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Drosophila Genetics

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OPENING/GENERAL SESSIONS

Wednesday, April 3 7:00 PM–9:00 PM

Opening General Session

Co-Moderators: Richard Mann, Columbia University, New York and Kristin Scott, University of California, Berkeley

Room: Marriott Ballroom Salons 1-3, Lobby Level

Presentations:

7:00 pm **Welcome and Opening Remarks.** Richard Mann. Columbia University, New York.
7:15 pm **GSA Welcome and Update.** Adam Fagen. Genetics Society of America, Bethesda, Maryland.
7:25 pm **Larry Sandler Award Presentation.** Ken Irvine. Rutgers University, Waksman Institute, Piscataway, New Jersey.
7:30 pm **Larry Sandler Lecture.**
8:00 pm **Jules Hoffmann Introduction.** Kristin Scott. University of California, Berkeley.

8:05 pm **Innate Immunity : From Flies to Humans.** Jules A. Hoffmann. IBMC, University of Strasbourg, Strasbourg, France. 1

8:50 pm **Presentation of George W. Beadle Award to R. Scott Hawley, Stowers Institute for Medical Research.** Adam Fagen. Genetics Society of America, Bethesda, MD

Thursday, April 4 8:30 AM–12:35 PM

Plenary Session I

Moderator: David Stern, Janelia Farm Research Campus, Ashburn, Virginia

Room: Marriott Ballroom Salons 1-3, Lobby Level

Presentations:

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

8:35 am **Molecular Mechanisms of Axon Degeneration.** Marc R. Freeman. Dept Neurobiology, Univ Massachusetts Med Sch/HHMI, Worcester, MA. 1

9:05 am **Genetic Approaches to Dissecting Neural Computation in the Visual System.** Tom Clandinin. Dept of Neurobiology, Stanford University, CA. 1

9:35 am **The Genomics of Speciation and Pattern Evolution in (butter)flies.** Chris Jiggins. Dept Zoology, University of Cambridge, Cambridge, United Kingdom. 1

10:05 am – **Break**

10:30 am **Creating Gradients by Morphogen Shuttling.** Naama Barkai. Weizman Institute, Rehovot, Israel. 2

11:00 am **Maintenance of Niche Function and Tissue Homeostasis During Aging.** Leanne Jones. Laboratory of Genetics, Salk Inst, La Jolla, CA. 2

11:30 am **Histone Genetics in Drosophila** Müller. Max-Planck Institute of Biochemistry, Am Klopferspitz 18, 82152 Martinsried, Bavaria, Germany. 2

12:00 noon **Presentation of FASEB Excellence in Science Award to Terry Orr-Weaver.** Judith Bond. President, FASEB, Bethesda, MD.

12:05 pm **Diamonds in the Rough: Finding Paradigms in Drosophila Developmental Strategies.** Terry Orr-Weaver. Whitehead Institute, MIT, Cambridge Massachusetts.

OPENING/GENERAL SESSIONS

Sunday, April 7 8:30 AM–12:00 PM NOON

Plenary Session II

Moderator: Hannele Ruohola-Baker, University of Washington, Seattle

Room: Marriott Ballroom Salons 1-3, Lobby Level

Presentations:

8:30 am **Poster Awards.** Hannele Ruohola-Baker. University of Washington, Seattle.

8:35 am **Information, Enhancers, and Cell Signaling: a View from the Binding Site.** Scott Barolo. University of Michigan Medical School, Ann Arbor, MI. 2

9:05 am **"The piRNA Pathway: a Small RNA-Based Innate Immune System".** Greg Hannon. HHMI, Cold Spring Harbor Lab, One Bungtown Road, Cold Spring Harbor, NY. 3

9:35 am **Transcription Factor Network Dynamics in Development.** Ilaria Rebay. Ben May Dept, Univ Chicago, Chicago, IL. 3

10:05 am – **Break**

10:30 am **The Role of Nuclear Pore Proteins in Developmental Gene Regulation.** Martin W. Hetzer. Salk Inst for Biological Studies, La Jolla, CA. 3

11:00 am **Stem Cells to Synapses: Regulation of Self-Renewal and Differentiation in the Nervous System.** Andrea H. Brand. The Gurdon Institute, University of Cambridge, Cambridge, United Kingdom. 4

11:30 am **Neurodegeneration and Aging: Insight from Drosophila.** Nancy M. Bonini. Dept Biol, 306 Leidy Labs, Univ Pennsylvania/HHMI, Philadelphia, PA.Moderator: Erika Matunis, Johns Hopkins University, Baltimore 4

Notes

Concurrent Platform Sessions

THURSDAY, APRIL 4 4:30-6:30 pm

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

Techniques and Functional Genomics/Systems Biology

Co-Moderators: Tzumin Lee, Janelia Farms Research Institute, and Ward Odenwald, NIH, and Thomas Gregor, Princeton University, and Richard Carthew, Northwestern University,

Room: Marriott Ballroom Salon 1, Lobby Level

1 - 4:30

A new frontier for the Duplication Consortium: retrofitted BACs that span very large Drosophila genes and the 4th chromosome. **Koen Venken[1,2], Stacy Holtzman[3], Soo Park[4], Joe Carlson[4], Roger Hoskins[4], Hugo Bellen[1], Thom Kaufman[3].** 1) Molec & Human Genetics, BCM, Houston, TX; 2) Biochem & Molecular Biology, BCM, Houston, TX; 3) Biology, IA, Bloomington, IN; 4) Life Sciences Division, LBNL, Berkeley, CA. 4

2 - 4:45

Captured segment exchange: A strategy for custom engineering large genomic regions in *Drosophila melanogaster*. **Jack R. Bateman, Michael F. Palopoli, Sarah T. Dale, Jennifer E. Stauffer, Anita L. Shah, Justine E. Johnson, Conor W. Walsh, Hanna Flaten, Christine M. Parsons.** Biology Department, Bowdoin College, Brunswick, ME. 5

3 - 5:00

Gene Targeting with TALENs in Drosophila. **Dana Carroll[1], Kelly J. Beumer[1], Jonathan K. Trautman[1], Michelle Christian[2], Timothy J. Dahlem[3], Cathleen Lake[4], R. Scott Hawley[4], David J. Grunwald[3], Daniel F. Voytas[2].** 1) Dept Biochem, Univ Utah Sch Med, Salt Lake City, UT; 2) Dept Genetics, Cell Biology & Development, University of Minnesota, Minneapolis, MN; 3) Dept Human Genetics, Univ Utah Sch Med, Salt Lake City, UT; 4) Stowers Institute, Kansas City, MO. **5**

4 - 5:15

Pyrimidine salvaging enzyme UPRTase is active in *Drosophila* and limits the specificity of tissue specific RNA isolation by 4TU tagging. **Arpan Ghosh, MaryJane Shimmel, Emma Leof, Michael O'Connor.** Gen Cell & Development, Univ Minnesota Twin Cities, Minneapolis, MN. 5

5 - 5:30

Sequencing mRNA from cryo-sliced *Drosophila* embryos to determine genome-wide spatial patterns of gene expression. **Peter A. Combs[1], Michael B. Eisen[2,3].** 1) Biophysics Graduate Group, University of California, Berkeley, CA; 2) Department of Molecular and Cell Biology, University of California, Berkeley, CA; 3) Howard Hughes Medical Institute, University of California, Berkeley, CA. 6

6 - 5:45

Mechanical aspects of fruit fly gastrulation. **Konstantin Doubrovinski Bing He[1], Oleg Polyakov[1], Eric Wieschaus[1,2].** 1) Princeton University, Princeton, NJ; 2) Howard Hughes Medical Institute. **6**

7 - 6:00

Genomic and transcriptomic analysis of diapause—an important life history trait in *Drosophila melanogaster*. **Xiaqing Zhao[1], Alan Bergland[2], Dmitri Petrov[2], Paul Schmidt[1].** 1) Dept. of Biology, University of Pennsylvania, Philadelphia, PA; 2) Dept. of Biology, Stanford University, Stanford, CA. 6

8 - 6:15

Solving navigational circuits in the *Drosophila* larva. **Marc Gershow Mason Klein[1], Marta Zlatic[2], Matthew Berck[1], Elizabeth Kane[1], Bruno Afonso[1], Aravinthan Samuel[1].** 1) Center for Brain Science, Harvard University, Cambridge, MA; 2) HHMI Janelia Farm, Ashburn, VA. **7**

Cell Division and Growth Control

Co-Moderators: Robert Duronio, University of North Carolina, Chapel Hill and Pat O'Farrell, University of California, San Francisco

Room: Marriott Ballroom Salon 2, Lobby Level

9 - 4:30

Proper chromosome segregation and spindle assembly require both kinetochore and central spindle components in Drosophila oocytes. **Sarah J. Radford, Kim S. McKim.** Waksman Institute, Rutgers University, Piscataway, NJ. 7

10 - 4:45

The oocyte-to-embryo transition requires APC/C mediated destruction of Matrimony, a POLO kinase inhibitor. **Zachary J. Whitfield[1], Jennifer Chisholm[2], R. Scott Hawley[2], Terry L. Orr-Weaver[1].**1) Whitehead Institute for Biomedical Research, MIT, Cambridge, MA; 2) Stowers Institute for Medical Research, Kansas City, MO. 7

11 - 5:00

Regulation of the asymmetric centrosome maturation cycle in neural stem cells. **Dorothy A. Lerit, Nasser M. Rusan.** Cell Biology and Physiology Center, NHLBI, National Institutes of Health, Bethesda, MD. 8

12 - 5:15

The role of *corp* in apoptosis following DNA damage. **Riddhita Chakraborty, Simon W. Titen, Kent G. Golic.** Department of Biology, University of Utah, Salt Lake City, UT. **8**

13 - 5:30

Tissue repair through cell competition and compensatory cellular hypertrophy in postmitotic epithelia. **Yoichiro Tamori, Wu-Min Deng.** Biological Science, Florida State University, Tallahassee, FL. 8

14 - 5:45

The transcriptional response to tumorigenic polarity loss. **Brandon D. Bunker[1], Anne-Kathrin Classen[2], Tittu T. Nellimoottil[3], David Bilder[1].** 1) Molecular and Cell Biology, University of California-Berkeley, Berkeley, CA 94720; 2) Biology II, Ludwig-Maximilians-University, Munich, D-82152 Germany; 3) Biological Sciences, University of Southern California, Los Angeles, CA 90033. **9**

15 - 6:00

Cell competition as a mechanism that can promote tumour growth through JNK activation. **Luna L. Ballesteros-Arias, Verónica Saavedra, Ginés Morata.** Centro de Biología Molecular Severo Ochoa, Madrid, Spain. 9

16 - 6:15

Identification and verification of genes involved in apoptosis-induced proliferation in *Drosophila*. **Yun Fan[1,2], Andreas Bergmann[2].** 1) School of Biosciences, University of Birmingham, Birmingham, United Kingdom; 2) Cancer Biology, UMass Medical School, Worcester, United States. 9

