfeld-Tanenbaum Institute, Mt Sinai Hospital , Toronto, ON, Canada; Dept. Molecular Genetics, University of Toronto Toronto, Canada. pg. 3

9:35 am **Epigenetic Regulation of Drosophila Male Germ Cell Differentiation.** Xin Chen. Dept Biol, Johns Hopkins Univ, Baltimore, MD. pg. 3

10:05 am - **Break**

10:30 am **X Marks the Spot: Targeting the X Chromosome During Dosage Compensation.** Erica N. Larschan. Molec Biol, Cellular Biol & Biochem, Brown Univ, Providence, RI. pg. 4

11:00 am **Circuit Mechanisms Underlying Behavioral Decisions and Motor Program Sequencing in Ecdysis.** Benjamin H. White. Laboratory of Molecular Biology, National Institute of Mental Health, Bethesda, MD. pg. 4

11:30 am **The Molecular Evolution of Morphology and Behavior.** David L. Stern. Janelia Farm Research Campus, Howard Hughes Medical Institute, Ashburn, VA. pg. 4

OPENING AND PLENARY SESSIONS

Sunday, March 30 8:30 AM–12:00 NOON

Plenary Session II

Moderator: Mihaela Serpe, NIH/National Institute of Child Health and Human Development, Bethesda, Maryland

Room: Atlas Ballroom

Presentations:

8:30 am **Poster Award Presentation.** Mihaela Serpe. NIH/Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, Maryland. N/A

8:35 am **Charting the Genotype-Phenotype Map: Lessons from Drosophila.** Trudy F. Mackay. Dept Biological Sciences, North Carolina State Univ, Raleigh, NC. pg. 5

9:05 am **Walking the Highwire from Synaptic Growth to the Axon Injury Response Pathway.** Aaron DiAntonio. Dept of Developmental Biology, Washington University School of Medicine, St. Louis, MO. pg. 5

9:35 am **piRNAs Function for the Safeguard of Germline Genome.** Toshie Kai. Temasek Lifesciences Laboratory/Dept. Biological Science, National University of Singapore, Singapore. pg. 5

10:05 am - **Break**

10:30 am **Multiple Layers of Complexity in the Regulation of the Bithorax Complex.** Francois Karch. Dept Genetic and Evolution, Univ Geneva, Geneva, Switzerland. pg. 6

11:00 am **Cardiomyopathy Models.** Rolf Bodmer. Development and Agi, Sanford-Burnham Medical Research Institute, La Jolla, CA. pg. 6

11:30 am **The Conflicted Existence of the Mitochondrial Genome.** Patrick H. O'Farrell. Dept Biochemistry, Univ California, San Francisco, CA. pg. 6

Notes

CONCURRENT PLATFORM SESSIONS

THURSDAY, MARCH 27 4:30-6:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

Cell Division and Growth Control

Co-Moderators: Laura Buttitta, University of Michigan, and Alex Gould, MRC National Institute for Medical Research, London, UK

Room: Town & Country

1 - 4:30 pg. 7
Re-replication during Follicle Cell Gene Amplification causes replication fork instability and requires double-strand break repair. **Jessica L. Alexander**, Terry L. Orr-Weaver. Whitehead Inst for Biomedical Research/Dept. of Biology, MIT, Cambridge, MA.

2 - 4:45 pg. 7
Regulation of cilium and centrosome function by rootletin. **Jieyan Chen**, Timothy Megraw. Biomedical Sciences, Florida State University, Tallahassee, FL.

3 - 5:00 pg. 7
The *Drosophila* orthologue of human GOLPH3 is required for contractile ring formation and membrane trafficking during cytokinesis. **Maria Grazia Giansanti**[1], Giorgio Belloni[2], Gianni Colotti[1], Vincenzo Mattei[3], Anna Frappaolo[1], Grazia Daniela Raffa[2], Margaret T. Fuller[4], Stefano Sechi[1]. 1) IBPM, Consiglio Nazionale delle Ricerche, Rome, Italy; 2) Dipartimento di Biologia e Biotecnologie, Università Sapienza, Rome, Italy; 3) Laboratory of Experimental and Environmental Pathology, Sabina Universitas, Rieti, Italy; 4) Departments of Developmental Biology and Genetics, Stanford University School of Medicine, Stanford, USA.

4 - 5:15 pg. 8
Adenosine is a paracrine homeostatic signal affecting growth of *wts* tumor clones. **Michal Zurovec**, Roman Sidorov, Lucie Kucerova. Biology Centre CAS, Ceske Budejovice, Czech Republic.

5 - 5:30 pg. 8
Growth control by the conserved Aac11/Api5 anti-apoptotic protein. **Can Zhang**[1], Wenjian Xu[2], Alexey Veraksa[2], Kenneth Moberg[1]. 1) Department of Cell Biology, Emory University, Atlanta, GA; 2) Department of Biology, University of Massachusetts Boston, Boston, MA.

6 - 5:45 pg. 8
The *Drosophila* TNF receptor Grindelwald couples loss of cell polarity with neoplastic growth. **Julien Colombani**[1], Ditte Andersen[1], Krittalak Chakrabandhu[1], Michael Röthlisberger[2], Anne-Odile Hueber[1], Konrad Basler[2], Pierre Leopold[1]. 1) University of Nice Sophia Antipolis, CNRS UMR7277, INSERM U1091, Intitute of Biology Valrose, Nice, France; 2) Inst of Molecular Life Sciences, Univ of Zurich, Zurich, Switzerland.

7 - 6:00 pg. 9
An evolutionarily conserved role for plexins during epithelial wound repair in Drosophila and zebrafish. **Sa Kan Yoo**[1,2], Iswar Hariharan[1]. 1) UC-Berkeley, Berkeley, CA; 2) Miller institute, UC-Berkeley, Berkeley, CA.

8 - 6:15 pg. 9
Src64 generates a gradient of tyrosine phosphorylation and controls actin dynamics during incomplete cytokinesis in the *Drosophila* male germline. **Asmund H. Eikenes**[1,2], Catherine Sem Wegner[1,2], Lene Malerød[1,2], Andreas Brech[1,2], Knut Liestøl[2], Harald Stenmark[1,2], Kaisa Haglund[1,2]. 1) Department of Biochemistry, Institute for Cancer Research, Oslo University Hospital, Montebello, Oslo, Norway; 2) Centre for Cancer Biomedicine, Faculty of Medicine, University of Oslo, Montebello, Oslo, Norway.

Neural Development

Co-Moderators: Robin Hiesinger, UT Southwestern, Dallas, Texas and James Posakony, University of California, San Diego

Room: Golden West

9 - 4:30 pg. 9
Chromatin modulation in structural and functional refinement of fru+ ORN circuits in Drosophila. **Pelin C. Volkan**[1,2,3], Doug Olsen[1], Catherine Hueston[2], Qingyun Li[1], Jianni Wu[4]. 1) Duke University, Department of Biology, Durham, NC; 2) Duke University, Department of Neurobiology, Durham, NC; 3) Duke Institute of Brain Sciences; 4) Duke Univeristy, Undergraduate Program in Neuroscience, Durham, NC.

10 - 4:45 pg. 10
Intravital 2-photon imaging and computational modeling reveal simple pattern formation rules underlying neural superposition. **Egemen Agi**[1,5], Marion Langen[2,5], Dylan Altschuler[2,3], Lani Wu[2,4], Steven Altschuler[2,4], Peter Robin Hiesinger[1,2,4]. 1) Department of Physiology, Univ of Texas Southwestern Med Center, Dallas; 2) Green Center for Systems Biology, Dept of Pharmacology, Simmons Cancer Center, Univ of Texas Southwestern Medical Center, Dallas; 3) STARS program, Univ of Texas Southwestern Med Center, Dallas; 4) Co-corresponding; 5) Equal contribution.

11 - 5:00 pg. 10
Role of microRNA machinery in dendrite patterning. **Marvin Nayan**[1], Charlie Kim[2], Jay Parrish[1]. 1) Dept. of Biology, University of Washington, Seattle, WA; 2) Division of Experimental Medicine, University of California San Francisco,

12 - 5:15 pg. 10
Drosophila Mitofusin affects mitochondrial trafficking, steroid-hormone production and NMJ maturation. **Hector Sandoval**[1], Chi-Kuang Yao[1,4], Kuchuan Chen[2], Taraka Donti[1], Manish Jaiswal[3], Yong-Qi Lin[3,5], Shinya Yamamoto[1,2], Brett Graham[1], Hugo Bellen[1,2,3]. 1) Human and Molecular Genetics; 2) Program in Development Biology; 3) Howard Hughes Medical Institute, BCM, Houston, TX; 4) Academia Sinica, Institute Institute of Biological Chemistry, Taipei, Taiwan; 5) Garvan Institute of Medical Research, Neuroscience Program, Sidney, Australia.

13 - 5:30 pg. 11
Crimpy enables discrimination of pre and postsynaptic pools of a BMP at the NMJ. Rebecca James[1], Kendall Hoover[1], Chris Wilson[1], Kristi Wharton[2], Ed Levitan[3], **Heather Broihier**[1]. 1) Neurosciences, Case Western Reserve University, Cleveland, OH; 2) Molecular Biology, Cell Biology, and Biochemistry, Providence, Brown University, RI; 3) Pharmacology and Chemical Biology, University of Pittsburgh, Pittsburgh, PA.

14 - 5:45 pg. 11
Local BMP signaling sculpts synapse development at the *Drosophila* neuromuscular junction. **Mikolaj J. Sulkowski**, Mihaela Serpe. NICHD, National Insts of Health, Bethesda, MD.

15 - 6:00 pg. 11
Xbp1-Independent Ire1 Signaling Is Required for Photoreceptor Differentiation and Rhabdomere Morphogenesis in Drosophila. **Dina S. Coelho**[1], Fátima Cairrão[1], Xiaomei Zeng[2], Elisabete Pires[1], Ana V. Coelho[1], David Ron[3], Hyung Don Ryoo[2], Pedro M. Domingos[1]. 1) Instituto de Tecnologia Química e Biológica, 2780-157 Oeiras, Oeiras, Portugal; 2) Department of Cell Biology, New York University School of Medicine; 3) Metabolic Research Laboratory and NIHR Cambridge Biomedical Research Centre, University of Cambridge, Addenbrooke's Hospital.

CONCURRENT PLATFORM SESSIONS

THURSDAY, MARCH 27 4:30-6:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

16 - 6:15 pg. 12
An E3 ubiquitin ligase regulates neural-specific glycosylation in the Drosophila embryo. **Nickita Mehta**, Mary Sharrow, Katherine Tiemeyer, Toshiko Katoh, Michael Tiemeyer. Biochemistry and Mol. Biology, Complex Carbohydrate Research Center, UGA, Athens, GA.

Organogenesis and Gametogenesis

Co-Moderators: Rachel Cox, Uniformed Services University of the Health Sciences, Bethesda, Maryland and Amin Ghabrial, University of Pennsylvania, Philadelphia

Room: California

17 - 4:30 pg. 12
Alien, a highly conserved COP9 Signalosome (CSN) subunit, maintains the cellular microenvironment for germline cells in testes of Drosophila melanogaster. **Yue Qian**, Chun Ng, Cordula Schulz. Cellular Biology, University of Georgia, Athens, GA.

18 - 4:45 pg. 12
Loss of the nuclear envelope protein Otefin causes germline stem cell death due to activation of Checkpoint kinase 2. **Lacy J. Barton**, Kaylee E. Lovander, Melinda J. Martin, Pamela K. Geyer. Dept Biochemistry, Univ Iowa, Iowa City, IA.

19 - 5:00 pg. 13
Steroid Signaling and *SREBP* coordinate germline lipid accumulation with dietary nutrients in *Drosophila*. **Matt Sieber**[1,2], Allan Spradling[1,2]. 1) Emrbyology, Carnegie Institution for Science, Baltimore, MD; 2) HHMI.

20 - 5:15 pg. 13
A secretion-based mechanism for basement membrane remodeling during egg chamber elongation. **Adam J. Isabella**[1,2], Sally Horne-Badovinac[1,2]. 1) Committee on Development, Regeneration, and Stem Cell Biology; 2) Department of Molecular Genetics & Cell Biology, University of Chicago, Chicago, IL.

21 - 5:30 pg. 14
Sunday Driver (Syd/JIP3) and JNK Signaling are Required for Myogenesis and Muscle Function. **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; 2) Sloan-Kettering Institute, New York, NY.

22 - 5:45 pg. 14
Org-1-Tup expressing alary muscles and "new" related muscles in the thorax connect different internal organs in the developing embryo. Laetitia Bataillé[1], Hadi Boukhatmi[1], Christoph Schaub[2], Ingolf Reim[2], Jean-Louis Frendo[1], Manfred Frasch[2], **Alain Vincent**[1]. 1) Developmental Biology Center, CNRS/Université de Toulouse, Toulouse, France; 2) Dept of Biology, University of Erlangen-Nuremberg, Erlangen Germany.

23 - 6:00 pg. 14
Mipp1 (Multiple Inositol Polyphosphate Phosphatase) dephosphorylates Inositol polyphosphates extracellularly to facilitate filopodia formation. **Yim Ling Cheng**, Deborah Andrew. Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD.

24 - 6:15 pg. 15
Caudal visceral mesoderm (CVM) cell migration is regulated by sphingolipids. **Angelike M. Stathopoulos**, Young-Kyung Bae. Div Biol, MC 114-96, Caltech, Pasadena, CA.

Notes

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 28 8:30-10:15 AM

Presenting author is in **bold**. Full abstracts can be found online.

Cell Cycle and Cell Death

Co-Moderators: Nathalie Franc, The Scripps Institute, La Jolla, California and Terry Orr-Weaver, Whitehead Institute/Massachusetts Institute of Technology, Cambridge

Room: Town & Country

25 - 8:30 pg. 15
Protein phosphatase 2A promotes cell cycle exit. **Dan Sun**, Laura Buttitta. Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI.

26 - 8:45 pg. 15
Coordination of Zygotic Genome Activation and the DNA Damage Response at the MBT. **Shelby A. Blythe**, Eric F. Wieschaus. Molecular Biology, Princeton University, Princeton, NJ.

27 - 9:00 pg. 16
Widespeard post-transcriptional changes control cell cycle alteration at the oocyte-to-embryo transition in Drosophila. **Iva Kronja**[1], Bingbing Yuan[1], Stephen Eichhorn[1,2], Kristina Dzeyk[3], Jeroen Krijgsveld[3], David Bartel[1,2], Terry Orr-Weaver[1,2]. 1) Whitehead Institute for Biomedical Research, Cambridge, MA; 2) Department of Biology, MIT, Cambridge, MA; 3) European Molecular Biology Laboratory, Heidelberg, Germany.

28 - 9:15 pg. 16
Dying cells protect survivors from radiation-induced cell death. **TinTin Su**, Amber Bilak, Lyle Uyetake. MCD Biology, University of Colorado, Boulder, CO.

29 - 9:30 pg. 17
A steroid-controlled global switch in sensitivity to apoptosis during *Drosophila* development. **Yunsik Kang**[1], Arash Bashirullah[2]. 1) Lab Genetics, Univ Wisconsin-Madison, Madison, WI; 2) Sch Pharmacy, Univ Wisconsi-Madison, Madison, WI.

30 - 9:45 pg. 17
The follicle cells non-autonomously contribute to the developmental programmed cell death of the nurse cells during Drosophila oogenesis. **Allison K. Timmons**, Albert A. Mondragon, Claire E. Schenkel, Jon Iker Etchegarary, Jeffrey Taylor, Olivia Rudnicki, Kim McCall. Boston University, Boston, MA.

31 - 10:00 pg. 17
Starvation-induced Sbf/MTMR13 and Rab21 activity promotes VAMP8 autophagosome-lysosome fusion. **Steve Jean**, Sarah Cox, Amy Kiger. Division of Biological Sciences, University of California San Diego, San Diego, CA.

Evolution and Quantitative Genetics I

Co-Moderators: Susan Harbison, National Heart, Lung, and Blood Institute, NIH, Bethesda, Maryland and Martin Kreitman, University of Chicago, Illinois

Room: Golden West

32 - 8:30 pg. 18
Frequent sex chromosome transitions in Dipterans. **Beatriz Vicoso**, Doris Bachtrog. UC Berkeley, Berkeley, CA.

33 - 8:45 pg. 18
Female-expressed *de novo* genes in *Drosophila*. **Li Zhao**, David J. Begun. Dept of Evolution and Ecology, Univ of California Davis,

34 - 9:00 pg. 18
Evolution of H3K27me3-marked chromatin in Drosophila is linked to patterns of gene duplication and diversification. **Robert Arthur**[1,2], Lijia Ma[2,3], Matthew Slattery[2,3,4], Rebecca Spokony[2,3], Alexander Ostapenko[2,3], Nicholas Negre[2,3,5], Kevin White[1,2,3]. 1) Ecology and Evolution, University of Chicago 2) Institute for Genomics and Systems Biology, University of Chicago and Argonne National Laboratory, Chicago, Illinois, 3) Department of Human Genetics, University of Chicago 4) Department of Biomedical Sciences, University of Minnesota Medical School, Duluth, 5). Université de Montpellier 2 and INRA, UMR1333 DGIMI, F-34095 Montpellier, France.

35 - 9:15 pg. 19
Unusual Haplotype Structure and Reduced Recombination in Chromosomal Rearrangements in Populations of Drosophila pseudoobscura. **Zach Fuller**[1], Gwilym Haynes[1], Shannon Duggan[2], Dianhuiz Zhu[2], Stephen Richards[2], Stephen Schaeffer[1]. 1) The Pennsylvania State University, University Park, PA; 2) Baylor College of Medicine, Houston, TX.

36 - 9:30 pg. 19
A novel cysteine-clamp gene establishes head-to-tail polarity in the midge Chironomus riparius. **Jeff Klomp**[1], Derek Athy[1], Chun Wai Kwan[1], Natasha Bloch[2], Thomas Sandmann[3], Steffen Lemke[4], Urs Schmidt-Ott[1]. 1) Dept. of Organismal Biology and Anatomy, University of Chicago; 2) Dept. of Ecology and Evolution, University of Chicago; 3) German Cancer Research Center (DKFZ), Im Neuenheimer Feld 280, Heidelberg, Germany; 4) Centre for Organismal Studies, Im Neuenheimer Feld 230, Heidelberg, Germany.

37 - 9:45 pg. 19
Signatures of polygenic adaptation from common natural variants in egg size evolution in experimentally evolved Drosophila melanogaster. **Aashish R. Jha**[1,2,3], Cecelia M. Miles[4], Nodia Lippert[4], Christopher D. Brown[5], Kevin P. White[1,2,3], Martin Kreitman[1,3]. 1) Institute for Genomics and Systems Biology, The University of Chicago; 2) Department of Ecology and Evolution, The University of Chicago, 3) Department of Human Genetics, The University of Chicago; 4) Department of Biology, Augustana College, Sioux Falls, SD; 5) Department of Genetics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA.

38 - 10:00 pg. 20
Genomics and the molecular basis of hybrid incompatibilities. **Nitin Phadnis**[1], Emily Baker[2], Jacob Kitzman[3], Kimberly Frizzell[1], Emily Hsieh[4], Jay Shendure[3], Harmit Malik[4,5]. 1) Department of Biology, University of Utah, Salt Lake City; 2) University of Wisconsin, Madison; 3) University of Washington, Seattle; 4) Fred Hutchinson Cancer Research Center, Seattle; 5) Howard Hughes Medical Institute.

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 28 8:30-10:15 AM

Presenting author is in **bold**. Full abstracts can be found online.

Pattern Formation

Co-Moderators: Thomas Kornberg, University of California, San Francisco and Amanda Simcox, Ohio State University, Columbus

Room: California

39 - 8:30 pg. 20
Trunk cleavage is essential for *Drosophila* terminal patterning and occurs independently of Torso-like. **Michelle A. Henstridge**[1], Travis K. Johnson[1,2], James C. Whisstock[2], Coral G. Warr[1]. 1) School of Biological Sciences, Monash University, Clayton VIC 3800 Australia; 2) Department of Biochemistry and Molecular Biology, Monash University, Clayton VIC 3800 Australia.

40 - 8:45 pg. 20
Myosin ID controls Planar Cell Polarity for proper Left/Right asymmetry. Nicanor Gonzalez-Morales, Jean-Baptiste Coutelis, Charles Géminard, Delphine Cérézo, **Stephane Noselli**. Institut de Biologie Valrose, iBV, University of Nice, CNRS, Inserm, NICE Cedex 2, France.

41 - 9:00 pg. 21
Dispersion via cytonemes: how the Hedgehog gradient forms in the Drosophila wing imaginal disc. **Weitao Chen**, Thomas Kornberg. Cardiovascular Research Institute, UCSF, San Francisco, CA.

42 - 9:15 pg. 21
A wing margin enhancer at *nab* is limited by dorsal-ventral, anterior-posterior, and distal-proximal signals in *Drosophila* wing imaginal discs. **Albert Erives**, Elizabeth Stroebele. Biology, University of Iowa, Iowa City, IA.

43 - 9:30 pg. 21
Using a Synthetic Gene Network to Model and Understand the Effects of Shuttling on Gene Expression Patterns. **Ashley Ann Jermusyk**, Gregory T. Reeves. North Carolina State University, Raleigh, NC.

44 - 9:45 pg. 22
Dynamic aspects of Bcd gradient formation contributing to scaling and robustness. **Alexander V. Spirov**[1,2], David M. Holloway[3]. 1) Computer Science and CEWIT, Stony Brook University, NY, USA; 2) The Sechenov Institute of Evolutionary Physiology and Biochemistry, RAS, St-Petersburg, Russia; 3) Mathematics, British Columbia Institute of Technology, Burnaby, BC, Canada.

45 - 10:00 pg. 22
Hedgehog signaling regulates mechanical tension along the *Drosophila* anteroposterior compartment boundary. **Katrin Rudolf**[1], Maryam Aliee[2], Frank Jülicher[2], Christian Dahmann[1]. 1) Technische Universität Dresden, Institute of Genetics, 01062 Dresden, Germany; 2) Max Planck Institute for the Physics of Complex Systems, 01187 Dresden, Germany.

Notes

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 28 10:45 AM-12:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

Cell Biology and Cytoskeleton

Moderator: Michelle Starz-Gaiano, University of Maryland, Baltimore County

Room: Town & Country

46 - 10:45 pg. 22
Mechanical force induced adherens junctions remodeling. **Mo Weng**[1], Eric Wieschaus[1,2]. 1) Howard Hughes Medical Institute; 2) Molecular Biology, Princeton University, Princeton, NJ.

47 - 11:00 pg. 23
Cellular and molecular mechanisms of epithelial organization in the *Drosophila* embryo. **Masako Tamada**, Jennifer Zallen. Howard Hughes Medical Institute and Developmental Biology Program, Sloan-Kettering Institute, NY.

48 - 11:15 pg. 23
Prickle/Spiny-legs isoforms control the polarity of the apical microtubule network in PCP. **Katherine Sharp**[1,2], Jessica Olofsson[1], Maja Matis[1], Bomsoo Cho[1], Jeffrey Axelrod[1]. 1) Pathology, Stanford University School of Medicine, Stanford, CA; 2) Genetics, Stanford University School of Medicine, Stanford, CA.

49 - 11:30 pg. 23
Myonuclear shape and architecture is maintained by cooperative activities between Spectraplakin-EB1 and Nesprin that link the microtubule network to the nuclear cytoskeleton. **Shuoshuo Wang**, Talila Volk. Weizmann Institute of Science, Rehovot, Israel.

50 - 11:45 pg. 24
Myosin II-mediated mechanosensory response generates cortical resistance to podosome invasion in *Drosophila* myoblat fusion. **Ji Hoon Kim**[1], Yixin Ren[2], Shuo Li[1], Yee Kee[2], Douglas Robinson[2], Elizabeth Chen[1]. 1) Molecular Biology and Genetics, Johns Hopkins University , Baltimore, MD; 2) Cell Biology, Johns Hopkins University, Baltimore, MD.

51 - 12:00 pg. 24
Clueless/dGRASP dependent unconventional protein secretion differentiates the delivery of αPS2 integrin from that of βPS integrin in the *Drosophila* muscle. **Zongheng Wang**[1], Ze Liu[1], Nicole Green[2], Catherine Rabouille[3], Erika Geisbrecht[1,2]. 1) School of Biological Sciences, University of Missouri-Kansas City, Kansas City, MO; 2) Department of Biochemistry and Molecular Biophysics, Kansas State University, Manhattan, KS; 3) Hubrecht Institute-KNAW & University Medical Center Utrecht, Utrecht, The Netherlands.

52 - 12:15 pg. 25
Prostaglandins temporally regulate actin remodeling during *Drosophila* oogenesis. **Andrew Spracklen**[1], Daniel Kelpsch[1], Xiang Chen[1], Cassandra Spracklen[2], Tina Tootle[1]. 1) Department of Anatomy and Cell Biology, University of Iowa Carver College of Medicine, Iowa City, IA; 2) Department of Epidemiology, University of Iowa College of Public Health, Iowa City, IA.

Evolution and Quantitative Genetics II

Co-Moderators: Cassandra Extavour, Harvard University, Cambridge, Massachusetts and Charles Langley, University of California, Davis

Room: Golden West

53 - 10:45 pg. 25
Genetic architecture of foraging behavior in natural Drosophila melanogaster population. **Grace Y. C. Lee**[1], Wanhao Chi[2], Qian Yang[1], Wei Du[3], Susie A. Turkson[2], Nicholas VanKuren[1], Xiaoxi Zhuang[2], Manyuan Long[1]. 1) Department Ecology and Evolution, University of Chicago, Chicago, IL; 2) Department of Neurobiology, University of Chicago, Chicago, IL; 3) Department of Biology, Wayne State University.

54 - 11:00 pg. 25
Quantitative genetics of caffeine resistance in Drosophila melanogaster. **Chad A. Highfill**, Michael A. Najarro, Stuart J. Macdonald. Department of Molecular Biosciences, University of Kansas, Lawrence, KS. 66045.

55 - 11:15 pg. 26
Using engineered deletions in the study of behavioral evolution between Drosophila species. **Wesley G. Cochrane**, Veronica A. Cochrane, Thomas L. Turner. EEMB, UCSB, Santa Barbara, CA.

56 - 11:30 pg. 26
Genome-wide association of *Drosophila melanogaster* nutritional responses to gut microbiota. **John Chaston**, Adam Dobson, Peter Newell, Chun-nin Wong, David Sannino, Sara Ali, Angela Douglas. Cornell University - Entomology, Ithaca, NY.

57 - 11:45 pg. 26
Quantitative Characterization of Natural Variation in Heterochromatin of Drosophila melanogaster. **Kevin H.-C. Wei**, Daniel A. Barbash, Andrew G. Clark. Molecular Biology and Genetics, Cornell, Ithaca, NY.

58 - 12:00 pg. 27
Selective and demographic determinants of latitudinal variation in allele frequency in North American Drosophila melanogaster. **Alan O. Bergland**[1], Ray Tobler[3], Emily Behrman[2], Katherine O'Brien[2], Josefa Gonzales[4], Paul Schmidt[2], Dmitri Petrov[1]. 1) Stanford, Stanford, CA; 2) University of Pennsylvania, Philadelphia, PA; 3) Institut de Biologia Evolutiva, Barcelona, Spain; 4) Institute for Population Genetics, Vienna, Austria.

59 - 12:15 pg. 27
Convergent balancing selection on an antimicrobial peptide in *Drosophila*. **Robert L. Unckless**, Virginia1 M. Howick, Brian P. Lazzaro. Entomology, Cornell University, Ithaca, NY.

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 28 10:45 AM-12:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

Chromatin and Epigenetics

Moderator: Vincenzo Pirrotta, Rutgers University, Piscataway, New Jersey

Room: California

60 - 10:45 pg. 27
Identification of new regulators of three dimensional Polycomb organization by a microscopy-based genome-wide RNAi screen. **Giacomo Cavalli**, Inmaculada Gonzalez, Julio Mateos, Aubin Thomas. Institute of Human Genetics, CNRS, Montpellier, France.

61 - 11:00 pg. 28
Spatial and Temporal Dynamics of Heterochromatin DSB Repair: Novel Role of Nuclear Pores. Taeyun Ryu[1], Hannah Hopp[1], Ryan Kunitake[1], Kate Bowlin[1], Preethi V. Palagani[1], Lars Israel[2], Alex Imhof[2], Gary H. Karpen[3], **Irene Chiolo**[1]. 1) Molecular and Computational Biology Department, University of Southern California, Los Angeles, CA; 2) Ludwig Maximilian University of Munich, Germany; 3) Genome Dynamics Department, Lawrence Berkeley National Laboratory, Berkeley, CA.

62 - 11:15 pg. 28
Tet, the 5-methylcytosine oxidase, is essential in Drosophila. **Fei Wang**[1,2], Svetlana Minakhina[1,2], Tatyana Naryshkina[1,2], Curtis Schauder[1,2], Brinda Banerji[1,2], Ruth Steward[1,2]. 1) Waksman Institute, Piscataway, NJ; 2) Rutgers University.

63 - 11:30 pg. 28
The role of *Drosophila* chromatin remodeling factor CHD1 in replication-independent chromatin assembly and in chromosome organization. **Alexander Y. Konev**, Anna A. Makase, Natalia V. Belyakova, Natalia L. Ronzhina, Maria A. Ignatyeva. Department of Radiation and Molecular Biophysics, St. Petersburg Nuclear Physics Institute, Gatchina, Leningrad District, Russian Federation.

64 - 11:45 pg. 29
Simple Sequence Repeats in Gene Regulation. **Jaya Krishnan**, Rakesh Mishra. Centre for Cellular and Molecular Biology, Hyderabad, Andhra Pradesh, India.

65 - 12:00 pg. 29
Transgenerational inheritance of nutrition-induced genome rearrangements. **John C. Aldrich**, Keith A. Maggert. Department of Biology, Texas A&M University, College Station, TX.

66 - 12:15 pg. 29
Maternal Haploid, the Drosophila ortholog of human Spartan, is required for the integrity of paternal chromosomes at fertilization. **Laetitia Delabaere**, Guillermo Orsi, Laure Sapey-Triomphe, Béatrice Horard, Pierre Couble, Benjamin Loppin. CGphiMC, CNRS UMR5534, Université Claude Bernard Lyon1, Villeurbanne, France.

Notes

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 28 4:30-6:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

Physiology, Organismal Growth and Aging

Co-Moderators: Pierre Leopold, Universite Nice Sophia Antipolis, France and Carl Thummel, University of Utah, Salt Lake City

Room: Town & Country

67 - 4:30 pg. 30
The Drosophila fat body controls nutrient flux via transcriptional mechanisms. **Laura Palanker Musselman**[1], Jill Fink[1], Zeke Maier[2], Michael Brent[2], Thomas Baranski[1]. 1) Endocrinology, Metabolism, and Lipid Research, Washington University School of Medicine, St. Louis, MO; 2) Department of Computer Science, Washington University School of Medicine.

68 - 4:45 pg. 30
Suppression of insulin secretion by the decretin hormone Limostatin. **Ronald Wakim Alfa**[1,2], Sangbin Park[1], Kathleen-Rose Skelly[1], Lutz Kockel[1], Seung K. Kim[1,3,4]. 1) Developmental Biology, Stanford University School of Medicine, Stanford, CA; 2) Neuroscience Program, Stanford University School of Medicine, Stanford, CA; 3) Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA; 4) Department of Medicine (Oncology), Stanford University School of Medicine, Stanford, CA.

69 - 5:00 pg. 30
Activin signaling mediates muscle-to-adipose communication in a mitochondria dysfunction-mediated obesity model. **Wei Song**, Xiaochun Ni, Yanhui Hu, Edward Owusu-Ansah, Jonathan Zirin, Norbert Perrimon. Genetics Dept, Harvard Medical School, Boston, MA.

70 - 5:15 pg. 31
An organismal role of Dp53 in metabolic adaptation to nutrient deprivation. **Lara Barrio**, Andrés Dekanty, Marco Milán. Institute for Research in Biomedicine, Barcelona, Spain.

71 - 5:30 pg. 31
Innate immune signaling in the *Drosophila* fat body blocks DILP signaling by uncoupling PI(3,4,5)P_3 production and Akt activation. **Michelle L. Bland**[1], Moshe D. Bitterman[2], Morris J. Birnbaum[2]. 1) Department of Pharmacology, University of Pennsylvania, Charlottesville, VA; 2) Department of Medicine, University of Pennsylvania, Philadelphia, PA.

72 - 5:45 pg. 31
Feeding and fasting signals converge on LKB1 and SIK3 pathway to regulate lipid homeostasis in Drosophila. **Sekyu Choi**[1], Jongkyeong Chung[1,2,3]. 1) National Creative Research Initiatives Center for Energy Homeostasis Regulation, Seoul, South Korea; 2) Institute of Molecular Biology and Genetics, Seoul, South Korea; 3) School of Biological Sciences, Seoul National University, Seoul, South Korea.

73 - 6:00 pg. 32
Metabolic pathways contributing to increased longevity in *Drosophila*. **Lauren A. Reynolds**, Kimberly A. Hughes. Biology, Florida State University, Tallahassee, FL.

74 - 6:15 pg. 32
Or22a and Or22b Are Both Involved in the Regulation of Fruit Fly Longevity. **Ceyda Bilgir**[1], Xiowen Chu[2], Scott Pletcher[1]. 1) Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI; 2) Huffington Center on Aging, Baylor College of Medicine, Houston, TX.

Techniques and Resources

Co-Moderators: Kent Golic, University of Utah, Salt Lake City and Kevin White, University of Chicago, Illinois

Room: Golden West

75 - 4:30 pg. 32
CIRPSR/Cas9-catalyzed homology-directed repair for complex genome engineering in Drosophila. **Kate M. O'Connor-Giles**[1,2], Scott J. Gratz[1], Fiona P. Ukken[2], C. Dustin Rubinstein[2]. 1) Laboratory of Genetics, University of Wisconsin, Madison, WI; 2) Laboratory of Cell and Molecular Biology, University of Wisconsin, Madison, WI.

76 - 4:45 pg. 33
Expanding applications of CRISPR/Cas9 technology. **Shu Kondo**, Ryu Ueda. National Institute of Genetics, Mishima, Japan.

77 - 5:00 pg. 33
A highly efficient and specific gene mutagenesis technology for *Drosophila melanogaster*. **Jiang Xu**[1,2], Xingjie Ren[1], Lu-Ping Liu[1,2], Jian-Quan Ni[1]. 1) Gene Regulatory Laboratory, School of Medicine, Tsinghua University, Beijing 100084, China; 2) Tsinghua Fly Center, Tsinghua University, Beijing 100084, China.

78 - 5:15 pg. 33
Golic+: Gene targeting during Oogenesis with Lethality Inhibitor and CRISPR/Cas9. **Hui-Min Chen**[1,2], Tzumin Lee[1]. 1) HHMI: Janelia Farm, Ashburn, VA; 2) Department of Neurobiology, University of Massachusetts Medical School, Worcester, MA.

79 - 5:30 pg. 33
The Genome Disruption Project: Protein tagging and gene inactivation using MiMIC. **Sonal Nagarkar Jaiswal**[1], Paolo Mangahas[1], Koen Venken[1,6], Stephanie Anguiano-Zarate[1], Theodore Busby III[1], Yuchun He[3], Benjamin Booth[5], Karen Schulze[3], Robert Levis[4], Allan Spradling[3,4], Roger Hoskin[5], Hugo Bellen[1,2,3]. 1) Molecular and Human Genetics, Baylor college of medicine, Houston, TX; 2) Program in Developmental Biology,BCM, Houston, TX; 3) Howard Hughes Medical Institute; 4) Department of Embryology, Carnegie Institution for Science, Baltimore, MD; 5) Life Sciences Division, LBNL, Berkeley, CA; 6) Verna and Marrs McLean Department of Biochemistry and Molecular Biology,BCM, Houston, TX.

80 - 5:45 pg. 34
An efficient and inexpensive method to generate customized phiC31 landing sites. **Jon-Michael Knapp**, Phuong M. Chung, Julie H. Simpson. HHMI/Janelia Farm Research Campus, Ashburn, VA.

81 - 6:00 pg. 34
Quantitative phenotyping of Drosophila larvae crawling with predictive power. **Maximilian N. Guenther**, George T. Shubeita. Center for Nonlinear Dynamics and Department of Physics, Institute for Cellular and Molecular Biology, The University of Texas at Austin, Austin, Tx 78712.

82 - 6:15 pg. 35
Light-induced elimination of protein function *in vivo*. **Dave Stein**. Department of Molecular Biosciences, University of Texas, Austin, TX.

CONCURRENT PLATFORM SESSIONS

FRIDAY, MARCH 28 4:30-6:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

RNA Biology

Co-Moderators: Susan Celniker, Lawrence Berkeley National Laboratory, California and Paul Lasko, McGill University, Montreal, Canada

Room: California

83 - 4:30 pg. 35
Diversity and Dynamics of the Drosophila Transcriptome. **James B. Brown**, The Celniker modENCODE Transcription Consortium. Genome Dynamics, Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA.

84 - 4:45 pg. 35
Suppressor of sable [Su(s)] and its partner Wdr82 promote the production of short unstable RNAs from Hsp70-αβ elements. **Lillie L. Searles**[1,2], Paul Brewer-Jensen[1], Lonna Mollison[2], Carrie B. Wilson[1], John Abernethy[1], Samantha Card[1]. 1) Dept Biol, Univ North Carolina, Chapel Hill; 2) Curriculum in Genetics and Mol Biol, Univ North Carolina, Chapel Hill.

85 - 5:00 pg. 36
Smg5 is critical for multiple NMD pathways. **Jonathan O. Nelson**[1], Dominique Förster[2], Stefan Luschnig[2], Mark M. Metzstein[1]. 1) Human Genetics, Univ of Utah, Salt Lake City; 2) IMLS, Univ of Zurich, Switzerland.

86 - 5:15 pg. 36
Unusual origin of *Drosophila* RNase P RNA from the intron of a *pol II*-regulated transcript. **Sathiya Narayanan Manivannan**[1], Lien Lai[2], Venkat Gopalan[1,2,3], Amanda Simcox[1,3]. 1) Molecular Cellular Developmental Biology program, Ohio State Univ, Columbus; 2) Dept of Chemistry and Biochemistry, Ohio State Univ, Columbus; 3) Dept of Molecular Genetics, Ohio State Univ, Columbus.

87 - 5:30 pg. 36
Regulated stop codon readthrough yields C-terminal protein extensions in *Drosophila melanogaster*. **Joshua G. Dunn**[1,2,3,4], Catherine K. Foo[1,2,3], Nicolette G. Belletier[5], Elizabeth R. Gavis[5], Jonathan S. Weissman[1,2,3,4]. 1) Department of Cellular and Molecular Pharmacology, UCSF, San Francisco, CA; 2) California Institute of Quantitative Biosciences, San Francisco, CA; 3) Howard Hughes Medical Institute, UCSF; 4) Center for RNA Systems Biology, UCSF and University of California, Berkeley, CA; 5) Department of Molecular Biology, Princeton University, NJ.

88 - 5:45 pg. 37
IRES-Mediated Translation of *grk* mRNA During Drosophila Oogenesis. Jacob A. Merle, Danielle E. Hindes, Malachi A, Blundon, Maya D. Mills, Matthew A. Fountain, **Scott B. Ferguson**. Departments of Biology, Chemistry and Biochemistry, SUNY Fredonia, Fredonia, NY.

89 - 6:00 pg. 37
piRNAs and epigenetic conversion in *Drosophila* . **Catherine Hermant**, Antoine Boivin, Laure Teysset, Augustin de Vanssay, Valérie Delmarre, Christophe Antoniewski, Stephane Ronsseray. Laboratoire de Biologie du Développement- UMR7622-CNRS-Université Pierre Marie Curie, Paris.

90 - 6:15 pg. 37
Ribosomal protein RACK1 is a specific host factor required for IRES-mediated translation of fly and human viruses. **Carine Meignin**[1], Karim Majzoub[1], Mohamed Lamine Hafirassou[2], Stefano Marzi[3], Franck Martin[3], Thomas Baumert[2], Catherine Schuster[2], Jean-Luc Imler[1]. 1) IBMC UPR9022, University of Strasbourg, Strasbourg, France; 2) UMR 1110, University of Strasbourg, Strasbourg, France Institut de Virologie; 3) IBMC UPR9002, University of Strasbourg, Strasbourg, France.

Notes

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 29 8:30-10:15 AM

Presenting author is in **bold**. Full abstracts can be found online.

Cell Biology and Signal Transduction

Co-Moderators: Christian Böekel, Technische Universitat, Dresden, Germany and Esther Verheyen, Simon Fraser University, Burnaby, Canada

Room: Town & Country

91 - 8:30 pg. 38
Calpain A regulates NFkappaB function during embryogenesis and the immune response by limited Cactus proteolysis. Marcio Fonetenele[1,2], Maira Cardoso[1], Bomyi Lim[4], Daniela Oliveira[1], David Perlman[3], Trudi Schupbach[3,5], **Helena Araujo**[1,2]. 1) Institute for Biomedical Sciences, Fed Univ Rio de Janeiro, Rio de Janeiro, Brazil; 2) National Institute for Molecular Entomology - INCT/INEM, Brazil; 3) Molecular Biology Department, Princeton University; 4) Lewis Sigler Institute for Integrative Genomics, Princeton University; 5) Howard Hughes Medical Institute.

92 - 8:45 pg. 38
GTPase Regulatory Proteins control Organ Size through Hippo Signalling. **Lucas G. Dent**[1,2], Kieran F. Harvey[1]. 1) Cell Growth and Proliferation Laboratory, Peter MacCallum Cancer Centre, Melbourne, VIC, Australia; 2) Pathology, University Of Melbourne, Melbourne, VIC, Australia.

93 - 9:00 pg. 39
Cytoneme-mediated contact-dependent transport of the Drosophila Decapentaplegic signaling protein. **Sougata Roy**, Hai Huang, Thomas B. Kornberg. Cardiovascular Research Institute, University of California San Francisco, San Francisco, CA.

94 - 9:15 pg. 39
ERK interactome perturbations induced by mutations of docking domains. **Liu Yang**[1], Alan Futran[2], A. James LInk[2], Stanislav Y. Shvartsman[2], Alexey Veraksa[1]. 1) Biology, UMass Boston, Boston, MA; 2) Chemical and Biological Engineering, Princeton University, Princeton, NJ.

95 - 9:30 pg. 39
A novel Talin-dependent mechanism mediates clustering of integrin adhesion receptors to reinforce tissue architecture. **Emily E. Lostchuck**[1], Stephanie J. Ellis[1], Benjamin T. Goult[2], Mohamed Bouaouina[3], Michael J. Fairchild[1], David A. Calderwood[3], Guy Tanentzapf[3]. 1) Cell and Physiological Sciences, University of British Columbia, Vancouver, British Columbia, Canada; 2) Dept. of Biochemistry, University of Leicester; 3) Dept. of Pharmacology, Yale University School of Medicine.