Concurrent Platform Sessions

THURSDAY, APRIL 4 4:30-6:30 pm

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

Physiology and Aging

Co-Moderators: Scott Pletcher, University of Michigan, Ann Arbor and Heinrich Jasper, Buck Institute, Novato, California

Room: Marriott Ballroom Salon 3, Lobby Level

17 - 4:30
HIF- and non-HIF-Regulated Hypoxic Responses Require the Estrogen-Related Receptor in *Drosophila*. **Keith D. Baker[1], Yan Li[1], Divya Padmanabha[1], Luciana B. Gentile[1], Catherine I. Dumur[2], Robert B. Beckstead[3].** 1) Biochemistry and Molecular Biology, VCU School of Medicine, Richmond, VA; 2) Pathology, VCU School of Medicine, Richmond, VA; 3) Poultry Science, University of Georgia, Athens, GA. 9

18 - 4:45
Loss of the *Drosophila* nuclear receptor dHNF4 recapitulates Maturity Onset Diabetes of the Young 1. **William E. Barry, Carl S. Thummel.** Department of Human Genetics, University of Utah, Salt Lake City, UT. 10

19 - 5:00
Central regulation of lipid metabolism and starvation response by a histone acetyl-transferase. **Nina Moderau, Ingo Zinke, Michael J. Pankratz.** Molecular Brain Physiology and Behavior, LIMES Institute, University of Bonn, 53115 Bonn, Germany. 10

20 - 5:15
Control of ovarian stem cells by adipocytes in response to diet. **Alissa Armstrong[1], Leesa Sampson[1], Kaitlin Laws[1], Robert Cole[2], Daniela Drummond-Barbosa[1].** 1) Biochemistry and Molecular Biology, JHU School of Public Health, Baltimore, MD; 2) Mass Spectrometry and Proteomics Facility, JHU School of Medicine, Baltimore, MD. **10**

21 - 5:30
Social interactions drive organism non-autonomous regulation of lifespan through pheromone perception. **Christi Gendron[1], Tsung-Han Kuo[2], Zachary Harvanek[1], Ingrid Hansen[2], Scott Pletcher[1,2].**1) Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI; 2) Molecular and Human Genetics, Baylor College of Medicine, Houston, TX. 11

22 - 5:45
A Role for Drosophila p38 MAP Kinase in Protein Homeostasis. **Alysia D. Vrailas-Mortimer[1,2], Amelia M. Burch[1], Subhabrata Sanyal[1,2,3].** 1) Cell Biology, Emory University, Atlanta, GA; 2) Center for Behavioral Neuroscience, Atlanta, GA; 3) Center for Neurodegenerative Disease, Emory University, Atlanta, GA. **11**

23 - 6:00
In vivo interaction proteomics reveal a novel role of p38MAPK in controlling proteostasis in ageing *Drosophila* muscle. **Vladimir Belozerov[1,2], Anne-Claude Gingras[2], Helen McNeill[2], John McDermott[1].** 1) Department of Biology, York University, Toronto, ON, Canada; 2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, ON, Canada. 11

24 - 6:15
A metabolic adaptation in muscle mediates the protective effects of dietary restriction in Drosophila. **Subhash D. Katewa, Kazutaka Akagi, Matthew J. Laye, Pankaj Kapahi.** Buck Institute for Research on Aging, Novato, CA. 12

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Concurrent Platform Sessions

FRIDAY, APRIL 5 8:30-10:15 am

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

Evolution and Quantitative Genetics I

Co-Moderators: Peter Andolfatto, Princeton University, New Jersey and Harmit Malik, Fred Hutchinson Cancer Institute, Seattle, Washington

Room: Marriott Ballroom Salon 1, Lobby Level

25 - 8:30
Recent and strong adaptation in Drosophila melanogaster is driven primarily by soft selective sweeps. **Nandita Garud, Philipp Messer, Erkan Buzbas, Dmitri Petrov.** Stanford University, Stanford, CA. 12

26 - 8:45
Population and metabolic genomics of five geographically dispersed fully-sequenced population samples of *Drosophila melanogaster*. **Andrew G. Clark[1], J. Roman Arguello[1], Margarida Cardoso Moreira[1], Jian Lu[1], Cornelia J. Scheitz[1], Anthony J. Greenberg[1], Sean R. Hackett[1,2], Julien F. Ayroles[1,3], Srikanth Gottipati[1], Lawrence G. Harshman[4], Jennifer K. Grenier[1].** 1) Dept Molec Biol & Gen, Cornell Univ, Ithaca, NY; 2) Grad Program Quant and Comp Biology, Princeton Univ, Princeton, NJ; 3) Dept of OEB, Harvard Univ, Cambridge MA; 4) School of Biol Sciences, Univ Nebraska, Lincoln, NE. 12

27 - 9:00
Parallel selection on copy-number variants across continents and species in *Drosophila*. **Daniel R. Schrider[1,2], Matthew W. Hahn[1,2], David J. Begun[3].** 1) Department of Biology. Indiana Univesity, Bloomington, IN; 2) School of Informatics and Computing. Indiana Univesity, Bloomington, IN; 3) Department of Evolution and Ecology. University of California. Davis, CA. 13

28 - 9:15
Interpreting faster-X evolution in light of expression breadth and adaptation. **Richard Meisel.** Cornell University. 13

29 - 9:30
Neofunctionalization of young duplicate genes in Drosophila. **Raquel Assis, Doris Bachtrog.** Integrative Biology, University of California, Berkeley, Berkeley, CA. 13

30 - 9:45
Signatures of correlated evolution predict new members of a protein network required for *Drosophila* female post-mating responses. **Geoffrey D. Findlay[1], Nathaniel L. Clark[1,2], Jessica L. Sitnik[1], Charles F. Aquadro[1], Mariana F. Wolfner[1].** 1) Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY; 2) Department of Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA. 14

31 - 10:00
The role of the Drosophila meiotic MCM proteins in crossover formation. **Kathryn P. Kohl, Corbin D. Jones, Jeff Sekelsky.** University of North Carolina at Chapel Hill, Chapel Hill, NC. 14

Cell Biology & Signal Transduction I

Co-Moderators: Helen McNeil, Mount Sinai Hospital, Toronto, Canada and Jin Jiang, UTSW, Dallas, Texas

Room: Marriott Ballroom Salon 2, Lobby Level

32 - 8:30
Contact-mediated long distance signaling by Drosophila cytonemes. **Sougata Roy, Thomas B. Kornberg.** Cardiovascular Research Institute, University of California San Francisco, San Francisco, CA. 14

33 - 8:45
Ubquitination of Costal 2 by the Ubr3 E3 ligase is required for proper Hedgehog signaling. **Tongchao Li[1], Nikos Giagtzoglou[2], Junkai Fan[7], Jianhang Jia[7], Sinya Yamamoto[1], Wu-Lin Charng[1], Manish Jaiwal[2], Hector Sandoval[2], Vafa Bayat[1,5], Bo Xiong[1], Ke Zhang[3], Gabriela David[1], Andy Groves[1,2,4], Hugo Bellen[1,2,3,4,6].** 1) Program in Developmental Biology; 2) Department of Molecular and Human Genetics; 3) Program in Structural and Computational Biology & Molecular Biophysics; 4) Department of Neuroscience; 5) Medical Scientist Training Program; 6) Howard Hughes Medical Institute, Neurological Research Institute at Baylor College of Medicine, Houston, Texas; 7) Markey Cancer Center, University of Kentucky, Lexington, KY. 15

34 - 9:00
Contribution of Ihog and Boi to the Hedgehog receptor in Drosophila. **Darius Camp[1,2], Haitian He[1], Don van Meyel[1], Frédéric Charron[2].** 1) Centre for Research in Neuroscience, McGill University, Montreal, Quebec, Canada; 2) Institut de recherches cliniques de Montréal, Montreal, Quebec, Canada. 15

35 - 9:15
The Formin Frl functions in Planar Cell Polarity Signaling in Drosophila. **Andreas Jenny[1], Saw-Myat Maung[1], Gretchen Dollar[1], Cathie Pfleger[2].** 1) Dept Molec & Dev Biol, Albert Einstein Col Med, Bronx, NY; 2) Department of Oncological Sciences Mount Sinai School of Medicine, New York, NY. 16

36 - 9:30
Frizzled induced Van Gogh phosphorylation regulates PCP signaling. **Lindsay Kelly, Marek Mlodzik.** Department of Developmental and Regenerative Biology, Mount Sinai School of Medicine, New York, NY. 16

37 - 9:45
CG9723 is required for spermatogenesis in *Drosophila*. **Robyn Rosenfeld[1,2], Helen McNeill[1,2].** 1) Samuel Lunenfeld Research Institute, Mount Sinai hospital, Toronto, ON, Canada; 2) Molecuar Genetics, University of Toronto, Toronto, ON, Canada. 16

38 - 10:00
Exosomes, secreted from secondary cells of the male accessory glands, fuse with sperm and female epithelia to modulate reproductive function. **Laura Corrigan[1], Shih-Jung Fan[1], Carina Gandy[1], Aaron Leiblich[1], Rachel Patel[1], Siamak Redhai[1], John Morris[1], Freddie Hamdy[2], Clive Wilson[1].** 1) Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom; 2) Nuffield Department of Surgical Sciences, University of Oxford, Oxford, United Kingdom. 16

Concurrent Platform Sessions

FRIDAY, APRIL 5 8:30-10:15 am

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

Immunity and Pathogenesis

Co-Moderators: Mimi Shirasu-Hiza, Columbia University, New York and Horatio Frydman, Boston University, Massachusetts

Room: Marriott Ballroom Salon 3, Lobby Level

39 - 8:30
Drosophila genome-wide RNAi screen identifies novel genes involved in Sindbis virus entry. **Debasis Panda, Patrick Rose, Sheri Hanna, Beth Gold, Sara Cherry.** Microbiology, University of Pennsylvania, Philadelphia, PA. 17

40 - 8:45
TAK1-dependent Ubiquitin Chain Editing Regulates IMD Signaling. **Li Chen, Uday Aggarwal, Boae Choi, Neal Silverman.** Med/Div Infectious Dis, Univ Massachusetts Med Sch, Worcester, MA. 17

41 - 9:00
JAK/STAT pathway in autophagic control of intracellular mycobacteria. **Claire Péan, Sharon W.S.Tan, Marc Dionne.** CMCBI, Kings College London, London, United Kingdom. 17

42 - 9:15
Vertical transmission of a Drosophila endosymbiont via co-option of the yolk transport and internalization machinery. **Jeremy K. Herren, Juan C. Paredes, Fanny Schupfer, Bruno Lemaitre.** Global Health Institute, EPFL, Lausanne, Vaud, Switzerland. 18

43 - 9:30
Intersection of *Drosophila* innate immunity and epidermal wound response in the serine proteolytic pathway. **Michelle T. Juarez, Rachel A. Patterson, William McGinnis.** University of California, San Diego, La Jolla, CA. 18

44 - 9:45
The dynamics of tolerance and resistance in heterogeneous environments. **Virginia Howick, Brian Lazzaro.** Cornell University, Ithaca, NY. 18

45 - 10:00
Investigating the Host-Pathogen Interaction: Tolerance in Perspective. **Kyung Han Song, David Schneider.** Dept of Microbiology and Immunology, School of Medicine, Stanford University, Stanford, CA. 19

Notes

Concurrent Platform Sessions

FRIDAY, APRIL 5 10:45 am-12:30 pm

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

Evolution & Quantitative Genetics II

Co-Moderators: Peter Andolfatto, Princeton University, New Jersey and Harmit Malik, Fred Hutchinson Cancer Center, Seattle, Washington

Room: Marriott Ballroom Salon 1, Lobby Level

46 - 10:45
Evolutionary change in fatty acid synthase expression underlies ecological divergence and reproductive isolation in a pair of Australian Drosophila species. **Henry Chung[1], David Loehlin[1], Kathy Vacarro[1], Heloise Dufour[1], Jocelyn Millar[2], Sean Carroll[1]**. 1) HHMI and Laboratory of Molecular Biology, University of Wisconsin, Madison, WI; 2) 2Department of Entomology, University of California, Riverside, CA. 19

47 - 11:00
Evolution of *miR-92a* underlies natural variation in the naked valley in *Drosophila melanogaster*. **Saad Arif[1], Sophie Murat[2], Isabel Almudi[1], Maria Nunes[1], Diane Bortolamiol-Becet[3], Naomi McGregor[1], James Currie[1], Matthew Ronshaugen[4], Elio Sucena[5], Eric C. Lai[3], Christian Schlötterer[2], Alistair McGregor[1].** 1) Oxford Brookes University, Oxford, United Kingdom; 2) Institute for Population Genetics, Vetmeduni Vienna, Vienna, Austria; 3) Sloan-Kettering Institute, New York, NY, USA; 4) Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom; 5) Instituto Gulbenkian de Ciência, Oeiras, Portugal. 19

48 - 11:15
The power of a multivariate approach to genome-wide association studies. **David Houle[1], Jessica Nye[1,2], Eladio Marquez[1], William Pitchers[3], Alycia Kowalski[3], Ian Dworkin[3].** 1) Dept Biological Science, Florida State Univ, Tallahassee, FL; 2) Dept. of Genetics, North Carolina State Univ, Raleigh, NC; 3) Dept. of Zoology, Michigan State University, Lansing, MI. 19

49 - 11:30
The severity of a mitochondrial-nuclear incompatibility depends upon the developmental thermal environment. **Kristi L. Montooth, Luke A. Hoekstra, Mohammad A. Siddiq.** Dept Biol, Indiana Univ, Bloomington, IN. 20

50 - 11:45
A Drosophila Model to Investigate Natural Variation Effect in Response to Expression of A Human Misfolded Protein. **Bin He[1], Michael Ludwig[1], Soo-Young Park[2], Pengyao Jiang[1], Cecelia Miles[3], Levi Barse[1], Desiree Dickerson[1], Sarah Carl[1], Graeme Bell[2], Martin Kreitman[1].** 1) Department of Ecology & Evolution, The University of Chicago, Chicago, IL; 2) Department of Medicine, The University of Chicago, Chicago, IL; 3) Biology Department, Augustana College, Sioux Falls, SD. 20

51 - 12:00
From missing genotypes to negative epistasis. **Russ Corbett-Detig, Jun Zhou, Daniel Hartl, Julien Ayroles.** OEB, Harvard University, Cambridge, MA. 20

52 - 12:15
Adaptation to hypoxia in experimentally evolved Drosophila melanogaster: convergent and highly polygenic. **Aashish R. Jha[1,2], Christopher D. Brown[2], Dan Zhou[3], Gabriel H. Haddad[3], Kevin P. White[1,2,4].** 1) Human Genetics, The University of Chicago, Chicago, IL; 2) Institute of Genomics and Systems Biology, The University of Chicago, Chicago, IL; 3) Department of Pediatrics, University of California an Diego; 4) Ecology and Evolution, The University of Chicago, Chicago, IL. 21

Cell Biology & Signal Transduction II

Co-Moderators: Helen McNeil, Mount Sinai Hospital, Toronto, Canada and Jin Jiang, UTSW, Dallas, Texas

Room: Marriott Ballroom Salon 2, Lobby Level

53 - 10:45
The spatial distribution of tension on E-cadherin in migrating border cells. **Danfeng Cai[1], Li He[2], Jessica Sawyer[3], Denise Montell[1].** 1) Department of Biological Chemistry, Johns Hopkins University, Baltimore, MD; 2) Department of Genetics, Harvard Medical School, HHMI, Boston, MA; 3) Department of Pharmacology and Cancer Biology, Duke University School of Medicine, Durham, NC. 21

54 - 11:00
Real-time analysis of the dynamics of coordinated epithelial plasticity. **Lara C. Skwarek, David Bilder.** Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA. 21

55 - 11:15
Robo2 shapes Slit-dependent muscle repulsion by altering the association of Slit to tendon cell surface. **Elly Ordan[1], Marko Brankatschk[2], Frank Schnorrer[3], Talila Volk[1].** 1) molecular genetics, Weizmann Institute of Science, Rehovot, Israel; 2) Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany; 3) Muscle Dynamics,Max-Planck-Institute for Biochemistry, Munich,Germany. 22

56 - 11:30
Regulation of Hippo signaling by EGFR-MAPK signaling through Ajuba. **Venu Reddy Bommireddy Venkata, Ken Irvine.** Waksman Institute, Piscataway, NJ. 22

57 - 11:45
Src controls tumorigenesis through JNK-dependent regulation of the Hippo pathway. **Masato Enomoto[1], Tatsushi Igaki[1,2].** 1) Division of Genetics, Kobe University Graduate School of Medicine, Kobe, Japan; 2) PRESTO, Japan Science and Technology Agency (JST), Saitama, Japan. 22

58 - 12:00
The Hippo Pathway targets the Cdh1/fzr inhibitor Rae1 to regulate mitosis and establish organ size homeostasis. **Maryam Jahanshahi[1], Kuangfu Hsiao[2], Andreas Jenny[3], Cathie Pfleger[1].** 1) Department of Oncological Sciences, Mount Sinai School of Medicine, New York, NY; 2) Fishberg Department of Neuroscience, Mount Sinai School of Medicine, New York NY; 3) Department of Molecular and Developmental Biology, Albert Einstein College of Medicine, Bronx NY. 22

59 - 12:15
dCORL is required for dSmad2 activation of Ecdysone Receptor expression in the Drosophila mushroom body. **Stuart J. Newfeld[1], Michael Stinchfield[1], Kazumichi Shimizu[2], Mayu Arase[3], Janine Quijano[1], Tetsuro Watabe[3], Kohei Miyazono[3], Norma T. Takaesu[1].** 1) Sch Life Sci, Arizona State Univ, Tempe, AZ; 2) Institute of Molecular and Cellular Biosciences, University of Tokyo, Tokyo 113-0032, Japan; 3) Department of Molecular Pathology, University of Tokyo, Tokyo 113-0033, Japan. 23

Concurrent Platform Sessions

FRIDAY, APRIL 5 10:45 am-12:30 pm

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

RNA Biology

Co-Moderators: Eric Lai, Memorial Sloan Kettering, New York and Halyna Shcherbatta, Max Plank Institute, Gottingen, Germany

Room: Marriott Ballroom Salon 3, Lobby Level

60 - 10:45
Steroid-induced microRNA let-7 acts as a spatio-temporal code for neuronal cell fate in the developing Drosophila brain. **Mariya M. Kucherenko, Halyna R. Shcherbata.** MPRG of Gene expression and signaling, Max Planck Institute for biophysical chemistry, Goettingen, Germany. 23

61 - 11:00
miRNome analyses reveal K box miRNAs function in mediating class specific dendrite morphogenesis. **Srividya Chandramouli Iyer[1], Myurajan Rubaharan[1], Ramakrishna Meduri[1], Shruthi Sivakumar[1], Francis Aguisanda[1], Suhas Gondi[1], Atit Patel[1], Eswar P. R. Iyer[1], Diane Bortolamiol-Becet[2], Eric C. Lai[2], Daniel N. Cox[1].** 1) School of Systems Biology, Krasnow Inst. Adv. Study, George Mason University, Fairfax, VA; 2) Sloan-Kettering Institute, Dept. Developmental Biology, New York, NY. 23

62 - 11:15
Piwi Is Required in Multiple Cell Types to Control Germline Stem Cell Lineage Development in the Drosophila Ovary. **Xing Ma[1,2].** 1) Stowers Institute for Medical Research, Kansas city, MO; 2) Department of Anatomy and Cell Biology, University of Kansas, Medical Center. 24

63 - 11:30
Role of the nuclear pore in piRNA biogenesis and speciation. **Swapnil Parhad[1], Jie Wang[2], Zhiping Weng[2], William Theurkauf[1].** 1) Program in Molecular Medicine,Univ Massachusetts Med Sch, Worcester, MA; 2) Program in Bioinformatics and Integrative Biology, Univ Massachusetts Med Sch, Worcester, MA. 24

64 - 11:45
Modeling Spinal Muscular Atrophy point mutations in *Drosophila melanogaster*. **A. Gregory Matera, Kavita Praveen, Ying Wen.** Department of Biology, Univ of North Carolina, Chapel Hill, NC. 24

65 - 12:00
A conserved RNA processing pathway coordinates striated muscle development. **Aaron N. Johnson[1,3], Mayssa M. Mokalled[2], Kenneth D. Poss[2], Eric N. Olson[3].** 1) Department of Integrative Biology, University of Colorado Denver, Denver, CO; 2) Department of Cell Biology and Howard Hughes Medical Institute, Duke University Medical Center, Durham, NC; 3) Department of Molecular Biology, UT Southwestern Medical Center at Dallas, Dallas, TX. 25

66 - 12:15
Identification of a novel splicing factor required for proper myotendenous junction formation and maintenance in *Drosophila*. **Kate M. Rochlin[1,2], Mary Baylies[1].** 1) Dept Dev Biol, Sloan-Kettering Inst, New York, NY; 2) Weill Cornell Biomedical University New York, NY. 25

Notes

Concurrent Platform Sessions

FRIDAY, APRIL 5 4:30-6:30 pm

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

Neurophysiology and Behavior

Co-Moderators: Michael Reiser, Janelia Farms Research Campus, Arlington, Virginia and Mala Murthy, Princeton University, New Jersey

Room: Marriott Ballroom Salon 1, Lobby Level

67 - 4:30
Synaptic endosomes as sorting stations for synaptic vesicle proteins. **Valerie Uytterhoeven, Ine Maes, Sabine Kuenen, Jaroslaw Kasprowicz, Katarzyna Miskiewicz, Patrik Verstreken.** Center for human Genetics, KU Leuven, Center for the Biology of Disease, VIB, Leuven, Vlaams-Brabant, Belgium. 25