96 - 9:45 pg. 40
The surprising case of Wingless or how not to be a morphogen. **Luis Alberto Baena-Lopez**, Cyrille Alexandre, Jean-Paul Vincent. Developmental Biology, NIMR. MRC. London, United Kingdom.

97 - 10:00 pg. 40
Mechanisms of Notch-Src synergy in *Drosophila*. **Diana M. Ho**, S. K. Pallavi, Spyros Artavanis-Tsakonas. Dept. of Cell Biology, Harvard Medical School, Boston, MA.

Drosophila Models of Human Disease I

Co-Moderators: Tian Xu, Yale University, New Haven, Connecticut and Bing Zhang, University of Missouri, Columbia

Room: Golden West

98 - 8:30 pg. 40
Role of the microbiota in a Drosophila model of intestinal barrier dysfunction. **Rebecca Clark**, David Walker. Dept. of Integrative Biology and Physiology, UCLA, Los Angeles, CA.

99 - 8:45 pg. 41
The formation of Hopscotch-induced hemocyte tumors requires the JAK/STAT transcriptional target Gα73B. **Martin P. Zeidler**, Nina Bausek. Biomedical Science, The University of Sheffield, Sheffield, United Kingdom.

100 - 9:00 pg. 41
The Transposon Storm Hypothesis of Neurodegeneration. **Joshua T. Dubnau**[1], Nabanita Chatterjee[1], Rebeca Borges[1,2], Lisa Krug[1,3], Lisa Prazak[1], Will Donovan[1,3], Anais Julien[1,4]. 1) Cold Spring Harbor Lab, Cold Spring Harbr, NY; 2) The Undergraduate Program on Genomic Sciences of the Nacional Autonomous University of Mexico; 3) Watson School of Biological Sciences, Cold Spring Harbor Laboratory; 4) Magistère de Génétique Graduate Program at Université Paris Diderot, Sorbonne Paris Cité, France.

101 - 9:15 pg. 41
Regulatory Network in Diet-induced Obesity and Lipotoxic Cardiomyopathy. **Soda Diop**, Rolf Bodmer. Development and Aging Program, Sanford Burnham Medical Research Institute, La Jolla, CA.

102 - 9:30 pg. 42
TDP-43 neurotoxicity is modulated by Fragile X Protein and Futsch in a Drosophila model of Amyotrophic Lateral Sclerosis. **Alyssa Coyne**[1,2,3], Shizuka Yamada[1,2,3], Patricia Estes[1,2,3], Donovan Lockwood[1,2,3], Michael Hart[4], Brian Freibaum[5], Joel Cassel[6], Allen Reitz[6], J. Paul Taylor[5], Aaron Gitler[4], Daniela Zarnescu[1,2,3]. 1) Department of Molecular and Cellular Biology, University of Arizona, Tucson, AZ; 2) Department of Neuroscience, University of Arizona, Tucson, AZ; 3) Department of Neurology, University of Arizona, Tucson, AZ; 4) Department of Genetics, Stanford University, Stanford, CA; 5) Department of Neurobiology, St. Jude Children's Research Hospital, Memphis, TN; 6) ALS Biopharma LLC, Philadelphia, PA.

103 - 9:45 pg. 42
Investigating Resistance and Tolerance to Cancer. **Adler R. Dillman**, David S. Schneider. Microbiology and Immunology, Stanford, Stanford, CA.

104 - 10:00 pg. 42
Flies and humans with prickle mutations exhibit similar epilepsy syndromes. **Salleh Ehaideb**[1,2], Atulya Iyengar[2], Katie Cranston[2], Alexander G. Bassuk[3], David Gubb[4], Chun-Fang Wu[2], J. Robert Manak[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) Department of Pediatrics, Carver College of Medicine, University of Iowa, Iowa City, IA; 4) Centre National de la Recherche Scientifique, Institut de Biologie Moléculaire et Cellulaire, Strasbourg Cedex, France.

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 29 8:30-10:15 AM

Presenting author is in **bold**. Full abstracts can be found online.

Regulation of Gene Expression I

Co-Moderators: Michael Levine, University of California, Berkeley and Lori Pile, Wayne State University, Detroit, Michigan

Room: California

105 - 8:30 pg. 43
Genome-wide binding of K50 family transcription factors. **Rhea R. Datta**[1], Jia Ling[1], Leila Shokri[2], Anastasia Vedenko[2], Martha L. Bulyk[2], Steve Small[1]. 1) Dept of Biology, New York Univ; 2) Division of Genetics, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA.

106 - 8:45 pg. 43
Co-option of a Hox-regulated network underlies a morphological novelty in Drosophila melanogaster. **Mark Rebeiz**, William Glassford, Chas Elliot, Winslow Johnson. Biological Sciences, University of Pittsburgh, PIttsburgh, PA.

107 - 9:00 pg. 44
A simple model of gradient interpretation can explain the precise pattern of *even skipped* in the *Drosophila* embryo. **Garth R. Ilsley**[1], Jasmin Fisher[2,3], Rolf Apweiler[4], Angela H. DePace[5], Nicholas M. Luscombe[1,6,7]. 1) Okinawa Inst of Science and Technology Graduate Univ, Japan; 2) Microsoft Research Cambridge, UK; 3) Dept of Biochemistry, Univ of Cambridge, UK; 4) European Molecular Biology Laboratory, European Bioinformatics Inst, Wellcome Trust Genome Campus, UK; 5) Dept of Systems Biology, Harvard Medical School, Boston, MA; 6) UCL Genetics Institute, Dept of Genetics, Evolution and Environment, Univ College London, UK; 7) London Research Inst, Cancer Research UK.

108 - 9:15 pg. 44
Zelda potentiates morphogen binding in the early embryo. **Sun Melody Foo**[1], Yujia Sun[1], Bomyi Lim[2,3], Kai Chen[4], Ruta Ziukaite[1], Julia Zeitlinger[4], Stanislav Shvartsman[2,3], Christine Rushlow[1]. 1) Dept of Biology, New York; 2) Dept of Chemical and Biological Engineering, Princeton University, NJ; 3) Lewis-Sigler Inst for Integrative Genomics, Princeton Univ, Princeton, NJ; 4) Stowers Inst for Medical Research, Kansas City, MO.

109 - 9:30 pg. 44
Spatial expression of a comprehensive set of Drosophila transcription factors reveals novel insights into regulatory networks. **Erwin Frise**[1], Ann Hammonds[1], Siqi Wu[1,2], Antony Joseph[1,2], Richard Weiszmann[1], William Fisher[1], Bin Yu[2], Susan Celniker[1]. 1) BDGP/Genome Dynamics, Lawrence Berkeley National Labs, Berkeley, CA; 2) Dept. of Statistics, UCB, Berkeley, CA.

110 - 9:45 pg. 45
Direct Quantification of Transcriptional Regulation at an Endogenous Gene Locus. **Heng Xu**[1,3], Anna Sokac[1], Ido Golding[1,2,3]. 1) Dept of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, TX; 2) Center for Theoretical Biological Physics, Rice Univ, Houston, TX; 3) Center for the Physics of Living Cells, Univ of Illinois at Urbana-Champaign.

111 - 10:00 pg. 45
Characterizing the dynamics of Yan polymerization, DNA binding and transcriptional repression during RTK-regulated cell fate transitions. **Jean-Francois Boisclair Lachance**[1,3], Nicolás Peláez[2,3], Arnau Gavalda[2,3], Luís Amaral[2,3], Richard Carthew[2,3], Ilaria Rebay[1,3]. 1) University of Chicago; 2) Northwestern University, Evanston, IL; 3) Chicago Center for Systems Biology.

Notes

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 29 10:45 AM-12:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

Organelles and Trafficking

Moderator: Tina Tootle, University of Iowa, Iowa City

Room: Town & Country

112 - 10:45 pg. 45
Abl/Enabled signaling regulates Golgi architecture *in vivo*. **Ramakrishnan Kannan**, Irina Kuzina, Joy Gu, Edward Giniger. National Inst of Neurological Disorder and Stroke, National Institute of Health, Bethesda, MD.

113 - 11:00 pg. 46
Clathrin-mediated endocytosis promotes embryonic wound repair in *Drosophila*. **Miranda V. Hunter**[1], Rodrigo Fernandez-Gonzalez[1,2,3]. 1) Department of Cell and Systems Biology, University of Toronto, Toronto, Ontario, Canada; 2) Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Ontario, Canada; 3) Developmental and Stem Cell Biology Program, The Hospital for Sick Children, Toronto, Ontario, Canada.

114 - 11:15 pg. 46
Kelch functions as a ubiquitin E3 ligase required for ovarian ring canal growth. **Andrew Hudson**, Lynn Cooley. Dept Genetics, Yale Univ Sch Medicine, New Haven, CT.

115 - 11:30 pg. 46
An AP-1-dependent E-Cadherin recycling defect reveals a role for E-Cadherin in ring canals anchoring in Drosophila germline cysts. **Nicolas Loyer**, Irina Kolotuev, Roland Le Borgne. IGDR, Rennes, France.

116 - 11:45 pg. 47
Mitotic Spatial Organization and Structural Morphology of the Endoplasmic Reticulum are Independently Regulated. **Zane J. Bergman**, Justin D. Mclaurin, Blake Riggs. Biology, San Francisco State University, San Francisco, CA.

117 - 12:00 pg. 47
Rab GTPases and BMP signalling regulate exosome secretion by controlling distinct endolysosomal trafficking events in *Drosophila* secondary cells. **Siamak Redhai**, Laura Corrigan, Aaron Leiblich, Shih-Jung Fan, Mark Wainwright, Carina Gandy, Sumeth Perera, Deborah Goberdhan, Clive Wilson. Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom.

118 - 12:15 pg. 47
Fbxl7 is an F-box protein that functions with the atypical cadherin Fat to control tissue size and shape. **Justin A. Bosch**, Taryn Sumabat, Kevin Gandhi, Iswar K. Hariharan. Molecular and Cell Biology, University of California - Berkeley, Berkeley, CA.

Drosophila Models of Human Disease II

Co-Moderators: Gabrielle Boulianne, Hospital for Sick Children, Toronto, Canada and John Manak, University of Iowa, Iowa City

Room: Golden West

119 - 10:45 pg. 48
A novel gene, *SAD*, is required for axonal integrity in aging - a discovery from an unbiased genetic screen using the *Drosophila* wing as a model. **Yanshan Fang**[1], Xu Cao[1], Xiuyin Teng[2], Qinqin Li[1], Yongqing Zhu[2], Nancy Bonini[2]. 1) SIOC, IRCBC, Chinese Academy of Sciences, Shanghai, China; 2) HHMI, Univ of Pennsylvania, Philadelphia, PA.

120 - 11:00 pg. 48
Quantification of *Drosophila* insulin reveals genetic mechanisms of human diabetes risk. **Sangbin Park**, Ronald W. Alfa, Sydni M. Topper, Grace E. S. Kim, Lutz Kockel, Seung K. Kim. Developmental Biology, Stanford University School of Medicine, Standford, CA.

121 - 11:15 pg. 49
Common responses of Drosophila and mammalian cells to novel lipid-lowering drugs. **Kseniya Golovnina**[1], Kirsten Tschapalda[2,3], Zhuyin Li[4], Min Shen[4], Matthew Boxer[4], Brian Oliver[1], Mathias Beller[2]. 1) NIH/NIDDK, Bethesda, MD; 2) Institute for Mathematical Modeling of Biological Systems, Heinrich Heine University, Düsseldorf, Germany; 3) Department of Chemical Biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany; 4) NIH/NCATS, Rockville, MD.

122 - 11:30 pg. 49
Exploiting Drosophila as a platform to develop anti-amyloid strategies. **Pedro Fernandez-Funez**[1,2], Jonantan Sanchez-Garcia[1], Swati Khare[1], Alfonso Martin-Peña[1], Diego Rincon-Limas[1,2]. 1) Dept Neurology, Univ Florida, Gainesville, FL; 2) McKnight Brain Institute, Genetics Institute, and Center for Translational Research on Neurodegenerative Disorders.

123 - 11:45 pg. 49
H^+ Efflux Enables Cancer Cell Behaviors. **Bree K. Grillo-Hill**, Mario Esquivel, Diane L. Barber. Cell and Tissue Biology, Univ California, San Francisco, San Francisco, CA.

124 - 12:00 pg. 50
Characterization of the leukemogenesis activity of the human Nup98-HoxA9 oncoprotein using Drosophila as a model system. **Gwenaelle Gavory**, Caroline Baril, Gawa Bidla, Marc Therrien. IRIC, University of Montreal, Montreal, Quebec, Canada.

125 - 12:15 pg. 50
Mitochondrial i-AAA protease deficiency leads to neuromuscular degeneration through apoptotic cell death. **Yun Qi**, Hong Xu. GDBC, NHLBI, Bethesda, MD.

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 29 10:45 AM-12:30 PM

Presenting author is in **bold**. Full abstracts can be found online.

Gene Expression and Chromatin II

Moderator: Maya Capelson, University of Pennsylvania, Philadelphia

Room: California

126 - 10:45 pg. 51
A new paternal effect lethal is required to prime paternal chromatin for embryonic mitosis. **Mia T. Levine**[1], Helen M. Vander Wende[1], Harmit S. Malik[1,2]. 1) Division of Basic Sciences, Fred Hutchinson Cancer Research Center Seattle, WA; 2) HHMI.

127 - 11:00 pg. 51
The Epigenome of Evolving Drosophila Neo-Sex Chromosomes: Dosage Compensation and Heterochromatin Formation. **Qi Zhou**[1], Chris Ellison[1], Vera Kaiser[1], Artyom Alekseyenko[2], Andrey Gorchakov[2,3], Doris Bachtrog[1]. 1) Integrative Biology, University of California, Berkeley, Berkeley, CA; 2) Department of Genetics, Harvard Medical School; 3) Institute of Molecular and Cellular Biology, Novosibirsk, Russia.

128 - 11:15 pg. 51
The weak shall lead the strong: Low-affinity transcription factor binding sites in morphogen gradient responses and enhancer evolution. David Lorberbaum[1,2], Andrea Ramos[1,2], Victoria Blake[1], Charles Katzman[1], David Parker[1], Christina Swanson[1,3], **Scott Barolo**[1,2]. 1) Dept. of Cell & Developmental Biology, University of Michigan Medical School, Ann Arbor, MI; 2) Program in Cellular and Molecular Biology, University of Michigan Medical School, Ann Arbor, MI; 3) Current address: Dept. of Biology, UNC Chapel Hill, NC.

129 - 11:30 pg. 52
Analysis of transcription factors binding footprints at developmental enhancers using ChIP-nexus, a novel ChIP-exo protocol. Qiye He[1], Jeff Johnston[1], **Julia Zeitlinger**[1,2]. 1) Stowers Institute for Medical Research, Kansas City, MO; 2) The University of Kansas School of Medicine, Department of Pathology and Laboratory Medicine, Kansas City, KS.

130 - 11:45 pg. 52
K27me3 and CTCF demarcate cis-regulatory domains in the Drosophila bithorax complex. **Sarah K. Bowman**[1,2], Aimee M. Deaton[1,2], Peggy Wang[1], Heber Domingues[3], Robert E. Kingston[1,2], Welcome Bender[3]. 1) Massachusetts General Hospital, Dept. of Molecular Biology, Boston, MA; 2) Harvard Medical School, Dept. of Genetics, Boston, MA; 3) Harvard Medical School, Dept. of Biological Chemistry and Molecular Pharmacology, Boston, MA.

131 - 12:00 pg. 52
Intrinsically random decisions and interchromosomal communication control stochastic expression in the fly eye. **Robert J. Johnston**. Department of Biology, Johns Hopkins University, Baltimore, MD.

132 - 12:15 pg. 53
The function of Zelda in establishing early embryonic genome organization. **Katharine N. Schulz**[1], Daniel J. McKay[2], Danielle C. Hamm[1], Jason D. Lieb[3], Melissa M. Harrison[1]. 1) Dept. of Biomolecular Chemistry, University of Wisconsin, Madison, WI; 2) Dept. of Biology, The University of North Carolina, Chapel Hill, NC; 3) Dept. of Molecular Biology, Princeton University, Princeton, NJ.

Notes

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 29 4:00-6:00 PM

Presenting author is in **bold**. Full abstracts can be found online.

Immunity and Pathogenesis

Co-Moderators: Sara Cherry, University of Pennsylvania, Philadelphia and Rui Zhou, Sanford-Burnham Medical Research Institute, San Diego, California

Room: Town & Country

133 - 4:00 pg. 53
PVR controls the antiviral ERK pathway in the *Drosophila* gut. **Christine L. Sansone**, Jie Xu, Ari Yasunaga, Beth Gordesky-Gold, Sara Cherry. Microbiology, University of Pennsylvania, Philadelphia, PA.

134 - 4:15 pg. 53
Epigenetic regulation of the antiviral Jak-Stat pathway by the histone methyltransferase *G9a* in *Drosophila*. **Sarah Merkling**, Walter Bronkhorst, Gijs Overheul, Jamie Kramer, Annette Schenck, Ronald van Rij. Radboud University Nijmegen Medical Center, Nijmegen Institute for Molecular Life Sciences, Nijmegen, The Netherlands.

135 - 4:30 pg. 54
Extracellular adenosine regulates complex host-pathogen interactions through the energy release for the immune response. **Tomas Dolezal**[1,2], Adam Bajgar[2], Katerina Kucerova[2], Lucie Jonatova[2], David Schneider[1]. 1) Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA; 2) Faculty of Science, University of South Bohemia in Ceske Budejovice, Czech Republic.

136 - 4:45 pg. 54
Drosophila-associated microbes promote host protein metabolism to rescue lifespan and development during malnutrition. **Ryuichi Yamada**, William Ja. Metabolism and Aging, The Scripps Research Institute, Jupiter, FL.

137 - 5:00 pg. 54
The serine protease homolog *novi* is involved in sensing of pathogenic Gram positive bacteria. **Jelena Patrnogic**, Vincent Leclerc, Jean-Marc Reichhart. Institut de Biologie Moléculaire et Cellulaire, CNRS UPR9022, 15 rue René Descartes, Strasbourg, France.

138 - 5:15 pg. 55
Origin, anatomy and proliferative capacity of adult hemocytes in Drosophila. Kalpana Makhijani[1], Brandy Alexander[1], Christa Rhiner[4], Eduardo Moreno[4], **Katja Brückner**[1,2,3]. 1) Dept. Cell and Tissue Biology; 2) Broad Center of Regeneration Medicine and Stem Cell Research; 3) CVRI; University of California San Francisco, CA; 4) University of Bern, Switzerland.

139 - 5:30 pg. 55
Protein restriction enhances anti-bacterial immunity through Target of Rapamycin and posttranslational regulation of Myc by protein phosphatase 2A. **Jung-Eun Lee**, Scott Pletcher. University of Michigan, Ann Arbor, MI.

140 - 5:45 pg. 55
Cholera toxin disrupts intestinal epithelial integrity by inhibiting junctional transport. **Annabel E. Guichard**[1], Beatriz Cruz Moreno[1], Berenice Aguilar[2], Nina van Sorge[2], Jennifer Kuang[1], Adrianne Kurkciyan[1], Zhipeng Wang[4], Saiyu Hang[4], Guillaume Pineton de Chambrun[3], Declan McCole[3], Paula Watnick[4], Victor Nizet[2], Ethan Bier[1]. 1) Dept Biology, Univ California, San Diego, La Jolla, CA; 2) Dept Pediatrics, Univ California, San Diego, La Jolla, CA; 3) Dept Medicine, Univ California, San Diego, La Jolla, CA; 4) Children's Hospital, Boston, MA 02115.

Neurophysiology and Behavior

Co-Moderators: Chi-Hon Lee, National Institute of Child Health and Human Development, NIH, Bethesda, Maryland and Noreen Reist, Colorado State University, Fort Collins

Room: Golden West

141 - 4:00 pg. 56
Taste of fatty acids - a new modality in *Drosophila*. **Pavel Masek**, Alex Keene. Biology Department, University of Nevada Reno, Reno, NV.

142 - 4:15 pg. 56
Acoustic Duetting During Courtship in *Drosophila virilis*. **Kelly M. LaRue**[1,2], Gordon J. Berman[1,3], Tristan Perez[1,2], Georgia Guan[1,2], David L. Stern[4], Mala Murthy[1,2]. 1) Molecular Biology, Princeton University, Princeton, NJ; 2) Princeton Neuroscience Institute, Princeton University, Princeton, NJ; 3) Lewis Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ; 4) Howard Hughes Medical Institute, Janelia Farm Research Campus, Ashburn, VA.

143 - 4:30 pg. 57
Genetic and molecular bases of noxious cold detection in *Drosophila* larvae. **Kevin Armengol**[1], Heather Turner[2], Srividya C. Iyer[1], Luis Sullivan[1], Eswar P. R. Iyer[1], Christian Landry[2], Michael J. Galko[2], Daniel N. Cox[1]. 1) Krasnow Institute, School of Systems Biology, George Mason University, Fairfax, VA; 2) Dept. of Biochemistry & Molecular Biol, Dept. of Genetics, UT MD Anderson Cancer Center, Houston, TX.

144 - 4:45 pg. 57
Translational profiling of clock cells reveals circadianly synchronized protein synthesis. **Yanmei Huang**, Joshua Ainsley, Leon Reijmers, F. Rob Jackson. Department of Neuroscience, Tufts University School of Medicine, Boston, MA.

145 - 5:00 pg. 57
Synaptic microcircuits control Drosophila sleep and arousal. **Divya Sitaraman**[1,2], Yoshinori Aso[2], Gerald Rubin[2], Michael Nitabach[1,2]. 1) Yale University School of Medicine, New Haven, CT; 2) Janelia Farm Research Campus, HHMI Ashburn, VA.

146 - 5:15 pg. 58
Serotonin motivates feeding behavior and appetitive memory performance in Drosophila. **Stephanie D. Albin**[1], Karla R. Kaun[1,2], Phuong Chung[1], Jon-Michael Knapp[1], Ulrike Heberlein[1], Julie H. Simpson[1]. 1) HHMI Janelia Farm, Ashburn, VA; 2) Brown University, Providence, RI.

147 - 5:30 pg. 58
A novel high-throughput mechanical nociception paradigm suggests a role for neuropeptides in nociception behavior. **W. D. Tracey**, Melissa Gottron, Ken Honjo. Dept Anesthesiology, Duke Univ Med Ctr, Durham, NC.

148 - 5:45 pg. 58
Drosophila larvae establish a *radish*-dependent anesthesia resistent memory after aversive olfactory conditioning. **Annekathrin Widmann**, Andreas Thum. Biology, University, Konstanz, Germany.

CONCURRENT PLATFORM SESSIONS

SATURDAY, MARCH 29 4:00-6:00 PM

Presenting author is in **bold**. Full abstracts can be found online.

Stem Cells

Co-Moderators: Michael Buszczak, UT Southwestern, Dallas, Texas and Volker Hartenstein, University of California, Los Angeles

Room: California

149 - 4:00 pg. 59
dFezf/Earmuff restricts progenitor cell potential by attenuating the competence to respond to self-renewal factors. Derek Janssens[1], Hideyuki Komori[2], Daniel Grbac[2], **Cheng-Yu Lee**[2,3,4]. 1) Program in Cellular and Molecular Biology; 2) Life Sciences Institute; 3) Department of Internal Medicine; 4) Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI, 48109, USA.

150 - 4:15 pg. 59
Neuroblasts transiently express differentiation factor Prospero in nucleus during entry into quiescence. **Sen-Lin Lai**[1,3], Chris Q. Doe[1,2,3]. 1) HHMI; 2) Institute of Molecular Biology; 3) Institute of Neuroscience, University of Oregon, Eugene, OR 97403.

151 - 4:30 pg. 59
Notch signaling and FoxA collaborate to maintain intestinal stem cells in Drosophila adult midgut. Qing Lan, Min Cao, **Huaqi Jiang**. Developmental Biology, UT Southwestern Medical Center, Dallas, TX.

152 - 4:45 pg. 60
Somatic mutation drives genetic heterogeneity and spontaneous neoplasia in the aging intestine. **Katarzyna Siudeja**, Patricia Skorski, Allison Bardin. Genetics and Developmental Biology Unit, Institut Curie, Paris, France.

153 - 5:00 pg. 60
Muscle niche ensures survival and reactivation of dormant Adult Muscle Precursors in Drosophila. **Krzysztof Jagla**, Rajaguru Aradhya. GReD, INSERM U1103, CNRS UMR6293, Clermont-Ferrand, France.

154 - 5:15 pg. 60
EGFR Regulates Epithelial Follicle Stem Cell Polarity to Facilitate Asymmetric Division. **Angela Castanieto**, Todd Nystul. University of California San Francisco, San Francisco, CA.

155 - 5:30 pg. 61
Wnt signaling in escorts cells regulate germ cell differentiation in drosophila ovary. **Su Wang**[1,2], Ting XIe[1,2]. 1) Xie's Lab, Stowers Inst Medical Research, Kansas City, MO; 2) University of Kansas Medical Center, Department of Anatomy and Cell biology, Kansas City, KS.

156 - 5:45 pg. 61
An insulin-independent requirement for the adiponectin receptor homolog in the maintenance of Drosophila melanogaster germline stem cells. **Kaitlin Laws**[1], Leesa Sampson[1], Daniela Drummond-Barbosa[1]. 1) Department of Biochemistry and Molecular Biology; Johns Hopkins Bloomberg School of Public Health; Baltimore, MD; .

Notes

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

Cell Biology and Cytoskeleton

157A pg. 61
The role of Orc6 in septin complex functions in Drosophila. **Katarina Akhmetova**[1,2], Maxim Balasov[1], Richard Huijbregts[1], Igor Chesnokov[1]. 1) Biochemistry and Molecular Genetics, UAB, Birmingham, AL; 2) Institute of Cytology and Genetics, Novosibirsk, Russia.

158B pg. 62
Tubulation and furrow ingression during epithelial formation is directed by Rab8. **J. Todd Blankenship**, Lauren Mavor, Zach Zuo. Biological Sciences, University of Denver, Denver, CO.

159C pg. 62
NMNAT Regulates Neuronal Microtubule Assembly State. **Jennifer M. Brazill**, Brandon M. Kitay, Yousuf O. Ali, R. Grace Zhai. Molecular and Cellular Pharmacology, University of Miami Miller School of Medicine, Miami, FL.

160A pg. 62
Functions of tropomyosin *in vivo*. **Aeri Cho**, Denise Montell. University of California, Santa Barbara, Santa Barbara, CA.

161B pg. 63
Drak is required for actomyosin assembly or organization during Drosophila cellularization. **Ashish B. Chougule**[1], Mary Catherine Hastert[2], Jeffrey H. Thomas[1]. 1) Cell Biology and Biochemistry, TTUHSC, Lubbock, TX; 2) Biological Sciences Imaging Center, TTU, Lubbock, TX.

162C pg. 63
Ena and Dynein Light Chain 90F may Function Together during Head Involution. **Brittany Duran**, Julie Gates. Biology Dept., Bucknell University, Lewisburg, PA.

163A pg. 63
Garz may Function with Ena During Epithelial Morphogenesis. **Rachel Franz**, Julie Gates. Biology Dept., Bucknell University, Lewisburg, PA.

164B pg. 64
Presenilin and GSK-3β control motor-cargo movement on microtubules. Kunsang Dolma, Gary Iacobucci, Kan Hong Zheng, Joseph White, **Shermali D. Gunawardena**. Biological Sciences, SUNY at Buffalo, Buffalo, NY.

165C pg. 64
Integrin regulation of filopodia during muscle migration. **Yoshiko Inoue**[1,3], Jenny Gallop[1,3], Nicholas Brown[1,2]. 1) The Gurdon Institute, Cambridge, United Kingdom; 2) Dept. of Biochemistry, University of Cambridge; 3) Dept. of PDN, University of Cambridge.

166A pg. 64
A genetic screen to identify dominant modifiers of Abl signaling during cell migration. **Megan Jackson**, Kristina M. Reiss, Christopher S. Moline, Traci L. Stevens. Biology, Randolph-Macon College, Ashland, VA.

167B pg. 65
Exploring the role of α-Actinin and Cheerio during Ventral Furrow Invagination and Dorsal Closure. **Jaime Jurado-Gomez**[1], Michael Tworoger[2], Adam C. Martin[2], Nicole Gorfinkiel[1]. 1) Centro Biologia Molecular 'Severo Ochoa', Madrid, Spain; 2) Department of Biology, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA.

168C pg. 65
Molecular dissection of the PINCH-RSU1 interaction in *Drosophila*. **Julie L. Kadrmas**[1,2], Stephen M. Pronovost[1]. 1) Huntsman Cancer Institute; 2) Oncological Sci, Univ Utah, Salt Lake City, UT.

169A pg. 65
Flapwing may Function with Ena during Head Involution and Dorsal Closure. **Rebecca LeShay**, Julie Gates. Biology Dept., Bucknell University, Lewisburg, PA.

170B pg. 66
Identifying a Kelch-Cullin3 ubiquitin ligase substrate. **Katelynn M. Mannix**, Andrew Hudson, Lynn Cooley. Genetics Dept., Yale University, New Haven, CT.

171C pg. 66
The role of microtubule-based motor proteins in Drosophila bristle development. **Anna Melkov**, Yasmin Simchoni, Anna Bakhart, Uri Abdu. Ben Gurion University, Israel, Beer Sheva, Israel.

172A pg. 66
Asymmetric distribution of the homophilic cell surface molecule Echinoid polarizes the actin cytoskeleton. **Arsida Nocka**, Laura Nilson. Biology Department, McGill University, Montreal, Quebec, Canada.

173B pg. 67
Epithelial Cell Alignment: A model of concerted cell shape changes. **Katy Lauren Ong**, Stephen DiNardo. Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA.

174C pg. 67
The conserved transmembrane proteoglycan Perdido/Kon-tiki is essential for myofibrillogenesis. **Juan José Pérez-Moreno**[1], Marcus Bischoff[2], María Dolores Martín-Bermudo[1], Beatriz Estrada[1]. 1) Centro Andaluz de Biología del Desarrollo (CSIC/UPO), Seville, Spain; 2) Biomolecular Sciences Building, University of St Andrews, Scotland, UK.

175A pg. 67
Ovhts-RC modulates cytoplasmic actin filaments in developing oocytes. **Nancy J. Pokrywka**. Dept of Biology, Vassar College, Poughkeepsie, NY.

176B pg. 68
The role for Spire in phosphoinositide-regulated hemocyte membrane trafficking and cortical remodeling. **Anette Pykalainen**, Amy Kiger. Biology, University of California, San Diego, 9500 Gilman Dr., La Jolla, 92093 CA.

177C pg. 68
The role of ER-specific proteins reticulon, lunapark, and atlastin in the early Drosophila melanogaster embryo. **Amanda M. Sims**, Rachel Coombs, Blake Riggs. San Francisco State University 1600 Holloway Avenue San Francisco, CA 94132.

178A pg. 68
Coordination of Rho family GTPase activities to orchestrate cytoskeleton responses during cell wound repair. **Jeffrey M. Verboon**, Maria Abreu-Blanco, Susan Parkhurst. Fred Hutchinson Cancer Research Institute, Seattle, WA.

179B pg. 69
Coordinating the pulsed and ratcheted contractions that drive collective apical constrictions during Drosophila gastrulation. **Shicong Xie**[1], Adam Martin[2]. 1) PhD program in Computational & Systems Biology, Massachusetts Institute of Technology,

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

Cambridge, MA; 2) Department of Biology, Massachusetts Institute of Technology, Cambridge, MA.

180C pg. 69
PIP2 regulates stability of cleavage furrow-associated proteins during cytokinesis. **Sukriye Yildirim**[1], Lacramioara Fabian[1], Raymond Wong[1,2], Ho-Chun Wei[1], Gordon Polevoy[1], Julie A. Brill[1,2,3]. 1) CELL BIOLOGY PROGRAM, THE HOSPITAL FOR SICK CHILDREN; 2) INSTITUTE OF MEDICAL SCIENCE, UNIVERSITY OF TORONTO; 3) DEPARTMENT OF MOLECULAR GENETICS, UNIVERSITY OF TORONTO.

181A pg. 69
The Role of the Drosophila Formin Frl in the Establishment of Planar Cell Polarity. **Austen A. Barnett**[1], Saw-Myat Maung[1], Gretchen Dollar[1], Cathie Pfleger[2], Andreas Jenny[1]. 1) Molecular and Developmental Biology, Albert Einstein College of Medicine, Yeshiva University, New York, NY; 2) Department of Oncological Sciences, Icahn School of Medicine, Mt. Sinai Hospital, New York, NY.

182B pg. 70
The polarity protein aPKC physically interacts with Nuf regulating vesicle trafficking. **Francisco J. Calero**, Sol Sotillos. CABD, Seville (Spain).

183C pg. 70
Structure-function analysis of Crumbs. **Shradha Das**, Elisabeth Knust. Max Planck Institute-CBG, Dresden, Saxony, Germany.

184A pg. 70
The Role of Cell Polarity in the Engulfment of Dying Germ Cells. **Sarah E. Kleinsorge**[1], Sandy Serizier[2], Tracy Meehan[2], Jeffrey Taylor[2], Kim McCall[2]. 1) GPGG, BUSM, Boston, MA; 2) Dept of Biology, Boston University, Boston, MA.

185B pg. 71
Characterization of novel interactors of the Drosophila Crumbs complex. **Ya-Huei Lin**, Elisabeth Knust. MPI-CBG, Dresden, Germany.

186C pg. 71
The Drosophila planar polarity gene multiple wing hairs regulates actin cytoskeleton. **Qiuheng Lu**, Dorothy Schafer, Paul Adler. Biology Department, Department of Cell Biology and Morphogenesis and Regenerative Medicine Institute, University of Virginia, Charlottesville, Virginia, 22904.

187A pg. 71
Apical Localization of the Integrin Heterodimer, αPS3βPS, Promotes Engulfment and Cell Corpse Processing in the Drosophila Ovary. **Tracy Meehan**[1], Allison Timmons[1], Sarah Kleinsorge[2], Jeffrey Taylor[1], Sarah Yunes[1], Kimberly McCall[1]. 1) Department of Biology, Boston University, Boston, MA; 2) Graduate Program in Genetics and Genomics, Boston University, Boston, MA.

188B pg. 72
Cell polarity and Notch signaling - an "EXTRA" job for Crumbs. **Linda Nemetschke**, Elisabeth Knust. Max Planck Institute of Molecular Cell Biology and Genetics, Pfotenhauerstr. 108, Dresden, Germany.

189C pg. 72
A Flamingo isoform lacking part of the Flamingo extracellular domain can send PCP signals in Fz -independent manner. **Jun Wu**, Marek Mlodzik. Dept. of Developmental and Regenerative Biology, Icahn Sch Medicine at Mount Sinai, New York, NY 10029.

190A pg. 72
A genetic screen identifies Rab35 and membrane trafficking regulators that control Transverse-tubule membrane remodeling required for muscle function. **Naonobu Fujita**, Wilson Huang, Amy Kiger. Section of Cell and Developmental Biology, UCSD, San Diego, CA.

191B pg. 73
Rabs and Vacuoles : The role of *Abd-B* in male accessory glands trafficking. **Elodie Prince**[1], Marko Brankatschk[2], Dragan Gligorov[1], Robert K. Maeda[1], Suzanne R. Eaton[2], François Karch[1]. 1) Genetics & Evolution, University of Geneva, GENEVA, GE, Switzerland; 2) Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany.

192C pg. 73
Egalitarian links *oskar* mRNA to motor complexes in *Drosophila* oocyte. **Paulomi B. Sanghavi**[1], Caryn Navarro[2], Graydon Gonsalvez[1]. 1) Cellular Biology and Anatomy, Georgia Regents University, Augusta, GA; 2) Biomedical Genetics Boston University School of Medicine, Boston, MA 02118.

193A pg. 74
The role of N-Cadherin in myoblast adhesion and its regulation during fusion. **Carina Braukmann**[1], Christine Dottermusch-Heidel[1], Verena Groth[2], Julia Hamp[1], Marco Rust[3], Susanne-Filiz Önel[1]. 1) Developmental Biology, Philipps Universität Marburg, Marburg, Hessen, Germany; 2) Christian-Albrechts-Universität zu Kiel, Institut für Humanernährung und Lebensmittelkunde, Molekulare Prävention, Kiel, Germany; 3) Institut für Physiologische Chemie, Philipps Universität Marburg, Hessen, Germany.

194B pg. 74
Exocyst complex are required for fusion of dense exocytotic rods to lacuna membrane in Drosophila nephrocytes to maintain highly dynamic endocytic cycling. Fujian Zhang[1], Ying Zhao[1], Tiffany Chang[1], Yufang Cao[1], Katherine Muir[1], **Zhe Han**[1,2]. 1) Dept. of Internal Medicine, University of Michigan, Ann Arbor, MI; 2) Sanford Burnham Medical Research Institute, La Jolla, CA.

195C pg. 74
Dynamin acts downstream of Tramtrack69 in the *Drosophila* ovary to promote epithelial tube expansion. **Nathaniel C. Peters**, Celeste A. Berg. Department of Genome Sciences / Molecular and Cellular Biology Program, University of Washington, Seattle, WA.

196A pg. 75
Endophilin B is required for the *Drosophila* oocyte to endocytose yolk downstream of Oskar. **Yi-Cheng Tsai**[1], Wei Chiang[1], Willisa Liou[4], Wei-Hao Lee[1], Yu-Wei Chang[1], Pei-Yu Wang[2,3], Yi-Chen Li[1], Tsubasa Tanaka[5], Akira Nakamura[5], Li-Mei Pai[1,2,3]. 1) Graduate Institute of Biomedical Sciences, Chang Gung University, Tao-Yuan, Taiwan; 2) Department of Biochemistry, Chang Gung University, Tao-Yuan, Taiwan; 3) Chang Gung Molecular Medicine Research Center, Chang Gung University, Tao-Yuan, Taiwan; 4) Department of Anatomy, College of Medicine, Chang Gung University, Tao-Yua; 5) Department of Germline Development, Division of Organogenesis, Institute of Molecular Embryology and Genetics, Kumamoto University 2-2-1 Honjo, Kumamoto 860-0811 Japan.

197B pg. 75
Dop/MAST2 kinase promotes protrusion formation during the collective migration of border cells. **George Aranjuez**[1,2], Alistair Langlands[3], Arno Müller[3], Jocelyn McDonald[1,2]. 1) Molecular Genetics, Cleveland Clinic Foundation, Cleveland, OH; 2) Genetics and Genome Sciences, Case Western Reserve University, Cleveland, OH; 3) Cell and Developmental Biology, University of Dundee, UK.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

198C pg. 75
Mechanical feedback through E-cadherin amplifies guidance signaling in collective border cell migration. **Danfeng Cai**[1,2], Mohit Prasad[1,3], Shann-Ching Chen[4], Li He[1,5], Xiaobo Wang[1,6], Valerie Choesmel-Cadamuro[6], Jessica Sawyer[1,7], Gaudenz Danuser[8], Denise Montell[1,2]. 1) Department of Biological Chemistry, Johns Hopkins University, Baltimore, MD; 2) Molecular, Cellular and Developmental Biology Department University of California, Santa Barbara, CA; 3) Department of Biological Sciences, IISER-Kolkata, West Bengal 741252, India; 4) Life Technologies, South San Francisco, CA; 5) Department of Genetics, Harvard Medical School, Boston, MA; 6) Université P. Sabatier Toulouse III, 31062 Toulouse cedex9. FRANCE; 7) Department of Pharmacology and Cancer Biology, Duke University School of Medicine, Durham, NC; 8) Department of Cell Biology, Harvard Medical School, Boston, MA.

199A pg. 76
Epithelial rotation promotes the global alignment of contractile actin filaments during Drosophila egg chamber elongation. **Maureen P. Cetera**[1], Guillermina R. Ramirez-San Juan[1], Patrick W. Oakes[1], Lindsay Lewellyn[1,3], Michael J. Fairchild[2], Guy Tanentzapf[2], Margaret L. Gardel[1], Sally Horne-Badovinac[1]. 1) University of Chicago, Chicago, IL; 2) University of British Columbia, Vancouver, BC, Canada; 3) Butler University, Indianapolis, IN.

200B pg. 76
Cytoskeletal and signaling factors act non-autonomously to regulate dorsal appendage morphogenesis. **Sandra G. Zimmerman**, Celeste A. Berg. Deptartment of Gemone Sciences, University of Washington, Seattle, WA.

201C pg. 76
Regulation of Eyes shut trafficking and rhabdomere separation by O-glucose. **Amanda Haltom**[1,2], Tom Lee[2], Beth Harvey[3], Jessica Leonardi[2,4], Yi-Jiun Chen[5], Yang Hong[5], Robert Haltiwanger[3], Hamed Jafar-Nejad[1,2,4]. 1) Program in Genes and Development, University of Texas Health Science Center, Houston, TX; 2) Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX; 3) Department of Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY; 4) Program in Developmental Biology, Baylor College of Medicine, Houston, TX; 5) Department of Cell Biology and Physiology, University of Pittsburgh School of Medicine, Pittsburgh, PA.

202A pg. 77
Actomyosin contraction assists lumen formation and expansion in Drosophila photoreceptor cells. **Jing Nie**, Simpla Mahato, Andrew Zelhof. Department of Biology, Indiana University Bloomington, Bloomington, IN.

203B pg. 77
Investigating the role of Mmp1 in cell migration using a larval epidermis wound healing model. **Erica Shannon**, Joshua Clanton, Andrea Page-McCaw. Vanderbilt University Medical Center, Nashville, TN.

204C pg. 77
Differential Roles of Dock Family Members in Development. **Bridget H. Biersmith**[1], Erika R. Geisbrecht[1,2]. 1) University of Missouri - Kansas City, Kansas City, MO; 2) Kansas State Univerity, Manhattan, KS.

205A pg. 78
Novel, tension-responsive adhesive structures mediate cell attachment to the ECM during dorsal closure. **Stephanie J. Ellis**, Katie Goodwin, Emily Lostchuck, Guy Tanentzapf. Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC, Canada.

206B pg. 78
Functional analysis of Cell-ECM adhesion during Dorsal Closure using quantitative imaging and mathematical modeling. **Katharine Goodwin**, Stephanie Ellis, Emily Lostchuck, Qiming Wang, James Feng, Guy Tanentzapf. University of British Columbia, Vancouver, Canada.