68 - 4:45
Cold avoidance and cold sensing in the *Drosophila* larva. **Mason Klein[1,2], Ashley Vonner[1,3], Marc Gershow[1,2], Elizabeth Kane[1,3], Bruno Afonso[1], Paul Garrity[4], Aravinthan Samuel[1,2].** 1) Center for Brain Science, Harvard University, Cambridge, MA; 2) Department of Physics, Harvard University, Cambridge, MA; 3) Program in Biological and Biomedical Sciences, Harvard Medical School, Boston, MA; 4) Department of Biology, Brandeis University, Waltham, MA. 26

69 - 5:00
Drosophila taste receptors reveal combinatorial and cross-modality functions. **Erica Freeman[1], Alice French[2], Zev Wisotsky[3], Frédéric Marion-Poll[2,4], Anupama Dahanukar[1,3,5].** 1) Bioengineering Graduate Program, University of California, Riverside; 2) INRA, Physiologie de l'Insecte: Signalisation et Communication, Versailles, France; 3) Neuroscience Program, University of California, Riverside, CA; 4) AgroParisTech, Départment Sciences de la Vie et Santé, Paris Cedex 05, France; 5) Dept of Entomology, University of California. 26

70 - 5:15
Evolved changes in pheromone production underlie differences in larval social behaviors between closely related *Drosophilids*. **Joshua D. Mast, David L. Stern.** JFRC/HHMI, Ashburn, VA. 26

71 - 5:30
A sexually dimorphic flight muscle functions in the generation of Drosophila male courtship song. **Troy Shirangi, David Stern, James Truman.** JFRC/HHMI, Ashburn, VA. 27

72 - 5:45
Drosophila melanogaster flies communicate using substrate-borne vibrations during courtship. **Caroline C. G. Fabre[1], Berthold Hedwig[2], Graham Conduit[2], Peter A. Lawrence[2], Stephen Goodwin[3], José Casal[2].** 1) Department of Zoology, Cambridge University and Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, United Kingdom; 2) Department of Zoology, Cambridge University, Cambridge, United Kingdom; 3) Department of Physiology, Anatomy and Genetics, Oxford University. 27

73 - 6:00
Juvenile hormone acts through *Methoprene tolerant* to modulate female receptivity and sex pheromones in *Drosophila melanogaster* . **Julide Bilen[1], Jade Atallah[2], Reza Azanchi[1], Joel Levine[2], Lynn Riddiford[1].** 1) Janelia Farm Research Campus HHMI, Ashburn, VA; 2) Department of Biology, University of Toronto, Ontario, Canada. 27

74 - 6:15
The neurobiological basis of personality in flies. **Benjamin L. de Bivort[1,2,3], Jamey S. Kain[1], Sean M. Buchanan[1], Julien Ayroles[3], Chelsea Jenney[1], Sarah Zhang[1].** 1) Rowland Institute, Harvard University, Cambridge, MA; 2) Center for Brain Science, Harvard University, Cambridge, MA; 3) Department of Organismic and Evolutionary Biology, Harvard University, Cambridge, MA. 27

Cell Biology and Cytoskeleton

Co-Moderators: Susan Parkhurst, Fred Hutchinson Cancer Center, Seattle, Washington and Lynn Cooley, Yale, New Haven, Connecticut

Room: Marriott Ballroom Salon 2, Lobby Level

75 - 4:30
Multi-parametric analysis of CLASP-interacting protein functions during interphase microtubule dynamics. **Jennifer B. Long[1], Maria Bagonis[1], Laura Anne Lowery[1], Haeryun Lee[1,2], Gaudenz Danuser[1], David Van Vactor[1].** 1) Cell Biology, Harvard Medical School, Boston, MA; 2) Pohang University of Science and Technology, Pohang, Gyungbuk, KOREA. 28

76 - 4:45
Dynamic myosin phosphorylation is required for pulsed contractions during apical constriction. **Claudia G. Vásquez, Adam C. Martin.** Biology, Massachusetts Institute of Technology, Cambridge, MA. 28

77 - 5:00
Regulation of epithelial morphogenesis by overlapping expression of Folded gastrulation (Fog), and its receptor, Mist. **Alyssa J. Manning, Kimberly Peters, Stephen L. Rogers.** Biology Department, UNC-Chapel Hill, Chapel Hill, NC. 28

78 - 5:15
Misshapen regulates integrin levels to promote epithelial motility and planar polarity in Drosophila. **Lindsay K. Lewellyn, Maureen Cetera, Sally Horne-Badovinac.** Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL. 29

79 - 5:30
Role of Calcium and Rho family small GTPases in Single Cell Wound Repair. **Maria Teresa Abreu-Blanco, Susan M. Parkhurst.** Basic Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA. 29

80 - 5:45
Branching Out: Genetic analysis of branch outgrowth in terminal cells. **Tiffani A. Jones, Mark M. Metzstein.** Human Gen, Univ Utah, Salt Lake City, UT. 29

81 - 6:00
Live imaging of Drosophila neuroblast delamination reveals two stages with differential cytoskeletal dynamics. **Yan Yan[1,2], Chris Doe[2].** 1) Division of Life Science, HKUST, Hong Kong, Kowloon, Hong Kong; 2) Institute of Neuroscience/HHMI, University of Oregon, Eugene, OR. 30

82 - 6:15
Alp/Enigma family proteins cooperate in Z-disc formation and myofibril assembly. **Frieder Schoeck, Stefan Czerniecki, Kuo An Liao, Anja Katzemich.** Dept Biol, McGill Univ, Montreal, PQ, Canada. 30

Concurrent Platform Sessions

FRIDAY, APRIL 5 4:30-6:30 pm

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

Chromatin and Epigenetics

Co-Moderators: Jerry Workman, Stowers Institute, Kansas City, Missouri and Andrew Dingwall, Loyola University, Chicago, Illinois

Room: Marriott Ballroom Salon 3, Lobby Level

83 - 4:30
UpSET modulates open chromatin features at active transcribed genes. **Hector Rincon-Arano, Jessica Halow, Jeffrey Delrow, Susan Parkhurst, Mark Groudine.** Basic Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA. 30

84 - 4:45
Sorted cell ChIP-seq shows the molecular organization of Polycomb-repressed chromatin in the bithorax complex. **Sarah K. Bowman[1], Aimee M. Deaton[1], Heber Domingues[2], Welcome Bender[2], Robert E. Kingston[1].** 1) Dept. of Molecular Biology, Massachusetts General Hospital, and Dept. of Genetics, Harvard Medical School, Boston, MA; 2) Dept. of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA. 31

85 - 5:00
Genome-wide Analysis of the Binding Sites of the JIL-1 H3S10 Kinase and its Contribution to Modulation of Gene Expression. **Kristen M. Johansen[1], Weili Cai[1], Chao Wang[1], Lu Shen[1], Yeran Li[1], Sanzhen Liu[2], Changfu Yao[1], Xiaomin Bao[1], Patrick S. Schnable[2,3], Jack Girton[1], Jørgen Johansen[1].** 1) Biochem, Biophys & Molec Biol, Iowa State Univ, Ames, IA; 2) Agronomy, Iowa State Univ, Ames, IA; 3) Data2Bio LLC, Ames, IA. 31

86 - 5:15
Piwi is linked to heterochromatin formation in the embryo of Drosophila melanogaster. **Tingting Gu, Sarah Elgin.** Department of Biology, Washington University in St Louis, St Louis, MO. 31

87 - 5:30
Epigenetic regulation of olfactory receptor gene choice. **Sarah Perry[1], Choon Kiat Sim[2], Sana Tharadra[1], Anand Ray[1].** 1) Entomology, UC Riverside, Riverside, CA; 2) Department of Genetics, Stanford University, Stanford, CA. **32**

88 - 5:45
The chromatin configurations of Polycomb Response Elements (PREs) define epigenetic states. **Kami Ahmad[1], Guillermo Orsi[1], Steven Henikoff[2], Jorja Henikoff[2].** 1) Dept BCMP, Harvard Medical Sch, Boston, MA; 2) FHCRC, Seattle, WA. 32

89 - 6:00
Stuxnet Regulates PRC1-mediated Epigenetic Silencing by Promoting Ubiquitinated Polycomb Protein for Degradation. **Juan Du[1], Junzheng Zhang[1], Feng Tie[2], Ying Su[1], Peter Harte[2], Alan Jian Zhu[1].** 1) Department of Cellular & Molecular Medicine, Lerner Research Institute, Cleveland Clinic, Cleveland, OH; 2) Department of Genetics and Genome Sciences, Case Western Reserve University School of Medicine, Cleveland, OH. 32

90 - 6:15
Telomere protection in Drosophila: functional analysis of the terminin complex. **Grazia D. Raffa, Emanuela Micheli, Fiammetta Verni, Domenico Raimondo, Alessandro Cicconi, Laura Ciapponi, Giovanni Cenci, Stefano Cacchione, Maurizio Gatti.** Biology and Biotechnology, Sapienza Universita' di Roma, Rome, Italy. 32

Notes

Concurrent Platform Sessions

SATURDAY, APRIL 6 8:30-10:15 am

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

Drosophila Models of Human Diseases I

Co-Moderators: Ross Cagan, Mount Sinai School of Medicine, New York and Leo Pallanck, University of Washington, Seattle

Room: Marriott Ballroom Salon 1, Lobby Level

91 - 8:30
Mannitol - a BBB disrupter is also a potent α-synuclein aggregation inhibitro for treating Parkinson's disease. **Daniel Segal[1,2], Ronit Shaltiel-Karyo[1], Moran Frenkel-Pinter[1], Edward Rockenstein[3], Christina Patrick[3], Michal Levy-Sakin[1], Nirit Egoz-Matia[1], Eliezer Masliah[3], Ehud Gazit[1].** 1) Department of Molecular Microbiol & Biotech, Tel Aviv University, Tel Aviv 69978, Israel; 2) Sagol School of Neurosciences, Tel Aviv University, Tel Aviv 69978, Israel; 3) Department of Neurosciences, School of Medicine, University of California at San Diego, La Jolla, CA 92093, USA. 33

92 - 8:45
Bioinformatics-driven approaches to building new fly models of human disease. **Stephanie E. Mohr[1], Yanhui Hu[1], Ian Flockhart[1], Juliane Schneider[2], Charles Roesel[1,3], Lizabeth Perkins[1], Norbert Perrimon[1,4].** 1) Dept Gen, Harvard Med Sch, Boston, MA; 2) Countway Medical Library, Harvard Med Sch, Boston, MA; 3) Grad Program in Bioinformatics, Northeastern University, Boston, MA; 4) Howard Hughes Medical Institute, Boston, MA. 33

93 - 9:00
Early mitochondrial dysfunction leads to oxidative stress in a drosophila model of TPI deficiency. **Stacy Hrizo[1,2], Isaac J. Fisher[1], Bartholomew P. Roland[2], Daniel R. Long[1], Joshua A. Hutton[1], Zhaohui Liu[2], Michael J. Palladino[2].** 1) Biology, Slippery Rock University, Slippery Rock, PA; 2) Pharmacology and Chemical Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA. 34

94 - 9:15
Signaling pathways involved in 1-octen-3-ol mediated neurotoxicity in *Drosophila melanogaster*: Implication in Parkinson's Disease. **Arati A. Inamdar, Joan W. Bennett.** Department of Plant Biology and Pathology, Rutgers, The State University of New Jersey, New Brunswick, NJ. 34

95 - 9:30
4-aminoquinoline analogs rescue neurotoxicity in a Drosophila model of ALS based on TDP-43. **Alyssa Coyne[1], Marilyn Roy[2], Ivy Lin[2], Joel Cassel[4], Mark McDonnell[4], Allen Reitz[4], Daniela Zarnescu[2,3].** 1) Department of Neuroscience, University of Arizona, Tucson, AZ 85721, USA; 2) Department of Molecular and Cellular Biology, University of Arizona, Tucson, AZ 85721, USA; 3) Department of Neurology, University of Arizona, Tucson, AZ 85721, USA; 4) Biopharma, LLC, Pennsylvania Biotechnology Center, Doyleston, PA 18902, USA. 34

96 - 9:45
A *Drosophila melanogaster* model identifies a critical role for zinc in initiating urinary stone formation. **Thomas Chi[1], Man Su Kim[2], Nichole Bond[1], Sven Lang[3], Joe Miller[1], Gulinuer Muteliefu[3], Katja Bruckner[1], Arnie Kahn[3], Marshall Stoller[1], Pankaj Kapahi[3].** 1) UCSF, San Francisco, CA; 2) College of Pharmacy, Inje University, Republic of Korea; 3) Buck Institute for Research on Aging, Novato, CA. 34

97 - 10:00
Inhibition of JNK/dFOXO pathway and caspases rescues neurological impairments in *Drosophila* Alzheimer's disease model. **Se Min Bang, Yoon Ki Hong, Soojin Lee, Kyoung Sang Cho.** Biological sciences, Kunkok university, Seoul, Seoul, South Korea. 35

Regulation of Gene Expression I

Co-Moderators: Erica Larschan, Brown University, Providence, Rhode Island and Angela Stathopoulos, CalTech, Pasadena, California

Room: Marriott Ballroom Salon 2, Lobby Level

98 - 8:30
Expression pattern analysis of 6,300 genomic fragments for *cis-* regulatory activity in the imaginal discs of *Drosophila Melanogater*. **Aurélie Jory[1], Carlos Estella[1,3], Matt W. Giorgianni[1,4], Matthew Slattery[1,5], Todd R. Laverty[2], Gerald M. Rubin[2], Richard S. Mann[1].** 1) Department of Biochemistry and Molecular Biophysics, Columbia University Medical Center, 701 W. 168th Street, HHSC 1104, New York, NY 10032, USA; 2) Janelia Farms Research Campus, 19700 Helix Drive, Ashburn, VA 20147, USA; 3) Present address: Departamento de Biología Molecular, and Centro de Biología Molecular ''Severo Ochoa,'' Universidad Autónoma de Madrid, Madrid, Spain; 4) Present address: R.M. Bock Laboratories, University of Wisconsin-Madison, 1525 Linden Drive, Madison, WI 53706, USA; 5) Present address: Institute for Genomics and Systems Biology, University of Chicago, 900 E. 57th St. KCBD 10115, Chicago, IL 60637, USA. *35*

99 - 8:45
DNA regulatory element usage is driven largely by developmental stage, even within distinct cell lineages. **Daniel J. McKay[1], Jason D. Lieb[1,2].** 1) Department of Biology, The University of North Carolina at Chapel Hill, Chapel Hill, NC; 2) Carolina Center for Genome Sciences. 35

100 - 9:00
Differential regulation of *sloppy-paired-1* transcription initiation and elongation by Runt and Even-skipped during Drosophila segmentation. **Kimberly Bell[1,3], Saiyu Hang[2,3], J. Peter Gergen[3].** 1) Graduate Program in Genetics; 2) Graduate Program in Biochemistry and Structural Biology; 3) Department of Biochemistry and Cell Biology and the Center for Developmental Genetics Stony Brook University, Stony Brook, NY 11794-5215. 36

101 - 9:15
Robust Hox-Mediated Transcriptional Regulation Utilizes a Combination of Flexible Binding Site Composition and Rigid Grammar. **Juli Uhl, Lisa Gutzwiller, Arif Ghasletwala, Brian Gebelein.**Developmental Biology, Cincinnati Children's Hospital, Cincinnati, OH. 36

102 - 9:30
Autoregulation controls temporal progression of gene expression during development. **Leslie A. Dunipace, Angelike Stathopoulos.** Biology, California Institute of Technology, Pasadena, CA. 36

103 - 9:45
Tissue-specificity of Drosophila Developmental Gene Regulatory Networks. **Matthew Slattery[1], Roumen Voutev[2], Rebecca Spokony[1], Lijia Ma[1], Richard Mann[2], Kevin White[1].** 1) Institute for Genomics and Systems Biology, University of Chicago, Chicago, IL; 2) Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY. 37

104 - 10:00
Regulation of *rhodopsins*: Single nucleotides are critical for photoreceptor subtype-specific expression. **Jens Rister, Claude Desplan.** New York University, Department of Biology, 100 Washington Square East, New York, NY. 37

Concurrent Platform Sessions

SATURDAY, APRIL 6 8:30-10:15 am

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

Stem Cells

Co-Moderators: Katja Bruckner, University of California, San Francisco and Allan Spradling, Carnegie Institute, Baltimore, Maryland

Room: Marriott Ballroom Salon 3, Lobby Level

105 - 8:30
Chinmo prevents male-to-female sex transformation of somatic stem cells in the adult *Drosophila* testis. **Qing Ma[1], Matthew Wawersik[2], Erika Matunis[1].** 1) Cell Biology Dept, The Johns Hopkins Sch Med, Baltimore, MD; 2) Biology Dept, The Col of William & Mary, Williamsburg, VA. 37

106 - 8:45
Identification of genes modifying epigenetic plasticity during follicle cell differentiation. **Ming-Chia Lee[1], Andrew Skora[2], Allan Spradling[1].** 1) Department of Embryology, Carnegie Institution of Washington, Baltimore, MD; 2) Ludwig Center for Cancer Genomics and Therapeutics, Johns Hopkins School of Medicine, Baltimore, MD. 38

107 - 9:00
The Hox gene *Abd-B* controls stem cell niche function in the *Drosophila* testis. **Fani Papagiannouli[1], Lisa Schardt[2], Nati Ha[1], Janina-Jacqueline Ander[1], Ingrid Lohmann[1].** 1) Developmental Biology, Centre for Organismal Studies (COS), Heidelberg, Germany; 2) Deutsches Krebsforschungszentrum (DKFZ), Heidelberg, Germany. 38

108 - 9:15
Niche appropriation by *Drosophila* intestinal stem cell tumors. **Parthive H. Patel[1,2], Devanjali Dutta[2], Bruce A. Edgar[1,2].** 1) Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA USA; 2) German Cancer Research Center (DKFZ) and Center for Molecular Biology Heidelberg (ZMBH) Alliance, Heidelberg, Germany. 38

109 - 9:30
Gastric Stem Cells Maintain the Adult Drosophila Stomach. **Craig A. Micchelli, Marie Strand.** Developmental Biology, Washington University School of Medicine, St. Louis, MO. 38

110 - 9:45
Neuron-produced Activinβ supports hematopoiesis in the *Drosophila* larva. **Kalpana Makhijani[2], Brandy Alexander[2], Sophia Petraki[2], Michael O'Connor[4], Katja Brückner[1,2,3].** 1) Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research; 2) Department of Cell and Tissue Biology; 3) Department of Anatomy, University of California San Francisco, San Francisco, CA; 4) Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN. 39

111 - 10:00
A genome-wide RNAi screen for Neuroblast cell cycle exit in *Drosophila*. **Catarina Homem, Juergen Knoblich.** IMBA, Vienna, Austria. 39

Notes

Concurrent Platform Sessions

SATURDAY, APRIL 6 10:45 am-12:30 pm

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

Drosophila Models of Human Diseases II

Co-Moderators: Ross Cagan, Mount Sinai School of Medicine, New York and Leo Pallanck, University of Washington, Seattle

Room: Marriott Ballroom Salon 1, Lobby Level

112 - 10:45
Drug screening on a new Drosophila cardiac model of Friedreich Ataxia. **Veronique Monnier, Hervé Tricoire.** BFA Unit, University Paris Diderot, 75205 Paris Cedex 13, France. 39

113 - 11:00
Rescue of insulin signaling misregulation in a fly model of fragile x syndrome. **Rachel E. Monyak[1], Danielle Emerson[1], Yan Wang[1], Xiangzhong Zheng[2], Brian Schoenfeld[3], Sean McBride[1], Amita Sehgal[2], Thomas Jongens[1].** 1) Department of Genetics University of Pennsylvania Perelman School of Medicine Philadelphia, PA; 2) Howard Hughes Medical Institute and Department of Neuroscience University of Pennsylvania Perelman School of Medicine Philadelphia, PA; 3) Section of Molecular Cardiology Departments of Medicine and Molecular Pharmacology Albert Einstein College of Med Bronx, NY. 40

114 - 11:15
Sphingosine 1-phosphate mediated suppression of dystrophic muscle wasting in Drosophila and mice. **Mario Pantoja[1], Karin A. Fischer[1], Nicholas Ieronimakis[2], Timothy L. Dosey[1], Junlin Qi[1], Aislinn Hayes[2], Morayma Reyes[2,3], Hannele Ruohola-Baker[1].** 1) Dept Biochem, Univ Washington, Seattle, WA; 2) Dept Pathology; 3) Dept Labortory Medicine. 40

115 - 11:30
A kinome-wide RNAi screen in *Drosophila* glia reveals new kinases that mediate cell proliferation and survival in human glioblastoma. **Renee Read[1,2], Tim Fenton[3], German Gomez[3], Jill Wykosky[3], Scott Vandenberg[4], Ivan Babic[3], Akio Iwanami[5], Huijun Yang[3], Webster Cavenee[3], Paul Mischel[3], Frank Furnari[3], John Thomas[2].** 1) Department of Pharmacology, Emory University School of Medicine, Atlanta, GA; 2) The Salk Institute for Biological Studies, Molecular Neurobiology Laboratory, La Jolla, CA; 3) Ludwig Institute for Cancer Research, University of California - San Diego,; 4) Department of Pathology, University of California - San Diego, La Jolla, CA; 5) Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan. 40