207C pg. 79
Analysis of the role of talin in force-mediated regulation of integrin turnover. **Gudlaug K. Hakonardottir**[1], Raibatak Das[3], Pablo Lopez[1], Stefan Czerniecki[1], Daniel Coombs[2], Guy Tanentzapf[1]. 1) Department of Cellular and Physiological Sciences, University of British Columbia, Life Science Institute, 2350 Health Sciences Mall, Vancouver, British Columbia V6T 1Z3, Canada; 2) Department of Mathematics and Institute of Applied Mathematics, 1984 Mathematics Road, University of British Columbia, Vancouver, British Columbia V6T 1Z2, Canada; 3) Integrative Biology, University of Colorado Denver, Denver, CO.

208A pg. 79
The stability of the integrin adhesion complex is modulated by mechanical force. **Pablo López Ceballos**[1], Guðlaug Katrín Hákonardóttir[1], Stefan Czerniecki[1], Alejandra Herrera Reyes[2], Raibatak Das[3], Daniel Coombs[2], Guy Tanentzapf[1]. 1) Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC; 2) Mathematics, University of British Columbia, Vancouver, BC; 3) Integrative Biology, University of Colorado Denver, Denver, CO.

209B pg. 79
PDZ-GEF/Rap1 regulate dynamic cell adhesion during border cell collective migration. **Ketki Sawant**[1,2], George Aranjuez[1,3], Jocelyn McDonald[1,2,3]. 1) Molecular Genetics, Lerner research institute, cleveland, OH; 2) Cleveland State university, Cleveland , Ohio; 3) Department of Genetics, School of Medicine, case Western Reserve University, OH.

210C pg. 80
Automated multidimensional image analysis reveals a role for Abl in embryonic wound repair. **Teresa Zulueta-Coarasa**[1], Rodrigo Fernandez-Gonzalez[1,2,3]. 1) Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON; 2) Department of Cell and Systems Biology, University of Toronto, Toronto, ON; 3) Developmental and Stem Cell Biology Program, The Hospital for Sick Children, Toronto, ON.

211A pg. 80
Quantification of mechanical force driving left-right asymmetric morphogenesis of the embryonic gut. **Mai Adachi**[1], Naotaka Nakazawa[1,2], Reo Maeda[2], Shukei Sugita[3], Takeo Matsumoto[3], Kenji Matsuno[1]. 1) Biological Sciences, Osaka University, Toyonaka, Japan; 2) Biological Science & Technology, Tokyo University of Science, Katsushika, Japan; 3) Mechanical Engineering, Nagoya Institute of Technology, Nagoya, Japan.

212B pg. 80
Huntingtin transports a novel class of vesicles on Drosophila larval axons. Joseph White, Shruthi Srinivasan, Kan Hong Zheng, **Shermali D. Gunawardena**. Biological Sciences, SUNY at Buffalo, Buffalo, NY.

213C pg. 81
An analysis of maternally expressed Blastoderm specific gene 25D in oogenesis and early Drosophila embryogenesis. **Michelle A. Kowanda**[1], Stephanie Yee[1], Julie Bergalet[2], Michal Wieczorek[1], Gary Brouhard[1], Eric Lécuyer[2], Paul Lasko[1]. 1) McGill University, Montreal, Quebec, Canada; 2) Institut de Recherches Cliniques de Montréal, Montreal, Canada.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

214A pg. 81
Dynamic Actin-based Extensions Mediate Myoblast Fusion in Developing Flight Muscles. **Dagan Segal**, Benny Shilo, Eyal Schejter. Department of Molecuar Genetics, Weizmann Institute of Science, Rehovot, Israel.

215B pg. 81
Fondue and Tiggrin Interaction at Muscle-Muscle Attachments. **Nicole Green**[1], Nadia Odell[2], Clara Bazjek[3], Shufei Zhuang[4], Mitch Dushay[3], Erika Geisbrecht[1]. 1) Biochemistry & Molecular Biophysics Dept., Kansas State University, Manhattan, KS; 2) Cell Biology & Biophysics Dept., University of Missouri-Kansas City, Kansas City, MO; 3) Biology Dept., Illinois Institute of Technology, Chicago, IL; 4) University of Kansas Cancer Center, Kansas University Medical Center, Kansas City, KS.

Cell Biology and Signal Transduction

216C pg. 82
Hyperphosphorylation and high levels of activity of the GPCR Smoothened are regulated by the Fused kinase. **Isabelle Becam**[1], Matthieu Sanial[1], Line Hofmann[1], Julien Béhague[1], Vanessa Gourhand[1], Robert Holmgren[2], Anne Plessis[1]. 1) Institut Jacques Monod, CNRS, Univ Paris Diderot, F-75205 Paris, France; 2) Dept. of Mol. Biosc., Northwestern Univ., Evanston, IL 60208-3500, USA.

217A pg. 82
Phosphorylation of the Smo tail is controlled by membrane localization and is dispensable for clustering. Adam P. Kupinski[2], Isabel Raabe[1], Marcus Michel[1], **Christian Boekel**[1]. 1) CRTD, TU Dresden, Dresden, Germany; 2) Faculty of Biological Sciences, University of Leeds, Leeds LS2 9JT, UK.

218B pg. 82
Characterization of a novel Wnt signaling factor regulating tissue homeostasis in the intestine of Drosophila melanogaster. **Anna-Lisa Boettcher**, Teresa Eichenlaub, Jun Zhou, Michael Boutros. Division of Signaling and Functional Genomics, German Cancer Research Center, Heidelberg, Baden-Wurttemberg, Germany.

219C pg. 83
Self-association of the APC tumor suppressor is required for the assembly, stability and activity of the Wnt signaling destruction complex. **Ezgi Kunttas-Tatli**[1], David Roberts[2], Brooke M. McCartney[1]. 1) Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA 15213; 2) Department of Biology, Franklin and Marshall College, Lancaster, PA 17604.

220A pg. 83
Genetic control of cardiac inflow tract formation. **Dalea Nodal**, Gloriana Trujillo, Richard Cripps. Biology, Univ New Mexico, Albuquerque, NM.

221B pg. 83
An *in vivo* kinome and phosphatome RNAi screen in the *Drosophila* wing imaginal disc identifies a novel regulator of Wnt/Wg secretion. **Tirthadipa Pradhan**, Esther Verheyen. SSB7152,MBB, Simon Fraser Unversity, Burnaby, BC, Canada.

222C pg. 84
Drosophila Matrix Metalloproteinase 2 inhibits Wingless signaling and the proliferation of follicle stem cells via processing of Dally-like protein. **Xiaoxi Wang**, Andrea Page-McCaw. Vanderbilt University Medical Center, Nashville, TN.

223A pg. 84
Testing the models: Direct binding of β-catenin to the 20 amino acid repeats of APC is dispensible for Wnt regulation. **Robert Yamulla**, Eric Kane, Alexandra Moody, Kristin Politi, Andrew Foley, David Roberts. Franklin & Marshall College, Lancaster, PA.

224B pg. 84
A pilot screen for deficiencies that alter wing phenotypes from overexpression of a hyperactive Smad gene. **Leeda Barikzi**[1,2], Carla Cortez[1,2], Lina Truong[1,2], Laurel Raftery[1]. 1) School of Life Sciences, University of Nevada, Las Vegas, NV; 2) Authors contributed equally to this work.

225C pg. 85
BMP signaling and extracellular matrix in the pupal wing are regulated by the receptor guanylyl cyclase Gyc76C and the cGMP-dependent kinase Foraging. Justin Schleede, **Seth S. Blair**. Dept Zoology, Univ Wisconsin, Madison, WI.

226A pg. 85
An Inwardly Rectifying K+ channel regulates Dpp Release. **Giri Raj Dahal**, Emily Bates. Developmental Biology-PEDS, Univ Colorado Denver Anschutz Medical Campus, Aurora, CO.

227B pg. 86
Mad linker phosphorylation controls the range of BMP activity in the wing imaginal disc. **Edward Eivers**, Marlyn Rios, Matthew Juarez, Fletcher Przybyla, Daniel Lee, Ashley Su, Abigail Aleman. Department of Biological Sciences, California State University Los Angeles, Los Angeles, CA. 90032-8201. USA.

228C pg. 86
A Novel Role for UDP-GlcNAc in Dpp Signal Antagonism. **Matthew J. Moulton**, Gregory B. Humphreys, Anthea Letsou. Human Genetics, University of Utah, Salt Lake City, UT.

229A pg. 86
Linker domain phosphorylation of Mad reduces its activity, independent of effects on protein levels. **Seema Patel**, Travis Parsons, Alexi Brooks, Laurel Raftery. School of Life Sciences, University of Nevada, Las Vegas, Las Vegas, NV.

230B pg. 86
Identification of novel maternal neurogenic genes that are potential components of Notch signaling in *Drosophila*. **Takuma Gushiken**[1,2], Kenjiroo Matsumoto[2], Ryo Hatori[2], Tomoko Yamakawa[2], Takeshi Sasamura[2], Kenji Matsuno[2]. 1) Department of Biological Science and Technology, Tokyo University of Science, Japan; 2) Department of Biological Science, Osaka university, Japan.

231C pg;. 87
Xylose is a novel ligand-specific regulator of Notch signaling in *Drosophila*. **Tom Van Lee**[1], Hamed Jafar-Nejad[1,2]. 1) Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX; 2) Program in Developmental Biology, Baylor College of Medicine, Houston, TX.

232A pg. 87
Roles of glycan modifications of Notch receptor in Drosophila Notch signaling. **Kenjiroo Matsumoto**, Akira Ishio, Takeshi Sasamura, Tomoko Yamakawa, Kenji Matsuno. Biological Science, Osaka University, Toyonaka, Osaka, Japan.

233B pg. 87
Drosophila TRAF2 physically interacts with Notch receptor and downregulates its signaling activity. **Abhinava K. Mishra**, Nalani Sachan, Ashim Mukherjee. Molecular and Human Genetics, Banaras Hindu University, Varanasi, Uttar Pradesh, India.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

234C pg. 88
Functions of a neurogenic gene, *pecanex* in Notch signaling. **Tomoko Yamakawa**, Yu Atsumi, Shiori Kubo, Kenji Matsuno. Osaka Univ, Osaka, Japan.

235A pg. 88
Ack regulates Dock localization to promote Drosophila spermatogenesis. **Abbas Abdallah**, James Clemens, Henry Chang. Purdue University, West Lafayette, IN.

236B pg. 88
Rap1 and PDZ-GEF contribute to the apical localization of the Sevenless receptor tyrosine kinase during Drosophila eye development. **Caroline Baril**, Martin Lefrançois, Marc Therrien. IRIC-University of Montreal, Montreal, PQ, Canada.

237C pg. 89
Investigation of novel epidermal growth factor receptor target genes implicated in multiple aspects of Drosophila development. **Luke Dombert**, Kristopher Krawchuk, Sean Thomas, Connor Zale, Lisa Kadlec. Department of Biology, Wilkes University, Wilkes-Barre, PA.

238A pg. 89
Screening for novel PLCγ inhibitors in *Drosophila melanogaster*. **Chitra Naidu**, Claire Rosenwasser, Todd Rosenberg, Michelle Latino, Justin Thackeray. Biology Department, Clark University, Worcester, MA.

239B pg. 90
The dorsal ridge: a TGF-alpha-like mediated morphological novelty on the Drosophila eggshell. **Matthew G. Niepielko**, Nir Yakoby. CCIB, Rutgers University, Camden, NJ.

240C pg. 90
PVR receptor tyrosine kinase is required for dorsal closure in parallel with JNK signaling. Rebecca Garlena[1], Ashley Lennox[2], **Beth Stronach**[1]. 1) Dept Micro & Mol Genetics, Univ Pittsburgh Sch Medicine, Pittsburgh, PA; 2) Dept Mol Genetics & Micro, Duke Univ Med Cntr, Durham, NC.

241A pg. 90
Src-kinases and ERK activate distinct responses to Stitcher receptor tyrosine kinase signaling during wound healing in Drosophila. **Vasilios Tsarouhas**, Liqun Yao, Christos Samakovlis. Molecular Biosciences, The Wenner-Gren Institute, Stockholm University, Stockholm, Sweden.

242B pg. 90
An *in vivo* RNAi screen identifies new regulators of invasive cell specification. **Afsoon Saadin**, Michelle Starz-Gaiano. University of Maryland Baltimore County, Baltimore, MD.

243C pg. 91
Localization of Insulin Receptor Function in Metabolic Regulation of Sleep. **Wesley L. Bollinger**[1], Katelyn Offerdahl[1], Pavel Masek[1], Yoon-Joon Kim[2], Alex Keene[1]. 1) Biology, University of Nevada, Reno, Reno, NV; 2) Life Science, Gwangju University, Gwangju, South Korea.

244A pg. 91
Pri peptides mediate ecdysone developmental timing for epidermal morphogenesis. **Helene Chanut-Delalande**[1,2], Yoshiko Hashimoto[5], Anne Pélissier-Monier[1,2], Rebecca Spokony[3], Azza Dib[1,2], Jérôme Bohère[1,2], Yvan Latapie[1,2], Philippe Valenti[1,2], Cédric Polesello[1,2], Bernard Moussian[4], Kevin White[3], Serge Plaza[1,2], Yugi Kageyama[5], François Payre[1,2]. 1) Centre de Biologie du Développement, Toulouse, France; 2) CNRS, UMR5547, Centre de Biologie du Développement, Toulouse, France; 3) Institute for Genomics and Systems Biology and Department of Human Genetics, University of Chicago, Illinois, USA; 4) Animal Genetics, Interfaculty Institute for Cell Biology, University of Tübingen, Germany; 5) Research Center for Environmental Genomics, Organization of Advanced Science and Technology, Kobe University, Japan.

245B pg. 91
Inhibition of JNK pathway by Myc under stress in Drosophila. **Jiuhong Huang**[1,2], Li He[2], Norbert Perrimon[2], Lei Xue[1]. 1) School of Life Science and Technology, Tongji University, Shanghai, China; 2) Department of Genetics, Harvard Medical School, Boston, MA.

246C pg. 92
Raw-Mediated JNK Signaling Antagonism: Keeping hyperactive JNK signaling in check. **Molly C. Jud**, Anthea Letsou. Human Genetics, University of Utah, Salt Lake City, UT.

247A pg. 92
Rab GTPases and their role in glue secretion in the larval salivary gland. **Kathryn Lantz**, Christopher Hardy, Andrew Andres. University of Nevada, Las Vegas, LAS VEGAS, NV.

248B pg. 92
Dual functionality of O-GlcNAc transferase is required for *Drosophila* development. **Daniel N. Mariyappa**[1], Xiaowei Zheng[1], Arno Muller[2], Daan van Aalten[1,3]. 1) MRC Protein Phosphorylation Unit, College of Life Sciences, University of Dundee, Dundee, Angus, United Kingdom; 2) Division of Cell and Developmental Biology, College of Life Sciences, University of Dundee, Dundee, Angus, United Kingdom; 3) Division of Molecular Microbiology, College of Life Sciences, University of Dundee, Dundee, Angus, United Kingdom.

249C pg. 93
Hemocyte-mediated repair: promoting retinal repair with MANF. **Joana Neves**, Deepak Lamba, Heinrich Jasper. Buck Institute for Research on Aging, Novato, CA.

250A pg. 93
PS2 Integrins are important for glia cell migration into the eye imaginal disc. **Ligia Tavares**, Emiliana Pereira, Rui Traquete, Andreia Correia, Nuno Amaral, João B. Relvas, Paulo S. Pereira. IBMC, Porto, Porto, Portugal.

251B pg. 93
A novel tool to monitor and specifically manipulate cells in which Yorkie is nuclear. **Ryohei Yagi**, Marc Debrunner, Franz Mayer, Konrad Basler. Institute of Molecular Life Sciences, University of Zürich, Zürich, Switzerland.

252C pg. 94
Characterization of the subcellular localization of BMP receptors. **Ilaria Alborelli**, Markus Affolter. Biozentrum, Basel, Switzerland.

253A pg. 94
JNK and DPP act in a feed-forward loop to achieve robustness during Dorsal Closure. Antoine Ducuing, Bertrand Mollereau, **Stephane Vincent**. LBMC, Ecole Normale Supérieure de Lyon, Lyon, France.

254B pg. 94
The Polarized Deposition of Basement Membrane Proteins Depends on Phosphatidylinositol Synthase and the Levels of Phosphatidylinositol 4,5-bisphosphate. **Olivier Devergne**, Karen Tsung, Gail Barcelo, Trudi Schüpbach. HHMI/Molecular Biology, Princeton University, Princeton, NJ.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

255C pg. 95
An examination of the requirement for septate junction components during morphogenesis in *Drosophila melanogaster*. **Sonia Hall**, Beth Jarvis, Robert Ward. Molecular Biosciences, University of Kansas, Lawrence, KS.

256A pg. 95
The Drosophila T-box Transcription Factor Midline Functions within the Insulin Receptor Activated Signaling Pathway to Regulate Interommatidial Bristle Formation and Cell Survival. **Sandra M. Leal**, Qichuan Chen, Sudeshna Das, Yan Zong, Robert Smith, Kelly Odom, Wisam Buti, Brielle Menegazzi. Dept Biological Sci, Univ Southern Mississippi, Hattiesburg, MS.

257B pg. 95
Functional specificity in highly conserved *Drosophila* zinc transport genes. **Christopher D. Richards**, Jessica Lye, Richard Burke. School of Biological Science, Monash University, Melbourne, Australia.

258C pg. 96
Digitor, an Essential Protein with Homology to Mammalian ATMIN is Involved in Brain Development and Oxidative Stress Pathways in Drosophila. **Saheli Sengupta**, Changfu Yao, Uttama Rath, Jack Girton, Jorgen Johansen, Kristen Johansen. Biochemistry, Biophysics & Molecular Biology, Iowa State University, Ames, IA.

259A pg. 96
Drosophila Acinus: A Genetic Link Between Autophagy and Hippo Signaling. **Lauren K. Tyra**[1], Nilay Nandi[1], Gabrielle Zuniga[2], Cecilia Esquivel[3], Helmut Krämer[1]. 1) Neuroscience, UT Southwestern Medical Center, Dallas, TX; 2) SURF Program, UT Southwestern Medical Center, Dallas, TX; 3) STARS Program, UT Southwestern Medical Center, Dallas, TX.

Cell Cycle and Cell Death

260B pg. 96
Mitotic role of SCF^{Skp2} in maintaining genome stability. **Biju Vasavan**, Nilanjana Das, Andrew Swan. Biological Sciences, University of Windsor, Windsor, Ontario, Canada.

261C pg. 97
The roles of *mir-2a* in *Drosophila* eye development. Su-Wen Cheng[2,3], Y. Henry Sun[2,3], **Yu-Chen Tsai**[1]. 1) Dept Life Science, Tung-hai Univ, Taichung, Taiwan; 2) Institute of Genetics, Yang-Ming Unv, Taipei, Taiwan; 3) Institute of Mol., Bio., Academia Sinica, Taipei, Taiwan.

262A pg. 97
Evaluating the Roles of *Blm* and *rtel* in Homologous Recombination in *D. melanogaster*. **Christopher Rota**, Susan McMahan, Jeff Sekelsky. Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC.

263B pg. 97
Mutations in C-terminal domain of Orc6 affect origin recognition complex function. **Maxim Balasov**[1], Franziska Bleichert[2], Michael Botchan[3], James Berger[3], Igor Chesnokov[1]. 1) Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham School of Medicine; 2) Miller Institute for Basic Research in Science, University of California, Berkeley; 3) Department of Molecular and Cell Biology, University of California, Berkeley.

264C pg. 98
Evaluating the requirement of Mcm10's expanded CTD in *D. melanogaster*. **Michael C. Reubens**, Tim W. Christensen. Biology, East Carolina University, Greenville, NC.

265A pg. 98
Investigating the Interaction of RecQL4 and Mcm10 in Drosophila melanogaster. **Wayne Rummings**, Michael Reubens, Lucas Hopkins, Tim Christensen. Biology, East Carolina University, Greenville, NC.

266B pg. 98
Essential role of the BLM helicase in syncytial cycles. **Eric P. Stoffregen**[1], Kathryn P. Kohl[1,2], Susan McMahon[1], Jeff Sekelsky[1,2]. 1) Department of Biology, University of North Carolina, Chapel Hill, NC 27599; 2) Curriculum in Genetics and Molecular Biology.

267C pg. 99
Intrinsic and extrinsic signals activate neural stem cell apoptosis through coordinated cell death gene expression. **Richa Arya**, Tatevik Keshishyan, Kristin White. CBRC, MGH/HARVARD, CHARLESTOWN, MA.

268A pg. 99
The role of pro-apoptotic genes in the developing *Drosophila* optic lobe cell death. **Hidenobu Tsujimura**[1], Ayaka Tsutsumi[1], Kengo Beppu[1], Yu Togane[1], Yusuke Hara[1], Hiromi Akagawa[1,2], Ryo Iiduka[1]. 1) Dept Dev Biol, Tokyo Univ Agric & Tech, Fuchu-si, Tokyo, Japan; 2) Department of Biological Production Science, Tokyo University of Agriculture and Technology.

269B pg. 99
Drosophila MOF and genome stability: a chromatin modifier to the rescue. **Arpita Sarkar**[1], Sncvl Pushpavalli[1], Manika Pal-Bhadra[1], Utpal Bhadra[2]. 1) chemical biology, IICT, Hyderabad, Andhra Pradesh, India; 2) Centre for Cellular and Molecular Biology,Hyderabad.

270C pg. 100
NuA4 Acts as a Timer in the Transition to a Postmitotic State. **Kerry Flegel**, Olga Grushko, Kelsey Bolin, Ellen Griggs, Laura Buttitta. University of Michigan, Ann Arbor, MI.

271A pg. 100
Regulation of cell death in the Drosophila ovary by Snail family genes. **Victoria Kathryn Jenkins**, Kim McCall. Department of Biology, Boston University, Boston, MA.

272B pg. 101
Salvador-Warts-Hippo pathway in a developmental checkpoint monitoring Helix-Loop-Helix regulation. **Lan-Hsin Wang**[1], Nicholas Baker[1,2,3]. 1) Genetics Dept, Albert Einstein College of Medicine, NY; 2) Developmental and Molecular Biology Dept, Albert Einstein College of Medicine; 3) Ophthalmology and Visual Sciences Dept, Albert Einstein College of Medicine.

273C pg. 101
The Drosophila effector caspase Dcp-1 regulates mitochondrial dynamics and autophagic flux via SesB. **Sharon M. Gorski**[1,2], Lindsay DeVorkin[1,2], Nancy Erro Go[1,2], Claire Hou[1,2], Annie Moradian[1], Gregg B. Morin[1,2]. 1) Genome Sciences Centre, British Columbia Cancer Agency, Vancouver, BC, Canada; 2) Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC, Canada.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

274A pg. 101
A novel Fizzy/Cdc20-dependent mechanism suppresses necrosis in neural stem cells. Chaoyuan Kuang[1], Krista Golden[2], John Damrath[2], Claudio Simon[2], Laura Buttitta[5], **Cheng-Yu Lee**[1,2,3,4]. 1) Program in Cellular and Molecular Biology; 2) Life Sciences Institute; 3) Department of Internal Medicine; 4) Department of Cell and Developmental Biology, University of Michigan Medical School; 5) Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor.

275B pg. 102
Quantitative Analysis of Drosophila Embryonic Epidermal Development. **Cody E. Narciso**[1], Jessica Freeman[1], Jochen Kurswe[2], Alexander Fletcher[2], Jeremiah Zartman[1]. 1) University of Notre Dame, IN; 2) Wolfson Centre for Mathematical Biology, Mathematical Institute, University of Oxford, Oxford, U K.

276C pg. 102
Dmp53 interacts with the Hippo pathway to regulate cell proliferation and apoptosis. **Shilpi Verghese**[1], Amit Singh[1,2,3], Madhuri Kango-Singh[1,2,3]. 1) Department of Biology, University of Dayton, OH; 2) Center for Tissue Regeneration and Engineering at Dayton (TREND); 3) Premedical Programs, Univ of Dayton, OH .

277A pg. 102
Cell death as a defence against cytosolic DNA in Drosophila. **Nazarii Vitak**[1], Karyn Johnson[2], David Sester[1], Katryn Stacey[1]. 1) School of Chemistry and Molecular Biosciences, University of Queensland, Brisbane, QLD, Australia; 2) School of Biological Sciences, University of Queensland, Brisbane, QLD, Australia.

Cell Division and Growth Control

278B pg. 103
Examination of the ER-specific Rab10 GTPase on ER partitioning during mitosis. **Elliott Holt**, Zane Bergman, Blake Riggs. Biology, San Francisco State University, San Francisco, CA.

279C pg. 103
Spindle Matrix Formation is Required for Cyclin B Localization, Nuclear Envelope Breakdown, and Cell Cycle Progression. **Jorgen Johansen**, Changfu Yao, Jack Girton, Kristen Johansen. Biochem, Biophys & Molec Biol, Iowa State Univ, Ames, IA.

280A pg. 103
Drosophila cytokinesis proteins regulate meiotic spindle assembly and homologue bi-orientation in oocytes. **Arunika Das**, Kim McKim. Waksman Institute,Rutgers University, New Jersey.

281B pg. 104
Proposed cohesin complexes in Drosophila meiosis. **Mercedes R. Gyuricza**, Kathryn B. Landy, Kim S. McKim. Waksman Institute, Rutgers University, Piscataway, NJ.

282C pg. 104
Germline progenitors escape the widespread phenomenon of homolog pairing during Drosophila development. **Eric Joyce**, C.-ting (Ting) Wu. Department of Genetics, Harvard Medical School, Boston, MA.

283A pg. 104
Analysis of Meiotic functions of Sisters Unbound Reveals Similarities to Drosophila Cohesion Proteins. **Badri Krishnan**[1], Sharon Thomas[1], Igor Zhulin[2], Hirotsugu Yamada[1], Rihui Yan[1], Bruce McKee[1]. 1) BCMB , University of Tennessee Knoxville, Knoxville, TN; 2) Department of Microbiology, University of Tennessee, Knoxville.

284B pg. 105
Synaptonemal Complex Protein c3G is required for regulating crossover frequency. **John R. Merriam**. Dept Molec/Cell/Dev Biol, Univ California, Los Angeles, CA.

285C pg. 105
Effects of SMC3 RNAi knockdown in Drosophila male meiosis. **Avik Mukherjee**. Genome Science and Technology, University of Tennessee, Knoxville, TN.

286A pg. 105
A splice variant of centrosomin (Cnn) converts mitochondria into MTOCs to facilitate sperm tail elongation. **Jieyan Chen**, Timothy Megraw. Biomedical Sciences, Florida State University, Tallahassee, FL.

287B pg. 106
The PCL acts as a sperm centriolar precursor during fertilization. **Atul Khire**[1], Stephanie Blachon[2], Tomer Avidor-Reiss[1]. 1) Department Biological Sciences, The University of Toledo, Toledo, OH-43606; 2) Hybrigenics, 3-5 impasse Reille, 75014 PARIS.

288C pg. 106
Isoform-specific functions of Mud/NuMA mediate binucleation of Drosophila male accessory gland cells. **Kiichiro Taniguchi**[1], Akihiko Kokuryo[2,3], Takao Imano[2,3], Ryunosuke Minami[4], Hideki Nakagoshi[4], Takashi Adachi-Yamada[1,2,3]. 1) Dept. Life Sci., Fac. Sci., Gakushuin University, Tokyo, Japan; 2) Inst. Biomol. Sci., Gakushuin University, Tokyo, Japan; 3) Dept. Biol., Grad. Sch. Sci., Kobe University, Kobe, Japan; 4) Grad. Sch. Nat. Sci./Tech., Okayama University, Okayama, Japan.

289A pg. 107
Small molecule screen to design a chemically defined medium supporting long-term growth of Drosophila cell lines. **Miranda Burnette**[1], Jonathan Chen[1], Jun Li[2], Jeremiah Zartman[1]. 1) Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN; 2) Department of Applied and Computational Mathematics and Statistics, University of Notre Dame, Notre Dame IN.

290B pg. 107
Troponin-I localizes cell polarity signals and is required for tumor growth. **Sergio Casas-Tinto**, Alberto Ferrus. Cajal Institute, Madrid, Spain.

291C pg. 107
A screen for Tribbles interacting genes using FijiWings, a toolkit for semi-automated wing morphometric analysis. **Leonard L. Dobens**, Anna Shipman. Sch Biological Sci, Univ Missouri, Kansas City, Kansas City, MO.

292A pg. 108
Healing a fly by increasing cell size through polyploidization and fusion. **Vicki Losick**[1], Allan Spradling[1,2]. 1) Dept Embryology, Carnegie Institution for Science, Baltimore, MD; 2) Howard Hughes Medical Institute.

293B pg. 108
CG10126 is a downstream target of EGFR signaling. **Qian Nie**, Susan Spencer. Department of Biology, Saint Louis, MO.

294C pg. 108
Non-autonomous tissue growth by endocytic regulation of Eiger and Ras signaling. **Kyoko Takino**[1,2], Shizue Ohsawa[1], Tatsushi Igaki[1,3]. 1) Lab. of Genetics, Kyoto Univ. Grad. Sch. of Biostu, Kyoto, Kyoto, Japan; 2) Division of Genetics, Kobe Univ. Grad. Sch. of Med; 3) PRESTO, Japan Science and Technology Agency.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

295A pg. 108
Identification and study of new genes involved in epithelial growth and morphogenesis. **Parvathy Venugopal**, Vincent Mirouse. GReD, Clermont University, CNRS UMR 6293, INSERM U1103, Clermont-Ferrand, France.

296B pg. 109
Regulation of Hippo signaling by EGFR-MAPK signaling through Ajuba family proteins. **Venu Reddy Bommireddy Venkata**[1,2], Ken Irvine[2]. 1) KS 338D, ACTREC, TMH, Navi Mumbai, Maharastra, India; 2) Waksman Institute, Rutgers University, Piscatway, NJ 08854.

297C pg. 109
Nitric oxide signaling in the prothoracic gland regulates growth coordination during the regeneration checkpoint. **Jacob Jaszczak**, Jacob Wolpe, Anh Dao, Adrian Halme. Department of Cell Biology, University of Virginia School of Medicine, Charlottesville, VA.

298A pg. 109
Genetic control of tissue specific growth in the larval trachea of *Drosophila*. **Paulo Leal**, Brett Bohmann, Cyril Cook, Alex Matlock, Robert Ward. Dept. of Molecular Biosciences, University of Kansas Lawrence, KS.

299B pg. 110
Non-cell autonomous tumor progression driven by cell cycle arrest. **Nakamura Mai**[1], Ohsawa Shizue[1], Igaki Tatsushi[1,2]. 1) Kyoto University, Kyoto, Sakyo-ku, Japan; 2) PRESTO, JST, Japan.

300C pg. 110
Identification of new Fat-Dachsous signaling regulators in growth control. **Yifei Zhang**, Xing Wang, Seth Blair. Zoology Dept, UW Madison, Madison, WI.

301A pg. 110
Dynein Light Chain 1 (DLC1) is required for normal growth in Drosophila Melanogaster. **Daniel Allyn Barron**, Kenneth Moberg. Dept Cell Biol, Emory Univ Sch Med, Atlanta, GA.

302B pg. 111
Regenerative signals regulate the timing of epithelial tumor development through ecdysone signaling. Thu Tran, Rebecca Garrett, Rajan Bhandari, **Adrian Halme**. Cell Biology, University of Virginia, Charlottesville, VA.

303C pg. 111
Disc overgrown (Dco) as a player in Drosophila haematopoiesis. **Lucie Jonatova**, Tomas Dolezal. University of South Bohemia, Ceske Budejovice, Czech Republic.

304A pg. 111
d-Csk regulates growth via the Hippo signaling pathway. **Hailey J. Kwon**[1], Indrayani Waghmare[1], Shilpi Verghese[1], Madhuri Kango-Singh[1,2,3]. 1) Department of Biology, University of Dayton, Dayton, OH; 2) Center for Tissue Regeneration and Engineering at Dayton, Dayton, OH; 3) Premedical Programs, University of Dayton, Dayton, OH 45469.

305B pg. 111
A role for Spaetzle in sensing and signaling during cell competition. **Lale Alpar**[1], Cora Bergantiños[2], Marc Amoyel[2], Laura A. Johnston[2]. 1) Biological Sciences, Columbia University, New York, NY; 2) Genetics and Development, Columbia University, New York, NY.

306C pg. 112
Mosaic Ribosomal protein S6 deficiency: a Minute mouse model for studying cell competition. **Laina Freyer**, Nicholas E. Baker, Bernice E. Morrow. Genetics, Albert Einstein College of Medicine, Bronx, NY.

307A pg. 112
A Transcriptional profiling approach to identify genes defining the loser cell identity in cell competition. **Iwo Kucinski**, Eugenia Piddini. Gurdon Inst, University of Cambridge, Cambridge, U K.

308B pg. 112
Mechanical processing of differential cell division during epithelial cell competition. **Alice Tsuboi**[1], Shizue Ohsawa[2], Kenji Matsuno[1], Tatsushi Igaki[2], Koichi Fujimoto[1]. 1) Graduate School Of Science, Osaka Univ., toyonaka, Japan; 2) Graduate School Of Biostudies, Kyoto Univ., Sakyo-ku, Japan.

309C pg. 113
A Drosophila model to study signaling and intercellular interactions that Promote Aggressive Tumorigenesis. **Indrayani Waghmare**[1], Shilpi Verghese[1], Austin Roebke[3], Amit Singh[1,2,3], Madhuri Kango-Singh[1,2,3]. 1) Univ of Dayton, OH; 2) Center for Tissue Regeneration and Engineering at Dayton (TREND), Univ of Dayton, OH; 3) Premedical Programs, Univ of Dayton, OH.

310A pg. 113
Identification of factors regulating regenerative growth in Drosophila imaginal discs. **Syeda Nayab Fatima Abidi**, Amanda Brock, Sumbul Jawed Khan, Rachel Smith-Bolton. CDB, UIUC, Urbana, IL.

311B pg. 113
Pattern reorganization occurs independently of cell division during Drosophila wing disc regeneration in situ. **Sandra Diaz-Garcia**[1], Antonio Baonza[2]. 1) Division of Biological Sciences, Univ of California, San Diego; 2) Centro de Biología Molecular Severo Ochoa, Universidad Autonoma de Madrid. Madrid, Spain.

312C pg. 114
Control of cell division during epithelial repair. Telmo Pereira, Marco Antunes, **Antonio Jacinto**. CEDOC - Centre for Studies in Chronic Diseases, Lisboa, Portugal.

313A pg. 114
Nucleoporin Nup98 is required for normal tissue growth and cell cycle regulation. **Kiriaki Kanakousaki**, Olga Grushko, Laura Buttitta. Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI.

314B pg. 114
Uncovering the principles of organ regeneration in *Drosophila* using whole-genome transcription profiling. **Sumbul Jawed Khan**, Syeda Nayab Fatima Abidi, Yuan Tian, Rachel K. Smith-Bolton. Cell and Developmental Biology, University of Illinois at Urbana Champaign, Urbana, IL.

315C pg. 115
Chameleon: a mutant with an increased frequency of notum-to-wing transdetermination. **Melanie I. Worley**, Iswar K. Hariharan. Molec & Cell Biol, Univ California, Berkeley, Berkeley, CA.

316A pg. 115
Zonda: a novel gene involved in autophagy and growth control. **Mariana Melani**[1], Nuria Romero[1], Julieta Acevedo[1], Joel Perez Perri[1], Eleonora Sorianello[1], Ayelen Valko[1], Milton Aguilera[2], Maria Colombo[2], Pablo Wappner[1]. 1) Fundacion Instituto Leloir-CONICET, Buenos Aires, Argentina; 2) Instituto de Histología y Embriología, Facultad de Ciencias Médicas, Universidad Nacional de Cuyo-CONICET, Mendoza, Argentina.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

317B pg. 115
Muscle organizer cells regulate myoblast proliferation during adult myogenesis in Drosophila. **Kumar Vishal**, Mary Turvy, Kevin Venczel, Lindsay Grainger, Joyce Fernandes. Department of Zoology, Maimi University, Oxford, OH.

Physiology, Organismal Growth, and Aging

318C pg. 116
Mating-Reward Reverses the Effects of Pheromone Perception in *Drosophila*. **Zachary M. Harvanek**[1,2], Christi M. Gendron[1], Brian Y. Chung[1], Scott D. Pletcher[1]. 1) Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI; 2) Medical Scientist Training Program, University of Michigan, Ann Arbor.

319A pg. 116
Drosophila embryogenesis scales uniformly across temperature in diverse species. **Steven G. Kuntz**[1,2], Michael B. Eisen[1,2,3]. 1) QB3, UC Berkeley, CA; 2) Dept of Molecular and Cell Biology, UC Berkeley, CA; 3) Howard Hughes Medical Institute, UC Berkeley.

320B pg. 117
Role of ADI1 in regulation of ER stress. **Wei-Cheng Lin**, Li-Mei Pai. Chang-Gung University, Tao-Yuan, Taiwan.

321C pg. 117
Heat stress disrupts key events in early embryonic development. **Brent L. Lockwood**, Kristi L. Montooth. Biology, Indiana University, Bloomington, IN.

322A pg. 117
Oxidative stress and the fly metabolome. **Thomas JS Merritt**, Jose M. Knee. Chemistry & Biochemistry, Laurentian University, Sudbury, Ontario, Canada.

323B pg. 117
The Fruit Fly: A Tractable System to Study Cold Tolerance. **Daniel Ricketti**[1], David Luor[1], Kosha Parikh[1], Nuray Sariaydin[1], Mohammad Khan[1], Alessio Russomanno[1], Daniel Shain[1,2], Nir Yakoby[1,2]. 1) Biology Dept, Rutgers, The State University of New Jersey, Camden; 2) Center for Computational and Integrative Biology, Rutgers, The State University of New Jersey, Camden.

324C pg. 118
A Role for Drosophila p38 MAP Kinase in Protein Homeostasis. Sarah Ryan[1], Amelia M. Burch[2], Subhabrata Sanyal[3], **Alysia D. Vrailas-Mortimer**[1]. 1) Biological Sciences, University of Denver, Denver, CO; 2) Department of Cell Biology, Emory University, Atlanta, GA; 3) BiogenIdec, Boston, MA.

325A pg. 118
Hypoxia-induced insulin resistance and associated lipid metabolism defects in *Drosophila melanogaster*. **Daniel Wong**, Julian Martinez-Agosto. Department of Human Genetics, University of California, Los Angeles, Los Angeles, CA.

326B pg. 119
Desiccation regulates innate immunity via ecdysone signaling in *Drosophila* Malpighian tubules. **Wenjing Zheng**[1], Ana Hernandez[1], Florintina Rus[2], Neal Silverman[2], Marc Tatar[1]. 1) Ecology and Evolutionary Biology Department, Brown University, Providence, RI, USA; 2) Division of Infectious Diseases, Department of Medicine, Univ of Massachusetts Medical, Worcester, MA,.

327C pg. 119
Seipin promotes adipose tissue fat storage through the ER Ca^{2+}-ATPase SERCA. **Junfeng Bi**, Wei Wang, Zhonghua Liu, Xun Huang. Institute of Genetics and Developmental Biology, CAS, Beijing, China.

328A pg. 119
The Roles of Endocannabinoids and Their Chemical Relatives in Regulating Drosophila melanogaster Metabolism. **Ruth A. Bishop**. Biology, The University of Alabama, Shreveport, LA.

329B pg. 120
Metabolism and Locomotion in Anoxic *Drosophila*. Viviane Callier[1], Steven C. Hand[2], **Jacob B. Campbell**[1], Jon F. Harrison[1]. 1) Arizona State University, Tempe, AZ; 2) Louisiana State University, Baton Rouge, LA.

330C pg. 120
Dietary and Genetic Regulation of Longevity and Neuronal Function in Drosophila. Eric Ratliff[1,2,3], Madhulika Achal[1], Roxanne Kotzebue[1,2], Arysa Gonzalez[1,2,3], Ruth Mauntz[1,3], **Kim Finley**[1,3]. 1) Shiley BioScience Center, San Diego State University, San Diego, CA; 2) Dept. Biology, SDSU; 3) Expression Drug Designs, LLC., SDSU, San Diego, CA.

331A pg. 120
Genetic and metabolic bases of thermal plasticity in *Drosophila*. **Luke A. Hoekstra**, Kristi L. Montooth. Dept Biol, Indiana Univ, Bloomington, IN.

332B pg. 121
Lost in translation: a mitonuclear interaction affecting metabolism, stress resistance and aging associated with mitochondrial tRNA mutations. **Marissa A. Holmbeck**[1], David M. Rand[2]. 1) Bio-Med, Brown University, Providence, RI; 2) Ecology and Evolutionary Biology, Brown University, Providence RI, USA.

333C pg. 121
Regulation of energy metabolism by the nuclear receptor DHR78. **Stefanie M. Marxreiter**, Carl S. Thummel. Human Genetics, University of Utah, Salt Lake City, UT.

334A pg. 121
Regulation of glucose homeostasis by *dsir2* in *Drosophila melanogaster*. **Rebecca A. Somer**, Carl S. Thummel. Human Genetics, University of Utah, Salt Lake City, UT.

335B pg. 122
Rapamycin increases mitochondrial efficiency by mtDNA-dependent reprogramming of mitochondrial metabolism in *Drosophila*. **Eugenia Villa-Cuesta**[1], Marissa Holmbeck[2], David Rand[2]. 1) BIOLOGY, DEPARTMENT OF, Adelphi University, Garden City, NY; 2) Department of Ecology and Evolutionary Biology, Brown University, RI, USA.

336C pg. 122
Comparing Nutrient Restrictions and its Effects on Metabolic Output in Drosophila melanogaster. **Rebecca A. Vaders**[1], Alexis A. Nagengast[1,2]. 1) Chemistry, Widener University, Chester, PA; 2) Biochemistry, Widener University, Chester, PA.

337A pg. 122
Mio and bigmax act in the brain to control feeding and metabolism in *Drosophila*. **James E. Docherty**, Sarah M. Rosenheck, Joseph E. Manno, Jacqueline E. McDermott, Justin R. DiAngelo. Biology, Hofstra University, Hempstead, NY.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

338B pg. 123
The Role of dTORC1 on Muscle Development, Function and Longevity in Drosophila. **Isabelle Hatfield**[1], Erika Yates[1], Lawrence Reiter[2,3], Dave Bridges[1,3]. 1) Department of Physiology, University of Tennessee Health Science Center, Memphis, TN; 2) Department of Neurology, University of Tennessee Health Science Center, 855 Monroe Avenue, Memphis, Tennessee 38163; 3) Children's Foundation Research Institute, Le Bonheur Children's Hospital, Department of Pediatrics, University of Tennessee Health Science Center, 50 North Dunlap, Memphis, TN 38103.

339C pg. 123
The Effect of Bacteria on Oviposition Preference of Drosophila melanogaster. **Geon Ho Kim**, Peter Newell, Angela Douglas. Entomology, Cornell University, Ithaca, NY.