116 - 11:45
Functional characterisation of human synapse genes expressed in the *Drosophila* brain, applications in drug screening. **Matt B. Mahoney, Lysimachos Zografos, R. Wayne Davies, J. Douglas Armstrong.** Brainwave Discovery, LTD, Ardshiel, Main Street, Gartmore, FK8 3RJ, United Kingdom. 41

117 - 12:00
Renal proximal tubule receptors Cubilin and Amnionless mediate protein reabsorption in Drosophila nephrocytes. **Fujian Zhang[1], Ying Zhao[1], Yufang Chao[1], Katherine Muir[1], Zhe Han[1,2].** 1) Department of Internal Medicine, University of Michigan, Ann Arbor, MI; 2) Department of Cell and Developmental Biology. 41

118 - 12:15
SMN is required for RNA splicing in sensory-motor circuits. **Brian McCabe[1,2], Francesco Lotti[1], Erin Beck[1,2], Ben Choi[1,2], George Mentis[1], Christine Beattie[3], Livio Pellizzoni[1], Wendy Imlach[1,2].** 1) Pathology & Cell Biology, Columbia University, New York, NY; 2) Neuroscience, Columbia University, New York, NY; 3) Neuroscience, The Ohio State University, Columbus, OH. 41

Regulation of Gene Expression II

Co-Moderators: Erica Larschan, Brown University, Providence, Rhode Island and Angelika Stathopoulos, CalTech, Pasadena, California

Room: Marriott Ballroom Salon 2, Lobby Level

119 - 10:45
Widespread and distinct sequence signatures of combinatorial transcriptional regulation. **M. Kazemian[1], H. Pham[2], M. Brodsky[2], S. Sinha[1].** 1) U of Illinois, Urbana, IL; 2) UMASS Med School, Worcester, MA. 41

120 - 11:00
Synergistic interactions between MSL complex and the CLAMP protein regulate Drosophila dosage compensation. **Marcela Soruco[1], Jessica Chery[1], Eric Bishop[2,7], Trevor Siggers[3], Michael Tolstorukov[2,3], Alexander Leydon[1], Arthur Sugden[1], Karen Goebel[1], Jessica Feng[1], Peng Xia[1], Anastasia Vedenko[3], Martha Bulyk[3,4,5], Peter Park[2,3,6], Erica Larschan[1].** 1) Department of Molecular Biology, Cellular Biology and Biochemistry, Brown University, Providence, RI ; 2) Center for Biomedical Informatics, Harvard Medical School, Boston MA; 3) Division of Genetics, Department of Medicine, Brigham & Women's Hospital and Harvard Medical School, Boston, MA ; 4) Department of Pathology, Brigham & Women's Hospital and Harvard Medical School, Boston, MA; 5) Harvard-MIT Division of Health Sciences and Technology, Harvard Medical School, Boston, MA; 6) Children's Hospital Informatics Program, Boston, MA; 7) Bioinformatics Graduate Program, Boston University, 42

121 - 11:15
Akirin: a novel link between Twist transcription factor activity and Brahma chromatin remodeling complexes during embryogenesis. **Scott J. Nowak[1], Hitoshi Aihara[3], Katie Gonzalez[2], Yutaka Nibu[3], Mary K. Baylies[2].** 1) Dept. of Biology and Physics, Kennesaw State University, Kennesaw, GA 30144; 2) Developmental Biology Program, Sloan-Kettering Institute, New York, NY 10065; 3) Cell and Developmental Biology, Weill Cornell Medical College, New York, NY 10065. 42

122 - 11:30
Zelda's role in *Drosophila* zygotic genome activation. **Yujia Sun[1], Sun Melody Foo[1], Chung-Yi Nien[1], Hsiao-Yun Liu[1], Kai Chen[2], Kevin O'Brien[1], Amruta Tamhane[1], Julia Zeitlinger[2], Christine Rushlow[1].** 1) Department of Biology, New York University, New York, NY 10003; 2) Stowers Institute for Medical Research, 1000 East 50th Street, Kansas City, MO 64110. 42

123 - 11:45
Analysis of evolution within the bHLH transcription factor family based on a complete set of DNA binding interaction specificities. **Hannah Pham, Jianhong Ou, Scot Wolfe, Michael Brodsky.** Program in Gene Function and Expression, University of Massachusetts Medical School, Worcester, MA. 43

124 - 12:00
Transcription Start Site Turnover in Drosophila using CAGE. **Bradley J. Main, Hyosik Jang, Andrew Smith, Sergey Nuzhdin.** MCB, Univ Southern California, Los Angeles, CA. 43

125 - 12:15
Role of regulatory small peptides in the control of gene expression. **Francois Payre[1,2], Emilie Benrabah[1,2], Jennifer Zanet[1,2], Serge Plaza[1,2].** 1) Center for Developmental Biology, University of Toulouse,Toulouse, France; 2) CNRS, UMR5547, Toulouse France. 43

Concurrent Platform Sessions

SATURDAY, APRIL 6 10:45 am-12:30 pm

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

Pattern Formation

Co-Moderators: Ruth Lehman, Skirball, New York and Francois Payre, Universite de Toulouse, France

Room: Marriott Ballroom Salon 3, Lobby Level

126 - 10:45
Bonus is maternally required for Dorsal nuclear translocation and zygotically for Dpp responsiveness in dorsal-ventral axis formation. **Janine Quijano, Michael Stinchfield, Stuart Newfeld.** School of Life Sciences, Arizona State Univ, Tempe, AZ. 43

127 - 11:00
Nanobodies as novel tools to study morphogen gradient formation in vivo. **Stefan Harmansa, Markus Affolter, Emmanuel Caussinus.** Biozentrum, Universität Basel, Basel, Switzerland. 44

128 - 11:15
The dynamics of patterning in the Drosophila wing imaginal discs change under different environmental and internal cues. **Marisa Oliveira[1], Alexander Shingleton[2], Christen Mirth[1].** 1) Instituto Gulbenkian de Ciência, Oeiras, Oeiras, Portugal; 2) Dept. of Zoology, Michigan State University. 44

129 - 11:30
Collapse of compartment boundaries and induced identity changes after massive damage in the imaginal discs of Drosophila. **Salvador C. Herrera, Ginés Morata.** Centro de Biología Molecular (CSIC-UAM), Madrid, Madrid, Spain. 44

130 - 11:45
Interchromosomal communication coordinates an intrinsically stochastic expression decision between alleles. **Robert J. Johnston, Claude Desplan.** Biology, New York University, New York, NY. 45

131 - 12:00
Robustness of cell type identity in *Drosophila* embryos depleted for *bicoid*. **Max V. Staller[1], Meghan D. Bragdon[1], Zeba B. Wunderlich[1], Norbert Perrimon[2], Angela H. DePace[1].** 1) Department of Systems Biology, Harvard Medical School, Boston, MA; 2) Department of Genetics and Howard Hughes Medical Institute, Harvard Medical School, Boston, MA. 45

132 - 12:15
BMP signaling likely had an ancestral role in providing global embryonic dorsal-ventral polarity in insects. **Jeremy A. Lynch[1,2], Orhan Özüak[2], Thomas Buchta[2], Siegfried Roth[2].** 1) Molecular, Cell, and Developmental Biology, University of Illinois at Chicago, Chicago, IL; 2) Institute for Developmental Biology, University of Cologne, Cologne, Germany. 45

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Concurrent Platform Sessions

SATURDAY, APRIL 6 4:00-6:00 pm

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

Cell Cycle and Cell Death

Co-Moderators: Hyung Don Ryoo, New York University and Brian Calvi, Indiana University, Bloomington

Room: Marriott Ballroom Salon 1, Lobby Level

133 - 4:00
A novel role of *Drosophila* P/Q type voltage gated calcium channel subunits in autophagy. **Upasana Gala[1], Chao Tong[2,3], Manish Jaiswal[2], Hector Sandoval[2], Shinya Yamamoto[1], Vafa Bayat[1], Bo Xiong[1], Ke Zhang[4], Wu-Lin Charng[1], Lita Duraine[5], Kartik Venkatachalam[6], Hugo Bellen[1,2,5].** 1) Program in Developmental Biology, BCM; 2) Department of Human and Molecular Genetics, BCM; 3) Department of Molecular Biology, Zhejiang University; 4) Structural & Computational Biology & Molecular Biophysics Program, BCM; 5) Howard Hughes Medical Institute; 6) Department of Integrative Pharmacology, UTHSC. 46

134 - 4:15
Zonda: A novel gene involved in autophagy and growth control. **Mariana Melani[1], Maria Julieta Acevedo[1], Joel Perez Perri[1], Nuria Magdalena Romero[2], Pablo Wappner[1].** 1) Fundacion Instituto Leloir, Buenos Aires, Buenos Aires, Argentina; 2) Institute of Developmental Biology and Cancer, Nice, France. 46

135 - 4:30
Ino80 is required for ecdysone-dependent regulation of PI3K/Akt signaling during *Drosophila* development. **Sarah Neuman, Robert Ihry, Arash Bashirullah.** University of Wisconsin-Madison,WI. 46

136 - 4:45
Necrotic cell death is mediated by a specific chromatin-modifying pathway in fly and mammals. **Kai Liu[1], Yuhong Li[1], Lianggong Ding[1], Hui Yang[1], Chunyue Zhao[1], Hermann Steller[2], Lei Liu[1].** 1) State Key Lab of Biomembrane and Membrane Biotechnology, School of Life Sciences, Peking University, Beijing, China; 2) Strang Laboratory of Apoptosis and Cancer Biology, Howard Hughes Medical Institute, The Rockefeller University, NY. 46

137 - 5:00
The endocycle promotes aneuploidy at both ends of the spindle. **Donald T. Fox[1,2], Ruth Montague[1], Kevin Schoenfelder[1], Benjamin Stormo[2], Sarah Paramore[1].** 1) Deprt of Pharmacology & Cancer Biology, Duke University Medical Center, Durham, NC; 2) Dept of Cell Biology, Duke University Medical Center, Durham, NC. 47

138 - 5:15
Cell cycle remodeling is sufficient to repress apoptosis. **Suozhi Qi, Christiane Hassel, Brian R. Calvi.** Indiana University, Bloomington, 47

139 - 5:30
The Molecular Chaperone Hsp90 is Required for Cell Cycle Exit. **Jennifer L. Bandura[1,2], Huaqi Jiang[1,3], Derek W. Nickerson[1], Bruce A. Edgar[1,2].** 1) Fred Hutchinson Cancer Research Center, 1100 Fairview Ave., Seattle, WA 98109, USA; 2) German Cancer Research Center (DKFZ) - Center for Molecular Biology Heidelberg (ZMBH) Alliance, Im Neuenheimer Feld 282, 69120 Heidelberg, Germany; 3) Current address: UT Southwestern Medical Center at Dallas, 6000 Harry Hines Blvd., Dallas, TX 75235, USA. 47

140 - 5:45
Phosphorylation of Caprin by Chk1(Grapes) May Control the Cell Cycle at the Mid-Blastula Transition. **Helen X. Chen[1,3], Ophelia Papoulas[2,3], Paul Macdonald[1,3].** 1) Section of Molecular Cell and Developmental Biology; 2) Center for Systems and Synthetic Biology; 3) The Institute for Cellular and Molecular Biology, The University of Texas at Austin 48

Gametogenesis and Organogenesis

Co-Moderators: Cordula Schulz, University of Geogia, Athens and Wu-Min Deng, Florida State University, Ft. Lauderdale

Room: Marriott Ballroom Salon 2, Lobby Level

141 - 4:00
Ecdysone Signaling Antagonizes EGF Signaling in Germline-Cyst Interactions of *Drosophila melanogaster* Testes. **Ricky W. Zoller, Cordula Schulz.** Cellular Biology, University of Georgia, Athens, GA. 48

142 - 4:15
Localization and functional analysis of Nmd and CG4701 AAA proteins in mitochondrial and microtubule dynamics in *Drosophila* spermatogenesis. **Bethany L. Wagner, Lindsay A. Regruto, Melissa Lorenzo, Jessica Gerard, Sarah C. Pyfrom, Karen G. Hales.** Department of Biology, Davidson College, Davidson, NC. 48

143 - 4:30
NPR2/3 define a novel nutrient stress pathway in the Drosophila ovary. **Youheng Wei, John Reich, Weili Cai, Tanveer Akbar, Kuikwon Kim, Mary Lilly.** Cell Biology and Metabolism Program, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD. 49

144 - 4:45
Tramtrack69 regulates epithelial tube expansion in the Drosophila ovary through Paxillin, Dynamin, and the homeobox protein Mirror. **Nathaniel Peters, Celeste Berg.** Dept of Genome Sciences/MCB Program, University of Washington, Seattle, WA. 49

145 - 5:00
Ovulation requires female reproductive tract secretions controlled by NR5a-family nuclear hormone receptors. **Jianjun Sun, Allan Spradling.** HHMI Laboratory, Department of Embyology, Carnegie Institution for Science, Baltimore, MD. 49

146 - 5:15
Using transcriptome and phosphoproteome profiling to identify genes that regulate the egg-to-embryo transition in D. melanogaster. **Caroline V. Sartain, Amber R. Krauchunas, Jun Cui, Vanessa L. Horner, Jeffrey A. Pleiss, Mariana F. Wolfner.** Dept Molec Biol & Gen, Cornell Univ, Ithaca, NY. 50

147 - 5:30
Intercellular Protein Equilibration through Somatic Ring Canals. **Peter McLean.** Genetics, Yale School of Medicine, New Haven, CT. 50

148 - 5:45
A non-canonical role for Yorkie and the Salvador/Warts/Hippo pathway in tracheal tube-size regulation. **Renée M. Robbins, Samantha C. Gbur, Greg J. Beitel.** Molecular Biosciences, Northwestern Univ, Evanston, IL. 50

Concurrent Platform Sessions

SATURDAY, APRIL 6 4:00-6:00 pm

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

Neural Development

Co-Moderators: Wes Grueber, Columbia University, New York and Ehud Isacoff, University of California, Berkeley

Room: Marriott Ballroom Salon 3, Lobby Level

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Mutual inhibition among postmitotic neurons regulates robustness of brain wiring. **Marion G. Langen[1,2,3], Marta Koch[1,2], Jiekun Yan[1,2], Natalie de Geest[1,2], Marie-Luise Erfurt[4,5], Barret D. Pfeiffer[6], Dietmar Schmucker[4,5], Yves Moreau[7], Bassem A. Hassan[1,2,3,4].** 1) VIB Center for Biology of Disease, VIB, 3000 Leuven, Belgium; 2) Center for Human Genetics, University of Leuven School of Medicine, 3000 Leuven, Belgium; 3) Doctoral Program in Molecular and Cognitive Neuroscience, Doctoral School of Biomedical Sciences, University of Leuven, 3000 Leuven, Belgium; 4) Vesalius Research Center, VIB, 3000, Leuven, Belgium; 5) Department of Oncology, University of Leuven School of Medicine, 3000 Leuven, Belgium; 6) Janelia Farm Research Campus, Howard Hughes Medical Institute, Ashburn, VA, USA; 7) Bioinformatics Group, Department of Electrical Engineering, University of Leuven, 3000 Leuven, Belgium. 51

150 - 4:15
Drosophila epidermal cells function as phagocytes to clear degenerated dendrites during dendrite pruning. **Chun Han, Yuanquan Song, Denan Wang, Lily Jan, Yuh-Nung Jan.** Howard Hughes Medical Institute, Departments of Physiology, Biochemistry, and Biophysics, Univ California, San Francisco, San Francisco, CA. 51

151 - 4:30
Control of cell proliferation in the embryonic CNS by Temporal, Hox and Notch cues. **Stefan Thor.** Dept Clinical and Exp Medicine, Linkoping Univ, Linkoping, OG, Sweden. 51

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152 - 4:45
Hippo-dependent cell fate specification is antagonized by multiple regulatory modules. **Baotong Xie[1], David Terrell[1,2,3], Mark Charlton-Perkins[1,2], Brian Gebelein[2,4], Tiffany Cook[1,2,4].** 1) Division of Pediatric Ophthalmology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA; 2) Molecular and Developmental Biology Graduate Program, University of Cincinnati, Cincinnati, OH 45229, USA; 3) Physician Scientist Training Program, University of Cincinnati, Cincinnati, OH 45229, USA; 4) Division of Developmental Biology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA. 52

153 - 5:00
Adult neurogenesis in Drosophila. **Eduardo Moreno, Ismael Hernandez-Fernandez, Christa Rhiner.** University of Bern, Bern, Switzerland. 52

154 - 5:15
3D mapping of the adult Drosophila brain: Towards a comprehensive digital atlas of secondary lineages. **Darren C. C. Wong, Jennifer K. Lovick, Kathy Ngo, Jaison Omoto, Joseph Nguyen, Volker Hartenstein.** MCDB, UCLA, Los Angeles, CA. 52

155 - 5:30
Development of astrocyte-like and ensheathing glia of the early larva ventral nerve cord. **Emilie Peco[1], Sejal Davla[1], Stephanie Stacey[1], Matthias Landgraf[2], Don van Meyel[1].** 1) Centre for Research in Neuroscience, McGill University, Montreal, Qc, Canada; 2) Department of Zoology, University of Cambridge, UK. 52

156 - 5:45
Activity dependent active zone remodeling in the *Drosophila* visual system. **Atsushi Sugie[1,2], Takashi Suzuki[2], Gaia Tavosanis[1].** 1) DZNE, Bonn, Germany; 2) Titech, Yokohama, Japan. 53

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Gametogenesis and Organogenesis

157A
MicroRNA-190 downregulates Bag of marbles to allow the switch from proliferation to differentiation in the *Drosophila* male germline stem cell lineage. **Gonzalo H. Olivares, Margaret T. Fuller.**Developmental Biology, Stanford University School of Medicine, Palo Alto, CA. 53

158B
Microtubule (MT)-dependent regulation of muscle length. **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. 53

159C
Frazzled/DCC facilitates cardiac cell outgrowth and attachment during dorsal vessel formation. **Frank D. Macabenta[1,2], Amber G. Jensen[1,2], Yi-Shan Cheng[1], Joseph J. Kramer[1], Sunita G. Kramer[1,2].** 1) Pathology Department, UMDNJ/RWJMS, Piscataway, NJ; 2) Cell and Developmental Biology, Rutgers University, Piscataway, NJ. 54

160A
The core complex of cuticle dynamics in *Drosophila* exoskeleton. **Matthias Behr, Kapil R. Patil, Yanina Y. Pesch, Dominik Hölper.** Life & Medical Sciences (LIMES) Institute, Carl-Troll-Str. 31, 53115 Bonn, Germany. 54

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MIPP1 functions at the basolateral domain to facilitate the generation of filopodia and the extension of lamellopodia of tracheal leading cells. **Yim Ling Cheng, Deborah Andrew.** Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD. 54

162C
The PDZ domain protein Arc is required for proper invagination of the embryonic salivary glands. **Rika Maruyama[1,2], Sarah Hughes[1], Deborah Andrew[2].** 1) Department of Medical Genetics, University of Alberta, Edmonton, AB, Canada; 2) Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD. 55

163A
The large Maf factor Traffic jam functions to repress hub cell fate in the developing germline stem cell niche. **Lindsey Wingert, Steve DiNardo.** Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA. 55

164B
Machine learning-based functional characterization of heart enhancers uncovers novel cardiogenic roles for the transcription factors Myb and Su(H). **Shaad M. Ahmad[1,4], Brian W. Busser[1,4], Di Huang[2,4], Elizabeth J. Cozart[1], Anton Aboukhalil[3], Sebastien Michaud[3], Neal Jeffries[1], Martha L. Bulyk[3], Ivan Ovcharenko[2], Alan M. Michelson[1].** 1) NHLBI, NIH, Bethesda, MD; 2) NLM, NIH, Bethesda, MD; 3) Harvard Medical School, Boston, MA; 4) Equally contributing first authors. 55

165C
Investigating the potential non-cell autonomous Robo2 function during lumen formation of the *Drosophila melanogaster* dorsal vessel. **Judith J. Canabal Alvear[1,2], Sunita G. Kramer[1,2].** 1) Pathology Department , UMDNJ/RWJMS, Piscataway , NJ; 2) Cell and Developmental Biology, Rutgers University, Piscataway, NJ. 56

166A
Identification of transcription factors and chromatin regulators with novel roles in muscle morphogenesis. **Krista C. Dobi[1], Marc S. Halfon[2], Mary K. Baylies[1].** 1) Dept Dev Biol, Sloan-Kettering Inst, New York, NY; 2) Biochem Dept, SUNY Buffalo, Buffalo, NY. 56

167B
Cellular mechanisms of heart morphogenesis and lumen formation in *Drosophila*. **Georg Vogler[1], Jiandong Liu[2], Timothy W. Iafe[3], Rolf Bodmer[1].** 1) Development and Aging, Sanford Burnham Medical Research Institute, La Jolla, CA; 2) University of North Carolina, School of Medicine, Chapel Hill, NC; 3) New York University, School of Medicine, New York, NY. 56

168C
Elucidating the role of the nuclear hormone receptor E78 in *Drosophila* oogenesis. **Elizabeth T. Ables[1,2], Kelly E. Bois[2], 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. 57

169A
RTC1, a conserved SEA complex component, is required for early oogenesis in Drosophila. **Weili Cai, Mary Lilly.** NICHD, National Institute of Health, Besthesda, MD. 57

170B
Aging Related Oogenesis Defects of Upd3 Mutants. **Michelle Giedt[1], Liqun Wang[2], Travis Sexton[3], Claire Venard[1], Douglas Harrison[1].** 1) Biology Department, University of Kentucky, Lexington, KY; 2) Department of Pathology, Brigham & Woman's Hospital, Harvard Medical School, Harvard New Research Building, Room 652, 77 Avenue Louis Pasteur, Boston, MA; 3) University of Kentucky College of Medicine, Cardiovascular Research Center, 741 S. Limestone St., Lexington, KY. 57