340A pg. 123
The Modified Effects of Bisphenol A (BPA) in Response to Dietary Composition. **Ashley L. Parker**, Trisha M. Zintel, Amber K. Weiner, AnnJosette Ramirez, Sheryl T. Smith. Biology, Arcadia University, Glenside, PA.

341B pg. 123
Identification of Neurosensory Mechanism for Dietary Protein by *Drosophila melanogaster*. **Jennifer Ro**[1], Gloria Pak[2], Scott D. Pletcher[3]. 1) Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI; 2) College of Literature, Science and the Arts, University of Michigan, Ann Arbor, MI; 3) Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI.

342C pg. 124
Rapamycin reduces *Drosophila* longevity under low nutrition. **Eugenia Villa-Cuesta**[1], Rand David[2]. 1) BIOLOGY, DEPARTMENT OF, Adelphi University, Garden City, NY; 2) Department of Ecology and Evolutionary Biology, Brown University, Providence, RI , USA.

343A pg. 124
Influence of gene duplication on a critical hormone signaling pathway in Drosophila. **Aaron Baumann**, Raechel Warner, Michael Texada, Hui-Min Chen, James Truman, Lynn Riddiford. Janelia Farm Research Campus, Howard Hughes Medical Institute, Ashburn, VA.

344B pg. 124
The *Drosophila* Neuropeptide F Circuit Integrates Sleep and Feeding Behavior to Regulate Aging. **Brian Y. Chung**[1], Jenny Ro[2], Kylie Miller[3], Scott D. Pletcher[1]. 1) Molecular and Integrative Physiology, University of Michigan Medical School, Ann Arbor, MI; 2) Cellular and Molecular Biology Graduate Program, University of Michigan Medical School, Ann Arbor, MI; 3) College of Literature, Science, and the Arts, University of Michigan, Ann Arbor, MI.

345C pg. 125
The steroid deficiency protein Ecdysoneless is a pre-mRNA splicing factor. **Ann-Katrin Claudius**[1], Patrizia Romani[2], Tobias Lamkemeyer[3], Marek Jindra[4], Mirka Uhlirova[1]. 1) Institute for Genetics, CECAD Cologne, University of Cologne, Cologne, Germany; 2) Dipartimento di Biologia Evoluzionistica Sperimentale, Università di Bologna, Bologna, Italy; 3) Proteomics Facility, CECAD, University of Cologne, Cologne, Germany; 4) Biology Center, Academy of Sciences of the Czech Republic, Ceske Budejovice, Czech Republic.

346A pg. 125
Met/Gce is a *bona fide* juvenile hormone receptor. **Marek Jindra**[1,2], Jean-Philippe Charles[3], Vlastimil Smykal[1], Mirka Uhlirova[4], Ron Hill[2]. 1) Dept Gen, Biol Ctr ASCR, Ceske Budejovice, Czech Republic; 2) Animal, Food and Health Sciences, CSIRO, North Ryde NSW, Australia; 3) Université de Bourgogne, Dijon, France; 4) Institute for Genetics, CECAD Cologne, University of Cologne, Cologne, Germany.

347B pg. 126
Drosophila neurotrophin Spätzle5 is required for ecdysone synthesis. **Qiuxiang Ou**, Brian Phelps, Kirst King-Jones. Biological Sciences, University of Alberta, Edmonton, Alberta, Canada.

348C pg. 126
The effects of Bisphenol A (BPA) and Bisphenol S (BPS) on growth and development in *Drosophila*: A comparative study. **Amber K. Weiner**, Trisha M. Zintel, Ashley L. Parker, AnnJosette Ramirez, Sheryl T. Smith. Biology, Arcadia University, Glenside, PA.

349A pg. 126
Nocturnin (curled) is involved in the regulation of ecdysone production via interaction with Drosophila Hormone Receptor 4. **Jie Zeng**, Qiuxiang Ou, Kirst King-Jones. Biological Sciences, University of Alberta, Edmonton, Alberta, Canada.

350B pg. 127
Exposure of *D. melanogaster* larvae to BDE-47 is associated with altered larval growth and delayed pupal development. **Trisha M. Zintel**, Ashley L. Parker, Amber K. Weiner, AnnJosette Ramirez, Shane A. Harris, Sheryl T. Smith. Biology Dept, Arcadia University, Glenside, PA.

351C pg. 127
Does Rapamycin improve lifespan and healthspan? A test with multiple mitonuclear genotpyes and dietary treatments. **James A. Mossman**, Julia Donner, Denise Croote, Russyan Mark Mabeza, Matthew Min, Michele Koh, Neha Mehta, Emma Blake, Eugenia Villa Cuesta, David Rand. Ecology and Evolutionary Biology, Brown University, Providence, RI.

352A pg. 127
The Role of miR-310s in ovarian soma in response to dietary conditions. **Omer Cicek**, Halyna Shcherbata. MPRG of Gene Expression and Signaling, Max Planck Institute, Goettingen, Germany.

353B pg. 127
A proteomic screen towards identifying fat body factors transmitting nutritional status to stem cell lineages in the *Drosophila* ovary. **Shinya Matsuoka**[1,3], Alissa Armstrong[1,3], Leesa Sampson[1], Kaitlin Laws[1], Robert Cole[2], Daniela Drummond-Barbosa[1]. 1) Biochemistry and Molecular Biology, JHU Bloomberg School of Public Health, Baltimore, MD; 2) Mass Spectrometry and Proteomics Facility, JHU School of Medicine, Baltimore, MD; 3) These authors contributed equally.

354C pg. 128
The regulation of muscle function by Mio in *Drosophila*. **Grzegorz Polak**, Justin R. DiAngelo. Department of Biology, Hofstra Univ, Hempstead, NY.

355A pg. 128
Analysis of βv integrin mutant showing a premature aging phenotype in Drosophila adult midgut. Takashi Okumura[1,2], **Koji Takeda**[1], Kiichiro Taniguchi[1], Takashi Adachi-Yamada[1]. 1) Dept of Life Science, Gakushuin University; 2) Department of Physics, Faculty of Science and Engineering, Waseda University.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

356B pg. 128
Salivary gland subcellular organization and regulatory conservation in Anopheles mosquitoes. **Michael B. Wells**, Deborah J. Andrew. Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD.

357C pg. 129
Insulin signaling related function of Tribbles during Drosophila development. **Rahul Das**, Zach Sebo, Leonard Dobens. Cell & Molecular Biology, University of Missouri-Kansas City, Kansas City, MO 64110.

358A pg. 129
Effect of insulin signaling on sexual attractiveness and performance. **Tatyana Y. Fedina**, Scott D. Pletcher. Molecular & Integrative Physiology, University of Michigan, Ann Arbor, MI.

359B pg. 130
Quantitative Analysis of the Effects of Insulin and Tor Signalling on Ageing in Drosophla. **Corinna Hopfen**[1], Nicole Philippi[1], Linda Partridge[1,2]. 1) Max-Planck Institut for Biology of Ageing, Joseph-Stelzmann-Straβe 9b, 50931, Cologne, NRW, Germany; 2) Institute of Healthy Ageing, and G.E.E., UCL, Gower Street, London, WC1E 6BT, UK.

360C pg. 130
Regulatory mechanism of the nutrient-dependent expression of *Drosophila* insulin-like peptide gene. **Naoki Okamoto**, Takashi Nishimura. Center for Developmental Biology (CDB), RIKEN, Kobe, Hyogo, Japan.

361A pg. 130
The nutritional geometry of insulin shapes the landscape of aging. **Stephanie Post**[1], Marc Tatar[1,2]. 1) Molecular Biology, Cell Biology and Biochemistry, Brown University, Providence, RI; 2) Ecology and Evolutionary Biology, Brown University, Providence, RI.

362B pg. 131
Exploring the interface of endoplasmic reticulum stress and insulin signal transduction. **Zachary Sebo**, Rahul Das, Leonard Dobens. Division of Molecular Biology and Biochemistry, UMKC, Kansas City, MO.

363C pg. 131
Genetic regulation of regeneration. **Robin Harris**, Joshua Saul, Iswar Hariharan. MCB, University of California, Berkeley, Berkeley, CA.

364A pg. 131
Interaction proteomics identify a novel translational repressor complex involved in p38MAPK-mediated control of myoproteostasis. **Vladimir Belozerov**[1], Helen McNeill[2], Arthur Hilliker[1], John McDermott[1]. 1) Biology, York University, Toronto, ON, Canada; 2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, ON, Canada.

365B pg. 131
Genetic and Morphological Characterization of Male Reproductive Senescence. **Michelle Giedt**, Douglas Harrison. Biology Department, University of Kentucky, Lexington, KY.

366C pg. 132
Hypoxia effects on survival, fecundity and media of Drosophila. **Jon F. Harrison**, Saundra Schlessinger, Taylor Biddulph, Stephanie Heinrich, Nicole Holden, Katrina Ramsey. School of Life Sciences, Arizona State University, Tempe, AZ.

367A pg. 132
A DGRP screen to identify host response factors to growth promotion effect mediated by *Lactobacillus plantarum*. **Dali Ma**, Claire-Emmanuelle Indelicato, François Leulier. Institut de Genomique Fonctionnelle de Lyon, ENS de Lyon, Lyon, France.

368B pg. 132
Characterization of Bacterial factors underlying *Drosophila - Lactobacilli* mutualistic interactions. **Gilles Storelli**[1], Jumamurat Bayjan[2], Roland Siezen[2], Sacha Van Hijum[2], François Leulier[1]. 1) Institute of Functional Genomics Lyon (IGFL), CNRS UMR5242, Ecole Normale Supérieure de Lyon, Lyon, France; 2) Nijmegen Centre for Molecular Life Sciences, CMBI, Nijmegen, The Netherlands.

369C pg. 133
Transcription factors FTZ-F1 and Blimp-1 in fat body control the pupal development and eclosion timing in *Drosophila*. **Hitoshi Ueda**[1,2], Abdel-Rahman Sultan[2]. 1) Dept Biol, Okayama Univ, Okayama, Japan; 2) The Grad. Sch. Nat. Sci. and Tech. Okayama Univ. Okayama, Japan.

Gametogenesis and Organogenesis

370A pg. 133
Histone H1 Linker-Like and Transition Proteins involved in chromatin condensation in *Drosophila*. **Zain A. Alvi**, Tin-Chun Chu, Angela V. Klaus. Department of Biological Sciences, Seton Hall University, South Orange, NJ 07079.

371B pg. 133
Genetic analysis of the *spermeye* region. **Stephen Anderson**, Steven Hernandez, Ujwala Gosavi, Chris Bazinet. Biological Sciences, St. John's University, Queens, NY.

372C pg. 134
Nuclear and chromatin remodeling events during spermiogenesis are modulated by phosphoinositide levels. **Lacramioara Fabian**[1], Julie Brill[1,2]. 1) Program in Cell Biology, Hospital for Sick Children, Toronto, Canada; 2) Department of Molecular Genetics, University of Toronto, Toronto, M5S 1A8, Canada.

373A pg. 134
Essential roles for Profilin in the soma of the fly testes. **Michael Fairchild**, Guy Tanentzapf. Cell and Developmental Biology, University of British Columbia, Vancouver, British Columbia, Canada.

374B pg. 134
Probing glycine metabolism in Drosophila. **Ujwala Ashok Gosavi**, Christopher Bazinet. St Johns University, Jamaica, Queens, NY.

375C pg. 135
Identification of genes involved in spermatid morphogenesis. **Dorota B. Grabowska**, Arshag Mooradian, Kaushik Roychoudhury, Kathryn G. Miller. Department of Biology, Washington University, 1Brookings Drive St.Louis, MO 63130.

376A pg. 135
Phosphatidylinositol 4,5-bisphosphate is required for axoneme assembly in Drosophila melanogaster spermatids. **Alind Gupta**[1], Lacramioara Fabian[2], Julie Brill[1,2]. 1) Department of Molecular Genetics, University of Toronto, Toronto, M5S 1A8, Canada; 2) Program in Cell Biology, The Hospital for Sick Children, Toronto, M5G 0A4, Canada.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

377B pg. 135
Tudor-SN interacts with Piwi in regulating spermatogenesis in Drosophila. **Hsueh-Yen Ku**[1], Vamsi Gangaraju[1,2], Na Liu[1], Haifan Lin[1]. 1) Stem Cell Center and Dept of Cell Biology, Yale Univ School of Medicine, New Haven, CT; 2) Dept of Biochemistry and Molecular Biology, Medical Univ of South Carolina, Charleston.

378C pg. 136
Ectopic expression of male germline-specific RpL22e-like in RpL22e-depleted flies rescues embryonic lethality but causes reduced longevity and fertility. **Catherine Mageeney**, Michael Kearse, Jennifer Colquhoun, Vassie Ware. Dept. of Biological Sciences, Lehigh University, Bethlehem, PA 18015.

379A pg. 136
Lipid signaling in spermatogenesis. **Eli Miller**, Geulah Ben-David, Josefa Steinhauer. Department of Biology, Yeshiva University, New York, NY.

380B pg. 136
Analyzing the critical role of Pskl, a sperm protein, in *Drosophila* fertilization. **Trung Phan**, Barbara Wakimoto. Biology, University of Washington, Seattle, WA.

381C pg. 137
The testis-enriched ATP synthase subunit d paralog Ms(2)1400 is required for Nebenkern organization and elongation in *Drosophila* spermatogenesis. **Eric M. Sawyer**, Lindsay Regruto, Olivia Brown, Yihharn Hwang, Lauren Ivey, Karen G. Hales. Department of Biology, Davidson College, Davidson, NC.

382A pg. 137
Functional analysis of novel dual localization AAA proteins Nmd and CG4701 in mitochondrial, microtubule, and contractile ring dynamics in *Drosophila* spermatogenesis. **Bethany L. Wagner**, Devon E. Harris, Sarah C. Pyfrom, Jessica L. Gerard, Melissa E. Lorenzo, James J. Winkle, Karen G. Hales. Department of Biology, Davidson College, Davidson, NC.

383B pg. 137
Roles of individual subunits of the testis meiotic arrest complex in transcriptional control. Simona Caporilli, Robert Pickering, Daphne Davies, **Helen White-Cooper**. Sch Biosci, Cardiff Univ, Cardiff, United Kingdom.

384C pg. 138
Nuclear hormone receptor *Eip78C* controls ovarian germline stem cell niche formation and follicle growth and survival. **Elizabeth T. Ables**[1,2], Kelly E. Bois[2], Caroline A. Garcia[1], Daniela Drummond-Barbosa[2]. 1) Dept. of Biology, East Carolina University, Greenville, NC; 2) Dept. of Biochemistry and Molecular Biology, Johns Hopkins University School of Public Health, Baltimore, MD.

385A pg. 138
The roles of Cyclins A, B and B3 in *Drosophila* female meiosis. **Mohammed R. Bourouh**, Zhihao Guo, Rajdeep Dhaliwal, Sucheta Sinha. Biological Sciences, University of Windsor, Windsor, Ontario, Canada.

386B pg. 138
Sea2, a conserved SEA/GATOR2 complex component, is required for oogenesis in Drosophila. **Weili Cai**, Youheng Wei, John Reich, Mary Lilly. NICHD, National Institutes of Health, Besthesda, MD.

387C pg. 139
Purity of essence: a new E3 ubiquitin ligase family member in Drosophila oogenesis. **Paromita Gupta**[1], Christopher Bazinet[1], Janet Rollins[2]. 1) Biological Sciences, St John's University, New York, NY; 2) College of Mount Saint Vincent, New York, NY.

388A pg. 139
Finding Novel "expressways" for *gurken* Translation. **John W. Hasper**, Austie F. Lawrence, Scott B. Ferguson. Biology, SUNY Fredonia, Fredonia, NY.

389B pg. 139
Direct regulation of *broad* by the Notch pathway affects timing of follicle cell development during *Drosophila* oogenesis. **Dongyu Jia**, Wu-Min Deng. Department of Biological Science, Florida State University, Tallahassee, FL.

390C pg. 140
Investigating Function and Composition of Follicle Cell Ring Canals in Drosophila. **Ronit Kaufman**[1], Peter McLean[1], Lynn Cooley[1,2,3]. 1) Department of Genetics, Yale School of Medicine, 333 Cedar Street, New Haven, CT 06520; 2) Department of Cell Biology, Yale School of Medicine, 333 Cedar Street, New Haven, CT 06520; 3) Department of Molecular, Cellular, and Developmental Biology (MCDB), Yale University, 260 Whitney Avenue, New Haven, CT 06510.

391A pg. 140
asteroid is required for oocyte determination and DNA repair. **Julie A. Merkle**, Trudi Schüpbach. HHMI/Molecular Biology, Princeton University, Princeton, NJ.

392B pg. 141
The effects of *mad2* deficiency on *Drosophila* female meiosis. **David M. Osiecki**, William D. Gilliland. Department of Biological Sciences, DePaul University, Chicago, IL.

393C pg. 141
Cbl regulates endoreplication by controlling cytoophidia. **Li-Mei Pai**, Pei-Yu Wang. Dept Biochem & Molec Biol, Chang-Gung Univ, Tao-Yuan, Taiwan.

394A pg. 141
Deciphering Thioredoxin function during Drosophila oogenesis. **Boryana Petrova**[1], Zachary Whitfield[1,2], Terry Orr-Weaver[1,2]. 1) Whitehead Institute, Cambridge, MA 02142; 2) Dept. of Biology, Massachusetts Institute of Technology, Cambridge, MA 02142.

395B pg. 141
Ectopic expression of caspase-resistant B-type lamin in the germline results in aberrant nuclear architecture and morphology of mature oocytes. **Alla Yalonetskaya**, Elizabeth Tanner, Margaret Barkett, Jeanne Peterson, Kimberly McCall. Department of Biology, Boston University, Boston, MA.

396C pg. 142
Investigation of the Roles of Proteins that Alter Phosphorylation State upon Egg Activation in Drosophila melanogaster. **Zijing Zhang**, Amber Krauchunas, Carolyn Milano, Mariana Wolfner. Molecular Biology and Genetics, Cornell University, Ithaca, NY.

397A pg. 142
The functional and structural analysis of germline Tudor protein complex. **Ming Gao**, Patrick McCluskey, Yanyan Lin, Alexey Arkov. Murray State University, Murray, KY.

398B pg. 142
A genomic analysis of *doublesex (dsx)* targets and function in sex determination. **E. Jimenez**[1], E. Clough[2], C. Whitworth[1,2], Y. Kim[3], M. Goodwin[4], L. Hempel[2], H. Pavlou[4], Z. Chen[2], D. Sturgill[2], R. Dale[5], H. Smith[6], T. Przytycka[3], S. Goodwin[4], M. Van Doren[1], B. Oliver[2]. 1) JHU, Baltimore, MD; 2) Sect. Dev. Gen., Lab. Cell. Dev. Bio., NIDDK, NIH, Bethesda, MD; 3) Comp. Biol. Branch, NCBI, NLM, NIH, Bethesda, MD; 4) Dep. Phys., Anat. Gen., U Oxford, UK; 5) Lab. Cell. Dev. Bio., NIDDK, NIH, Bethesda, MD; 6) Gen. Core, NIH, Bethesda, MD.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

399C pg. 143
The grappa gene is target of the Doublesex transcription factors and is required for sex differentiation and gonad development. **Satish Kumar**, Emily Clough, Cale Whitworth, Brian Oliver, Doublesex Consortium. Section of Developmental Genomics, Laboratory of Cellular and Developmental Biology, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD.

400A pg. 143
Investigating the role of *Sex Lethal* in the germline of *Drosophila Melanogaster*. **Shekerah Primus**, Mark Van Doren. Department of Biology, Johns Hopkins University, Baltimore, MD.

401B pg. 143
Mechanism and targets of a seminal protein proteolysis cascade in Drosophila. **Frank W. Avila**, Brooke A. LaFlamme, Kevin Michalski, Mariana F. Wolfner. Dept Mol Biol & Gen, Cornell Univ, Ithaca, NY.

402C pg. 144
Nup50 is a lineage-specific nucleoporin required for germ cell differentiation. **Jonah Cool**[1], Leanne Jones[2], Martin Hetzer[1]. 1) MCBL, Salk Institute, La Jolla, CA; 2) MCDB, UCLA, Los Angeles, CA.

403A pg. 144
Identification of novel Akirin-interacting factors during embryonic myogenesis. **Austin Howard**, Katharine Majeski, Shelby Johnston, Aayushi Bhagwanji, Scott Nowak. Dept. of Biology and Physics, Kennesaw State University, Kennesaw, GA.

404B pg. 144
Non-canonical roles for Yorkie, Drosophila Inhibitor of Apoptosis 1, and DrICE in epithelial tube size control. **Renee M. Robbins**, Samantha C. Gbur, Greg J. Beitel. Molecular Biosciences, Northwestern Univ, Evanston, IL.

405C pg. 145
Machine learning classification of cell-specific cardiac enhancers uncovers developmental subnetworks regulating progenitor cell division and cell fate specification. **S. M. Ahmad**[1,3], B. W. Busser[1,3], D. Huang[2,3], E. J. Cozart[1], S. Michaud[1], X. Zhu[1], N. Jeffries[1], I. Ovcharenko[2], A. M. Michelson[1]. 1) NHLBI, NIH, Bethesda, MD; 2) NLM, NIH, Bethesda, MD; 3) Equally contributing authors.

406A pg. 145
Characterization of the Role of BTB Family Proteins in Embryonic Gonad Formation. **Jennifer C. Jemc**, Andrew Droste, Diane Silva, Christopher Lenkeit. Dept. of Biology, Loyola University Chicago, Chicago, IL.

407B pg. 145
Cadherin 99C regulates apical expansion and cell rearrangement during epithelial tube elongation. **Se-Yeon Chung**, Deborah Andrew. Dept Cell Biol, Johns Hopkins Univ, Baltimore, MD.

408C pg. 146
The Role of *tbc-1* in Drosophila Salivary Gland Development. **Dorothy M. Johnson**, Deborah J. Andrew. Cell Biology, Johns Hopkins School Medicine, Baltimore, MD.

409A pg. 146
Phantom and Shade, two enzymes essential for ecdysone biosynthesis, play a critical role in the control of border cell migration in *Drosophila*. **Lauren Anllo**, Elena Domanitskaya, Trudi Schüpbach. HHMI/Dept. of Molecular Biology, PRINCETON UNIVERSITY, PRINCETON, NJ.

410B pg. 146
The role of Fd64a in salivary gland migration and muscle organization. **Caitlin D. Hanlon**. Cell Biol, Johns Hopkins Med Inst, Baltimore, MD.

411C pg. 147
Live imaging of muscle development in *akirin* mutants. **Katharine Majeski**, Fatima Ali, Scott Nowak. Dept. of Biology and Physics, Kennesaw State University, Kennesaw, GA.

412A pg. 147
Traffic Jam controls the architecture of the ovarian germline stem cell niche. **Xi Chen**, Trupti Panchal, Dorothea Godt. Dept. of Cell and System Biology, University of Toronto, Toronto, Canada.

413B pg. 147
Snapshots of gene expression during pupal wing development lead to insights about cuticle and chitin deposition. **Lukasz F. Sobala**[1,2], Paul N. Adler[1]. 1) University of Virginia, Charlottesville, VA; 2) Lodz University of Technology, Lodz, PL.

414C pg. 148
Matrix metalloproteinase is required for ovulation and corpus luteum formation in *Drosophila*. **Jianjun Sun**[1], Lylah Deady[1], Sarah Mosure[1], Allan Spradling[2]. 1) Dept of Physiology & Neurobiology, Univ of Connecticut, Storrs; 2) Dept of Embryology, Carnegie Inst for Science/ HHMI, Baltimore, MD.

Stem Cells

415A pg. 148
The Hippo pathway controls follicle stem cell maintenance in the *Drosophila* ovary. **Ta-Hsing Hsu**[1], Jenn-Yah Yu[1,2]. 1) Department of Life Sciences, Institute of Genomic Sciences, National Yang-Ming University, Taipei, Taiwan; 2) Brain Research Center, National Yang-Ming University, Taipei, Taiwan.

416B pg. 148
Function of Perlecan in the Drosophila Ovary. **Alfonsa Diaz Torres**, John Pearson, Acaimo Gonzalez Reyes. Centro Andaluz de Biologia del Desarrollo, Sevilla, Spain.

417C pg. 148
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.

418A pg. 149
Snail is required for maintenance of male germline stem cells. **Gary R. Hime**[1], Aviv Gafni[1], Arjun Chahal[1], Agnes Gany[1], Franca Casagranda[1], Kate L. Loveland[2], Helen E. Abud[2]. 1) Anatomy and Neuroscience, University of Melbourne, Parkville, Victoria, Australia; 2) Anatomy and Developmental Biology, Monash University, Clayton, Victoria, Australia.

419B pg. 149
A novel DnaJ domain protein activates integrin signaling to maintain stem cell niche in Drosophila. **Joo-Yeun Lee**. University of Southern California.

420C pg. 149
DNA damage disrupts stem cell-niche interaction and differentiation program in the Drosophila ovary. **Xing Ma**[1,2], Xiaoqing Song[1], Trieu Do[1], Ting Xie[1,2]. 1) Stowers Institute for Medical Research, Kansas city, MO; 2) University of Kansas Medical Center Kansas City, KS.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

421A pg. 150
Aging-induced Notch signaling suppresses adhesiveness of germline stem cells to the niche via E-cadherin. **Chen-Yuan Tseng**[1,2], Shih-Han Kao[1], Chih-Ling Wan[1], Yueh Cho[1], Shu-Yun Tung[3], Hwei-Jan Hsu[1]. 1) Institute of Cellular and Organismic Biology, Academia Sinica, Taipei 11529, Taiwan; 2) Graduate Institute of Life Sciences, National Defense Medical Center, Taipei 11490, Taiwan; 3) Genomic Core Facility, Institute of Molecular Biology, Academia Sinica, Taipei 11529, Taiwan.

422B pg. 150
Cellular and molecular regulation of stem cell niche quiescence. **Leah J. Greenspan**, Phylis Hetie, Erika Matunis. Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD.

423C pg. 150
The receptor tyrosine kinase Pvr in the Drosophila testis stem cell niche. **Kenneth Hammer**, Judith Leatherman. Biological Sciences, University of Northern Colorado, Greeley, CO.

424A pg. 151
Niche signaling regulates stem cell survival under stress-induced conditions in the Drosophila testis niche. **Salman Hasan**, Phylis Hétié, Erika Matunis. Johns Hopkins Medical Institute, Baltimore, MD.

425B pg. 151
The Jak-STAT target Chinmo prevents sex transdifferentiation of adult stem cells in the Drosophila testis. **Qing Ma**[1], Matthew Wawersik[2], Erika Matunis[1]. 1) Cell Biology, Johns Hopkins Univ, Baltimore, MD; 2) Biology Dept, The Col of William & Mary, Williamsburg, VA.

426C pg. 151
BMP signaling is required in the Drosophila testis cyst stem cells. **James Major**, Judith Leatherman. School of Biological Sciences, University of Northern Colorado, Greeley, CO.

427A pg. 151
Apontic Functions as a Feedback Inhibitor of STAT to Maintain Niche Integrity and Limit Stem Cell Populations. **Amanda J. Monahan**, Michelle Starz-Gaiano. Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD.

428B pg. 152
Role of Notch Signaling in Stem Cell Lineages of Testes. **Chun Leung Ng**, Cordula Schulz. Department of Cellular Biology, University of Georgia, Athens, GA.

429C pg. 152
The Wnt signaling and cytoskeletal regulator APC2 controls stem cell niche size, architecture, and stem cell number in the Drosophila ovary. **Stacie L. Oliver**, Brooke M. McCartney. Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA 15213.

430A pg. 153
Ecdysone Regulation of Stem Cell Maintenance in the *Drosophila* Testis Niche. **Yijie Li**, Qing Ma, Erika Matunis. Johns Hopkins Medical Inst, Baltimore, MD.

431B pg. 153
Stem cell division in the testis is affected by environmental rhythms and sleep duration. **Natalia M. Tulina**[1], Jung Hsuan Chen[1], Wen-Feng Chen[2], Amita Sehgal[2]. 1) Fox Chase Cancer Center, Philadelphia, PA; 2) HHMI, Unviversity of Pennsylvania, Philadelphia.

432C pg. 153
The Trithorax (Trx) histone methyl transferase complex maintains neural stem cell heterogeneity in *Drosophila* larval brain. **Hideyuki Komori**[1], Qi Xiao[2], Cheng-Yu Lee[1,2,3]. 1) Center for Stem Cell Biology, Life Sciences Institute,; 2) Depertment of Cell and Developmental Biology,; 3) Division of Molecular Medicine and Genetics, Department of Internal Medicine, University of Michigan Medical School, Ann Arbor, MI.

433A pg. 153
Role of p21-activated kinase Mbt in proliferation of central brain neuroblasts with special focus on the mushroom body neuroblasts. Juliane Melzer[2], **Karoline F. Kraft**[1], Rolf Urbach[1], Thomas Raabe[2]. 1) Institute of Genetics, University of Mainz, Mainz, Germany; 2) Institute for Medical Radiation and Cell Research, University of Würzburg, Würzburg, Germany.

434B pg. 154
Drosophila Phosphotyrosyl Phosphatase Activator (PTPA) Facilitates Miranda dephosphorylation in Early Mitosis and Regulates its Asymmetric Localization in Dividing Neuroblasts. **Fan Zhang**[1], Zhenxing Huang[2], Hongcun Bao[1], Huashan Wang[3], Yu Cai[4,5], Xiaohang Yang[1]. 1) College of Life Sciences, Zhejiang University, Hang Zhou, China; 2) Yong Loo Lin School of Medicine, National University of Singapore; 3) National Neuroscience Institute, Singapore; 4) Temasek Life Sciences Laboratory, Singapore; 5) Department of Biological Sciences, National University of Singapore, Singapore.

435C pg. 154
split-ends : a novel regulator of adult stem cells in Drosophila intestine. **Maheva Andriatsilavo**[1], Carolina N. Perdigoto[1,2], François Schweisguth[2], Allison Bardin[1]. 1) Genetic and Developmental Biology unit, Institut Curie, PARIS, France; 2) GDD unit, Institut Pasteur, Paris France.

436A pg. 154
Plasticity in Stem Cell Division Pattern and a Negative Feedback Slit-Robo2 Signaling Determine the Secretory EE Cell Fate in the Adult Drosophila Posterior Midgut. Xiankun Zeng, **Steven Hou**. Stem Cell Regulation and Animal Aging Section, NCI, NIH, Frederick National Laboratory, Frederick, MD.

437B pg. 155
EGFR Signaling Mediates Intestinal Stem Cell Proliferation via Capicua Regulated Genes in Drosophila. **Yinhua Jin**, Bruce Edgar. ZMBH-DKFZ, Heidelberg, Germany, Germany.

438C pg. 155
dWDR40a regulates the mitosis-to-endoreplication transition in the intestinal stem cell lineage. **Jihyun Kim**[1], Dae-sung Hwangbo[2], Heinrich Jasper[1,2]. 1) The Buck Institute for Research on Aging; 2) University of Rochester.

439A pg. 155
Regulation of pH homeostasis in the Drosophila gastrointestinal tract. **Hongjie Li**[1,2], Yanyan Qi[1], Heinrich Jasper[1,2]. 1) Buck Institute for Research on Aging, Novato, CA, USA; 2) Department of Biology, University of Rochester, Rochester, NY, USA.

440B pg. 156
Regulation of intestinal stem cells by the Snail family transcriptional repressor Escargot. **Mariano A. Loza-Coll**[1,2], Sharsti S. Sandall[2], Tony Southall[3,4], Andrea Brand[3,4], D. Leanne Jones[1,2]. 1) Molecular, Cell and Developmental Biology, University of California, Los Angeles, Los Angeles, CA; 2) The Salk Institute for Biological Studies, La Jolla, CA; 3) The Gurdon Institue, Cambridge, UK; 4) The University of Cambridge, Cambridge, UK.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

441C pg. 156
Targeted control of mRNA stability reestablishes quiescence in Drosophila intestinal stem cells. **Lindy McClelland**[1,2], Heinrich Jasper[1], Benoît Biteau[2]. 1) The Buck Institute for Research on Aging, Novato, CA; 2) University of Rochester Medical Center.

442A pg. 156
Expression and Function of Group B Sox gene function in adult intestinal stem cells. **Joanna Taborda**, John Nambu. Biology, Florida Atlantic Univeristy, Jupiter, Fl.

443B pg. 157
Regulation of String during Drosophila intestinal stem cell proliferation. **Jinyi Xiang**, Bruce Edgar. Cell growth and proliferation, DKFZ-ZMBH Alliance, Heidelberg, Germany.

444C pg. 157
Adaptation of Drosophila hematopoiesis through sensory neuron stimulation. Kalpana Makhijani[1], Brandy Alexander[1], Sophia Petraki[1], Stephanie Wachner[1,4], Michael O'Connor[5], **Katja Brückner**[1,2,3]. 1) Dept. Cell & Tissue Biol; 2) Broad Center of Regeneration Medicine and Stem Cell Research; 3) CVRI; University of California San Francisco, CA; 4) University of Heidelberg, Germany; 5) Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN.

445A pg. 157
Cell competition leads to active selection of fitter stem cells and their progeny in adult homeostatic tissues. **Golnar Kolahgar**, Saskia Suijkerbuijk, Enzo Poirier, Sarah Mansour, Benjamin Simons, Eugenia Piddini. Gurdon Institute, University of Cambridge, Cambridge, United Kingdom.

446B pg. 158
Novel genes involved in the maintenance of hematopoietic progenitors. **Bama Charan Mondal**, Cory Evans, Utpal Banerjee. Molecular Cell and Developmental Biology, University of California, Los Angeles, Los Angeles, CA.

447C pg. 158
Investigating the role of cell competition in Wnt-induced tumorigenesis. **Saskia JE Suijkerbuijk**, Golnar Kolahgar, Eugenia Piddini. The Wellcome Trust/Cancer Research UK Gurdon Institute, Cambridge, United Kingdom.

Immunity and Pathogenesis

448A pg. 158
Flow cytometry in detecting blood cell populations during an immune challenge. **Laura Vesala**[1], Ines Anderl[1], Dan Hultmark[1,2]. 1) Institute of Biomedical Technology,University of Tampere, Tampere, Finland; 2) Department of Molecular Biology, University of Umeå, Umeå, Sweden.

449B pg. 159
The Pallbearer-SCF complex degrades RpS6 and regulates actin to promote apoptotic cell clearance. **Hui Xiao**[1], James Thompson[2], John R. Yates Jr. III[2], Nathalie C. Franc[1]. 1) The Department of Immunology & Microbial Science, The Scripps Research Institute, La Jolla, CA; 2) Department of Chemical Physiology, The Scripps Research Institute, La Jolla, CA.

450C pg. 159
JAK/STAT signaling in Drosophila somatic muscles is involved in cellular immune response against parasitoid wasp infection. **Hairu Yang**, Jesper Kronhamn, Dan Hultmark. Umeå University, Umeå, Sweden.

451A pg. 159
Damage induced expression of antimicrobial peptides via the Imd pathway in Drosophila larvae. **Takayuki Kuraishi**[1,2], Aki Hori[1], Shoichiro Kurata[1]. 1) Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan; 2) PRESTO, Japan Science and Technology (JST).

452B pg. 160
Spatial and temporal variation in innate immunity. **Emily Louise Behrman**[1], Virgina Howick[2], Brian Lazzaro[2], Paul Schmidt[1]. 1) University of Pennsylvania, Philadelphia, PA; 2) Cornell University, Ithaca, NY.

453C pg. 160
Innate Immune Memory Increases *Drosophila melanogaster* Resistance to the Lethal Insect Pathogen *Xenorhabdus nematophila*. **Adler R. Dillman**[1], Marta Andres-Terre[2], Brittney Nguyen[1], David S. Schneider[1]. 1) Department of Microbiology and Immunology, Stanford, Stanford, CA; 2) Department of Immunology, Stanford, Stanford, CA.

454A pg. 160
Sting Governs An Evolutionarily Conserved Innate Immune Pathway. **Alan G. Goodman**, Brandon M. Kitay, Keiko Konno, Hiroyasu Konno, R. Grace Zhai, Glen N. Barber. University of Miami School of Medicine, Miami, FL.

455B pg. 161
Lifespan extension by promoting immune homeostasis and limiting commensal dysbiosis in the Drosophila intestine. **Linlin Guo**[1,2], Jason Karpac[1], Susan Tran[3], Heinrich Jasper[1,2,3]. 1) Buck Institute for Research on Aging, 8001 Redwood Boulevard, Novato, CA 94945- 1400, USA; 2) Department of Biomedical Genetics, University of Rochester Medical Center, 601 Elmwood Avenue, Rochester, NY 14642, USA; 3) Department of Biology, University of Rochester, River Campus Box 270211, Rochester, NY, 14627, USA.

456C pg. 161
Low Doses of Iron-Oxide Nanoparticles have a Detrimental Effect on Reproduction and Development. **Benjamin W. Henderson**[1], Hunter Dean[2], Rami R. Ajjuri[1], Yuping Bao[2], Janis M. O'Donnell[1]. 1) Department of Biological Sciences, Box 870344, University of Alabama, Tuscaloosa, AL 35487; 2) Department of Chemical and Biological Engineering The University of Alabama Box 870203 Tuscaloosa, AL 35487-0203.

457A pg. 161
Gut immune response against Gram-positive bacteria. **Aki Hori**[1], Takayuki Kuraishi[1,2], Shoichiro Kurata[1]. 1) Tohoku University, Sendai, Japan; 2) PRESTO, Japan Science and Technology (JST).

458B pg. 161
A Drosophila immune response against RasV12-induced altered self. **Robert Krautz**[1], Thomas Hauling[2], Robert Markus[1], Anne Volkenhoff[3], Ulrich Theopold[1]. 1) Department of Molecular Biosciences, The Wenner-Gren Institute, Stockholm University, Stockholm, Sweden; 2) Karolinska Institute Science Park, SciLifeLab, Solna, Sweden; 3) Institute of Neuro- and Behavioral Biology, University of Münster, Münster, Germany.

459C pg. 162
A novel dual role for Notch signaling in maintenance of lamellocyte progenitors and innate immunity to parasitoid wasps in Drosophila. **Chiyedza Small**[1,2,3], Johnny Ramroop[2,3], Maria Otazo[2], Lawrence Huang[2], Shireen Saleque[2,3], Shubha Govind[2,3]. 1) Dept. of Biology, Medgar Evers College, CUNY, 1638 Bedford Ave, Brooklyn, NY, 11225; 2) Dept. of Biology, City College of New York, CUNY, 160 Convent Avenue, NY, NY 10031; 3) The Graduate Center, CUNY.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

460A pg. 162
Impact of prolonged hypergravity on the immune response of *Drosophila melanogaster*. **William D. Wade**, Sharmila Bhattacharya. NASA Ames, Moffett Field, CA.

461B pg. 162
Physiological trade-offs during chronic infection. **Moria C. Chambers**, Sarah Khalil, Brian P. Lazzaro. Entomology, Cornell University, Ithaca, NY.

462C pg. 163
Natural Variation Among Drosophila Melanogaster Populations in Response to Beauveria bassiana Exposure. Jessica Y. Chen, **Jessica I. Gabrielian**, Vivian Lu, Ju-Yin Hsu, Mishan D. Rambukwella, Matthew Salomon, Daniel Campo. Molecular and Computational Biology, University of Southern California, Los Angeles, CA.

463A pg. 163
Effects of Metabolism and Stress on Immune Defense: Investigating the Molecular Crosstalk between Metabolism, Stress, and the Immune System. **Katia Sotelo-Troha**[1], Nicolas Buchon[2], Brian Lazzaro[2]. 1) Department of Biological & Biomedical Sciences, Cornell University, Ithaca, NY; 2) Department of Entomology, Cornell University, Ithaca, NY.

464B pg. 163
Factors that influence *Wolbachia* titer in *Drosophila simulans* and *Drosophila melanogaster*. **Marissa Cloutier**, Jack Manquen, Roger Albertson. Biology Dept, Albion College, Albion, MI.

465C pg. 164
The impact of nutrients on intracellular *Wolbachia* titer. **Laura R. Serbus**[1], Pamela White[2], Roger Albertson[3], Amanda Rabe[2], William Sullivan[2]. 1) Biological Sciences, OE210, Florida International University, Miami, FL; 2) MCD Biology, Sinsheimer 319, University of California, Santa Cruz, CA; 3) Biology Department, Putnam 262, Albion College, Albion, MI.

466A pg. 164
Genome-wide RNAi screen for host factors that regulate Wolbachia titer. **Pamela M. White**[1], Laura R. Serbus[2], William Sullivan[1]. 1) Molecular, Cell, and Developmental Biology University of California, Santa Cruz 1156 High Street Santa Cruz, CA 95064; 2) Department of Biological Sciences, OE210 Florida International University 11200 SW 8th St Miami, FL 33199.

Neural Development

467B pg. 164
An RNAi screen identifies a new determinant of R7 photoreceptor axon targeting. **Jessica Douthit**, Sergio Astigarraga, Jessica Treisman. Department of Cell Biology and Kimmel Center for Biology and Medicine at the Skirball Institute, New York University School of Medicine, New York, NY.

468C pg. 164
Slit/Robo-mediated axon guidance in *Tribolium* and *Drosophila*. **Tim Evans**. Biological Sciences, University of Arkansas, Fayetteville, AR.

469A pg. 165
The Drosophila formin dDAAM is required for axon growth in the developing mushroom body. **Rita Gombos**, József Mihály. Biological Research Centre, Hungarian Academy of Sciences, Szeged, Csondrad, Hungary.

470B pg. 165
An RNAi screen to identify extracellular signals required in axonal targeting in the visual system. **Justine Oyallon**, Sergio Astigarraga, Gina Lee, Brie Wamsley, Felix Simon, Vincent Parillaud, Jessica Treisman. New York University School of Medicine, Skirball Institute of Biomolecular Medicine, New York, NY.

471C pg. 165
Nejire/CBP regulates dendritic complexity by modulating the localization of Dar1. **Sarah G. Clark**, Myurajan Rubaharan, M. Jennifer Van, Srividya C. Iyer, Daniel N. Cox. Krasnow Institute, School of Systems Biology, George Mason University, Fairfax, VA.

472A pg. 166
Dissecting the role of autophagy in mediating sensory neuron dendrite homeostasis. **Lacey Graybeal**, Srividya C. Iyer, Eswar P. R. Iyer, Caroline Thomas, Myurajan Rubaharan, Daniel N. Cox. Krasnow Institute, School of Systems Biology, George Mason University, Fairfax, VA.

473B pg. 166
Silencing of the Drosophila ortholog of SOX5 in neurons leads to impaired dendrite differentiation and olfactory perception. **Airong Li**, Adele Bubnys, Rebecca Tate, Rudolph Tanzi. Genetics and Aging Research Unit, MassGeneral Institute for Neurodegenerative Diseases, Massachusetts General Hospital and Harvard Medical School, Charlestown, MA.

474C pg. 166
FoxO regulates dendritic morphology and MT organization. **James Sears**, Heather Broihier. Neurosciences, Case Western Reserve University, Cleveland, OH.

475A pg. 167
Balancing dendrite-epidermis and dendrite-ECM interactions for dendrite morphogenesis. **Conrad M. Tenenbaum**, Mala Misra, Elizabeth Gavis. Molecular Biology, Princeton University, Princeton, NJ.

476B pg. 167
Sexual identity affects the development and mature function of a defined neural circuit in Drosophila melanogaster. **Parag Bhatt**, Harsha Swamy, Selma Avdagic, Wendi Neckameyer. Pharmcological and Physiological Science, Saint Louis University School of Medicine, St Louis, MO.

477C pg. 168
Collapsin response mediator protein (CRMP) is required for presynaptic development in R7 photoreceptor neurons. **Sarah Casper**, Tory Herman. Institute of Molecular Biology, University of Oregon, Eugene, OR.

478A pg. 168
The transmembrane domain of Neto engages the glutamate receptors and enables their clustering at the *Drosophila* NMJ. **Qi Wang**, Young-Jun Kim, Oghomwen Igiesuorobo, Mihaela Serpe. NICHD/NIH,Bethesda,MD.

479B pg. 168
Expression profiling of R7 and R8 photoreceptors during development of the D. melanogaster eye. **Stefan A. Koestler**, Arzu Celik-Fuss. Department of Molecular Biology and Genetics, Bogazici University, Istanbul, Turkey.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

480C pg. 169
Studying the eye differentiation in the Drosophila transcriptome. **Manon Quiquand**[1], Nicholas E. Baker[1], Dachuan Zhang[1], Jackie Han[2], Shengbao Suo[2], Nan Qiao[2], Matthew Slattery[3], Kevin White[3]. 1) Albert Einstein College of Medicine, Bronx, NY; 2) Institute for Computational Biology, Shanghai; 3) Institute for Genomics and System Biology, Chicago, IL.

481A pg. 169
Combinatorial rules of precursor specification underlying olfactory neuron diversity. **Pelin C. Volkan**[1,2,3], Qingyun Li[1], Tal Soo HA[4], Sumie Okuwa[1], Yiping Wang[1], Qian Wang[5], S. Sean Millard[6]. 1) Department of Biology, Duke University, Durham, NC; 2) Department of Neurobiology, Duke University, Durham, NC; 3) Duke Institute of Brain Sciences; 4) Department of Biomedical Science, College of Natural Science, Daegu University, 15 Naeri, Jillyang, Gyeongsan, Gyeongbuk 712-714, South Korea; 5) The Pratt School of Engineering, Duke University, Durham, NC; 6) School of Biomedical Sciences, The University of Queensland, BNE, QUEENSLAND.

482B pg. 170
Genetic interaction of *alan shepard (shep)* in neuronal remodeling during metamorphosis. **Dahong Chen**, Randall Hewes. Department of Biology, University of Oklahoma, Norman, OK.

483C pg. 170
Lineage-related neuronal wiring properties of the Drosophila brain. **Volker Hartenstein**[1], Jennifer Lovick[1], Stephan Saalfeld[2], Pavel Tomancak[2], Albert Cardona[3]. 1) MCDB, UCLA, Los Angeles, CA; 2) Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany; 3) Janelia Farm Research Campus, Howard Hughes Medical Institute, Ashburn, Virginia, USA.

484A pg. 170
Linking cell surface receptor to microtubule: Tubulin folding cofactor D mediates Dscam functions during neuronal morphogenesis. **Misako Okumura**[1], Chisako Sakuma[1], Masayuki Miura[1,2], Takahiro Chihara[1,2]. 1) Department of Genetics, Graduate School of Pharmaceutical Sciences, University of Tokyo; 2) Core Research for Evolutional Science and Technology, Japan Science and Technology Agency.

485B pg. 171
Analysis of Retinal Basal Glial cell Drivers from Janelia Gal4 Lines in Drosophila Melanogaster. **Yen-Ching Chang**[1,2], Y. Henry Sun[1,2]. 1) Instituition of Moleuclar biology, Sinica, Taipei, Taipei, Taiwan; 2) Department of Life sciences and Institute of Genome sciences, National Yang-Ming University, Taipei, Taiwan, Republic of China.

486C pg. 171
RNAi screening for investigation of retinal basal glia development. **Tsao Chia-Kang**[1,2], Sun Y. Henry[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, Taiwan, Republic of China.

487A pg. 171
Remodeling of peripheral glial ensheathment during metamorphosis - a role for the EGF signaling pathway. **Matthew Siefert**, Soumya Banerjee, Hayley Gibson, Tara Fallah, Joyce Fernandes. Department of Zoology, Miami University, Oxford, OH.

488B pg. 172
A Comparison of Midline and Tracheal Gene Regulation during Drosophila Development. **Patricia A. Estes**[1], Sarah K. R. Long[1], Eric Fulkerson[1], Rebecca Breese[1], Giovanna Hernandez[1], Cara Davis[1], Mark A. Melton[2], Rachana R. Chandran[3], Napoleon Butler[1], Lan Jiang[3]. 1) Dept of Biological Sciences, North Carolina State Univ, Raleigh, NC; 2) Dept of Biological and Physical Sciences, Saint Augustine's Univ, Raleigh, NC; 3) Dept of Biological Sciences, Oakland University, Rochester, MI.

489C pg. 172
Investigating the effect of Odd-skipped (Odd) loss-of-function on neuronal specification in Drosophila melanogaster. **Mena Farag**, Camilla Larsen, Peter Levy. MRC Centre for Developmental Neurobiology, King's College London, London, United Kingdom.

490A pg. 172
Investigating the molecular mechanism of Crimpy-mediated presynaptic Gbb signaling at the NMJ. **Kendall Hoover**, Rebecca James, Heather Broihier. Department of Neurosciences, Case Western Reserve University School of Medicine, Cleveland, OH 44106.

491B pg. 173
Characterizing a novel FoxO-dependent neurotrophic pathway. **Colleen McLaughlin**, Heather Broihier. Neurosciences, Case Western Reserve University , Cleveland , OH.

492C pg. 173
Connecting dCORL CNS expression and behavioral defects in dCORL mutants. Norma Takaesu[1], Agapi Dimitriadou[2], Janine Quijano[1], Estela Arciniega[1], Nancy Tran[1], Carsten Duch[3], Christos Consoulas[2], **Stuart Newfeld**[1]. 1) Sch Life Sci, Arizona State Univ, Tempe, AZ; 2) Lab Experimental Physiology, Univ. Athens Medical School, Athens, Greece; 3) Inst. Neurobiology, Johannes Gutenberg Univ. Mainz, Germany.

493A pg. 173
Characterizing the Role of E-cadherin in Neuroblast Maintenance. **Alexis A. Reyes**. Vanguard University, Costa Mesa, CA.

494B pg. 174
Characterization of Group B Sox genes in Development of Adult Nervous System. **Shweta Singh**, John Nambu. Biology, Florida Atlantic University, Jupiter, FL.

495C pg. 174
Multi-potent Intermediate Progenitor Cells Are Present Throughout All Pupa Stage In Drosophila melanogaster. **Elizabeth R. Swezey**. Vanguard University, Costa Mesa, CA.

Neurophysiology and Behavior

496A pg. 174
Dopamine homeostasis is essential for daily activity and movement behavior in Drosophila melanogaster - a model system to study neurological disorders. **Anathbandhu Chaudhuri**[1], Courtney Cunningham[1], Mary Jane Krotzer[1], Janis O'Donnell[2], Natraj Krishnan[3]. 1) Department of Natural Sciences, Stillman College, Tuscaloosa, AL; 2) Biological Sciences, University of Alabama, Tuscaloosa, 35487, AL; 3) Department of Biochemistry, Mississippi State University, MS 39762.

497B pg. 175
Changes in Acetylcholine Release Alter Locomotion and Touch Response Timing in Drosophila. Gabriel Gutierrez[1], David Krantz[1], Natalie Kendall[2], Toshi Kitamoto[3], **Hakeem Lawal**[1,2]. 1) Department of Psychiatry, David Geffen School of Medicine at UCLA, Los Angeles CA; 2) Neuroscience Program, Department of Biology, Delaware State University, Dover 3) Department of Anesthesia, Carver College of Med, University of Iowa, Iowa City.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

498C pg. 175
The endosomal Hook protein is required for histamine recycling in the *Drosophila* visual system. **Mokhlasur Rahman**, Helmut Kramer. Department of Neuroscience, UT Southwestern Medical Center at Dallas, Dallas, TX.

499A pg. 175
Control of Body Size by TGF-Beta Signaling. **Lindsay Moss-Taylor**[1], Michael O'Connor[2]. 1) Molecular, Cellular, Developmental Biology and Genetics Program, University of Minnesota, Minneapolis, MN; 2) Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN.

500B pg. 176
Determination of the location of action of isoflurane in the *Drosophila* brain. **Christina M. Colosimo**[1], Anna James[1], Krista Pearman[1], Michelle Peters[2], Michael J. Murray[3], Gerald B. Call[1]. 1) Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ; 2) Glendale Community College, Glendale, AZ; 3) Dept of Anesthesiology, Scottsdale, AZ.

501C pg. 176
Photoreceptor neuron function requires a conserved Ncc69-activating kinase cascade specifically in glia. **Drew Stenesen**[1], Jeffrey Schellinger[2], Aylin Rodan[2], Helmut Krämer[1]. 1) Department of Neuroscience, UT Southwestern Medical Center, Dallas, Texas; 2) Department of Internal Medicine, UT Southwestern Medical Center, Dallas, Texas.

502A pg. 176
Minibrain kinase promotes efficient synaptic vesicle recycling. Chun-Kan Chen[1,2], Catherine Bregere[1], Jeremy Paluch[3], Dion Dickman[3], **Karen Chang**[1,4]. 1) Zilkha Neurogenetic Institute, University of Southern California, Los Angeles, CA; 2) Dept. Biochemistry & Molecular Biology, University of Southern California, Los Angeles, CA; 3) Dept. of Neurobiology, University of Southern California, Los Angeles, CA; 4) Dept. Cell & Neurobiology, University of Southern California, Los Angeles.

503B pg. 177
An EP Overexpression Screen for Genetic Modifiers of rab7-Dependent Neurodegeneration in Drosophila Nervous System. **Wei-Hung Jung**[1], Smita Cherry[2], Jennifer Jin[2], Robin Hiesinger[2], Chih-Chiang Chan[1]. 1) Department of Physiology, National Taiwan University, Taipei, Taiwan; 2) Department of Physiology, University of Texas Southwestern Medical Center, Dallas, TX, USA.

504C pg. 177
The domain of synaptotagmin implicated in autoimmunity is not required for synaptic function. Michael D. Getzy[1], Carin A. Loewen[2], Laurie M. Biela[1], **Noreen E. Reist**[1]. 1) Biomedical Sciences, Colorado State University, Fort Collins, CO; 2) Genetics, University of Wisconsin, Madison, WI.

505A pg. 177
Functional Role of Mushroom Body Neurons in Courtship Conditioning. **Shelby A. Montague**, Yoshinori Aso, Gerald M. Rubin, Bruce S. Baker. HHMI Janelia Farm Research Campus, Ashburn, VA.

506B pg. 178
A novel role for Notch signaling in alcohol reward memory. **Arjun Ray**[1], Reza Azanchi[2], Yoshi Aso[3], Gerry Rubin[3], Ulrike Heberlein[3], Karla Kaun[2]. 1) Molecular Biology, Cell Biology and Biochemistry, Brown University, Providence, RI; 2) Neuroscience , Brown University, Providence, RI; 3) HHMI Janelia Farm Research Campus, Ashburn, VA.

507C pg. 178
Localization of aversive gustatory memory. **Kurtresha Worden**[1], Yoshi Aso[2], Gerald Rubin[2], Alex Keene[1], Pavel Masek[1]. 1) University of Nevada, Reno, Sparks, NV; 2) HHMI JFRC, Ashburn, VA.

508A pg. 178
Male-Specific Fruitless Isoforms Target Neurodevelopmental Genes to Specify a Sexually Dimorphic Nervous System. **Megan C. Neville**[1], Tetsuya Nojima[1], Elizabeth Ashley[1], Darren Parker[2], Tony Southall[3], Andrea Brand[3], Steven Russell[4], Michael Ritchie[2], Stein Aerts[5], Stephen Goodwin[1]. 1) Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom; 2) Centre for Biological Diversity, University of St Andrews, St Andrews; 3) The Gurdon Institute and Department of Physiology, Development and Neuroscience, University of Cambridge; 4) Department of Genetics, University of Cambridge, Downing Street, Cambridge; 5) Laboratory of Computational Biology, Department of Human Genetics, University of Leuven.

509B pg. 179
Investigation into the molecular-genetic basis of *Drosophila melanogaster* female post-mating behaviors. **Nicole R. Newell**[1], Joyce L. Kao[2], Kjong-Van Lehmann[2], Karrie D. Dudek[1], Christopher L. Souders[1], Peter Poon[2], Daniel Campo[2], Matthew Salomon[2], Peter L. Chang[2], Tevfik Hamdi Kitapci[2], Justin M. Fear[3], Justin E. Dalton[1], Alison M. Morse[3], Simon Tavaré[2], Lauren McIntyre[3], Sergey Nuzhdin[2], Michelle N. Arbeitman[1]. 1) Department of Biomedical Sciences, Florida State University, Tallahassee, FL; 2) Molecular and Computational Biology, University of Southern California, Los Angeles, CA; 3) Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL.

510C pg. 179
Modeling the circadian oscillator protein network in Drosophila melanogaster. **Vu Lam**, Ying Li, Jonathan Diehl, Joanna Chiu. Entomology and Nematology, UC Davis, Davis, CA.

511A pg. 179
A novel Bayesian approach to social structure uncovers cryptic regulation of group dynamics. **Brad R. Foley**[1], Julia B. Salz[1], Sergey V. Nuzhdin[1], Paul Marjoram[2]. 1) Molecular and Computational Biology, University of Southern California, Los Angeles, CA; 2) Keck School of Preventative Medicine, University of Southern California, Los Angeles, CA.

512B pg. 180
The blood-brain barrier regulates ecdysone signalling in the CNS, affecting neurophysiology and behaviour. **Samantha Hindle**[1], Souvinh Orng[1], Michael DeSalvo[1], Elena Dolgikh[2], Hiroshi Ishimoto[3], Fahima Mayer[1], Toshihiro Kitamoto[3], Matt Jacobson[2], Roland Bainton[1]. 1) Department of Anesthesia, University of California San Francisco, CA; 2) Department of Pharmaceutical Chemistry, University of California San Francisco, CA; 3) Department of Anesthesia, University of Iowa, IA.

513C pg. 180
Screening for a receptor for the Drosophila seminal fluid protein, ovulin. **Jennifer Apger McGlaughon**, Brooke A. LaFlamme, Mariana F. Wolfner. Cornell University, Ithaca, NY.

514A pg. 180
Steroid signaling modulates nociception in *Drosophila melanogaster*. **Aidan L. McParland**, Mona Roesler, Geoffrey K. Ganter. Biology, University of New England, Biddeford, ME.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

515B pg. 181
Ecdysis Triggering Hormone acts on neurons to both positively and negatively regulate wing expansion. **Rebecca Vaadia**, Feici Diao, Benjamin H. White. Laboratory of Molecular Biology, NIMH, Bethesda, MD.

516C pg. 181
Ecdysteroid plays a role in *Drosophila* nociception. **Gwendolyn Davis Vesenka**, Geoffrey K. Ganter. Biology Department, University of New England, Biddeford, ME.

517A pg. 181
Behavioral Analysis of the Pruritus Response in *Drosophila melanogaster*. **Ciny John**, Edward Kempf, John Nambu. Department of Biological Sciences, Charles E. Schmidt College of Science, Florida Atlantic University, Jupiter, FL.

518B pg. 182
Roles for *jim lovell* in larval feeding behavior and embryonic development. **Kathleen M. Beckingham**, Fanli Zhou, Cheng Wang. Dept Biochem & Cell Biol, Rice Univ, Houston, TX.

519C pg. 182
Quantitative Genetics of Food Intake in *Drosophila melanogaster*. **Megan Garlapow**[1], David Threadgill[2], Trudy Mackay[1]. 1) Program in Genetics, Dept of Biological Sciences, College of Science, North Carolina State Univ, Raleigh, NC; 2) Dept of Veterinary Pathobiology, Texas A&M Univ, College Station, TX.

520A pg. 182
The Anatomy and Function of Enteric Neurons. **Marion Hartl**, Dafni Hadjieconomou, Irene Miguel-Aliaga. Gut Signalling and Metabolism, MRC Hammersmith Campus, London, United Kingdom.

521B pg. 183
Selection for starvation resistance promotes sleep and inhibits foraging behaviors in Drosophila. Pavel Masek[1], Lauren Reynolds[2], Wesley Bollinger[1], Catriona Moody[1], Aradhana Mehta[1], Allen Gibbs[2], **Alex Keene**[1]. 1) Dept of Biology, University of Nevada, Reno, NV; 2) School of Life Sciences, University of Nevada, Las Vegas, NV, 89154.

522C pg. 183
Neural *translin* Regulates Metabolic Control of Sleep. **Maria E. Yurgel**[1], Kaz Murakami[1], Aradhna Mehta[1], Justin DiAngelo[2], Pavel Masek[1], Alex C. Keene[1]. 1) University of Nevada, Reno, 1664 N. Virginia Street, Reno, NV 89557; 2) Hofstra University, 900 Fulton Avenue, Hempstead, NY, 11549.

523A pg. 183
Acute hypergravity alters locomotor behavior and causes physiological stress in *Drosophila melanogaster*. **Ravikumar Hosamani**[1], Jarret Weinrich[2], Curran Reddy[1], Sharmila Bhattacharya[1]. 1) NASA Ames Research Center, Mountain View, CA; 2) Weill Medical College of Cornell University, NY.

524B pg. 184
Intracellular calcium signaling specifies dopaminergic neurons required for wing coordination during *Drosophila* flight. **Sufia Sadaf**, Sanjay Sane, Gaiti Hasan. National Centre for Biological Sciences, TIFR, Bangalore-560065, India.

525C pg. 184
stallone and *balboa* are DEG/ENaC genes required for mechanical nociception in *Drosophila* larvae. **Stephanie Mauthner**[1], Richard Hwang[2], Qi Xiao[2], W. Daniel Tracey[1,2,3]. 1) Univ Prog Genetics and Genomics, Duke University, Durham, NC; 2) Department of Neurobiology, Duke University, Durham, NC; 3) Department of Anesthesiology, Duke University Medical Center, Durham, NC.

526A pg. 185
Dopaminergic pathways innervating Mushroom Bodies are involved in olfactory responses in Drosophila melanogaster. **Nicolás Fuenzalida-Uribe**, Jorge M. Campusano. Departamento de Biología Celular y Molecular, Universidad Católica de Chile, Santiago, Chile.

527B pg. 185
Genome-wide Association Mapping of Natural Variation in Odor-guided Behavior in *Drosophila*. **Elizabeth B. Brown**[1], John E. Layne[1], Cheng Zhu[2], Anil G. Jegga[3,4], Stephanie M. Rollmann[1]. 1) Department of Biological Sciences, University of Cincinnati, Cincinnati, OH; 2) Department of Computer Science, University of Cincinnati, OH; 3) Division of Biomedical Informatics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH; 4) Department of Pediatrics, University of Cincinnati, Cincinnati, OH.

528C pg. 185
Molecular and Physiological Characterization of Drosophila melanogaster 4th Order Olfactory Neurons. **Amanda J. Crocker**[1,2], Coleen Murphy[2,3], Mala Murthy[1,2]. 1) Princeton Neuroscience Institute, Princeton University, Princeton, NJ; 2) Molecular Biology, Princeton University, Princeton, NJ; 3) Lewis Sigler Institute, Princeton University, Princeton, NJ.

529A pg. 186
Variation in epistatic interactions that modify olfactory behavior in the *Drosophila melanogaster* Genetic Reference Panel. **Xiaofang He**[1,2], Shanshan Zhou[1], Genevieve E. Evans[1], Trudy F. C. Mackay[1], Robert R. H. Anholt[1]. 1) Biological Sciences, North Carolina State University, Raleigh, NC; 2) Department of Entomology, South China Agricultural University, Guangzhou 510642, China.

530B pg. 186
Inhibition and activation of key olfactory pathways promotes both attraction and avoidance. **Dyan MacWilliam**, Anandasankar Ray. Dept. of Entomology, University of California, Riverside, CA.

531C pg. 186
Conservation of innate olfactory avoidance pathways across *Drosophila* species. **Christine K. Pham**[1], Anandasankar Ray[2]. 1) Interdepartmental Neuroscience Program, University of California, Riverside, Riverside, CA; 2) Entomology Department, University of California, Riverside, Riverside, CA.

532A pg. 187
Acids modulate bitter and sweet taste in Drosophila. **Yan Chen**, Hubert Amrein. Molecular and Cellular Medicine, Texas A&M Health Science Center, College Station, TX.

533B pg. 187
Molecular Basis of Sugar Sensing in *Drosophila*. **Ahmet E. Yavuz**[1], Shinsuke Fujii[1], Christopher Jagge[1], Jesse Slone[2], Xiangyu Song[3], Hubert Amrein[1]. 1) Molecular & Cellular Medicine, Texas A&M HSC, College Station, TX; 2) Department of Biology, Vanderbilt University, Nashville, TN; 3) P&G BJTC, Beijing, China.

534C pg. 187
Distinct neuronal circuits regulate sleep and wake within Drosophila mushroom body. **Nan Chen**[1], Divya Sitaraman[1,2], Yoshinori Aso[1], Wyatt Korff[1], Michael Nitabach[1,2], Gerald Rubin[1]. 1) Howard Hughes Medical Institute Janelia Farm Research Campus, Ashburn, VA; 2) Yale University School of Medicine, Dept. of Cellular and Molecular Physiology, New Haven, CT 06511.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

535A pg. 188
A Hard-wired Glutamatergic Circuit Pools and Relays UV Signals to Mediate Spectral Preference in Drosophila. Thangavel Karuppudurai[1], Tzu-Yang Lin[1], Benjamin White[2], Marco Gallio[3], Thomas Pohida[4], **Chi-Hon Lee**[1]. 1) NIH/NICHD, Bethesda, MD; 2) NIH/NIMH, Bethesda, MD; 3) Northwestern University, Evanston, IL; 4) NIH/CIT, Bethesda, MD.

536B pg. 188
CO_2 Effects on Subsequent Anesthesia. **Nathan R. Bartholomew**[1], Gerald B. Call[2]. 1) Biomedical Sciences, Midwestern University, Glendale, AZ; 2) Dept of Pharmacology, Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ.

537C pg. 188
Sucrose-only diets suppress seizure-like activity (SLA) and shorten recovery time following SLA in the Bang-sensitive (BS) paralytic mutants *easily-shocked* and *technical knockout*. **Kris Burner**, Daniel Kuebler. Biology, Franciscan University, Steubenville, OH.

538A pg. 189
Contrasting influences of Drosophila white/mini-white on ethanol sensitivity in two different behavioral assays. Robin Chan[1,2], Jacquie Delohyt[2,3], Lara Lewellyn[2], Matt Hewitt[2], Kristyn Sennett[2], Scarlett Coffman[2], Jill Bettinger[4,5], John Warrick[6], **Mike Grotewiel**[1,2,3,5]. 1) Molecular Biology and Genetics Program; 2) Human and Molecular Genetics; 3) Neuroscience Program; 4) Pharmacology and Toxicology; 5) Virginia Commonwealth University Alcohol Research Center, Virginia Commonwealth University, Richmond, VA; 6) Department of Biology, University of Richmond, Richmond, VA.

539B pg. 189
Directional Preference in Drosophila. **Taylor A. James**, Eli D. Zachary, Spicie M. Davis, Michael J. Baltzley, Kristin L. Latham. Western Oregon University, Monmouth, OR.

540C pg. 189
Systematic Profiling and Functional Characterization of rab GTPases in Drosophila Brain and Malpighian Tubules. Cheng-Wen Hsieh[1], **Chung-Chih Liu**[1], Smita Cherry[3], Jennifer Jin[3], June-Tai Wu[2], Robin Hiesinger[3], Chih-Chiang Chan[1]. 1) Graduate Institute of Physiology, National Taiwan University, Taipei, Taiwan; 2) Graduate Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan; 3) Department of Physiology, UT Southwestern Medical Center, Dallas, Texas, USA.

Drosophila Models of Human Diseases

541A pg. 189
The JAK-STAT signaling pathway mediates the effects of ethanol on development and adult behavior. **Kimberly D. McClure**, Gina Trotto, Gabriella Ceresa, Maria Barajas, Joseph Skopek. Department of Biology, Elmhurst College, Elmhurst, IL.

542B pg. 190
Targeting the Spindle Assembly Checkpoint gene, Mad2, and small molecule inhibitors using synthetic lethality. **Shamim A. Butt**, Blake Riggs. San Francisco State University, 1600 Holloway Ave, San Francisco, CA.

543C pg. 190
Cachexia-like Wasting Induced by Malignant Tumors in *Drosophila*. **Alejandra Figueroa-Clarevega**, David Bilder. Molecular and Cell Biology, UC Berkeley, Berkeley, CA.

544A pg. 190
A Drosophila Brain Tumor Model to Study Interclonal Interactions. **Austin Roebke**[3], Indrayani Waghmare[1], Madhuri Kango-Singh[1,2,3]. 1) Department of Biology, University of Dayton, Dayton, OH 45469; 2) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, Dayton, OH 45469; 3) Premedical Programs, University of Dayton, Dayton, OH 45469.

545B pg. 191
Dm-Myb regulation of cell cycle genes is independent of NURF. **Juan Santana**[1], Mrutyunjaya Parida[2], Abby Long[3], Jonathan Birdsall[3], Kealie Rogers[3], Martin Aguilera[3], Kar Men Mah[3], Scott McDermott[3], J. Robert Manak[1,2,3,4]. 1) Interdisc Grad Program in Genetics, University of Iowa, Iowa City, IA; 2) Interdisc Grad Program in Informatics; 3) Dept Biology; 4) Dept Pediatrics, Carver College of Medicine.

546C pg. 191
Screening of medicinal plant extracts from Nepal, in cancer models of Drosophila. **Bhupal G. Shrestha**[1,2], Parthiv H. Patel[2], Bruce Edgar[2]. 1) Biotechnology, Kathmandu University, Dhulikhel, Kathmandu, Nepal; 2) DKFZ-ZMBH Alliance, University of Heidelberg, Germany.

547A pg. 191
Identification and characterization of cancer-relevant genes in a *Drosophila* tumor model. **Janine Toggweiler**, Maria Willecke, Konrad Basler. Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland.

548B pg. 192
Size and Growth Regulation in Development and Cancer. **Tian Xu**, Chiswili Chabu, Sangil Lee. Dept Gen, HHMI, Yale Univ, New Haven, CT.

549C pg. 192
Diverse transcriptional cardiac aging profiles lead to similar decline in heart function. **Leah Cannon**[1], Anthony Cammarato[1], Sanford Bernstein[2], Alexander Zambon[2], Rolf Bodmer[1]. 1) Development and Aging, Sanford-Burnham Medical Research Institute, La Jolla, CA; 2) University of California, San Diego.

550A pg. 192
Tau-induced mitochondrial dysfunction mediates cardiomyopathy in *Drosophila* model. **Sreehari Kalvakuri**[1], Adriana Trujillo[2], Sanford I. Bernstein[2], Rolf Bodmer[1], Girish C. Melkani[2]. 1) Aging and Development Program, Sanford Burnham Medical Research Institute, San Diego, CA 92037; 2) Department of Biology, Molecular Biology and SDSU Heart Institutes, San Diego State University San Diego, CA 92182.

551B pg. 193
Cardiac Remodeling Mechanisms. **Karen Ocorr**. Dept Neuroscience & Aging, Burnham Inst Medical Research, La Jolla, CA.

552C pg. 193
Drosophila heart model to study the genetic basis underlying Ischemia/Reperfusion-induced cardiac injury: Combinatorial function of Hif1α and Hsp23. **Sarah Piloto**, Rolf Bodmer. Development and Aging, Sanford-Burnham Medical Research Institute, La Jolla, CA.

553A pg. 193
Methylene blue as a therapeutic compound in Drosophila models of Huntington's disease. **Herve Tricoire**, Raheleh Heidari, Elodie Martin, Veronique Monnier, Amandine Palandri. Unité de Biologie Fonctionnelle et Adaptative (BFA, Univ Paris Diderot, Sorbonne Paris Cité, PARIS, France.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

554B pg. 194
Modeling Ceramide-Induced Lipotoxic Cardiomyopathy. **Stanley M. Walls**[1], Greg L. Harris[2], Rolf Bodmer[1]. 1) Development, Aging and Regeneration Program, Sanford-Burnham Med. Res. Institute, San Diego, CA; 2) Department of Biology, San Diego State University, San Diego CA.

555C pg. 194
Characterization of sialic acid synthase mutants rescued by a transgene expressed in the insulin producing cells: loss of sialic acid in IPC cells is a model for Type II diabetes. **Aiden Nguyen**, Ilhan Akan, John Nguyen, Karen Palter. Biology, Temple University, Philadelphia, PA.

556A pg. 194
Phytochemical Withanolide A (WL-A) : A potent suppressor of Huntington's disease in transgenic *Drosophila* model. **Namita Agrawal**, Chongtham Anjalika. Dept of Zoology, University of Delhi, Delhi, India.

557B pg. 195
Juvenile Exposure to the Herbicide Paraquat Result in Long-Term Consequences in Parkinson's Disease. **Rami R. Ajjuri**, James Anderson, De'Anna Trunnell, Ryan Colaianni, Janis O'Donnell. Biological Sciences, University of Alabama, Tuscaloosa, AL.

558C pg. 195
PI3K-induced Synaptogenesis Prevents β-Amyloid Neurotoxicity. **Mercedes Arnés**[1], Sergio Casas-Tintó[1], Ángel Acebes[1,2], Alberto Ferrús[1]. 1) Cajal Institute, Madrid, Spain; 2) Centro de Investigaciones Biomédicas de Canarias (CIBICAN) La Laguna, Tenerife, Spain.

559A pg. 195
Dexamethasone induces heat shock response and slows down disease progression in mouse and fly models of Huntington's disease. Megha Maheshwari[1], **Supriya Bhutani**[1], Aniruddha Das[1], Rajarshi Mukherjee[1], Ankit Sharma[1], Yoshihiro Kino[2], Nobuyuki Nukina[2], Nihar Jana[1]. 1) National Brain Research Centre, Gurgaon, Haryana, India; 2) Structural Neuropathology Laboratory, Riken Brain Science Institute, Wako-shi, Saitama-351-0198, Japan.

560B pg. 196
Characterization of *dnr1* in *Drosophila*: linking innate immune response to neurodegeneration. **Yang Cao**[1], Stanislava Chtarbanova-Rudlof[1], Andrew Petersen[2], Barry Ganetzky[1]. 1) Laboratory of Genetics, University of Wisconsin-Madison, Madison, WI; 2) Molecular and Cellular Pharmacology Program, University of Wisconsin-Madison, Madison, WI.

561C pg. 196
Role of Transcriptional Co-Activator CREB Binding Protein in Amyloid Beta 42 Mediated Neurodegeneration. **Timothy L. Cutler**[1,2], Oorvashi Roy Puli[3], Meghana Tare[3], Michael T. Moran[3], Greg Mancini[3], Madhuri Kango-Singh[1,3,4], Amit Singh[1,3,4]. 1) Premedical Programs, University of Dayton, 300 College Park Drive, Dayton, OH; 2) University Honors Program, University of Dayton, 300 College Park Drive, Dayton, OH; 3) Department of Biology, University of Dayton, 300 College Park Drive, Dayton, OH; 4) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, 300 College Park Drive, Dayton, OH.

562A pg. 196
Aneuploidy by Mitotic Spindle Defects Drives Tau-mediated Neurodegeneration in Drosophila. **Bart Dermaut**[1], Marc Gistelinck[2], Nicolas Malmanche[1], Pierre Dourlen[1], Cloé Dupont[1], Dieder Moechars[3], Patrick Callaerts[2]. 1) Institut Pasteur de Lille, Inserm U744, University of Lille 2, Lille, France; 2) Laboratory of Behavioral and Developmental Genetics, VIB Center for the Biology of Disease, University of Leuven, Leuven, Belgium; 3) Neuroscience Department, Janssen Research and Development, a Division of Janssen Pharmaceutica NV, Beerse, Belgium.

563B pg. 197
A Drosophila model of neurometabolic disease yields insights into therapeutic treatments for Adrenoleukodystropy. **Hannah B. Gordon**, Anthea Letsou. Department of Human Genetics, University of Utah, Salt Lake City, UT.

564C pg. 197
Proteotoxicity in *Drosophila*: Relevance of the *Drosophila* Tau Protein. **Marianna K. Gorsky**[1,2], Sylvie Burnouf[1], Sebastian Grönke[1], Jacqueline Dols[1], Linda Partridge[1,2]. 1) Max Planck Institute for Biology of Ageing, Cologne, NRW, Germany; 2) Cologne Excellence Cluster on Cellular Stress Responses in Aging Associated Diseases (CECAD), University of Cologne, Cologne, Germany.

565A pg. 197
Investigating genetic interactions between proteins in the PI3K-AKT signaling pathway and molecular motors. **Timothy Hansen**, Shermali Gunawardena. Biological Sciences, University at Buffalo, Buffalo, NY.

566B pg. 198
Role of Calcium channels in fungal volatile organic compound-mediated neurotoxicity. **Arati A. Inamdar**, Joan W. Bennett. Department of Plant Biology and Pathology, Rutgers, The State University of New Jersey, New Brunswick, NJ.

567C pg. 198
Drosophila eye model to understand role of signaling pathways in Aβ42 mediated neurodegeneration. **Madison N. Irwin**[1], Kristine Garcia[1], Madhuri Kango-Singh[1,2,3], Amit Singh[1,2,3]. 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) Center for Tissue Regeneration and Engineering at Dayton (TREND), University ofDayton, Dayton, OH.

568A pg. 198
MULAN E3 ligase interacts with PINK1 in regulating mitochondrial dynamics and mitophagy in a *Drosophila* Parkinson's disease model. **Sreehari Kalvakuri**[1], Ryo Yonashiro[2], Zhihao Wu[3], Bingwei Lu[3], Claudio Joazeiro[2], Rolf Bodmer[1]. 1) Development and aging program, Sanford Burnham Medicalsearch Institute, San Diego, CA; 2) Department of Cell Biology, The Scripps Research Institute, CB168, 10550 North Torrey Pines Road, La Jolla, California 92037, USA; 3) Department of Pathology, Stanford University School of Medicine, Stanford, California 94305, USA.

569B pg. 199
A non-neural *Drosophila* model for NMDA receptor-mediated excitotoxic cell death. **Michael Lehmann**, Brandy Ree. Dept Biological Sci, Univ Arkansas, Fayetteville, AR.

570C pg. 199
Mitochondrial induced oxidative damage in neurons activates JNK and SREBP, induces lipid droplet accumulation in neuronal support cells, and promotes neurodegeneration. **Lucy Liu**[1], Ke Zhang[2], Hector Sandoval[3], Vafa Bayat[4], Zhihong Li[3], Shinya Yamamoto[3,4], Manish Jaiswal[3], Richard Palmiter[5,6], Albert Quintana[5,6], Brett Graham[3], Hugo Bellen[6,7]. 1) Department of Neuroscience, Baylor College of Medicine, Houston, TX; 2) Structural and Computational Biology & Molecular Biophysics Graduate Program, Baylor College of Medicine, Houston, TX; 3) Department of Molecular and Human Genetics, Baylor College of

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

Medicine, Houston, TX; 4) Program in Developmental Biology, Baylor College of Medicine, Houston, TX; 5) Department of Biochemistry, University of Washington, Seattle, WA; 6) Howard Hughes Medical Institute; 7) Jan and Dan Duncan Neurological Research Institute, Baylor College of Medicine, Houston, TX.

571A pg. 199
Locating E-cadherin and Glial Cells in the Brain of the Drosophila melanogaster During the Pupal Stage. **Michael J. Lum**. Vanguard University of Southern California, Costa Mesa, CA.

572B pg. 199
Insights into Alzheimer's disease from NMR metabolomics of Aβ-expressing *Drosophila*. **Anders Malmendal**[1], Stanislav Ott[2], Damian Crowther[2]. 1) Department of Biomedical Science, University of Copenhagen, Denmark; 2) Department of Genetics, University of Cambridge, United Kingdom.

573C pg. 200
FoxO modulates neurotoxicity in a Drosophila model of ALS. **Andrés A. Morera**[1], Daniela Zarnescu[1,2,3]. 1) Department of Molecular and Cell Biology, University of Arizona, Tucson, AZ; 2) Department of Neuroscience, University of Arizona, Tucson, AZ; 3) Department of Neurology, University of Arizona, Tucson, AZ.

574A pg. 200
Structural and functional organization of a nucleus under stress in Drosophila melanogaster: the role of the limk1 gene. **Ekatherina Nikitina**[1,2], Anna Medvedeva[1,3], Vladimir Pronikov[2], Elena Savvateeva-Popova[1,3]. 1) Pavlov Institute of Physiology, St Petersburg, Russian Federation; 2) Herzen State Pedagogical University, St Petersburg, Russian Federation; 3) St Petersburg State University, St Petersburg, Russian Federation.

575B pg. 201
Mitochondrial abnormalities and nicotine treatment in a familial model of Parkinson's disease. **Morolake Odumosu**[1], Gerald Call[2], Lori Buhlman[1]. 1) Biomedical Science, Midwestern University, Glendale, AZ; 2) Arizona College of Osteopathic Medicine, Glendale, AZ.

576C pg. 201
Glial function of *pak3* and *draper* show overlapping but distinct regulation of *spastin* neuronal synaptic bouton formation. **Emily F. Ozdowski**, Nina T. Sherwood. Dept Biol, Duke Univ, Durham, NC.

577A pg. 201
Using an Androgen Receptor-Humanized-Drosophila to Study the Molecular Pathology of Spinal Bulbar Muscular Atrophy. Conor Barker[2], Stephanie Yee[3], Paul Lasko[3], Mark Trifiro[1], **Miltiadis Paliouras**[1]. 1) Medicine, Lady Davis Institute for Medical Research - Jewish General Hospital, Montreal, QC, Canada; 2) Department of Cell Biology and Anatomy McGill University Montreal, QC, Canada; 3) Department of Biology McGill University Montreal, QC, Canada.

578B pg. 202
Implication of mutant Huntingtin protein (mHtt) in Huntington's disease pathogenesis in transgenic *Drosophila*. **Nidhi Paliwal**, Namita Agrawal. Department of Zoology, University of Delhi, Delhi, India.

579C pg. 202
The Effects of Genetic Manipulation of Synaptotagmin 1 in a *Drosophila* model of Machado-Joseph Disease. **Rachel Pearcy**, John Warrick. University of Richmond, Richmond, VA.

580A pg. 202
A genetic screen for identifying novel genes involved in neurodegeneration. **Amy Pribadi**, Shizuka Yamada, Megan Huynh, Michael Chen, Ashley Boehringer, Daniela Zarnescu. University of Arizona, Tucson, AZ.

581B pg. 203
The influence of mis-regulating dJNK in a Drosophila model of Machado-Joseph Disease. **Catherine Romberger**, John Warrick. University of Richmond, Richmond, VA.

582C pg. 203
Uncovering Prion Protein Stability. **Jonatan Sanchez-Garcia**, Diego Rincon-Limas, Pedro Fernandez-Funez. Univ of Florida, Gainesville, FL.

583A pg. 203
Role of Signaling Pathways in Aβ42 mediated neurodegeneration. **Ankita Sarkar**[1], Amit Singh[1,2,3]. 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) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, Dayton, OH.

584B pg. 204
Aggregate formation in the central nervous system of drosophila after a brief reduction in proteasome activity. **Thomas Schmidt-Glenewinkel**, Marlon Jansen, Chun-Hung Yeh, Annie Cheng, Jie Gao, Eugene Lempert, Karina Perlaza. Dept Biological Sci, Hunter Col & Grad Ctr., City Univ New York, New York, NY.

585C pg. 204
Probing integrin signaling in neuronal maintenance in flies. **Mumine Senturk**[1], Shinya Yamamoto[2], Manish Jaiswal[3], Nele Haelterman[1], Hugo Bellen[1,2,3,4]. 1) Program in Developmental Biology, Baylor College of Medicine, Houston, TX; 2) Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX; 3) HHMI; 4) Department of Neuroscience; Neurological Research Institute at Baylor College of Medicine, Houston, TX.

586A pg. 204
Nebula/DSCR1 Ameliorates APP-Induced Learning and Memory Impairments. **Jillian L. Shaw**, Karen T. Chang. Zilkha Neurogenetic Institute, University of Southern California, Neuroscience Graduate Program.

587B pg. 205
Investigating initiation of Cdk5-associated neurodegeneration. **Joshua Spurrier**[1,2], Kristina McLinden[1], Edward Giniger[1]. 1) NINDS, National Institutes of Health, Bethesda, MD; 2) CMDB, Johns Hopkins University, Baltimore, MD.

588C pg. 205
Role of Isocitrate Dehydrogenase in retinal degeneration in *Drosophila melanogaster*. **Berrak A. Ugur**[1], Manish Jaiswal[2,3], Shinya Yamamoto[2], Nele Haelterman[1], Hector Sandoval[2], Hugo Bellen[1,2,3,4,5]. 1) Developmental Biology, Baylor College of Medicine, Houston, TX; 2) Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX; 3) Howard Hughes Medical Institute; 4) Department of Neuroscience, Baylor College of Medicine, Houston, TX; 5) Jan and Dan Duncan Neurological Institute at Baylor College of Medicine, Houston, Texas.

589A pg. 206
FoxO Mediates APP-Induced AICD-Dependent Cell Death. **Lei Xue**, Xingjun Wang, Zhiqiang Wang. Tongji Univ, Shanghai, China.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

590B pg. 206
Investigation of the Role of Endoplasmic Reticulum in Motor Neuron Axons. **Belgin Yalcin**, Niamh O'Sullivan, Martin Stofanko, Cahir O'Kane. Department of Genetics, University of Cambridge, Cambridge, United Kingdom.

591C pg. 206
A screen for RNA Binding Proteins as Modulators of TDP-43 toxicity in a Drosophila Model of ALS. **Shizuka B. Yamada**[1], Amy Pribadi[1], Megan Huynh[1], Michael Chen[1], Nakia Keita[1], Linh Pham[1], Ashley Boehringer[1], Daniela C. Zarnescu[1,2]. 1) MCB, University of Arizona, Tucson, AZ; 2) Neuroscience, University of Arizona, Tucson, AZ.

592A pg. 206
Defining Spinal Muscular Atrophy Gene Networks in Drosophila. **Takakazu Yokokura**[1], Elizabeth McNeill[2], Andreia Fonseca[3], Maureen Lynes[4], Seiko Yoshikawa[1], Tamar Chobanyan[1,2], Howard Chang[2], Douglas Dimlich[2], Anindua Sen[2], Spyros Artavanis-Tsakonas[2], Lee Rubin[4], Margarida Gama Carvalho[3], David Van Vactor[1,2]. 1) Okinawa Institute of Science and Technology, Okinawa, Japan; 2) Dept Cell Biology, Harvard Medical School, Boston, MA; 3) Bio-FIG, Faculty of Science, University of Lisbon, Lisbon, Portugal; 4) Harvard University, Dept Stem Cell and Regenerative Biology, Cambridge, MA.

593B pg. 207
Proteomic Analysis of Huntingtin Interacting Network Using Drosophila. Zhen Xu[1,4], Dongsheng Chen[1,4], Zhihua Chen[1,4], Yanning Rui[1,4], Antonio Tito[1,3,4], **Sheng Zhang**[1,2,3,4]. 1) Center for Metabolic & Degenerative Diseases, The Brown Foundation Institute of Molecular Medicine; 2) Department of Neurobiology and Anatomy; 3) The Graduate School of Biomedical Sciences (GSBS); 4) The University of Texas Health Science Center at Houston (UTHEALTH), 1825 Pressler Street, Houston, TX 77030.

594C pg. 207
Transgenerational effect of diet on metabolic phenotypes. **Kelly Dew-Budd**, Laura Reed. Department of Biological Sciences, University of Alabama, Tuscaloosa, AL.

595A pg. 207
Modulation of lipid droplet accumulation in the larval midgut of Drosophila. **Ron Dubreuil**, Bianca Diaconeasa. Dept Biological Sci, Univ Illinois at Chicago, Chicago, IL.

596B pg. 208
The Effects of Laminin A Mutation on Metabolic Syndrome in Drosophila melanogaster. **Matthew B. Kieffer**, Joana Hubickey, Laura K. Reed. University of Alabama, Tuscaloosa, AL.

597C pg. 208
The influence of gene Cam on life span, moving activity and Ca^{2+} concentration in dystrophy mutants of *Drosophila melanogaster*.. Natalia Holub, Vasylyna Borutska, Chrystyna Dronska, Yaroslava Chernyk. Departament of Genetics and Biotechnology, Ivan Franko National University, Lviv, Ukraine.

598A pg. 208
A whole genome enhancer/suppressor screen for Dube3a interacting genes involved in autism. **Addison E. Jezek**[1], Lawrence T. Reiter[2]. 1) Rhodes College, Memphis, TN; 2) Department of Neurology, UTHSC, Memphis, TN.

599B pg. 209
Modeling aberrant behavior of autism spectrum disorders in UBE3A mutations. **Matthew Lollar**[1], Rami Ajjuri[1], Larry Reiter[2], Janis O'Donnell[1]. 1) Biological Sciences, University of Alabama, Tuscaloosa, AL; 2) Department of Neurology, University of Tennessee Health Science Center, Memphis, TN.

600C pg. 209
pointed and vap Mediate Ethanol-Related Mortality in a Drosophila melanogaster Model of Fetal Alcohol Syndrome. **Peter Luu**. biology, San Jose State University, San Jose, CA.

601A pg. 209
Defining the phenotypic specificity of Schimke immuno-osseous dysplasia. **Marie Morimoto**[1], Clara Myung[1], Kimberly Beirnes[1], Andrew Gormley[2], Christy Mayfield[3], Behzad Najafian[4], David Parham[5], Zhongxin Yu[6], Kunho Choi[1], Yan Huang[1], Kyoung Sang Cho[7], Thomas Lücke[8], Cornelius Boerkoel[1]. 1) Department of Medical Genetics, UBC, Vancouver, BC, Canada; 2) Department of Pediatrics, UOHSC, Oklahoma City, OK; 3) Warren Clinic, Tulsa, OK; 4) Department of Pathology, UW, Seattle, WA; 5) Department of Pathology, Children's Hospital Los Angeles and Keck School of Medicine, USC, Los Angeles, CA; 6) Department of Pathology, UOHSC, Oklahoma City, OK; 7) Department of Biological Sciences, Konkuk University, Seoul, Republic of Korea; 8) Department of Neuropediatrics, University Children's Hospital, Ruhr-University, Bochum, Germany.

602B pg. 210
Exposure of larvae to Perfluorooctanoic acid (PFOA) causes dysregulation of the dTOR signaling pathway in *Drosophila melanogaster*. **AnnJosette Ramirez**[1], Edward Wolff[2], Trisha Zintel[1], Amber Weiner[1], Ashley Parker[1], Kristin Johndreau[1], Kara Bennett[1], Caroline Rachfalski[1], Sheryl T. Smith[1]. 1) Biology, Arcadia University, Glenside, PA; 2) Math and Computer Science, Arcadia University, Glenside, PA.

603C pg. 210
Dube3a expression levels affect motor neuron axonal propagation and resting potential. **Lawrence T. Reiter**[1,2], Colleen Valdez[1], Reese Scroggs[2]. 1) Neurology, UTHSC, Memphis, TN; 2) Anatomy and Neurobiology, UTHSC, Memphis, TN.

604A pg. 211
Drosophila as a Simple Model to Test Dark Toxicity and Tolerance of Potential Photodynamic Therapy Agents. **Joshua Yoho**[1,4], Colette Stroh[4], Shawn Swavey[4], Madhuri Kango-Singh[1,2,3]. 1) Biology, University of Dayton, Dayton, OH; 2) Center for Tissue Regeneration and Engineering at Dayton (TREND); 3) Premedical Programs, University of Dayton, Dayton; 4) Chemistry, University of Dayton, Dayton, OH.

605B pg. 211
Role of miRNAs in Drosophila model for Muscular Dystrophy. **Evgeniia V. Edeleva**, April K. Marrone, Halyna R. Shcherbata. Max Planck Insitute for Biophysical Chemistry, Goettingen, Germany.

606C pg. 211
Epigenetic regulation of lipase activity establishes a postnatal protection from high-fat diet induced obesity and heart dysfunction. **Ryan Tyge Birse**[1], Fabian Filipp[1,2], Rolf Bodmer[1]. 1) Program of Development and Aging, Sanford-Burnham Medical Research Institute, La Jolla, CA; 2) School of Natural Sciences, University of California Merced, Merced, CA.

607A pg. 212
A *Drosophila* Model of Wolfram Syndrome Disease. **Chan Hsiao-Yen**[1,2], Chen Yi-Chun[1], Kuo Tzer-Min[2], Lin Wan-Hsuan[2], Li Jian-Chiuan[2], Wang Horng-Dar[1], Chen Chun-Hong[2]. 1) Institute of Biotechnology, Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan; 2) Institute of Molecular and Genomic Medicine,National Health Research Institutes, Zhunan, Miaoli, Taiwan.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

608B pg. 212
Analysis of transgenerational effects of Bisphenol A (BPA) in *Drosophila melanogaster*. **Ashley M. Labdik**, Amber K. Weiner, Trisha M. Zintel, AnnJosette Ramirez, Sheryl T. Smith. Arcadia University, Glenside, PA.

609C pg. 212
Effects of the Mediterranean Diet on Metabolic Phenotypes. **Jordyn Lee Merriam**, Laura Reed. Department of Biological Sciences, University of Alabama, Tuscaloosa, AL.

610A pg. 212
Cytoplasmic Protein Aggregation as a Trigger For *LMNA* Associated Muscle Dystrophy. **Jessica Ponce**[1], Dylan Thiemann[2], Grant Young[2], George Dialynas[3], Lori Wallrath[1,2]. 1) Interdisciplinary Program in Genetics, University of Iowa, Iowa City, IA; 2) Department of Biochemistry, University of Iowa, Iowa City, IA; 3) Stowers Institute for Medical Research, Kansas City, MO.

611B pg. 213
Genetic Basis of Genotype-by-Environment (GxE) Interactions for weight in Drosophila melanogaster. **A. Cigdem Tunckanat**, Leah Leonard, Julie Jarnigan, Andrea Davidson, Laura Reed. Department of Biological Sciences, University of Alabama, Tuscaloosa, AL.

612C pg. 213
Drosophila Mitochondrial Pyruvate Carrier mutants display defects in carbohydrate homeostasis and hallmarks of diabetes. **Dona Roonalika Wisidagama**, Daniel K. Bricker, Carl S. Thummel. Department of Human Genetics, University of Utah, Salt Lake city, UT.

613A pg. 213
Oxidative stress as a consequence of ethanol exposure in developing Drosophila. **Anthony J. Bortolazzo**, Jodie Wu, Naomi Fieger, David Do, Theresa Logan-Garbisch, Audrey Ford, Hilal Jarrar, Rachael French. Biological Sciences, San Jose State University , San Jose , CA.

614B pg. 214
Rapamycin as a potential treatment for succinate dehydrogenase mutants in *Drosophila melanogaster*. **Frances Fan**, Eugenia Villa-Cuesta. Biology Department, Adelphi University, Garden City, NY.

615C pg. 214
Determinants of Frailty in *Drosophila*. **Mariann M. Gabrawy**[1,2], Mehnaz A. Khan[1], Peter M. Abadir[2], Jeff Leips[1]. 1) Biological Sciences, UMBC, Baltimore, MD; 2) Division of Geriatric Medicine, Johns Hopkins Medical Institute, Baltimore, MD.

616A pg. 214
Mutations in von Hippel Lindau Enhances Susceptibility to Paraquat and Exarcebates Neuroinflammatory and Hypoxia Responses. **Marleshia Dorcell Hall**, Anna Moyer, Erin Mcminn, Emily Peel, Janis O'Donnell. Department of Biological Sciences, University of Alabama, Tuscaloosa, AL.

617B pg. 215
Nephrocyte as a model to identify and study renal disease genes. Fujian Zhang[1], Tiffany Chang[1], Ying Zhao[1], Katherine Muir[1], **Zhe Han**[1,2]. 1) Internal Med, Univ Michigan, Ann Arbor, MI; 2) Sanford Burnham Medical Research Institute, La Jolla, CA.

618C pg. 215
CYFIP1 functions in brain: insights into Autism and Intellectual Disabilities. **Alexandros Kanellopoulos**[1], Lysimachos Zografos[2], Douglas Armstrong[2], Patrick Callaerts[3], Claudia Bagni[1]. 1) Laboratory of Molecular Neurobiology, K.U. Leuven/VIB Center for the Biology of Disease, Leuven, Belgium; 2) Brainwave Ltd, University of Edinburgh, UK; 3) Laboratory of Behavioral and Developmental Genetics, K.U. Leuven/VIB Center for the Biology of Disease, Leuven, Belgium.

619A pg. 215
dPKD2 trafficking in Drosophila sperm. **Weizhe Li**, Stacey Bridges, Terry Watnick. Department of Medicine, University of Maryland, Baltimore, MD.

620B pg. 216
Suppression of TOR pathway ameliorates skeletal muscle defects in a Drosophila model of Huttingtons disease. Jennifer A. Suggs, Samvel Avagyan, Raul Ramos, Anju Melkani, Sanford I. Bernstein, **Girish C. Melkani**. Department of Biology, Molecular Biology and Heart Institutes, San Diego State University San Diego, CA 92182.

621C pg. 216
Modeling nerve injury in a long-lived *Drosophila* larval system. **Daniel L. Miller**, Barry Ganetzky. Department of Genetics University of Wisconsin Madison 425 Henry Mall Madison, WI 53706.

622A pg. 216
Behavioral models analogous to rodent depressive-like behaviors. **Wendi S. Neckameyer**, Selma Avdagic, Andres Nieto, Kelly Hainz, Anisa Tabtiang, Sarah Chan. Dept Pharmac & Physiol Sci, St Louis Univ School Med, St Louis, MO.

623B pg. 217
Effects of ethanol exposure on developmental time and survival in Drosophila. **Victoria A. Pray**[1,2], Rachel A. Lyman[1,2], Raveena M. Chhabria[2], Lenovia J. McCoy[1], Tatiana V. Morozova[1,2], Robert R. H. Anholt[1,2], Trudy F. C. Mackay[1,2]. 1) Biological Sciences, NCSU, Raleigh, NC; 2) W.M. Keck Center for Behavioral Biology, NCSU, Raleigh, NC.

624C pg. 217
Functional Modeling of Human Muscle Tauopathies in Drosophila. **Eric Ratliff**[2], Jennifer A. Suggs[1], Kim D. Finley[2], Sanford I. Bernstein[1], Girish C. Melkani[1]. 1) Department of Biology, Molecular Biology and Heart Institutes, San Diego State University San Diego, CA 92182; 2) Donald P. Shiley BioScience Center, San Diego State University, San Diego, CA 92182.

625A pg. 218
Expression of polyQ aggregates in non neuronal cells leads to developmental anomalies in *Drosophila melanogaster*. **Suman Yadav**, Madhu G. Tapadia. CYTOGENETICS LABORATORY, ZOOLOGY, BANARAS HINDU UNIVERSITY, VARANASI, 221005, UTTAR PRADESH, India.

Evolution and Quantitative Genetics

626B pg. 218
Multiple DNA motifs contribute to variation in recombination localization across the Drosophila genome. **Andrew Adrian**[1,2], Josep Comeron[1,3]. 1) Department of Biology, University of Iowa, Iowa City, IA; 2) Interdisciplinary Program in Bioinformatics, University of Iowa; 3) Interdisciplinary Program in Genetics, University of Iowa.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

627C pg. 218
Nucleotide Polymorfism of Enhancer Region of D*RAS1* Gene in The *Drosophila Virilis* Sibling Species Group. **Sivoplyas Ekaterina**[2], Chekunova Anna[1], Proshakov Prokhor[1], Barsukov Maxim[2], Sorokina Svetlana[1], Mitrofanov Vladimir[1], Kutuzova Nina[2]. 1) Russian Academy of Sciences Koltzov Institute of Developmental Biology; 2) FSFEI of HPE Moscow State Pedagogical University (MSPU).

628A pg. 219
Muller F elements maintain a distinctive pattern of gene structure over 40 million years of evolution. Wilson Leung[1], Christopher Shaffer[1], Jeremy Buhler[2], **Sarah Elgin**[1], Faculty & Students of the Genomics Education Partnership. 1) Dept Biology, Washington Univ, St Louis, MO; 2) Dept Computer Science & Engineering, Washington Univ, St. Louis, MO.

629B pg. 219
Genome-wide effect of 785 generations of parallel adaptation in replicate populations of Drosophila melanogaster. Mark A. Phillips[1], Anthony D. Long[1,2], **Lee F. Greer**[1,2], Laurance D. Mueller[1,2], Michael R. Rose[1]. 1) Ecology and Evolutionary Biology, University of California, Irvine, CA; 2) Genescient Corporation, Fountain Valley, CA 92708.

630C pg. 219
Domesticated genes from PIF transposable elements in Drosophila melanogaster. **Diwash Jangam**[1], Cedric Feschotte[2], Esther Betrán[1]. 1) Biology, University of Texas at Arlington, Arlington, TX; 2) Human Genetics, University of Utah, Salt Lake City, UT.

631A pg. 220
Genome of *Scaptomyza flava*, a leaf mining drosophilid. **Richard Lapoint**, Noah Whiteman. Dept of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ.

632B pg. 220
Regulatory impacts of tandem duplications in *Drosophila yakuba*. **Rebekah L. Rogers**, Ling Shao, Kevin Thornton. Ecology and Evolutionary Biology, Thornton Lab, Irvine, CA.

633C pg. 220
A Novel Dataset for Identifying Sex-Biased Genes in *Drosophila*. Nicholas VanKuren[1,2], **Maria Vibranovski**[2,3]. 1) Committee on Genetics, Genomics, and Systems Biology, The University of Chicago, Chicago, IL, USA; 2) Department of Ecology and Evolution, The University of Chicago, Chicago, IL, USA; 3) Departamento de Genética e Biologia Evolutiva, Instituto de Biociências, Universidade de São Paulo, São Paulo, Brazil.

634A pg. 221
*Drosophila simulans w*Ri *Wolbachia* variants differ by multi-gene duplications in a natural population. **Chenling Xu**, Chris Smith. Evolution and Ecology, UC Davis, Davis, CA.

635B pg. 221
Directional asymmetry of the Drosophila wing as a target of evolution of bilateral traits. **Denis Anisiforov**, Alexey Kulikov, Oleg Lasebny. Russian Academy of Sciences, Koltzov INSTITUTE of DEVELOPMENTAL BIOLOGY , Moscow, Russian Federation.

636C pg. 221
Genomic basis of parallel evolution of dark pigmentation in high-altitude populations of *Drosophila melanogaster* in Africa. **Héloïse Bastide**, Amir Yassin, Justin Lack, Evan Johanning, John Pool. Laboratory of Genetics, University of Wisconsin-Madison, Madison, WI.

637A pg. 221
Evolution of Germline Stem Cell Regulating Genes in Drosophila ananassae: Testing the Wolbachia pipientis conflict hypothesis. **Jae Young Choi**, Charles Aquadro. Dept of Molecular Biology and Genetics, Cornell University, Ithaca, NY.

638B pg. 222
Life History Determinants: Physiological Mechanisms of Egg Dumping in Drosophila melanogaster Using Extreme Phenotypes and Genetic Mapping. **Ashley A. Gilchrist**[1], Laura Reed[2], Trish Moore[3]. 1) Ashley Gilchrist Biological Sciences, University of Alabama, Tuscaloosa, AL; 2) Laura Reed PhD, Dept. Biology, UA; 3) Trish Moore PhD, Department of Entomology, University of Georgia.

639C pg. 222
Differences in regulatory variability between sexes and 'X's, in *D. simulans*. **Rita M. Graze**[1,6], Lauren M. McIntyre[1,2], Alison M. Morse[1], Brett M. Boyd[5], Sergey V. Nuzhdin[3], Marta L. Wayne[4]. 1) Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL; 2) Department of Statistics, University of Florida, Gainesville, FL; 3) Section of Molecular and Computational Biology, Department of Biological Sciences, University of Southern California, Los Angeles, CA; 4) Department of Biology, University of Florida, Gainesville, FL; 5) Florida Museum of Natural History, University of Florida, Gainesville, FL; 6) Biological Sciences, Auburn University, Auburn, AL.

640A pg. 223
Whole genome sequencing of Drosophila melanogaster from the southeast United States and Caribbean Islands to investigate admixture in North America. **Joyce Y. Kao**, Matt P. Salomon, Asif Zubair, Daniel Campo. Biological Sciences, University of Southern California, Los Angeles, CA.

641B pg. 223
The genetic basis of high-altitude adaptation in Drosophila melanogaster. **Justin B. Lack**, John Pool. Laboratory of Genetics, University of Wisconsin-Madison, Madison, WI.

642C pg. 223
Clinal patterns of genomic variation and their demographic implications in *D. melanogaster* and *D. simulans*. **Heather Machado**[1], Alan Bergland[1], Katherine O'Brien[2], Emily Behrman[2], Paul Schmidt[2], Dmitri Petrov[1]. 1) Biology, Stanford University, Palo Alto, CA; 2) Department of Biology, University of Pennsylvania, Philadelphia, PA.

643A pg. 224
Recent colonization history of the invasive drosophilid *Zaprionus indianus* in Mexico and Central America. Therese Ann Markow[1,2], Giovanni Hanna[2], Juan R. Riesgo-Escovar[3], Maxi Polihronakis Richmond[2], **Nestor Octavio Nazario-Yepiz**[1], Mariana Ramírez-Loustalot-Laclette[1], Javier Carpinteyro-Ponce[1], Edward Pfeiler[4]. 1) Laboratorio Nacional de Genómica para la Biodiversidad, CINVESTAV Irapuato, Irapuato, Guanajuato, C.P. 36821 Mexico; 2) Division of Biological Sciences, University of California, San Diego, La Jolla, CA 92093, USA; 3) Departamento de Neurobiología del Desarrollo y Neurofisiología, Instituto de Neurobiología, Universidad Nacional Autónoma de México, Querétaro, C.P. 76230, México; 4) Centro de Investigación en Alimentación y Desarrollo, A.C., Unidad Guaymas, Apartado Postal 284, Guaymas, Sonora, 85480, México.

644B pg. 224
Identifying functional elements and species-specific gain and loss of function from population genomic data. **Daniel R. Schrider**, Andrew D. Kern. Department of Genetics, Rutgers, The State University of New Jersey, Piscataway, NJ.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

645C pg. 224
"Molecular fossils" and genetic diversity of ancestral population of *D.virilis*. **Svetlana Y. Sorokina**[1], Sergej V. Bukhanov[1], Denis A. Romanov[2], Boris V. Andrianov[2]. 1) Genetics, Koltzov INSTITUTE of DEVELOPMENTAL BIOLOGY RAS, Moscow, Russian Federation; 2) Vavilov INSTITUTE of GENERAL GENETICS RAS, Moscow, Russian Federation.

646A pg. 225
Regulation of developmental timing in the *Drosophila* embryo. **Cynthia Staber**, Axel Shum, Samuel Meier, Julia Zeitlinger. Stowers Institute for Medical Research, Kansas City, MO.

647B pg. 225
Latitudinal variation in sleep in *Drosophila melanogaster*. **Nicolas Svetec**[1], Perot Saelao[1], Joanna Chiu[2], David Begun[1]. 1) Department of Evolution & Ecology, UC Davis, Davis, CA; 2) Department of Entomology and Nematology, UC Davis, CA.

648C pg. 225
What gene expression can tell us about selective forces driving chromosome evolution. **Gwilym Haynes**[1], Zachary Fuller[1], Shannon Duggan[2], Stephen Richards[2,3], Stephen Schaeffer[1]. 1) Biology, Pennsylvania State University, State College, PA; 2) Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, Houston TX 77030; 3) Chevron, Houston, TX.

649A pg. 226
DNA copy number evolution in *Drosophila* modENCODE cell lines. **Hangnoh Lee**, Brian Oliver, modENCODE. National Institute of Diabetes, Digestive, and Kidney Diseases, National Institutes of Health, Bethesda, MD.

650B pg. 226
The Evolution of Breakpoint Sequences in *Drosophila pseudoobscura*. **Haley E. Randolph**[1], Megan E. Lee[1], Geovanny C. Montoya[1], Atousa Jahanshahi[1], Shannon Duggan[2], Dianhuiz Zhu[2,3], Stephen Richards[2], Stephen W. Schaeffer[1]. 1) Biology, The Pennsylvania State University, University Park, PA; 2) Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, Houston TX; 3) Chevron, 1500 Louisiana St, Houston, Texas.

651C pg. 226
The ovipositor of an invasive pest, *Drosophila suzukii*, provides insight into the evolution of an adaptive novelty. **Joel Atallah**, Raul Salazar, Lisa Teixeira, George Zaragoza, Artyom Kopp. Evolution & Ecology, University of California - Davis, Davis, CA.

652A pg. 227
Microsatellite repeat instability fuels evolution of embryonic enhancers in Hawaiian *Drosophila*. **Andrew S. Brittain**, Elizabeth Stroebele, Albert Erives. University of Iowa, Dept. of Biology, Iowa City, IA 52242, USA.

653B pg. 227
Dorsocross is a putative target for morphological divergence in fly embryos. **Francesca Caroti**, Steffen Lemke. Molecular Developmental Biology & Physiology, Center for Organismal Studies (COS), Heidelberg, Baden-Württemberg, Germany.

654C pg. 227
Genome of Drosophila arizonae and its divergence from D. mojavensis. **Javier Carpinteyro Ponce**[1], Fernando Peñaloza[2], Alejandro Sanchez[2], Cei Abreu-Goodger[1], Therese Markow[1,3]. 1) LANGEBIO, CINVESTAV Irapuato, Irapuato, Guanajuato, Mexico; 2) Unidad Universitaria de Apoyo Bioinformático, Instituto de Biotecnología, UNAM, Cuernavaca, Morelos. México; 3) Division of Biological Sciences, UCSD, La Jolla, CA.

655A pg. 228
Study of function of two young nuclear transport retrogenes (Dntf-2r and Ran-like). **Susana Domingues**, Erica Eckstrand, Esther Betrán. The University of Texas at Arlington, Arlington, TX.

656B pg. 228
Molecular evolution of the proteins comprising the synaptonemal complex in the Drosophila genus. **Lucas Hemmer**, Justin Blumenstiel. Ecology and Evolutionary Biology, Univ of Kansas.

657C pg. 228
The insect order Diptera as framework to assess the genetics of morphological divergence. **Steffen Lemke**, Silvia Urbansky, Francesca Caroti, Lucas Schütz. Centre for Organismal Studies, Universität Heidelberg, Heidelberg, Germany.

658A pg. 229
Evolution of the maternally deposited mRNA pool in the Drosophila egg. **Susan E. Lott**. Department of Evolution and Ecology, University of California, Davis, Davis, CA.

659B pg. 229
Evolution of shape and sense in male *Drosophila prolongata.* **David Luecke**, Artyom Kopp. Center for Population Biology, University of California - Davis, Davis, CA.

660C pg. 229
Coordinated cis- and trans-regulatory changes along the dpp pathway correlate with a derived wing phenotype in D. sechellia. **Richard W. Lusk**[1], Nuala Bobowski[2], Alberto Civetta[2], Cassandra Kirkland[1], Emily Valice[1], Patricia Wittkopp[1], Ian Dworkin[3]. 1) Ecology & Evolutionary Biology, University of Michigan, Ann Arbor, MI; 2) Dept. of Biology, University of Winnipeg, Winnipeg, MB, Canada; 3) Dept. of Zoology, Michigan State University, East Lansing, MI.

661A pg. 230
Conservation of long intergenic noncoding RNAs (lincRNAs) between D. pseudoobscura and D. melanogaster: expression is key. **Kevin G. Nyberg**, Carlos A. Machado. Biology Department, University of Maryland, College Park, MD.

662B pg. 230
Molecular mechanism behind the evolution of a novel sex-specific trait. **Gavin R. Rice**[1], Olga Barmina[1], Michelle Arbeitman[2], Daniel Friedman[1], Artyom Kopp[1]. 1) Evolution and Ecology, University of California at Davis, Davis, CA; 2) College of Medicine, Florida State University, Tallahassee, FL.

663C pg. 230
What does it take to evolve an enhancer? **Saurabh Sinha**[1,2], Thyago S. P. C. Duque[1]. 1) Department of Computer Science, University of Illinois, Urbana, IL; 2) Institute for Genomic Biology, University of Illinois, Urbana, IL.

664A pg. 231
Gene expression profiling of Drosophila testis. **Toshiyuki Takano-Shimizu**, Masatoshi Tomaru, Masahide Watanabe. Drosophila Genetic Resource Center, Kyoto Institute of Technology, Kyoto.

665B pg. 231
Comparative transcriptomics of X chromosome meiotic drive in *Drosophila simulans*. Shu Fang[1], Wei-Chung Yu[1], David Ogereau[2], Ching-Ho Chang[3], Quentin Helleu[2], **Chau-Ti Ting**[3], Catherine Montchamp-Moreau[2]. 1) Biodiversity Research Center, Academia Sinica, Taiwan, ROC; 2) Laboratoire Evolution, Génomes & Spéciation, UPR9034 - CNRS, France; 3) Department of Life Science, Natl Taiwan University, Taipei, Taiwan, ROC.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

666C pg. 231
Study of segmentation using *Dermestes maculatus* as a non-model organism. **Jie Xiang**[1,2], Leslie Pick[1,2]. 1) Dept of Entomology, Univ. of Maryland-College Park, College Park, MD; 2) Program in Molecular & Cell Biology, Univ. of Maryland-College Park.

667A pg. 232
How does selection at tyrosine hydroxylase (*pale*) drive melanism in high-altitude Ethiopian *Drosophila melanogaster*? **Amir Yassin**, Héloïse Bastide, John Pool. Laboratory of Genetics, University of Wisconsin-Madison, Madison, WI.

668B pg. 232
QTL affecting genotype-by-diet interactions of larval triglyceride levels. **Alison F. Adams**, Kelly J. Dew-Budd, Laura K. Reed. Department of Biological Sciences, The University of Alabama, Tuscaloosa, AL.

669C pg. 232
Genomic basis of parallel seasonal variation in stress tolerance traits in *Drosophila melanogaster* and *D. simulans*. **Alan O. Bergland**[1], David Enard[1], Felicia King[1], Jamilla Akhund-Zade[1,2], Dmitri Petrov[1]. 1) Stanford University, Stanford, CA; 2) Cornell University, Ithica, NY.

670A pg. 232
Climatic adaptations of life-history traits in outdoor field cage and laboratory populations of *Drosophila melanogaster*. **Veer Bhan**. Department of Biotechnology, UIET, M D University, Rohtak, Haryana, India.

671B pg. 233
Naturally Occurring Variations in Food Intake in Drosophila melanogaster. **Matthew John Eveland**, Hayley Leuch, Maria De Luca. Nutrition Sciences, University of Alabama, Birmingham, Birmingham, AL.

672C pg. 233
Bayesian multi-phenotype genome-wide association methods for experimental designs of arbitrary complexity. **Anthony Greenberg**[1,2], Jason Mezey[1], Susan McCouch[1,2], Jean-Luc Yannink[3]. 1) Biostatistics and Computational Biology, Cornell University, Ithaca, NY; 2) Plant Breeding and Genetics, Cornell University, Ithaca, NY; 3) USDA-ARS, Robert W. Holley Center, Ithaca, NY.

673A pg. 233
The relationship between sleep and evolutionary fitness in *Drosophila melanogaster* . **Amanda Lobell**, Susan Harbison. Laboratory of Systems Genetics, Division of Intramural Research, National Heart, Lung and Blood Institute, Bethesda, MD.

674B pg. 234
What is the best design to understand gene regulatory networks? **Lauren M. McIntyre**[1], Sergey Nuzhdin[2]. 1) Dept Molec Gen & Micro, Univ Florida, Gainesville, FL; 2) University of Southern California, Los Angeles CA.

675C pg. 234
Mapping divergent pupation behavior between *Drosophila melanogaster* and *D. simulans*. **Alison Pischedda**, Michael Shahandeh, Thomas Turner. Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, Santa Barbara, CA.

676A pg. 234
Genes of Attraction: Mapping male preference for a species-specific female pheromone in *Drosophila*. **Michael Shahandeh**, Alison Pischedda, Thomas Turner. Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA.

677B pg. 234
The genetics of convergent evolution. **Sarah A. Signor**[1], Artyom Kopp[2]. 1) University of Southern California, Los Angeles, CA; 2) University of California, Davis, Davis, CA.

678C pg. 235
Divergence of water balance mechanisms in two sibling species (Drosophila simulans and D. melanogaster): effects of growth temperatures. **Divya Singh**, Ravi Parkash. M.D.UNIVERSITY, ROHTAK, HARYANA, India.

679A pg. 235
Mapping natural variation in courtship song to the gene level using the Drosophila Synthetic Population Resource. **Thomas L. Turner**, Alison Pischedda, Wes G. Cochrane, Veronica A. Cochrane. Ecology Evolution and Marine Biology Dept, University of California, Santa Barbara.

680B pg. 235
Reproductive barriers in a hybrid zone of Drosophila melanogaster. **Joyce Y. Kao**, Sergey V. Nuzhdin. Biological Sciences, University of Southern California, Los Angeles, CA.

681C pg. 236
Investigating genomic divergence in the Asian fruit fly Drosophila nasuta complex. **Wynn K. Meyer**, Doris Bachtrog. Integrative Biology, University of California, Berkeley, Berkeley, CA.

682A pg. 236
Genome-wide scans reveal a young candidate speciation gene in *Drosophila athabasca*. **Karen M. Wong Miller**[1], Michael Eisen[1,2,3], Doris Bachtrog[1]. 1) Integrative Biology, University of California, Berkeley, Berkeley, CA; 2) Department of Molecular and Cell Biology, University of California, Berkeley, CA; 3) Howard Hughes Medical Institute, University of California, Berkeley, CA.

683B pg. 236
The role of fungal interactions in the host-plant specialization of Hawaiian *Drosophila*. **Allison Quan**[1], Patrick O'Grady[2], Michael Eisen[1]. 1) Department of Molecular and Cell Biology, UC Berkeley, Berkeley, CA; 2) Department of Environmental Science, Policy & Management, UC Berkeley, Berkeley, CA.

684C pg. 237
Radiation of the Drosophila nannoptera species group in Mexico. **Michael Lang**[1], Maxi Polihronakis Richmond[2], Andrea E. Acurio[3], Therese A. Markow[2,4], Virginie Orgogozo[1]. 1) CNRS UMR7592, Institut Jacques Monod, Paris, France; 2) University of California, San Diego, USA; 3) Universitat Autònoma de Barcelona, Barcelona, Spain; 4) Laboratorio Nacional de Genomica de la Biodiversidad, CINVESTAV, Irapuato, Mexico.

685A pg. 237
Bioinformatic Analysis of Odorant-Binding Proteins from an Emerging Agricultural Pest, *Drosophila suzukii*. **Herbert Lee**, Jessica Wu-Woods, Daniel Woods. Inscent, Inc., Irvine, CA.

686B pg. 237
The transposable element Bari-Jheh mediates oxidative stress response in Drosophila. **Josefa Gonzalez**, Lain Guio, Lidia Mateo, Anna Ullastres, Maite Barron. Institute of Evolutionary Biology, Barcelona, Barcelona, Spain.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

687C pg. 238
Genome-wide analysis of positive selection in an herbivorous drosophilid. **Andrew Gloss**, Richard Lapoint, Noah Whiteman. University of Arizona, Tucson, AZ.

688A pg. 238
Soft shoulders ahead: on the problem of differentiating between hard and soft sweeps. **Andrew D. Kern**[1], Daniel R. Schrider[1], Fabio Mendes[2], Matthew Hahn[2]. 1) Dept of Genetics, Rutgers University, Piscataway, NJ; 2) Dept of Biology, Indiana University, Bloomington, IN.

689B pg. 238
Transmission of mitochondrial mutations and action of purifying selection in Drosophila. **Hansong Ma**[1], Hong Xu[2], Patrick O'Farrell[1]. 1) Department of Biochemistry & Biophysics, UCSF, San Francisco, CA; 2) National Heart, Lung, and Blood Institute, Molecular Genetics Lab, Bethesda, MD 20892.

690C pg. 238
Direct and correlated responses to laboratory selection for body melanisation in Drosophila melanogaster: support for the melanisation-desiccation resistance hypothesis. **Seema Ramniwas**, Ravi Parkash. GENETICS, M. D.UNIVERSITY, ROHTAK, India.

691A pg. 239
The effect of linked selection on Approximate Bayesian estimation of demographic parameters. **Alexander G. Shanku**, Andrew D. Kern. Department of Genetics, Rutgers University, Piscataway, NJ.

692B pg. 239
The contributions of epistasis and biochemical plasticity to ethanol tolerance across life stages. **Brandon S. Cooper**, P. Signe White, Kristi L. Montooth. Biology, Indiana University, Bloomington, IN.

693C pg. 239
Understanding the influence of diet and gut microflora on host behavior and mate preferences in *Drosophila melanogaster*. **Michael A. Najarro**, Thomas L. Turner. Dept. of Ecology, Evolution, and Marine Biology, University California Santa Barbara, Santa Barbara, CA.

694A pg. 240
Genetic and plastic effects on body melanisation in a cold adapted drosophilid -Drosophila takahashii. **Shama Singh**. ZOOLOGY, UNIVERSITY OF DELHI, DELHI, India.

695B pg. 240
Mitonuclear epistasis and the transcriptional response to hypoxia. **David M. Rand**, Yawei Ge, Nicholas Jourjine, James Mossman. Ecology & Evolutionary Biol, Brown Univ, Providence, RI.

696C pg. 240
Yeast metabolic state mediates attraction of wild Drosophila melanogaster to suitable breeding sites. **Kelly M. Schiabor**[1], Michael B. Eisen[1,2]. 1) Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA; 2) Howard Hughes Medical Institute, Bethesda, MD.

697A pg. 241
Robust genome-wide analysis of metabolic phenotypes in *Drosophila melanogaster* using a panel of hybrid genotypes containing a common haplotype. **Kjong-Van Lehmann**[1], Peter Poon[2], Daniel Campo[2], Matthew Salomon[2], Peter Chang[2], Tevik Hamdi Kitapci[2], Justin Fear[3], Alison Morse[3], Michelle Arbeitman[4], Lauren McIntyre[3], Simon Tavare[5], Sergey Nuzhdin[2], John Tower[2]. 1) Memorial Sloan Kettering Cancer, New York, NY; 2) University of Southern California, Los Angeles, CA; 3) University of Florida, Gainesville, FL; 4) Florida State University, Tallahassee, FL; 5) Cancer Research, Cambridge, UK.

698B pg. 241
Pathogen pressures increase the rate of meiotic recombination in Drosophila. **Dallas Criscoe**[1], Erin Keebaugh[2], Shelly Skolfield[2], Todd Schlenke[2], Nadia Singh[1]. 1) Department of Biological Sciences, North Carolina State University, Raleigh, NC; 2) Department of Biology, Emory University, Atlanta, GA.

699C pg. 241
Sexual dimorphism in extent and mechanisms of resistance to infections shows that the Bateman principle does not apply to Drosophila immunity. **David Duneau**, Brian Lazzaro. Entomology, Cornell University, Ithaca, NY.

700A pg. 242
Divergence of desiccation-related traits in two Drosophila species of the takahashii subgroup from the western Himalayas. **Babita Kajla**, Ravi Parkash. Department of Genetics, M. D.UNIVERSITY, ROHTAK, Haryana, India.

701B pg. 242
Divergence of water balance mechanisms and acclimation potential in body color morphs of a tropical rainforest Drosophila species. **Chanderkala Lambhod**, Ravi Parkash. M.D.UNIVERSITY, ROHTAK, haryana, India.

702C pg. 242
Seasonal changes in humidity impact drought resistance in tropical Drosophila leontia: testing developmental effects of thermal versus humidity changes. **Poonam Ranga**, Ravi Parkash. GENETICS, MAHARSHI DAYANAND UNIVERSITY, ROHTAK, India.

703A pg. 243
MiRNA transcriptome follows different evolutionary trajectories at the onset of *Drosophila* metamorphosis. **Shu-Dan Yeh**[1], Marcin von Grotthuss[1], Vivek Jayaswal[2], José Ranz[1]. 1) Ecology and Evolutionary Biology, UC Irvine, Irvine, CA; 2) School of Mathematics and Statistics, The University of Sydney, Sydney, Australia.

Pattern Formation

704B pg. 243
Novel Interactions between the NF-κB and BMP Signaling Pathways in the *D. melanogaster* Embryo. **Sophia Carrell**, Alexander Thomas, Jeramey Friedman, Gregory Reeves. Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC.

705C pg. 244
Differential cell response to Epidermal Growth Factor Receptor (EGFR) signalling in the ovary. **Scott De Vito**[1], Jean François Boisclair Lachance[2], Mariana Fregoso Lomas[1], Laura Nilson[1]. 1) Deparment of Biology, McGill University, Montreal, QC, Canada; 2) Ben May Department for Cancer Research, University of Chicago, Chicago, Il.

706A pg. 244
A role for ABCF2 in early morphogenetic patterning. **Rachel Harney**[1], Byron Williams[2], Mike Hayes[3], Arida Dhanaswar[1], Danielle Beekman[1], Clinton Rice[1], Karla Daniels[4], David Soll[4], Daniel Weeks[3], Jan Fassler[1], Albert Erives[1]. 1) Dept. of Biology, University of Iowa, Iowa City, IA; 2) Interdisciplinary Program in Genetics, University of Iowa, Iowa City, IA; 3) Dept. of Biochemistry, University of Iowa, Iowa City, IA; 4) Developmental Studies Hybridoma Bank, University of Iowa, Iowa City, IA.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

707B pg. 244
Self-organized shuttling: generating sharp dosro-ventral polarity in the early Drosophila embryo. **Michal Haskel-Ittah**, Danny Ben-Zvi, Merav Branski-Arieli, Eyal Schejter, Naama Barkai, Benny Shilo. molecular genetics, weizmann institute, Rehovot, Israel.

708C pg. 245
Maternal Torso-like functions post terminal patterning to control *Drosophila* gastrulation. **Travis K. Johnson**[1,2], James C. Whisstock[1], Coral G. Warr[2]. 1) Biochemistry and Molecular Biology, Monash University, Clayton, Victoria, Australia; 2) School of Biological Sciences, Monash University, Clayton, Victoria, Australia.

709A pg. 245
Role of BMP signaling in serosa and amnion development of the phorid fly *Megaselia abdita*. **Chun Wai Kwan**, Urs Schmidt-Ott. Dept. of Organismal Biology and Anatomy, Univ of Chicago.

710B pg. 245
The Regulation of Dorsoventral Patterning in the Early Drosophila Embryo. **Ruta Ziukaite**. New York University, New York, NY.

711C pg. 246
Compartments in the second tracheal metamere of Drosophila larva. **Prashanth Rao**, Li Lin, Sougata Roy, Thomas Kornberg. CVRI, UCSF, San Francisco, CA.

712A pg. 246
The Drosophila T-box Transcription Factor Midline Functions within the Notch-Delta Signaling Pathway to Specify Sensory Organ Precursor Cell Fates and Regulates Cell Survival within the Eye Imaginal Disc. **Sandra M. Leal**, Sudeshna Das, Qichuan Chen, Joseph Saucier, Brandon Drescher, Sarah Morgan, John Forstall, Andrew Meriwether, Randy Toranzo. Dept Biological Sci, Univ Southern Mississippi, Hattiesburg, MS.

713B pg. 246
defective proventriculus (dve), a new member of DV patterning in the eye. **Oorvashi Roy G. Puli**[1], Takeshi Yorimitsu[3], Madhuri Kango-Singh[1,2,4], 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.

714C pg. 246
Role of growth regulatory pathway in eye development and differentiation. **Erika L. Wittkorn**[1], Kristine Garcia[1], Madhuri Kango-Singh[1,2,3], Amit Singh[1,2,3]. 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) Center for Tissue Regeneration and Engineering at Dayton (TREND), University of Dayton, Dayton, OH.

715A pg. 247
A genetic screen in wing imaginal discs for regeneration mutants. **Amanda R. Brock**, Rachel K. Smith-Bolton. Cell and Developmental Biology, University of Illinois at Urbana-Champaign, Urbana, IL.

716B pg. 247
Evolution of dipteran wing vein patterning. **Valentino M. Gantz**, Xiang-Ru Xu, Ethan Bier. Biological Sciences, University of California San Diego, La Jolla, CA.

717C pg. 247
Cytoneme-mediated Notch signaling between wing disc myoblasts and trachea. **Hai Huang**, Sougata Roy, Thomas Kornberg. Cardiovascular Research Institute, UCSF, San Francisco, CA.

718A pg. 247
Dual role for Dpp in early wing disc development in regulating EGFR and Wg signaling. **Sathiya Narayanan Manivannan**[1], Amanda Simcox[1,2]. 1) Molecular Cellular Developmental Biology, The Ohio State University, Columbus, OH; 2) The Department of Molecular Genetics, The Ohio State University, Columbus, OH.

719B pg. 248
Pan-leg developmental regulators control pro-thoracic leg specific Scr expression. **Christopher L. McCallough**, Ece Eksi, Emily R. Wyskiel, Teresa V. Orenic. Dept Biological Sci, Univ Illinois at Chicago, Chicago, IL.

720C pg. 248
Modeling dorsoventral patterning of the Drosophila embryo in silico reveals critical details overlooked by fluorescence imaging studies. **Michael D. O'Connell**, Gregory T. Reeves. Chemical & Biomolecular Engineering, North Carolina State University, Raleigh, NC.

721A pg. 248
Lethal (2) Essential for Life Gene Regulates Lateral Muscle Shapes During Embryonic Development. **Teresa Jagla**, Inga Wojtowicz, Krzysztof Jagla. GReD, INSERM U1103, CNRS UMR6293, Clermont, FD, France.

722B pg. 249
Gene regulatory domains controlling eggshell patterning are enriched within the first intron. **Nicole Pope**[1], Maira Farhat[2], Robert Marmion[1], Nir Yakoby[1,2]. 1) CCIB Rutgers University-Camden, Camden, NJ; 2) Biology Rutgers University-Camden, Camden, NJ.

Regulation of Gene Expression

723C pg. 249
The *tfiia-s-2* gene is a germline-specific homolog of the small subunit of the General Transcription Factor TFIIA. **Maura Coughlin**, Kevin Wons, Leah Hirschman, Cynthia Cain, Mark Hiller. Biological Sciences, Goucher College, Baltimore, MD.

724A pg. 249
Identification of phosphorylation sites of the transcription factor MEF2 *in vivo*. **Ashley A. DeAguero**, Melanie Adams, Marilyn Cisneros, Richard M. Cripps. Biology, University of New Mexico, Albuquerque, NM.

725B pg. 250
Determining general and male-specific functions of the essential protein CLAMP in Drosophila Melanogaster. **Jennifer Johnson**, Erica Larschan. Brown University, Providence, RI.

726C pg. 250
Regulation of a conserved Class I/ Class V Helix-Loop-Helix (HLH) Gene Regulatory Network. **Ke Li**, Nicholas Baker. Genetics, Albert Einstein College of Medicine, Bronx, NY.

727A pg. 250
The molecular basis of enhancer-promoter choice. **Jia Ling**, Theresa Apoznanski, Jinshuai Cao, Stephen Small. Department of Biology, New York University, New York, NY.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

728B pg. 251
KDM5 interacts with Foxo to modulate cellular levels of oxidative stress. **Xingyin Liu**, Christina Greer, Julie Secombe. Genetics, Albert Einstein Med College, Bronx, NY.

729C pg. 251
Genome-wide analysis of tissue-specific effector genes in the Drosophila embryo. **Malini Natarajan**, Samuel Meier, Jeff Johnston, Julia Zeitlinger. Stowers Institute for Medical Research, Kansas City, MO.

730A pg. 251
Identification of New Wingless Targets in *Drosophila* via ChIP-seq. **Claudia Rockel**, Konrad Basler. University of Zürich, Zürich, Switzerland.

731B pg. 252
Differential utilization of TATA Box-Binding Protein (TBP) and TBP-related Factor 1 (TRF1) at different classes of RNA polymerase III promoters. **Neha Verma**[1], Ko-Hsuan Hung[2], Jin Joo Kang[2], William Stumph[2]. 1) Dept. of Biology, San Diego State University, San Diego, CA 92182; 2) Dept. of Chemistry and Biochemistry, San Diego State University, San Diego, CA 92182.

732C pg. 252
Measuring polymerase dynamics with multi-color fluorescent in situ hybridization. **Shawn C. Little**[1], Mikhail Tikhonov[2], Eric F. Wieschaus[1], Thomas Gregor[2]. 1) Department of Molecular Biology / HHMI, Princeton University, Princeton, NJ; 2) Joseph Henry Laboratories of Physics / Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ.

733A pg. 252
Dual roles of TAK1 in the important dengue vector Aedes aegypti. **Shin-Hong Shiao**. Department of Parasitology, National Taiwan University, Taipei, Taipei, Taiwan.

734B pg. 253
A Targeted RNAi Screen of Maternally Deposited Cofactors in the *Drosophila* Embryo. **Adam N. Carte**[1,2], Max V. Staller[2], Meghan D. Bragdon[2], Ben Vincent[2], Zeba B. Wunderlich[2], Angela H. DePace[2]. 1) West Virginia University, Morgantown, WV; 2) Department of Systems Biology, Harvard Medical School, Boston, MA.

735C pg. 253
The bromodomain protein tBRD-1 interacts with two new members of the BET family and is required for gene activation in male germ cells. **Ina Theofel**, Tim Hundertmark, Renate Renkawitz-Pohl, Christina Rathke. Developmental Biology, Philipps Universität Marburg, Marburg, Hessen, Germany.

736A pg. 253
Dissecting the mechanism of Capicua- and Groucho-mediated repression in the terminal patterning system. Marta Forés[1], Leiore Ajuria[1], Núria Samper[1], Sergio González-Crespo[1], Rona Grossman[2], Ze'ev Paroush[2], **Gerardo Jiménez**[1,3]. 1) IBMB-CSIC, Parc Cientific de Barcelona, Barcelona, Spain; 2) Dept. of Developmental Biology and Cancer Research, IMRIC, The Hebrew University, Jerusalem, Israel; 3) ICREA, Barcelona, Spain.

737B pg. 254
INO80-dependent regression of transcriptional responses regulates developmental timing in Drosophila. **Sarah Neuman**, Robert Ihry, Arash Bashirullah. University of Wisconsin-Madison, Madison, WI.

738C pg. 254
Novel Gli-independent regulation of Hedgehog target enhancers via Gli binding sites. **Andrea Isabel Ramos**[1], Scott Barolo[1,2]. 1) Program in Cellular and Molecular Biology,; 2) Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI.

739A pg. 254
Identification of novel STAT92E target genes in hematopoiesis using *in silico* methods. **Aditi Vyas**[1], Rami Al-Ouran[2], Lonnie Welch[2], Soichi Tanda[1]. 1) Dept. of Biological Sciences, Ohio University, Athens, OH; 2) School of Electrical Engineering and Computer Science, Ohio University, Athens, OH.

740B pg. 255
The Mechanistic Basis for the Conservation of Enhancer Grammar Elements. **Jenny E. Atanasov**, James W. Posakony. Division of Biological Sciences-CDB, UCSD, La Jolla, CA.

741C pg. 255
The Effects of Poly-Glutamine Tract Variation on Protein-Protein Interactions in Enhanceosomes. **Danielle Beekman**, Clinton Rice, Megan Bowman, Rachel Harney, Albert Erives. Dept. of Biology, University of Iowa, Iowa City, IA, 52242, USA.

742A pg. 255
Non-additive *cis*-regulatory interactions underlie pair-rule regulation of Drosophila *wingless* at the blastoderm stage. **Kimberly Bell**[1,2], Kevin Chen[1], Jinelle Wint[1,3], 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; 3) Graduate Program in Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY.

743B pg. 256
Identification and analysis of regulatory elements at the endogenous apterous locus. **Dimitri Bieli**[1], Oguz Kanca[1], Fisun Hamaratoglu-Dion[2], Daryl Gohl[3], Paul Schedl[3], Martin Müller[1], Markus Affolter[1]. 1) University of Basel, Biozentrum, Basel, Switzerland; 2) University of Lausanne, Switzerland; 3) Princeton University, NJ.

744C pg. 256
Cis-regulatory elements controlling fiber-specific expression of muscle structural gene *Troponin C at 41C*. **Maria Chechenova**, Sara Maes, Richard Cripps. Biol, Univ New Mexico, Albuquerque, NM.

745A pg. 256
The activity of the *en/inv* imaginal disc enhancer depends on the genomic neighborhood. **Yuzhong Cheng**, Judith Kassis. Program in Genomics of Differentiation, NICHD, NIH, Bethesda MD 20892.

746B pg. 257
Tunable Control of Transcriptional Enhancers Using TAL-Effectors: Computing Back the Magic. **Justin Crocker**[1], Garth Ilsley[2,3], David Stern[1]. 1) HHMI Janelia Farm, Ashburn, VA; 2) European Molecular Biology Laboratory, European Bioinformatics Institute, Wellcome Trust Genome Campus, Cambridge, United Kingdom; 3) Okinawa Institute of Science and Technology Graduate University, Japan.

747C pg. 257
Global analysis of early nervous system specification. **Lea Daempfling**, Robert P. Zinzen. BIMSB, MDC Berlin, Berlin, Berlin, Germany.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

748A pg. 257
Decoding the regulatory grammar at homeotic gene enhancers. **Robert Drewell**[1,3,4], Lauren Winkler[4], Jessica Kurata[4], Michael Nevarez[4], Lily Li[4], Jacqueline Dresch[2]. 1) Department of Biology, Amherst College, Amherst, MA; 2) Department of Mathematics, Amherst College, Amherst, MA, 01002; 3) Department of Biological Sciences, Mount Holyoke College, South Hadley, MA, 01075; 4) Biology Department, Harvey Mudd College, Claremont, CA, 91711.

749B pg. 258
Identifying the enhancer region for *singles bar* expression in *Drosophila melanogaster* myoblasts. **Brayon Fremin**, Tonya Brunetti, Richard Cripps. Biology Dept, UNM, Albuquerque, NM.

750C pg. 258
Evolution of sex comb enhancers in the HOX gene *Scr*. **Daniel Friedman**, Olga Barmina, Artyom Kopp. Department of Evolution and Ecology, University of California, Davis, Davis, CA.

751A pg. 258
The Abdominal-A Hox factor acts in the EGF signal receiving cell to promote oenocyte formation. **Lisa M. Gutzwiller**, David Li-Kroeger, Brian Gebelein. Dev Biol, Cincinnati Children's Hosp, Cincinnati, OH.

752B pg. 259
Do regulatory interactions that result in repression of transcription elongation dominantly interfere with activation by other enhancers at the same promoter? **Michael L. Higgins**[1], Lisa Prazak[2], Haiyue Zhang[3], John Peter Gergen[4]. 1) Graduate Program in Biochemistry and Structural Biology, Stony Brook University, Stony Brook, NY; 2) Cold Spring Harbor Laboratory, Cold Spring Harbor, Stony Brook NY; 3) Nanjing University, Nanjing, China; 4) Department of Biochemistry and Cell Biology and the Center for Developmental Genetics.

753C pg. 259
Tissue-specific *cis*-regulatory interactions in early *Drosophila* development. **Sabrina Krueger**, Robert P. Zinzen. BIMSB, MDC Berlin, Berlin, Germany.

754A pg. 259
Establishment of chromatin states during maternal to zygotic transition in Drosophila embryos. **Xiao-Yong Li**[1], Melissa Harrison[2], Tommy Kaplan[3], Michael Eisen[1,4]. 1) Howard Hughes Medical Institute, University of California, Berkeley, CA; 2) Dept of Biomolecular Chemistry, University of Wisconsin, Madison, WI; 3) School of Computer Science and Engineering, The Hebrew University of Jerusalem, Jerusalem 91904, Israel; 4) Dept of Molecular and Cell Biology, Dept of Integrative Biology, QB3 Institute, University of California, Berkeley, CA.

755B pg. 260
Tinman and Pannier Regulate a *Mef2* Shadow Enhancer in the *Drosophila* Heart. **TyAnna L. Lovato**, Cheryl A. Sensibaugh, Kirstie L. Swingle, Melody M. Martinez, Richard M. Cripps. Biol, Univ New Mexico, Albuquerque, NM.

756C pg. 260
Complex Cis-Regulation of the *Drosophila* Genome: Insights from the modENCODE Project. **Steve W. Miller**[1], Nicholas Negre[2], Matthew Slattery[2], Chris Bristow[3], Jia Chen[2], Rachel Selfon[3], Lijia Ma[2], Manolis Kellis[3], Kevin P. White[2], James W. Posakony[1]. 1) Div of Bio/CDB, UCSD, San Diego, CA; 2) Institute for Genomics & Systems Biology, Dept of Human Genetics, Univ of Chicago, Chicago, IL; 3) Comp Sci and Artificial Intelligence Lab, Broad Inst of MIT and Harvard, Cambridge MA.

757A pg. 260
Dissecting the *cis*-regulatory DNA that controls the POU-domain transcription factor genes, *pdm-1* and *pdm-2*. **Jermaine Ross**[1,2], Kuzin Alexander[1], Thomas Brody[1], Ward F. Odenwald[1]. 1) NIH, Bethesda, MD; 2) Brown University, Providence, RI.

758B pg. 261
Spalt major directly regulates *seven-up* expression in Drosophila oenocytes. **Kathryn M. Ryan**, Richard M. Cripps. Dept Biol, Univ New Mexico, Albuquerque, NM.

759C pg. 261
Deciphering the logic of Su(H)-dependent Notch-target enhancers. **Elizabeth Stroebele**, Xin Yuan, Christian Noblett, Andrew Brittain, Albert Erives. Dept. of Biology, University of Iowa, Iowa City, IA 52242, USA.

760A pg. 261
Multiple *cis*-regulatory elements regulate *eyes absent* expression in the developing retina. **Bonnie Weasner**, Justin Kumar. Department of Biology, Indiana University, Bloomington, IN.

761B pg. 262
The Regulation and origin of sexually dimorphic segment number in Drosophila abdomen. **Shun Yan**, Wei Wang, John Yoder. University of Alabama, Tuscaloosa, AL.

762C pg. 262
The Chromatin Regulator Sin3A Buffers Transcriptional Changes in the Somatic Musculature. **Krista C. Dobi**[1], Marc S. Halfon[2], Mary K. Baylies[1]. 1) Dept Dev Biol, Sloan-Kettering Inst, New York, NY; 2) Dept Biochemistry, SUNY Buffalo, Buffalo, NY.

763A pg. 263
Krüppel regulation of *hunchback* increases reliability of mid-embryo expression patterning. **David M. Holloway**[1], Alexander V. Spirov[2,3]. 1) Dept Mathematics, British Col Inst Tech, Burnaby, BC, Canada; 2) CEWIT and Computer Science, Stony Brook University, New York, USA; 3) Sechenov Institute of Evolutionary Physiology and Biochemistry St. Petersburg, Russia.

764B pg. 263
Natural variation on the expression of developmentally essential gene *even-skipped* in *Drosophila melaogaster*. **Pengyao Jiang**[1], Michael Ludwig[1], Martin Kreitman[1,2], John Reinitz[1,3]. 1) Ecology & Evolution, University of Chicago, Chicago, IL; 2) Committee on Genetics, Genomics and Systems Biology, The University of Chicago, Chicago, IL; 3) Molecular Genetics & Cell Biology, The University of Chicago, Chicago, IL.

765C pg. 263
In vivo interpretation of morphogen gradients in neural development. **Agnieszka Klawiter**, Robert P. Zinzen. BIMSB, MDC Berlin, Berlin, Germany.

766A pg. 264
Regulation of ligand transcription mediates signaling pathway crosstalk. **Noemie Ammeux**[1], Ben Housden[1], Norbert Perrimon[1,2]. 1) Department of Genetics, Harvard Medical School, Boston, MA; 2) Howard Hughes Medical Institute, 77 Avenue Louis Pasteur, Boston, MA.

767B pg. 264
FlyBase Gene Model Annotations: The Rule-Benders. **Madeline Crosby**, Gil dos Santos, Sian Gramates, Beverley Matthews, Susan E. St. Pierre, David Emmert, Pinglei Zhou, Andrew Schroeder, Kathleen Falls, Susan Russo, William Gelbart, FlyBase Consortium. FlyBase, Harvard University, Cambridge, MA.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

768C pg. 264
Expression of the RpL22e family: Evidence for tissue-specific post-translational modification of RpL22e-like in the fly eye. **Brett W. Gershman**, Michael G. Kearse, Vassie C. Ware. Biological Sciences, Lehigh University, Bethlehem, PA.

769A pg. 265
An editing-independent function for the *Drosophila dADAR* mRNA truncated isoform during *rnp-4f* 5'-UTR intron splicing regulation. **Sushmita Ghosh**, Yaqi Wang, John Cook, Lea Chhiba, Jack Vaughn. Biology, Miami University, Oxford, OH.

770B pg. 265
Allele spesific expression in heterozygous D. melanogaster embryos. **Tevfik H. Kitapci**, Srna Vlaho, Jessica Gabrielian, Daniel Campo, Sergey Nuzhdin. Molecular and Computational Biology, USC, Los Angeles, CA.

771C pg. 265
Is there evidence for Dosage Compensation in Strepsiptera? **Shivani Mahajan**, Doris Bachtrog. Integrative Biology, University of California , Berkeley, US.

772A pg. 265
Role of regulatory small peptides in the control of gene expression during cell morphogenesis. Emilie Benrabah[1,2], Jennifer Zanet[1,2], Tongchao Li[3], Hugo Bellen[3], Francois Payre[1,2], **Serge Plaza**[1,2]. 1) Centre de Biologie du development, Universite Paul Sabatier, Toulouse, France; 2) CNRS UMR5547, Toulouse, France; 3) Baylor College of Medicine, Houston, Texas, USA.

773B pg. 266
Alternative splicing of *Drosophila nmnat* functions as a switch between NAD synthetic and neuroprotective functions. **Kai Ruan**, Chong Li, Shaoyun Zang, R.Grace Zhai. MCP, Miller School of Medicine, University of Miami, Miami, FL.

774C pg. 266
FlyBase Gene Model Annotations: Impact of High Throughput Data. **Susan E. St. Pierre**, Beverley Matthews, Madeline Crosby, Gil dos Santos, Sian Gramates, David Emmert, Pinglei Zhou, Andrew Schroeder, Kathleen Falls, Susan Russo, William Gelbart, FlyBase Consortium. FlyBase, Harvard University, Cambridge, MA.

Chromatin and Epigenetics

775A pg. 266
The chromatin landscape of Drosophila: comparisons between sexes, species, and chromosomes. **Emily Brown**, Doris Bachtrog. Department of Integrative Biology, University of California, Berkeley, Berkeley, CA.

776B pg. 267
How does Ago2 contribute to dosage compensation in *Drosophila melanogaster*? **Nikita Deshpande**, Victoria Meller. Department of Biological Sciences, Wayne State University, Detroit, MI.

777C pg. 267
The Genetic Basis of Paris *Sex-Ratio* Drive in *Drosophila simulans*. **Quentin Helleu**[1,2], Pierre Gérard[1], David Ogereau[1], Benjamin Prud'homme[3], Catherine Montchamp-Moreau[1]. 1) Laboratoire Evolution Génomes & Spéciation, CNRS, Gif sur Yvette, France; 2) Université Paris XI, Orsay, France; 3) Institut de Biologie du Developpement de Marseille-Luminy, Aix-Marseille Université, Marseille, France.

778A pg. 267
Nucleosomes shape DNA polymorphism and divergence. **Sasha A. Langley**[1], Charles H. Langley[2], Gary H. Karpen[1,3]. 1) Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 2) University of California, Davis, Department of Evolution and Ecology, Davis, CA; 3) University of California, Berkeley, Department of Molecular and Cellular Biology, Berkeley, CA.

779B pg. 268
The Influence of the *Chd1* on puffing pattern in polytene chromosomes during drosophila development. **Anna Makase**, Alexander Konev. St. Petersburg Nuclear Physics Institute, Gatchina, Russian Federation.

780C pg. 268
HP1B's role in gene regulation and chromatin structure. Louis Watanabe, **Nicole Riddle**. Biology, University of Alabama at Birmingham, Birmingham, AL.

781A pg. 268
Structure-Function Studies of Drosophila Myb-Interacting Protein Mip120. **MeiHsin Cheng**[1], Laura Andrejka[2], Joseph Lipsick[1,2,3]. 1) Genetics, Stanford University , Stanford, CA; 2) Pathology, Stanford University , Stanford, CA; 3) Biology, Stanford University , Stanford, CA.

782B pg. 269
Neocentromere formation in *Drosophila*. **Jason T. Palladino**, Barbara Mellone. Department of Molecular and Cell Biology, University of Connecticut, Storrs, CT.

783C pg. 269
Analyzing the co-evolution of CENP-A, CAL1, and centromeric DNA in *Drosophila*. **Leah Rosin**, Barbara Mellone. Molecular and Cell Biology, University Of Connecticut, Storrs, CT.

784A pg. 269
Monitoring the influence of CHD1 on histone dynamics in *Drosophila melanogaster*. **Michael A. Erb**, Jennifer A. Armstrong. W.M. Keck Science Department, Claremont McKenna College, Claremont, CA.

785B pg. 270
A candidate screen to identify factors important for CHD1 in *Drosophila melanogaster*. **Sharon Kim**, Jennifer Armstrong. W.M. Keck Science Department, Scripps College, Claremont, CA.

786C pg. 270
The role of centromeric protein misregulation in aneuploidy and cancer. **Nicole L. Beier**[1,2], Gary H. Karpen[1,2]. 1) Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA; 2) Department of Genome Biology, Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA.

787A pg. 270
Understanding the regulation of expression and stability of the SIN3 isoforms. **Ashlesha M. Chaubal**, Ambikai Gajan, Lori Pile. Biological Sciences, Wayne State University, Detroit, MI.

788B pg. 271
The signature of repressed enhancers during Drosophila pattern formation. **Nina Koenecke**[1,2], Samuel Meier[1], Jeffrey Johnston[1], Julia Zeitlinger[1,3]. 1) Stowers Institute for Medical Research, Kansas City, MO, USA; 2) The Open University, UK; 3) University of Kansas Medical Center, Department of Pathology and Cell Biology, Kansas City, KS, USA.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

789C pg. 271
Histone H3S10 Phosphorylation by the JIL-1 Kinase in Pericentric Heterochromatin and on the 4th Chromosome Creates a Composite H3S10phK9me2 Epigenetic Mark. **Chao Wang**, Yeran Li, Weili Cai, Xiaomin Bao, Jack Girton, Jorgen Johansen, Kristen Johansen. Biochemistry, Biophysics & Mol Biol, Iowa State University, Ames, IA.

790A pg. 271
Drosophila Rm62 and SU(VAR)3-9 complex targeted by a 5' non coding midsized RNA for Heterochromatin assembly. **Indira Bag**[1], Manika Pal-Bhadra[1], J. Boeke[3], Axel Imhof[3], Utpal Bhadra[2]. 1) Centre for Chemical Biology, Indian Institute of Chemical Technology, Tarnaka, Uppal road, Hyderabad 500007, Andhra Pradesh, India; 2) Functional Genomics and Gene Silencing Group, Centre for Cellular and Molecular Biology, Hyderabad-500007, India; 3) 3Munich Center of Integrated Protein Science and Adolf-Butenandt Institute, Ludwig Maximilians University of Munich, Munich, Germany.

791B pg. 272
Understanding Heterochromatin: Determination of DNA Elements That Influence Gene Expression. **April Bauer**, Sarah Elgin. Department of Biology, Washington University, St. Louis, MO.

792C pg. 272
Heterochromatin Function and Dynamics by the KDM4A Demethylase. **Serafin U. Colmenares**[1], Sasha Langley[1], Cameron Kennedy[1], Irene Chiolo[2], Joel Swenson[1], Axel Imhof[3], Gary Karpen[1]. 1) Genome Dynamics, Lawrence Berkeley National Lab, Berkeley, CA; 2) Dept of Biological Sciences, University of Southern California, Los Angeles, CA; 3) Adolf Butenandt Institut, University of Munich, Germany.

793A pg. 272
Targeting Heterochromatin Formation in Drosophila. **Sarah C. R. Elgin**, Monica Sentmanat, Kiri Ulmschneider, Tingting Gu. Dept Biology, Washington Univ, St Louis, MO.

794B pg. 273
Development of a single break system to study DNA damage repair in heterochromatin. **Aniek Janssen**[1,2], Jan LaRocque[3], Gary Karpen[1,2]. 1) Genome Dynamics, Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 2) Department of Molecular and Cell Biology, University of California Berkeley, Berkeley, California, USA; 3) Department of Human Science, School of Nursing & Health Studies, Georgetown University, Washington DC, USA.

795C pg. 273
Centromeric variation in natural populations of Drosophila melanogaster. **Charles H. Langley**[1], Gary H. Karpen[2,3], Sasha A, Langley[2]. 1) Dept, of Evolution and Ecology, Univ California - Davis, Davis, CA; 2) Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3) University of California, Berkeley, Department of Molecular and Cellular Biology, Berkeley, CA.

796A pg. 273
Ator, a Novel AT-hook Protein Co-purifies with Chromator and Localizes to the Chromocenter and Interband Regions of Polytene Chromosomes. **Yeran Li**[1], Peng Wang[2], Changfu Yao[1], Jack Girton[1], Vincent Archambault[2], Kristen Johansen[1], Jorgen Johansen[1]. 1) Biochemistry, Biophysics & Molecular Biology, Iowa State University, Ames, IA; 2) Institut de Recherche en Immunologie et en Cancérologie, Montreal, Canada.

797B pg. 274
Novel Roles of Helicases in Preventing Aberrant Recombination Repair in Heterochromatin. **Taehyun Ryu**, Kate Bowlin, Devika Das, Irene Chiolo. Molecular and Computational Biology Department, University of Southern California, Los Angeles, CA.

798C pg. 274
Identification and Characterization of Novel Regulators of Heterochromatin Structure and Function. **Joel Swenson**[1,2], Serafin Colmenares[2], Sylvain Costes[3], Gary Karpen[1,2]. 1) Molec & Cell Biol, Univ California-Berkeley, Berkeley, CA; 2) Department of Genome Dynamics, Lawrence Berkeley National Laboratory, Berkeley, CA; 3) Department of Cancer and DNA Damage Response, Lawrence Berkeley National Laboratory, Berkeley, CA.

799A pg. 274
Illuminating the onset of late replication and heterochromatinization of particular repetitive sequences during Drosophila embryogenesis using TALE-lights. **Kai Yuan**, Tony Shermoen, Patrick O'Farrell. Biochemistry & Biophysics, UCSF, San Francisco, CA.

800B pg. 275
Dissection of a domain border in the bithorax complex. **Welcome Bender**. BCMP Dept, Harvard Medical Sch, Boston, MA.

801C pg. 275
Mechanism of Homie insulator-mediated long-range interaction. **Miki Fujioka**, James B. Jaynes. Biochemistry & Molecular Biology, Thomas Jefferson University, Philadelphia, PA.

802A pg. 275
The RNA-binding protein CIP3 antagonizes *gypsy* chromatin insulator function in a tissue-specific manner. Matthew R. King, Leah H. Matzat, Ryan K. Dale, Su Jun Lim, **Elissa P. Lei**. Laboratory of Cellular and Developmental Biology, NIDDK, NIH, Bethesda, MD.

803B pg. 276
The chromatin state-dependent TRL binding conservation in Drosophila species. **Lijia Ma**[1], Matthew Slattery[2], Nicolas Negre[3], Robert Arthur[1], Rebecca Spokony[1], Sasha Ostapenko[1], Ryan Ptashkin[1], Jennifer Zieba[1], Kevin White[1]. 1) University of Chicago, Chicago, IL., US; 2) University of Minnesota, Duluth, MN., US; 3) University of Montpellier, Montpellier, France.

804C pg. 276
Cis-elements mediating epigenetic regulation of *eyeless* locus in *Drosophila melanogaster*. **Shreekant Verma**, Rashmi U. Pathak, Rakesh K. Mishra. Centre for Cellular and Molecular Biology - CSIR, Hyderabad-07, India.

805A pg. 276
De novo establishment of PcG-mediated repression. **Jumana S. AlHaj Abed**, Rick Jones. Southern Methodist University, Dallas, TX.

806B pg. 277
Cyclin G, a link between epigenetic regulation of gene expression and developmental stability? **Camille Dupont**[1], Delphine Dardhalon-Cuménal[1], Valérie Ribeiro[1], Vincent Debat[2], Frédérique Peronnet[1], Neel B. Randsholt[1]. 1) UMR7622 - Developmental Biology, CNRS-UPMC, Paris, France; 2) UMR7205 - OSEB, Systematic and Evolution, CNRS-MNHN, Paris, France.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

807C pg. 277
Deciphering the functions of Ino80, a chromatin remodeling protein, in *Drosophila* development. **Mohsen Ghasemi**[1], Vasanthi Dasari[2], Shruti Jain[1], Narendra Pratap Singh[2], Rakesh K. Mishra[2], Vani Brahmachari[1]. 1) Dr. B. R. Ambedkar Center for Biomedical Research, Delhi University, Delhi, India; 2) Centre for Cellular and Molecular Biology, Hyderabad, India.

808A pg. 278
Polycomb group regulation of *engrailed* and *invected*. **Judith A. Kassis**, Sandip De, Yuzhong Cheng. NICHD/NIH, Bethesda, MD.

809B pg. 278
Identifying new Polycomb group genes by screening for mutations that disrupt pairing-sensitive silencing. **James A. Kennison**. Genomics of Differentiation, Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, Bethesda, MD.

810C pg. 278
Genome-wide functions for Polycomb complexes. **Hun-Goo Lee**[1], Yuri Schwartz[2], Tatyana Kahn[2], Amanda Simcox[3], Vincenzo Pirrotta[1]. 1) Molecular Biology and Biochemistry Dept, Rutgers University, Piscataway, NJ; 2) Molecular Biology Dept, Umeå University, Umeå, Sweden; 3) Molecular Genetics Dept, Ohio State University, Columbus, OH.

811A pg. 278
Dynamic and differential targeting of Polycomb complexes during Drosophila development. **Anne-Marie Martinez**, Anna Delest, Aubin Thomas, Bernd Schuttengruber, Samy Sakr, Giacomo Cavalli. Institute of Human Genetics, CNRS, Montpellier, Languedoc-Roussillon, France.

812B pg. 279
Polycomb/ Trithorax group proteins collaborate with Heterochromatin protein 1 to regulate Drosophila gene expression. **Janel Rodriguez**, Jamila Horabin. Biomedical Science, Florida State University, Tallahassee, FL.

813C pg. 279
A screen of chromatin modifier mutants in Drosophila wing disc regeneration using a non-surgical ablation system. **Yuan Tian**, Rachel Smith-Bolton. Cell & Developmental Biology, University of Illinois Urbana-Champaign, Urbana, IL.

814A pg. 279
What makes the X unique: an X-clusive sequence story. **Sonal S. Joshi**, Victoria H. Meller. Department of Biological Sciences, Wayne State University, Detroit, MI.

815B pg. 280
The function of the dosage compensation protein, CLAMP, at the histone locus body. **Leila E. Rieder**, Anna Zeidman, Erica Larschan. Molecular Biology, Cellular Biology and Biochemistry, Brown University, Providence, RI.

816C pg. 280
Cohesin-independent connections between sister chromatids and their relationship to homolog pairing. **Tharanga Niroshini Senaratne**, Eric Joyce, Chao-ting Wu. Genetics, Harvard Medical School, Boston, MA.

817A pg. 280
Investigating the role of chromatin remodeler CHD1 in the nucleolus of *D. melanogaster*. **Lauren S. Siems**, Jennifer Armstrong. Biology, Scripps College, Claremont, CA.

818B pg. 281
Trans--Activation: A New Epigenetic Phenomenon Responsible for Transcriptional Memory. **Davide Corona**, Maria Cristina Onorati, Walter Arancio. STEBICEF, Universita di Palermo, Palermo, Italy.

819C pg. 281
Presence of assymetic CpC methylation in *Drosophila melanogaster*. **Deepti D. Deobagkar**[1,2], Chitra Pannikar[1], Abhyankar Varada[1], Deshmukh Saniya[1]. 1) Zoology, University of Pune, Pune, India, 411007; 2) Bioinformatics center, University of Pune, Pune, India, 411007.

820A pg. 281
Identifying the Genetic Components of Hybrid Sterility in *Drosophila virilis*. **Mauricio Galdos**[1,2], Alex Erwin[1], Chris Harrison[1], Justin Blumenstiel[1]. 1) Ecology and Evolutionary Biology, The University of Kansas, Lawrence, KS; 2) Molecular Biosciences, The University of Kansas, Lawrence, KS.

821B pg. 282
Defining the roles of chromatin environment in DNA replication origin activation. **Brian Hua**[1,2], Terry Orr-Weaver[1,2]. 1) Whitehead Institute, Cambridge, MA; 2) MIT Biology, Cambridge, MA.

822C pg. 282
Evaluation of genes required for cell survival after telomere loss. **Rebeccah Kurzhals**[1], Cory Parks[1], Hailey Lowery[1], Jenny Atanasov[2], Zachary Lee[3]. 1) Department of Biology, Southeast Missouri State University, Cape Girardeau, MO; 2) University of California San Diego, California 92093; 3) University of Utah, Salt Lake City, UT 84112.

823A pg. 282
The SUUR Chromatin Protein Promotes Underreplication Through Inhibition of Replication Fork Progression. **Jared T. Nordman**[1], Elena Kozhevnikova[2], Peter Verrijzer[2], Alexey Pindyurin[3], Evgeniya Andreyeva[4], Victor Shloma[4], Igor Zhimulev[4], Terry L. Orr-Weaver[1,5]. 1) Orr-Weaver Lab, Whitehead Inst, Cambridge, MA; 2) Erasmus Univ. Med. Center, Rotterdam, Netherlands; 3) Netherlands Cancer Institute, Amsterdam, Netherlands; 4) Russian Acad. Sciences, Novosibirsk, Russia; 5) Dept. of Biology, Massachusetts Institute of Technology, Cambridge, MA.

824B pg. 283
Faithful Transmission of Paternal Telomeres Ensured by a Sperm-Specific Chromosomal Protein. **Takuo Yamaki**[1], Glenn Yasuda[2], Barbara Wakimoto[1]. 1) Department of Biology, University of Washington, Seattle, WA 98195; 2) Department of Biology, Seattle University, Seattle, WA 98122.

RNA Biology

825C pg. 283
MicroRNA-mediated Regulation of Apoptosis in Drosophila. **Chao-Yi Chen**[1,2], Jian-Chiuan Li[2], Kun-Nan Tsai[2,4], Chi-Chuan Li[2,5], Hsi-Ju Chen[2], Haixia Huang[3], Wan-Hsuan Lin[2], Bruce A. Hay[3], Chun-Hong Chen[2,3]. 1) Institute of Molecular and Cellular Biology, National Taiwan University, Taipei, Taiwan; 2) Division of Molecular and Genomic Medicine, National Health Research Institutes, Zhunan Mioali, Taiwan, Taiwan; 3) Division Of Biology, Mc 156-29, California Institute Of Technology, Pasadena, CA. USA; 4) Institute of Molecular Medicine, National Tsing Hua University, Hsinchu, Taiwan; 5) Institute of Biotechnology, National Tsing Hua University, Hsinchu, Taiwan.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

826A pg. 283
MicroRNAs regulates the neuronal and developmental timing. **Chu-Ya Cheng**[1], Kun-Nan Tsai[1,2], Jian-Chiuan Li[1], Hung-Hsiang Yu[3], Chun-Hong Chen[1]. 1) Institute of Molecular and Genomic Medicine, National Health Research Institutes, Zhunan, Taiwan; 2) Institute of Molecular Medicine, National Tsing Hua University, Hsinchu, Taiwan; 3) Institute of Cellular and Organismic Biology, Academia Sinica, Taipei, Taiwan.

827B pg. 284
Unbiased screening by conditional competitive inhibition reveals novel functions of conserved Drosophila miRNAs during development and adult behavior. **Elizabeth M. McNeill**[1], Tudor A. Fulga[1,6], Richard Binari[2], Julia Yelick[1], Alexandra Blanche[1], Matthew Booker[2], Michael Schnall-Levin[2], Yong Zhao[2], Todd DeLuca[3], Fernando Bejarano[4], Zhe Han[5], Eric C. Lai[4], Dennis Wall[3], Norbert Perrimon[2], David Van Vactor[1]. 1) Cell Biology, Harvard Medical School, Boston, MA; 2) Genetics, Harvard Medical School, Boston, MA; 3) Systems Biology, Harvard Medical School, Boston, MA; 4) Developmental Biology, Sloan-Kettering Institute, New York, NY; 5) Internal Medicine-Molecular Medicine, Genetics and Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI; 6) Weatherall Institute of Molecular Medicine, Radcliffe Department of Medicine, University of Oxford, Oxford, UK.

828C pg. 284
Sexual divergence by global and coordinated reductions in microRNA abundance and 3'UTR length in spermatogenesis. **Yang Shen**[1], Bitao Qiu[1], Chung-I Wu[1,2,3]. 1) State Key Laboratory of Biocontrol, School of Life Sciences, Sun Yat-sen University, Guang Zhou, P.R. China; 2) Department of Ecology and Evolution, Univeristy of Chicago, Chicago, USA; 3) Laboratory of Disease Genomics and Individualized Medicine, Beijing Institute of Genomics, Chinese Academy of Sciences, Beijing, P.R. China.

829A pg. 284
Genome-wide microRNA screening reveals that the evolutionary conserved microRNA-9a regulates body growth by targeting sNPFR1/NPYR. **Yoon Seok Suh**[1,2], Kweon Yu[1,2]. 1) Bionano Research Center, KRIBB, Daejeon, South Korea; 2) Department of Functional Genomics, KUST, Daejeon, South Korea.

830B pg. 285
Characterization of subtelomeric regions involved in transposable element repression in Drosophila melanogaster. **Amna Asif-Laidin**. Université Pierre et Marie Curie, Paris, France.

831C pg. 285
Primary processing and Aub homotypic ping-pong cycle are acting in *Drosophila* primary spermatocytes to produce piRNAs. **Emilie Quenerch'du**[1,2], Amit Anand[1], Toshie Kai[1,2]. 1) Temasek Life Sciences Laboratory, Singapore; 2) National University of Singapore, Department of Biological Sciences, Singapore.

832A pg. 285
Cosuppression of Adh gene in Drosophila melanogaster by insertion of inducible transgene follows typical RNAi pathway. **Debabani Roy Chowdhury**, Utpal Bhadra. Functional Genomics Group, Centre for Cellular and Molecular Biology, Uppal Road, Hyderabad - 500007, INDIA.

833B pg. 286
Dietary Restriction and the effects of the *Syndecan* gene on life span in *Drosophila*. **Thanhlong G. Tran**[1], Maria De Luca[2], Jeff Leips[1]. 1) Dept of Biological Science, UMBC, Baltimore, MD; 2) Dept of Nutrition Sciences, University of Alabama at Birmingham, Birmingham, AL.

834C pg. 286
Core snRNP splicing factor SmD1 modulates RNA interference in *Drosophila*. Xiao-Peng Xiong[1], Krishna Kurthkoti[1], Kung-Yen Chang[1], Gianluigi Lichinchi[1], Nabanita De[2], Anette Schneemann[3], Ian J. MacRae[2], Tariq M. Rana[1], Norbert Perrimon[4], **Rui Zhou**[1]. 1) Program for RNA Biology, Sanford-Burnham Medical Research Institute, La Jolla, CA; 2) Department of Integrative Structural and Computational Biology; 3) Department of Cell and Molecular Biology, The Scripps Research Institute, La Jolla, CA; 4) Howard Hughes Medical Institute, Department of Genetics, Harvard Medical School, Boston, MA.

835A pg. 286
Circular RNA transcripts in *Drosophila melanogaster* development. **Shannon Hateley**[1], Lior Pachter[1,2], Michael Eisen[1,3]. 1) Department of Molecular and Cell Biology, University of California, Berkeley, CA; 2) Department of Mathematics, University of California, Berkeley, CA; 3) Howard Hughes Medical Institute, University of California, Berkeley, CA.

836B pg. 287
Acal, a long non-coding RNA that collaborates with Raw to downregulate JNK signaling during dorsal closure. **Luis Daniel Ríos-Barrera**, Juan Riesgo-Escovar. Dev Biology., Neurobiology Inst, Univ Nacional Autónoma de México, Querétaro, Juriquilla, Mexico.

837C pg. 287
Tropomyosin protein expression is regulated by a novel coding region determinant. Nathan Boin, Jessica Williams, **Aaron N. Johnson**. Dept of Integrative Biology, University of Colorado Denver, Denver, CO.

838A pg. 287
Analysis of the nuclear localisation of *castor*-mRNA in *Drosophila melanogaster*. **Antje Juengling**[1], Melanie Homberg[2], Kathrin Fischer[1], Joachim Urban[1]. 1) Institute of Genetics, University of Mainz, Mainz, Germany; 2) TRM Leipzig, Dpt. for Cell and Development Biology, Leipzig, Germany.

839B pg. 288
Identification of a conserved motif in mRNAs that localize to RNA islands during *Drosophila* embryogenesis. **Stephanie Yee**[1], Michelle Kowanda[1], Xiao Li[2], Quaid Morris[3], Howard Lipshitz[2], Eric Lecuyer[4], Paul Lasko[1]. 1) Biology, McGill University, Montreal, Quebec, Canada; 2) Molecular Genetics, University of Toronto, Toronto, Ontario, Canada; 3) Computer Science, University of Toronto, Toronto, Ontario, Canada; 4) RNA Biology, Institut de Recherches Cliniques de Montreal, Montreal, Quebec, Canada.

840C pg. 288
Distinct neural mRNA decay kinetics in Drosophila embryogenesis. **Dana A. Burow**, Maxine Umeh, Michael Cleary. Quantitative and Systems Biology, University of California, Merced, Merced, CA.

841A pg. 288
Stable intronic sequence RNAs (sisRNAs) in Drosophila melanogaster. **Jun Wei Pek**, Eugene Gardner, Joseph Gall. Embryology, Carnegie Institution, Baltimore, MD.

842B pg. 289
New RNA-seq and RNAi data on the function of alternatively spliced exons in the complex Drosophila *dumpy* gene. **Amber Carmon**, Ross MacIntyre. Dept Molec Biol & Genetics, Cornell Univ, Ithaca, NY.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

843C pg. 289
Analysis of alternative splicing in Drosophila using RNA-sequence data. **Lauren Gibilisco**, Qi Zhou, Shivani Mahajan, Doris Bachtrog. University of California, Berkeley, Berkeley, CA.

844A pg. 289
Decreased expression of 9G8 and sex determination genes alter lipid droplet morphology and triglyceride levels in larvae. **Bijal C. Kakrecha**[1], Robert M. Gingras[3], Spencer Ng[2], Justin R. DiAngelo[3], Alexis Nagengast[2]. 1) Biology, Widener Univ, Chester, PA; 2) Biochemistry and Chemistry, Widener Univ, Chester, PA; 3) Biology, Hofstra Univ, Hempstead, NY.

845B pg. 289
A phylogenetic study of *Drosophila* splicing assembly chaperone RNP-4F associated U4-/U6-snRNA: a revised secondary structure. **Jack C. Vaughn**, Sushmita Ghosh, Jing Chen. Dept Biology, Miami Univ, Oxford, OH.

846C pg. 290
A new non-spliceosomal nuclear intron class in *Drosophila rnp-4f*. **Yaqi Wang**, Sushmita Ghosh, Angila Simone, Amy Feiber, Jack Vaughn. Biology, Miami University, Oxford, OH.

847A pg. 290
The effect of ALS-associated TDP-43 mutations on active translation of specific RNAs using polysome profiling and RNA-seq. **Scott G. Daniel**[1], Antony Pearson[1], Daniela C. Zarnescu[1,2,3]. 1) Molecular and Cellular Biology Dept, University of Arizona, Tucson, AZ; 2) Neuroscience Dept, University of Arizona, Tucson, AZ; 3) Neurology Dept, University of Arizona, Tucson, AZ.

848B pg. 291
Orb and Wispy cooperate in the cytoplasmic polyadenylation of *grk* mRNA during oogenesis. **Amanda Norvell**, Lauren Langbein, Kristen Randolph, Letitia Thompson. Dept Biol, Col of New Jersey, Ewing, NJ.

849C pg. 291
gurken (*grk*) mRNA is alternatively polyadenylated. **Letitia Thompson**, Amanda Norvell. Biology, The College of New Jersey, Ewing, NJ.

850A pg. 291
The RNA export pathway and regulation of tissue specific gene expression. Simona Caporilli, Yachuan Yu, Jianqiao Jiang, **Helen White-Cooper**. Sch Biosci, Cardiff Univ, Cardiff, United Kingdom.

Techniques and Resources

851B pg. 292
Three-dimension magnetic resonance microscopy of the Drosophila brain at 10 micron isotropic resolution. **Pedro Fernandez-Funez**[1,2], Choong Lee[2], Steve Blackband[2,3]. 1) Dept Neurology, Univ Florida, Gainesville, FL; 2) Dept. Neuroscience, Univ. of Florida, Gainesville, FL; 3) National High Magnetic Field Laboratory.

852C pg. 292
Computational tissue labeling: Tissue and Cellular Recognition in Developing *Drosophila* Embryos. **Soile V. E. Keränen**[1], Jonathan T. Barron[2], Pablo Arbeláez[2], Mark D. Biggin[1], Jitendra Malik[2], David W. Knowles[1]. 1) Lawrence Berkeley National Laboratory, Berkeley, CA; 2) University of California Berkeley, Berkeley, CA.

853A pg. 292
Ultrastructural characterization of cytokinesis and abscission in polarized epithelia cells using advanced TEM approaches. **Irina Kolotueva**, Emeline Daniel, Roland Le Borgne. IGDR, Rennes, France.

854B pg. 293
Microfluidic culturing for studying morphogenesis and gastrulation in live *Drosophila* embryos. **Thomas J. Levario**[1], Bomyi Lim[2], Jiyuan Ding[1], Stanislav Y. Shvartsman[2], Hang Lu[1]. 1) School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA; 2) School of Chemical and Biological Engineering and Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ.

855C pg. 293
The Transgenic RNAi Project (TRiP): new resources, online tools and validation data. **Ian T. Flockhart**[1], Yanhui Hu[1], Charles Roesel[1,3], Richelle Sopko[1], Marianna Foos[1], Colleen Kelley[1], Noemie Ammeux[1], Norbert Perrimon[1,2], Stephanie E. Mohr[1], Lizabeth Perkins[1]. 1) Harvard Med Sch, Boston, MA; 2) HHMI, Boston, MA; 3) Northeastern U, Boston MA.

856A pg. 293
Development of novel CRISPR tools for genome editing in Drosophila. **Benjamin E. Housden**[1], Yanhui Hu[1], Charles Roesel[3], Ian Flockhart[1], Shuailiang Lin[1], Colleen Kelley[1], Rong Tao[1], Michael Buckner[1], Laura Holderbaum[1], Stephanie Mohr[1], Norbert Perrimon[1,2]. 1) Department of Genetics, Harvard Medical School, Boston, MA; 2) Howard Hughes Medical Institute, Harvard Medical School, Boston, MA; 3) Northeastern University, Boston, MA.

857B pg. 294
Genome engineering and RNAi resources at the Drosophila RNAi Screening Center. **Stephanie E. Mohr**[1], Yanhui Hu[1], Ian T. Flockhart[1], Quentin Gilly[1], Michael Buckner[1], Benjamin E. Housden[1], Gerald Marsischky[1], Charles Roesel[1,2], Shuailiang Lin[1], Bahar Yilmazel[1], Kirstin Rudd[1], Norbert Perrimon[1,3]. 1) Dept Gen, Harvard Med Sch, Boston, MA; 2) Northeastern University, Boston, MA; 3) Howard Hughes Medical Institute, Boston, MA.

858C pg. 294
A versatile toolbox for CRISPR/Cas-mediated engineering of the Drosophila genome. **Fillip Port**[1], Hui-Min Chen[2], Tzumin Lee[2], Simon Bullock[1]. 1) MRC Laboratory of Molecular Biology, Cambridge, United Kingdom; 2) Janelia Farm Research Campus, HHMI, Ashburn, VA.

859A pg. 294
High performance gene expression profiling of D melanogaster, and host-parasite interactions. MM Kańdula[1], S. Shridhar[1], **N. Stralis-Pavese**[1], DP Kreil[1,2]. 1) Chair of Bioinformatics, BOKU University, Vienna, Austria; 2) School of Life Sciences, University of Warwick, U.K.

860B pg. 295
New methods for translational profiling of sensory neurons of *Drosophila* larvae. **Andrew Bellemer**[1], Sherry Tang[2], W. Daniel Tracey[1,3,4]. 1) Department of Anesthesiology, Duke University, Durham, NC; 2) Department of Biology, Duke University, Durham, NC; 3) Department of Neurobiology, Duke University, Durham, NC; 4) Department of Cell Biology, Duke University, Durham, NC.

861C pg. 295
A Synthetic Non-amplyfing RNAseq Carrier. **Peter A. Combs**[1], Michael B. Eisen[2,3]. 1) Biophysics Grad Group, UC Berkeley, CA; 2) Molecular and Cell Biology, UC Berkeley, CA; 3) HHMI, UC Berkeley, CA.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

862A pg. 295
Large-scale identification of chemically induced mutations in *Drosophila melanogaster* . **Nele A. Haelterman**[1], Lichun Jiang[2], Yumei Li[2], Vafa Bayat[1,3], Berrak Ugur[1], Kai Li Tan[1], Ke Zhang[4], Danqing Bei[2], Bo Xiong[1], Wu-Lin Charng[1], Hector Sandoval[2], Shinya Yamamoto[1,2], Manish Jaiswal[2,5], Koen J. T. Venken[1,6], Rui Chen[1,2], Hugo J. Bellen[1,2,4,5]. 1) Developmental Biology Program, Baylor College of Medicine, Houston, TX; 2) Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, Tx; 3) Medical Scientist Training Program, Baylor College of Medicine, Houston, Tx; 4) Program in Structural and Computational Biology and Molecular Biophysics, Baylor College of Medicine, Houston, Tx; 5) Howard Hughes Medical Institute; 6) Department of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, Tx.

863B pg. 296
Prediction of genetic interactions from high-throughput RNA-Seq of *Drosophila* deletion collections. **Hangnoh Lee**[1], Dong-Yeon Cho[2], Steven Russell[3], Teresa Przytycka[2], Brian Oliver[1]. 1) National Institute of Diabetes, Digestive, and Kidney Diseases, National Institutes of Health, Bethesda, MD; 2) National Center for Biotechnology Information, National Institutes of Health, Bethesda, MD; 3) Department of Genetics, University of Cambridge, Cambridge, United Kingdom.

864C pg. 296
High-speed robotic system for handling live non-anesthetized adult Drosophila melanogaster for biological research. **Joan Savall**[1,2], Eric Tatt Wei Ho[1,3], Mark Schnitzer[1,2]. 1) James H. Clark Center for Biomedical Engineering & Sciences, Stanford University, Stanford, CA; 2) Howard Hughes Medical Institute, Stanford University, Stanford, CA; 3) University Teknologi PETRONAS, Malaysia.

865A pg. 297
Modeling a gene's expression from its intergenic sequence. **Md A. Hassan Samee**[1], Tara Lydiard-Martin[3], Angela DePace[3], Saurabh Sinha[1,2]. 1) Dept of Comp Sci, Univ of Illinois, Urbana, IL; 2) Institute for Genomic Biology, Univ of Illinois, Urbana, IL; 3) Dept of Systems Biology, Harvard Med School, Boston, MA.

866B pg. 297
Automated Image Annotation of Drosophila Embryos. **Qian Sun**[1,2], Stuart Newfeld[3], Sudhir Kumar[1,3,4], Jieping Ye[1,2]. 1) Center for Evolutionary Medicine and Informatics, Biodesign Institute, Arizona State University, Tempe, AZ; 2) School of Computing, Informatics, and Decision Systems Engineering, Arizona State University, Tempe, AZ; 3) School of Life Sciences, Arizona State University, Tempe, AZ; 4) Center of Excellence in Genomic Medicine Research, King Abdulaziz Univ, Jeddah, Saudi Arabia.

867C pg. 297
Annotation of genes on the *Drosophila biarmipes* dot chromosome using comparative genomics. **Alison Dubé**, Benjamin Reid, Genevieve St. Martin, Tiffany Turner, James E. J. Bedard. Department of Biology, University of the Fraser Valley, Abbotsford, BC, Canada.

868A pg. 298
GeneSeer Aids Drug Discovery by Exploring Evolutionary Relationships Between Genes Across Genomes. **Douglas D. Fenger**, Matthew Shaw, Philip Cheung, Tim Tully. Bioinformatics Department, Dart NeuroScience, San Diego, CA.

869B pg. 298
FlyExpress 6: Discovering cis-regulatory motifs by integrative analysis of sequence and spatiotemporal patterns of expression. **Charlotte E. Konikoff**[1], Bremen Braun[1], Maxwell Sanderford[1], Qian Sun[1,2], Thomas Brody[3], Jieping Ye[1,2], Sudhir Kumar[1,4]. 1) Center for Evolutionary Medicine and Informatics, Biodesign Institute, Arizona State University, Tempe, AZ; 2) School of Computing, Informatics, and Decision Systems Engineering, Arizona State University, Tempe, AZ; 3) National Institutes of Health, Neural Cell-Fate Determinants Section, Bethesda, MD; 4) School of Life Sciences, Arizona State University, Tempe, AZ.

870C pg. 298
A website consolidating multiple *Drosophila* species genome data. **Virginie Orgogozo**. Institut Jacques Monod, CNRS UMR7592, Paris, France.

871A pg. 299
A proposed standardized *Drosophila* thoracico-abdominal ganglion nomenclature. Douglas Armstrong[2], Jana Börner[4], Gwyneth Card[1], Robert Court[2,3], Marta Costa[5], Michael Dickinson[6], Carsten Duch[7], **Wyatt Korff**[1], Richard Mann[8], David Merritt[9], Rod Murphey[4], Shigehiro Namiki[1], Andrew Seeds[1], David Shepherd[3], Troy Shirangi[1], John Tuthill[10], James Truman[1], Darren Williams[11]. 1) HHMI- Janelia Farm; 2) School of Informatics, U. of Edinburgh; 3) School of Biol. Sci, Bangor University; 4) Biological Sciences, Florida Atlantic University; 5) Dept. of Genetics, U. of Cambridge; 6) Dept. of Biology, U. of Washington; 7) Univ. of Mainz; 8) Biochemistry and Molecular Biophysics, Columbia University; 9) School of Biological Sciences, The University of Queensland; 10) Department of Neurobiology, Harvard Medical School; 11) MRC Centre for Developmental Neurobiology, King's College London.

872B pg. 299
High rates of background mutagenesis induced by the hsFLP-FRT targeted deletion method. **David R. Andrew**[1,2], Robert Kraft[2], Alvin J. Clark[2], Judith Tello[2], Monica Chaung[2], Elise Blackmore[2], Frank Valdes[2], Linda L. Restifo[1,2]. 1) Center for Insect Science, University of Arizona, Tucson, AZ; 2) Department of Neuroscience, University of Arizona, Tucson, AZ.

873C pg. 299
Regulated, inducible Cre for spatio-temporal mosaic analysis in Drosophila. **Sougata Roy**, Songmei Liu, Frank Hsiung, Thomas B. Kornberg. Cardiovascular Research Institute, University of California San Francisco, San Francisco, CA.

874A pg. 300
RMCE in Drosophila tissue-culture cells. **Amanda Simcox**, Thomas Jacobsen, Sathiya Manivannan, Bhavani Selvaraj. Dept Molec Gen, Ohio State Univ, Columbus, OH.

875B pg. 300
Visualization of Sqd-*grk* Interactions in Live Drosophila Oocytes Using Tri-molecular Fluorescence Complementation. **Nancy J. Levensailor**, Steven J. Gangloff, Alicia R. Watson, Dane M. Buenton, Nathanael R. Terwilliger, Scott B. Ferguson. Department of Biology, SUNY Fredonia, Fredonia, NY.

876C pg. 300
Analysis of temperature sensitivity of nine Rho1 alleles. **Nicole K. Barnette**[1], Lauren Stone[2], Laurence von Kalm[1]. 1) Biology, University of Central Florida, Orlando, FL; 2) Rollins College, Winter Park, FL.

877A pg. 300
Drosophila Habitat Developed to Support Research on the International Space Station. **Sharmila Bhattacharya**, Matthew Lera, Ravikumar Hosamani. Space Biosciences Division, NASA Ames Res Ctr, Mail stop 236-5. Moffett Field, CA 94035.

POSTER SESSIONS

See Page 10 for presentation schedule. Poster board number and presenter are in **bold**. Full abstracts can be found online.

878B pg. 301
Characterization of histidine decarboxylase bearing an internal FLAG epitope in *Drosophila melanogaster* . **Anthony Hage**[1], Maxwell Mianecke[2], Andra Trapp[1], Deb Burg[1], Martin G. Burg[1,2]. 1) Biomedical Sciences, Grand Valley State Univ., Allendale, MI; 2) Cell and Molecular Biology, Grand Valley State Univ., Allendale, MI.

879C pg. 301
Survey or Drosophila species on Santa Catalina Island. **Joyce Y. Kao**, Sergey V. Nuzhdin. Biological Sciences, University of Southern California, Los Angeles, CA.

880A pg. 302
Novel vectors for tracking multiple transgenes within a single *Drosophila* strain. **David Li-Kroeger**[1], Hugo Bellen[1,2,3]. 1) Molecular and Human Genetics, Baylor College of Medicine, Houston, TX; 2) Graduate Program in Developmental Biology, Baylor College of Medicine, Houston, TX; 3) Howard Hughes Medical Institue, Baylor College of Medicine, Houston, TX.

881B pg. 302
New stocks at the Bloomington Drosophila Stock Center. **Annette L. Parks**, Kevin R. Cook, Thom C. Kaufman, Kathy A. Matthews. Bloomington Drosophila Stock Center, Dept. of Biology, Indiana University, Bloomington, IN.

882C pg. 302
Geometric morphometric analysis reveals opposing effects of PVR and JNK signaling on thorax morphology. Lewis Baker[1], Rebecca Garlena[1], Trish Parsons[2], Seth Weinberg[2], **Beth Stronach**[1]. 1) Dept Micro & Mol Genetics, Univ Pittsburgh Sch Medicine, Pittsburgh, PA; 2) Dept Oral Biology, Univ Pittsburgh Sch Dental Medicine, Pittsburgh, PA.

883A pg. 303
An intersectional genetic approach that is interoperable with existing GAL4 lines. **Shamprasad Varija Raghu**[1], Claudia Barros[1], Farhan Mohammad[1], Joanne Lam[1], Sadhna Sahani[1], Adam Claridge-Chang[1,2]. 1) Program in Neuroscience and Behavior, Duke-NUS Graduate Medical School, Singapore; 2) Institute for Molecular and Cell Biology, Singapore.

884B pg. 303
Weak imaginal disc GAL4 drivers can be used to express toxic UAS responder constructs throughout development. **Minpei Wang**, Mariah Pero, Laurence von Kalm. Department of Biology, University of Central Florida, Orlando, FL.

885C pg. 303
National BioResource Project “Drosophila” --- Fly Stock Centers Consortium in Japan. **Masayoshi Watada**[1], Toshiyuki Takano[2], Muneo Matsuda[3], Ryo Akashi[4], Ryu Ueda[5]. 1) Dept Biol, Fac Sci, Ehime Univ, Matsuyama, Ehiem, Japan; 2) Drosophila Genetic Resource Center, Kyoto Institute of Technology, Japan; 3) School of Medicine, Kyorin University, Japan; 4) Frontier Science Research Center, University of Miyazaki, Japan; 5) Genetic Resource Center, National Institute of Genetics, Japan.

Educational Initiatives

886A pg. 304
Melanogaster...Catch the fly! The video game. **Josefa Gonzalez**[1], Roberto Torres[2]. 1) Institute of Evolutionary Biology, Barcelona, Barcelona, Spain; 2) Torresdecomunicacion, Barcelona, Spain.

887B pg. 304
An interdisciplinary project-based approach using *Drosophila* genetics and cell biology to improve reasoning, problem solving and foundational knowledge in high school students. **Sonia Hall**[1], Camden Hanzlick-Burton[2]. 1) Molecular Biosciences, University of Kansas, Lawrence, KS; 2) Olathe Northwest High School, Olathe, KS.

888C pg. 304
A genetic screen for new *dis3* alleles in *Drosophila*. **Hemlata Mistry**[1], Mark Snee[2], James Skeath[2]. 1) Dept of Biology, Widener University, Chester, PA; 2) Dept of Genetics, Washington University Medical School, St Louis, MO.

889A pg. 305
Using an undergraduate course to map and clone adult visible mutations. **Eric P. Spana**. Department of Biology, Duke University, Durham, NC.

890B pg. 305
The Genomics Education Partnership: Implementing a Research-Based Genomics Project for Undergraduates. **S. Elgin**[1], C. Bazinet[2], J. Bedard[3], M. Burg[4], J. DiAngelo[5], C. Jones[6], L. Kadlec[7], J. Leatherman[8], H. Mistry[9], A. Nagengast[9], L. Reed[10], NL Reeves[11], J. Sanford[12], C. Small[13], S. Smith[14], L. Zhou[15], C. Shaffer[1], W. Leung[1], D. Lopatto[16]. 1) Washington U St Louis, MO; 2) St John's U, NY; 3) U Fraser Valley, BC; 4) Grand Valley St U, MI; 5) Hofstra U, NY; 6) Moravian Col, PA; 7) Wilkes U, PA; 8) U Northern Colorado, CO; 9) Widener U, PA; 10) U Alabama-Tusc, AL; 11) Mt San Jacinto Col, CA; 12) Ohio Northern U, OH; 13) Medgar Evers Col, NY; 14) Arcadia U, PA; 15) U Pittsburg, PA; 16) Grinnell Col, IA.

891C pg. 305
Implementation of the Genomics Education Partnership (GEP) Project at a Community College. **Nick L. Reeves**[1], Céline Gerber[1], Astrid Russell[1], Gabriel A. Sanchez[1], Ursula Simonoski[1], Curtis C. Smith[1], Robert Haywood[1], Maureen Njuguna[1], Wilson Leung[2], Christopher D. Shaffer[2], Sarah C. R. Elgin[2]. 1) Biological Sciences, Mt. San Jacinto College, Menifee, CA; 2) Biology Department, Washington University, St Louis, MO.

PROGRAM CHANGES/ADDITIONS

Friday, March 28

11:15 am	Chromatin & Epigenetics session #62 has been cancelled and is replaced by #793A Targeting Heterochromatin Formation in Drosophila. **Sarah C R Elgin**
11:45 am	Chromatin & Epigenetics session #64 has been cancelled and is replaced by #823A The SUUR Chromatin Protein Promotes Underreplication Through Inhibition of Replication Fork Progression **Jared T. Nordman**
7:00-7:45 pm	The Fly Room Movie Special Event — California Room

Saturday, March 29

8:30 am	Abstract #105 will be presented by Steve Small in the Regulation of Gene Expression Session.
11:00 am	Abstract #127 will be presented by Doris Bachtrog in the Regulation of Gene Expression Session

POSTER CANCELLATIONS/CHANGES

Poster #272B (Wang) cancelled
Poster #273C (Gorski) cancelled
Poster #556A (Agrawal) Presenter changed to Anjalika Chongtham
Poster #625A (Yadav) cancelled
Poster #751A (Gutzwiller) cancelled
Poster # 793A (Elgin) Changed to platform session

LATE ABSTRACTS

(see complete text of abstracts at www.drosophila-conf.org)

Poster #	Presenting Author	Abstract Title and Co-Authors
Cell Biology and Cytoskeleton		
892A	Anna Jang	The role of Rap1 in regulation of actin dynamics during *Drosophila* border cell migration. **Anna C. Jang**, Zih-Min Liao, Yi-Shan Huang, Yi-Chi Hsieh, Tzu-han Huang.Institute of Biotechnology, National Cheng Kung University, Tainan, Taiwan. pg. 309
893B	Christopher Fields	Functional and expression analysis of a novel putative basement membrane degrader in *Drosophila melanogaster*. **Christopher J. Fields**, Ajay Srivastava.Biology, Western Kentucky University, Bowling Green, KY. pg. 309
894C	James Caldwell	First X-ray crystal structure of a *Drosophila* muscle myosin. **James Caldwell**, Girish Melkani, Tom Huxford, Sanford Bernstein.Biology Dept, San Diego State University, San Diego, CA, 92182. pg. 309
Cell Biology and Signal Transduction		
895A	Derek Dean	*Wavy*, a gene affecting wing morphology, encodes an inositol 1,4,5-triphosphate kinase. **Derek M. Dean**[1], Eric Spana[2], Luana Maroja[1], Brent Bomkamp[1], David L. Deitcher[3].1) Biology, Williams College, Williamstown, MA; 2) Biology, Duke University, Durham, NC; 3) Neurobiology and Behavior, Cornell University, Ithaca, NY. pg. 309
896B	Janine Quijano	Lolal is maternally required for proper Dpp responsiveness. **Janine Quijano**, Jacob Seemann, Stuart Newfeld.School of Life Sciences, Arizona State Univ, Tempe, AZ. pg. 310
897C	Hui-Ying Lim	ROS regulate cardiac function in Drosophila via a novel paracrine mechanism. **Hui-Ying Lim**[1,2].1) Free Radical Biology and Aging, Oklahoma Medical Research Foundation, Oklahoma City, OK; 2) Development, Aging and Regeneration Program, Sanford-Burnham Medical Research Institute, La Jolla, CA. pg. 310
898A	Liping Zhang	Mucin-type O-glycosylation is required for polarized secretion in the Drosophila digestive system. **Liping Zhang**,

		Kelly Ten Hagen.Developmental Glycobiology Section, NIDCR/NIH, Bethesda, MD 20892. pg. 311

Cell Division and Growth Control		
899B	John Poulton	Centrosomes are key components of mitotic spindle assembly and orientation in the symmetric divisions of Drosophila epithelial cells. **John Poulton**, John Cuningham, Mark Peifer.Biology, Univ North Carolina, Chapel Hill, NC. pg. 311
Physiology, Organismal Growth, and Aging		
900C	Aditya Sen	The role of Clu in germ cell mitochondrial function. **Aditya Sen**, Rachel Cox.Biochemistry and Mol. Biology, Uniformed Services Univ., Bethesda, MD. pg. 311
901A	Gayle Overend	Transcriptomic insights into extreme pH. **Gayle Overend**, Louise Henderson, Pawel Herzyk, Shireen A. Davies, Julian AT Dow.Molecular, Cell & Systems Biology, University of Glasgow, Glasgow, Scotland, United Kingdom. pg. 312
902B	Maria Stefana	Diet-induced changes in *Drosophila* lifespan and metabolism. **M. Irina Stefana**, Timothy J. Ragan, Paul Driscoll, Alex P. Gould.Physiology and Metabolism, MRC National Institute for Medical Research, London, United Kingdom. pg. 312
903C	Wen Bin Chng	Dietary regulation of amylase and maltase expression in the adult *Drosophila* midgut. **Wen-Bin Alfred Chng**.Global Health Institute, School of Life sciences, Station 19, EPFL, 1015 Lausanne, Switzerland. pg. 312
904A	Sahar Emran	Target of Rapamycin Signalling Pathway as a Potential Mediator of the Lifespan-Extending Effects of Dietary Restriction by Essential Amino Acid Alteration. **Sahar Emran**, Mingyao Yang, Xiaoli He, Matthew Piper.University College London, London, United Kingdom. pg. 313
905B	Kai Huang	The putative role of DCISD3 in *Drosophila*. **KT Huang**[1,2], JC Li[2], HD Wang[1], CH Chen[2].1) National Tsing Hua University, Hsinchu, Taiwan, Taiwan; 2) National Health Research Institutes,Miaoli,Taiwan pg. 313
Gametogenesis and Organogenesis		
906C	Ming-Der Lin	Molecular dissection of Vasa function in germ plasm localization and assembly. Szu-Chieh Wang[1,2], Hao-Jen Hsu[2], Gee-Way Lin[3], Ting-Fang Wang[1], Chun-Che Chang[3], **Ming-Der Lin**[1,2].1) Dept. of Mol. Biol. & Human Genetics, Tzu-Chi University, Hualien, Taiwan; 2) Dept. of Life Science, Tzu-Chi University, Hualien, Taiwan; 3) Department of Entomolog, National Taiwan University, Taipei, Taiwan. pg. 313
Stem Cells		
907A	Yalan Xing	pineapple eye, a putative Drosophila E3 ligase, functions as an essential factor in germline and intestinal stem cell self-renewal. **Yalan Xing**, Hannele Ruohola-Baker.Department of Biochemistry, University of Washington, Seattle, WA. pg. 313
908B	Kyu-Sun Lee	Roles of PINK1, mTORC2, and mitochondria in preserving brain tumor-forming stem cells in a noncanonical Notch signaling pathway. **Kyu-Sun Lee**[1,2], Zhihao Wu[1], Yan Song[3], Siddhartha S. Mitra[4], Abdullah H. Feroze[4,5], Samuel H. Cheshier[4,5], Bingwei Lu[1].1) Department of Patholgy, Stanford University, Stanford, CA 94305 USA; 2) BioNanotechnology Research Center, Korea Research Institute of Bioscience and Biotechnology, Daejeon, Korea; 3) Peking-Tsinghua Center for Life Sciences, Peking University, Beijing, China; 4) Institute of Stem Cell Biology and Regenerative Medicine, Stanford, CA 94305 USA; 5) Department of Neurosurgery, Stanford University School of Medicine, Stanford, CA 94305 USA. pg. 314
909C	Chenhui Wang	EGFR and Notch signaling respectively regulate proliferative activity and multiple cell lineage differentiation of *Drosophila* gastric stem cells. **Chenhui Wang**[1,2], Xingting Guo[1,2], Rongwen Xi[1].1) National Institute of Biological Sciences, No. 7 Science Park Road, Zhongguancun Life Science Park, Beijing 102206, China; 2) College of Life Sciences, Beijing Normal University, Beijing ,100875, China. pg. 314
Immunity and Pathogenesis		
910A	Lei Zhou	P53-Mediated Rapid Induction of Apoptosis Conveys Resistance to Viral Infection. Bo Liu[1], Susanta Behura[2], Rollie Clem[3], Anette Schneemann[4], James Becnel[5], David Severson[2], **Lei Zhou**[1].1) Dept Molec Genetics/Microbiol, Univ Florida Col Medicine, Gainesville, FL; 2) Eck Institute for Global Health, Department of Biological Sciences, University of Notre Dame, Notre Dame, IN; 3) Division of Biology, Kansas State University, Manhattan, KS; 4) Department of Molecular Biology, The Scripps Research Institute, La Jolla, CA; 5) Center for Medical, Agricultural and Veterinary Entomology, USDA/ARS, Gainesville, FL. pg. 315
Neural Development		
911B	Dominique Siegenthaler	Molecular mechanisms underlying Neuroglian (L1 CAM) mediated axonal interactions essential for mushroom body development. **Dominique Siegenthaler**, Eva-Maria Enneking, Eliza Moreno, Jan Pielage.Friedrich Miescher Institute, Basel, Switzerland. pg. 315
912C	Cecilia Lu	The Conserved MicroRNA miR-8 Regulates Synapse Morphogenesis. **Cecilia S. Lu**[1,2], Bo Zhai[2], Alex Mauss[3,4], Matthias Landgraf[3], Stephen Gygi[2], David Van Vactor[1,2].1) Okinawa Institute of Science and Technology, Onna-son, Okinawa, Japan; 2) Department of Cell Biology, Harvard Medical School, Boston, MA, USA; 3) Department of Zoology, University of Cambridge, Cambridge, UK; 4) Max Planck Institute of Neurobiology, Martinstried, Germany. pg. 315
913A	Husam Babikir	Aplip1/JIP1 is a transport adaptor for axonal transport of active zone proteins. **Husam Babikir**[1,2], Matthias Siebert[1,2], Matthias Böhme[1,2], Nicole Holton[3], Stephan Sigrist[1,2].1) Institute of Biology & Genetics -FU Berlin, Berlin, Germany; 2) NeuroCure Cluster of Excellence, Charité Berlin, Berlin, Germany; 3) Institut für Chemie und Biochemie, Abteilung Strukturbiochemie, Freie Universität Berlin,. pg. 316

Neurophysiology and Behavior		
914B	Matthew Meiselman	Ecdysis Triggering Hormone: Metamorphosis of a Developmental Signal into a Regulator of Reproduction in the Fruit Fly Drosophila melanogaster. **Matthew R. Meiselman**[1], Hongjiu Dai[1], Sang Soo Lee[1], Crisalejandra Rivera-Perez[2], Fernando Noriega[2], Thilini Wijesekera[3], Brigitte Dauwalder[3], Adams Michael E.[1].1) Department of Cell, Molecular, and Developmental Biology, University of California, Riverside, Riverside, CA 92521; 2) Department of Biological Sciences, Florida International University, Miami, FL 33199; 3) Department of Biology and Biochemistry, University of Houston, 369 SR2, Houston, TX 77204. pg. 316
915C	Mohammed Khan	Functional Consequences of Amyloid-like Oligomerization of Drosophila Orb2. **Mohammed R. Khan**.Stowers Institute For Medical Research, Kansas City, KS. pg. 316
916A	Sang Soo Lee	Ecdysis Triggering Hormone Mediates Courtship Memory via Regulation of Juvenile Hormone Levels. **Sang Soo Lee**[1], Natalie Karapetians[2], Crisalejandra Rivera-Perez[3], Fernando Noriega[3], Thilini Wijesekera[4], Brigitte Dauwalder[4], Michael Adams[1,2].1) Neuroscience Graduate Program; 2) Department of Entomology and Cell Biology & Neuroscience, University of California, Riverside, Riverside, CA 92521; 3) Department of Biological Sciences, Florida International University, Miami, FL 33199; 4) Department of Biology and Biochemistry, University of Houston, 369 SR2, Houston, TX 77204. pg. 317
Drosophila Models of Human Diseases		
917B	Santiago Pineda	The BK Channel Slowpoke and Cardiac Function. **Santiago Pineda**[1], Karen Ocorr[1], Rolf Bodmer[1], Diane Fatkin[2].1) Biomedical Sciences, Sanford Burnham Medical Research Institute, La Jolla, CA; 2) Victor Chang Cardiac Research Institute,405 Liverpool Street, Darlinghurst NSW 2010. pg. 317
918C	Mark Kankel	Identification of Modifiers of Amyotrophic Lateral Sclerosis in *Drosophila*. **Mark W. Kankel**[1], Anindya Sen[1], Douglas Dimlich[2], Marianthi Kiparaki[2], Marina Theodorou[2], Nicole Sakellari[2], Basel Tarab[2], Spyros Artavanis-Tsakonas[1,2].1) Molecular Discovery, BiogenIdec, Cambridge, MA; 2) Department of Cell Biology, Harvard Medical School, Boston, MA. pg. 318
919A	Anindya Sen	Identification of modifiers of Parkinson's disease in *Drosophila*. **Anindya K. Sen**[1], Mark Kankel[1], Doug Dimlich[2], Harsha Kuthethur Gururaj[1], Basel Tarab[2], Christina Wong[2], Nicole Sakellari[2], Samia Aly[2], Chapman Beekman[2], Spyros Artavanis-Tsakonas[1,2].1) Molecular Discovery, Biogen-Idec, Cambridge, MA 02142; 2) Department of Cell Biology, 240 Longwood Avenue, LHRRB 410, Boston, MA 02115. pg. 318
920B	David Hess-Homeier	Astrocyte-specific regulation of human MeCP2 expression in *Drosophila*. **David Hess-Homeier**[1], Chia-Yu Fan[3], Tarun Gupta[2], Ann-Shyn Chiang[3,4], Sarah Certel[1,2].1) Department of Biological Sciences, University of Montana, Missoula, MT; 2) Neuroscience Graduate Program, University of Montana, Missoula, MT; 3) Brain Research Center, National Tsing Hua University, Taiwan; 4) Institute of Biotechnology, National Tsing Hua University, Taiwan. pg. 318
921C	Patricia Jumbo-Lucioni	Altered Glycosylated Synaptomatrix Composition and Synaptic Architecture in a Drosophila Classic Galactosemia Disease Model. **Patricia P. Jumbo-Lucioni**, Kendal S. Broadie.Department of Biological Sciences, Vanderbilt University, Nashville, TN. pg. 319
922A	Dominika Korzekwa	Systems biology and metabolomics approaches: towards the core metabolic map of *Drosophila melanogaster*. **Dominika Korzekwa**[1], Dan Erben[1], Shireen A. Davies[1], David G. Watson[2], Julian A. T. Dow[1].1) University of Glasgow, Glasgow, United Kingdom; 2) University of Strathclyde, Glasgow, United Kingdom. pg. 319
Evolution and Quantitative Genetics		
923B	Carlos Diaz-Castillo	Heterochromatin Dynamics in Early Embryogenesis Might Contribute to a Sexual Dimorphism for Gene Expression Noise. **Carlos Diaz-Castillo**.Independent Researcher, Irvine, CA. pg. 320
924C	Richard Meisel	Evolution and Function of Positionally Relocated Genes in Drosophila Genomes. **Richard P. Meisel**.Biology and Biochemistry, University of Houston, TX. pg. 320
925A	Shuoyang Wen	Courtship songs in the *Drosophila montium* species-subgroup. Chuancheng Chen[1], Xiaoshen Lu[1], Masayoshi Watada[2], Michael G. Ritchie[3], **Shuoyang Wen**[1].1) Department of Entomology, South China Agricultural Univ. 483 Wushan Road, Guangzhou, Guangdong, China; 2) Graduate School of Science and Engineering, Ehime University, 3 Bunkyo-Cho, Matsuyama, Ehime 790-8577, Japan; 3) School of Biology, University of St Andrews, St Andrews, Fife KY16 9TH, UK. pg. 320
926B	Yerbol Kurmangaliyev	Allele-specific splicing in panel of genotype-specific transcriptomes of Drosophila melanogaster. **Yerbol Kurmangaliyev**[1,2], Kjong Lehmann[3], Daniel Campo[1], Peter Chang[1], Alexander Favorov[4], John Tower[1], Mikhail Gelfand[2], Sergey Nuzhdin[1].1) Molecular and Computational Biology, University of Southern California, Los Angeles, CA; 2) Institute for Information Transmission Problems, Moscow, Russia; 3) Memorial Sloan-Kettering Cancer Center, New York, NY; 4) Johns Hopkins University School of Medicine, Baltimore, MD. pg. 320
927C	Allison McClish	Cytoplasmic incompatibility and infection frequency of *Wolbachia* in a Michigan population of *D. melanogaster*. **Allison McClish**, Roger Albertson.Albion College Biology Department, Albion, MI. pg. 321
928A	Alison Egge	Genotype-by-environment interactions of demographic values in fluctuating thermal environments using *Drosophila melanogaster*. **Alison Egge**, Olivia Eller, Theodore Morgan.Kansas State University KS. pg. 321
929B	Timothy Karr	Protein evolution through the lens of the sperm proteome. **Timothy Karr**.Biodesign Inst, PO Box 875001, Arizona State Univ, Tempe, AZ. pg. 322
930C	Minako Izutsu	Comprehensive Analysis of Genes Involved in the Dark Adaptation of a *Drosophila* Line. **Minako Izutsu**[1], Osamu Nishimura[2], Kiyokazu Agata[1], Naoyuki Fuse[1,2].1) Laboratory for Molecular Developmental Biology, Graduate School of Science, Kyoto University; 2) RIKEN Center for Developmental Biology, Japan. pg. 322

946C	Moises Paramo	Dispersal at the Chromosomal Level of the NK gene family in Drosophila willistoni. **Moises S. Paramo**, Carolus Chan, Jose Ranz.University of California, Irvine, Irvine, CA. pg. 327
Pattern Formation		
931A	Jennifer Winstanley	A Structure-Function analysis of *Drosophila* Tolloid. **Jennifer Winstanley**, Clair Baldock, Hilary Ashe.Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom. pg. 322
932B	Emilia Esposito	Dynamic Regulation of Eve Stripe 2 Expression in Living Embryos. **Emilia Esposito**[1,3], Jacques Bothma[1,3], Gavin Shlissel[1,3], Hernan Garcia[2], Thomas Gregor[2], Michael Levine[1].1) Dept. of MCB, UC Berkeley, Berkeley, CA; 2) Dept of Physics, Princeton University, Princeton, NY; 3) Authors contributed equally to the work. pg. 323
933C	Sudha Kumar	Understanding the mechanism of pigment rim formation at the periphery of the fly eye. **Sudha R. Kumar**, Andrew Tomlinson.Genetics & Development, Columbia University, New York, NY. pg. 323
934A	Adam Majot	*E(spl)*^{D}-mediated repression of R8 cell-fate occurs independently of *N*^{spl}. **Adam Majot**, Ashok Bidwai.Biology, West Virginia University, Morgantown, WV. pg. 323
Regulation of Gene Expression		
935B	Jasmine Kharazmi	Investigation of dmyc Promoter and Regulatory Regions. **Jasmine Kharazmi**[1], Cameron Moshfegh[2].1) Department of Neuroanatomy, UZH, Zurich, Switzerland; 2) Department of Health Sciences, ETHZ, Zurich, Switzerland. pg. 324
936C	Hsiao-Yun Liu	Zelda functions in larval disc and brain development. **Hsiao-Yun Liu**, Kevin O'Brien, Christine Rushlow.Biology, New York University, New York, NY. pg. 324
937A	Lisa Deignan	Dynamic regulation of the Dpp signalling-responsive transcriptional network in the *Drosophila* embryo. **Lisa Deignan**, Abbie Saunders, Catherine Sutcliffe, Tim Burgis, Leo Zeef, Ian Donaldson, Hilary L. Ashe.Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom. pg. 324
947A	Laura Youngblood	*Drosophila melanogaster* and the role of genetic background in eggshell phenotype. **Laura Youngblood**, Lisa Goering.St. Edward's University, Austin, TX. pg. 328
Chromatin and Epigenetics		
938B	Jack Bateman	Analysis of transvection using fluorescent reporters. **Jack R. Bateman**, Amanda J. Blick, Ilana Mayer-Hirshfeld, Beatriz Malibiran, Justine E. Johnson.Biology Department, Bowdoin College, Brunswick, ME. pg. 325
939C	Qingjiao Li	Analysis of the D. melanogaster genome organization. **Qingjiao Li**, Harianto Tjong, Xianghong Jasmine Zhou, Frank Alber.CMB, University of Southern California , Los Angeles, CA. pg. 325
RNA Biology		
940A	Ya-Chen Lin	Role of MicroRNA Turnover in the Maternal to Zygotic Transition in *Drosophila*. **YC Lin**[1,2], JC Li[2], HD Wang[1], CH Chen[2].1) National Tsing Hua University, Hsinchu, Taiwan; 2) National Health Research Institutes, Miaoli, Taiwan. pg. 325
941B	Coline Goriaux	A new swing for flamenco, transcriptionnal analysis of a master piRNA cluster. **Coline Goriaux**, Sophie Desset, Yoan Renaud, Chantal Vaury, Emilie Brasset.GReD, Clermont Ferrand, France. pg. 326
942C	Sachi Inagaki	Lobe-less RNA is essential for mushroom body morphogenesis in *Drosophila*. **Sachi Inagaki**[1], Masanao Sato[2,3], Tomoyuki Miyashita[4], Natsuki Nakamura[5], Satoru Kobayashi[2,3], Minoru Saitoe[4], Yuji Kageyama[1,5].1) Research Center for Environmental GenomicsKobe University, Kobe, Japan; 2) Okazaki Institute for Integrative Bioscience, Japan; 3) National Institute for Basic Biology, National Institutes of Natural Sciences, Japan; 4) Tokyo Metropolitan Institute of Medical Science, Japan; 5) Department of Biology, Graduate School of Sciences, Kobe University, Japan. pg. 326
943A	Jenna Schwarz	Characterisation of a broadly expressed long non-coding RNA, lnc703, in *Drosophila melanogaster*. **Jenna Schwarz**, Andrew Bassett, Robert Young, Chris Ponting, Jilong Liu.MRC Functional Genomics Unit, University of Oxford, Oxford, United Kingdom. pg. 326
Techniques and Resources		
944B	Andrew Bassett	Mutagenesis and homologous recombination in *Drosophila* cell lines using CRISPR/Cas9. **Andrew Roger Bassett**.MRC Functional Genomics Unit, University of Oxford, Oxford, Oxfordshire, United Kingdom. pg. 327
945C	Susan Celniker	De novo Assemblies of Drosophila melanogaster using third-generation PacBio sequencing. Jane Landolin[2], Kristi Kim[2], Sergey Koren[3], Chen-Shan Jason Chin[2], Charles Yu[1], Bill Fisher[1], Roger Hoskins[1], Casey Bergman[4], Adam M. Phillippy[3], **Susan E. Celniker**[1].1) Berkeley Dros Genome Ctr, Lawrence Berkeley National Lab, Berkeley, CA; 2) Pacific Biosciences, 1380 Willow Road, Menlo Park, CA 94025; 3) 3125 Biomolecular Sciences Bldg #296, University of Maryland, College Park, MD 20742; 4) Michael Smith Building, Oxford Road, University of Manchester, M13 9PT. pg. 327