171C
Selective replication of functional mtDNA during oogenesis restricts the transmission of a deleterious mutation. **Jahda H. Hill, Hong Xu.** National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD. 58

172A
FGF mutants exhibit pleiotropic ovariole phenotypes relating to loss of epithelial sheath. **Jihyun Irizarry[1,2], Angelike Stathopoulos[1].** 1) California Institute of Technology, Division of Biology, Pasadena, CA; 2) CIRM Bridges to Stem Cell Research Program, California State Los Angeles, Los Angeles, CA. 58

173B
The Mitochondrial Protein Cytochrome c heme lyase is Necessary for Cell Polarity. **Sarah E. Kleinsorge, Caryn Navarro.** Graduate Program in Genetics and Genomics, BUSM, Boston, MA. 58

174C
Translational regulation at the oocyte to embryo transition in Drosophila. **Iva Kronja[1], Bingbing Yuan[1], Kristina Dzeyk[2], Joanna Kirkpatrick[2], Jeroen Krijgsveld[2], Terry Orr-Weaver[1].** 1) Whitehead Institute, MIT, Cambridge, MA; 2) EMBL, Heidelberg, Germany. 59

175A
Heterologous Segregations are established prior to chromosome congression in female meiosis I in *Drosophila melanogaster.*. **Fiona M. Lane, Ashley A. Snouffer, William D. Gilliland.** Biological Sciences Department, DePaul University, Chicago, IL. 59

176B
asteroid is required for oocyte determination in *Drosophila*. **Julie A.** 59

Merkle, Trudi Schüpbach. Howard Hughes Medical Institute, Department of Molecular Biology, Princeton University, Princeton, NJ.

177C
The DExH box helicase region of Spindle-E is necessary for retrotransposon silencing and germline development. **Caryn Navarro, Kristen Ott, Tram Nyguyen.** Boston University School of Medicine, Boston, MA. 59

178A
Three-dimensional epithelial morphogenesis in developing eggshells. **Miriam Osterfield[1], XinXin Du[1], Trudi Schüpbach[1,2], Eric Wieschaus[1,2], Stanislav Shvartsman[1].** 1) Princeton University, Princeton, NJ; 2) Howard Hughes Medical Institute, Princeton, NJ. 60

179B
Genetic and cytological dissection of mechanisms controlling mitochondrial DNA inheritance in *Drosophila melanogaster*. **Jennifer Leigh Page, Patrick O'Farrell.** BIOCHEMISTRY AND BIOPHYSICS, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, SAN FRANCISCO, CA. 60

180C
Mio: Connecting Meiotic Progression to Metabolism in Early Oogenesis. **John C. Reich, Mary Lilly.** CBMP, NICHD, Bethesda, MD. 60

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A Role for *Prolyl-4-Hydroxylase Alpha* in Cell Migration During Oogenesis. **Jinal S. Sheth, Michelle Starz-Gaiano.** Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD. 61

182B
Genes that act to destroy mitochondrial DNA in spermatids and enforce maternal only inheritance. **Steven Z. DeLuca, Patrick H. O'Farrell.** Dept. of Biochemistry, UCSF, San Francisco, CA. 61

183C
Identifying new regulators of secretory capacity. **Rebecca M. Fox, Xueni Chen, Deborah J. Andrew.** Dept Cell Biol, Johns Hopkins Univ, Baltimore, MD. 61

184A
Terminal cells lacking V-ATPase appear to form auto-cellular rather than seamless tubes. **Deanne M. Francis, Amin Ghabrial.** Cell and Developmental Biology, University of Pennsylvania School of Medicine, Philadelphia, PA. 62

185B
Role of *expansion* in *Drosophila* tracheal tube diameter regulation. **Ekaterini Iordanou, Rachana R. Chandran, Mina Essak, Lan Jiang.** Biological Sciences, Oakland University, Rochester, MI. 62

186C
Myogenesis of the smooth muscles surrounding the testes of Drosophila melanogaster males. **Jessica Kuckwa[1], Christina Hornbruch-Freitag[1], Loreen Susic-Jung[1], Uwe Lammel[2], Renate Renkawitz-Pohl[1].** 1) Developmental Biology, University of Marburg, 35043, Marburg, Germany; 2) Neurobiology, University of Muenster, 48149, Muenster, Germany. 62

187A
Identification of somatic factors controlling ovarian development by *RNAi* screening. **Chun-Ming Lai[1,2], Yueh Cho[1], Hwei-Jan Hsu[1].** 1) Inst Cellular & Organismic Biol, Academia Sinica, Taipei, Taipei, Taiwan; 2) Molecular and Biological Agricultural Sciences Program, Taiwan International Graduate Program, National Chung-Hsing University and Academia Sinica, Taipei, Taiwan. 63

188B
Analysis of *Neprilysins 1-5* in *Drosophila melanogaster* reveals parallels between mammalian and invertebrate roles in reproductive fitness. **J. Sitnik[3], C. Francis[1,2], R. Huybrechts[4], M. Wolfner[3], P. Callaerts[1,2].** 1) Laboratory of Behavioral and Developmental Genetics, KULeuven, Leuven, Belgium; 2) VIB Center for the Biology of Disease, Leuven, Belgium; 3) Dept. of Molecular Biology and Genetics, Cornell University, Ithaca NY, USA; 4) Zoological Institute, KULeuven, Leuven, Belgium. 63

189C
The H4K16 histone acetyltransferase *chameau* is a putative target of Doublesex. **Emily Clough[1], Cale Whitworth[2], Erin Jimenez[2], Hania Pavlou[3], Megan Neville[3], Stephen Goodwin[3], Mark Van Doren[2], Brian Oliver[1].** 1) Laboratory of Cellular and Developmental Biology, NIDDK/NIH, Bethesda , MD; 2) Department of Biology, Johns Hopkins University, Baltimore, MD; 3) Department of Physiology, Anatomy and Genetics,University of Oxford, Oxford, UK. 63

190A
A Genomic Analysis of Sex Determination. **Erin Jimenez[1], Cale Whitworth[1], Emily Clough[2], Brian Oliver[2], Mark Van Doren[1].** 1) Biology, Johns Hopkins University, Baltimore, MD; 2) NIDDK, National Institutes of Health, Bethesda, MD. 64

191B
Female-expressed genes that affect the post mating response in Drosophila melanogaster. **Alexandra L. Mattei, Jessica L. Sitnik, Frank W. Avila, Amber R. Krauchunas, Mariana F. Wolfner.**Cornell University, Ithaca, NY. 64

192C
Genetic basis for developmental homeostasis of germline stem cell niche number: a network of Tramtrack-group nuclear BTB factors. **Mathieu Bartoletti[1,2,3], Thomas Rubin[2,3], Fabienne Chalvet[2,3,4], Sophie Netter[1,2,3], Nicolas Dos Santos[2,3], Emilie Poisot[2,3], Melanie Paces-Fessy[2,3,5], Delphine Cumenal[5], Frederique Peronnet[5], Anne-Marie Pret[1,2], Laurent Theodore[1,2,4].** 1) Centre de Génétique Moléculaire - UPR 3404, GIF SUR YVETTE, France; 2) Departement de Biologie, Univ Versailles St-Quentin, Versailles, France; 3) Laboratoire de Génétique et Biologie Cellulaire, Equipe Associée 4589, Univ Versailles St-Quentin, Versailles , France; 4) Departement de Biologie, Univ Paris-Sud, Orsay, France; 5) Biologie du Développement UMR 7622, CNRS et UPMC, France. 64

193A
Apontic acts as a JAK/STAT pathway regulator in the Drosophila testis niche. **Kathryn A. Bus, Archana Murali, Michelle Starz-Gaiano.** University of Maryland Baltimore County, Batimore, MD. 65

194B
The Role of miR-310s in Regulation of Somatic Cell Differentiation in Drosophila Ovary. **Omer Cicek, Halyna Shcherbata.** MPRG of Gene Expression and Signaling, Max Planck Institute, Goettingen, Germany. 65

195C
Putative sperm chromatin condensing proteins and their respective conserved domains in 12 sequenced species of *Drosophila*. **Zain A. Alvi, Tin-Chun Chu, Angela V. Klaus.** Department of Biological Sciences, Seton Hall University, South Orange, NJ. 65

196A
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Steinhauer. Department of Biology, Yeshiva College, New York.

197B
Studying the effects of Hsp27 phosphorylation on viability and fertility. **Emily Furbee[1], Joseph Ayoob[2], Jonathan Minden[1].** 1) Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 2) Department of Computational and Systems Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA. 66

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The role of Tudor-SN in spermatogenesis and the Piwi-piRNA pathway. **Hsueh-Yen Ku, Vamsi Gangaraju, Haifan Lin.** Stem Cell Center and Department of Cell Biology, Yale University School of Medicine, New Haven, CT. 66

199A
Characterizing the genetic basis for mitochondrial shaping defects in *emmenthal* mutants of *Drosophila melanogaster*. **Will S. Mitchell, Karen G. Hales.** Department of Biology, Davidson College, Davidson, NC. 67

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Cell Biology & Signal Transduction

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The *Drosophila* BMPRII, Wishful thinking, is required for eggshell patterning. **Rob Marmion[1], Milica Jevtic[2], George Pyrowolakis[2], Nir Yakoby[1].** 1) Department of Biology and Center for Computational and Integrative Biology, Rutgers University, Camden, NJ; 2) Institute for Biology I, Albert-Ludwigs-University of Freiburg, Freiburg, Germany. 67

203B
A Novel Role for UDP-GlcNAC in Dpp Signal Antagonism. **Matthew J. Moulton, Gregory Humphreys, Anthea Letsou.** Human Genetics, University of Utah, Salt Lake City, UT. 68

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GPI-mannosyltransferase 2 shapes the Hedgehog morphogen gradient. **Yi-Nan Lee[1], Haiwei Pi[2], Cheng-Ting Chien[1].** 1) Institute of Molecular Biology, Academia Sinica, Taipei 115, Taiwan; 2) Department of Biomedical Sciences, Chang-Gang University, Taoyuan 333, Taiwan. 68

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Balancing Hedgehog, a retention and release equilibrium given by Dally, Ihog, Boi and Shifted/dWif. **David Sánchez Hernández, Aphrodite Bilioni, Ainhoa Callejo, Ana-Citlali Gradilla, Carmen Ibañez, Emanuela Mollica, M.Carmen Rodríguez-Navas, Eleanor Simon, Isabel Guerrero.** CBMSO, Madrid, Madrid, Spain. 68

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The interactions among upd-family ligands. **Qian Chen, Douglas Harrison.** Dept Biol, Univ Kentucky, Lexington, KY. 69

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A novel calcyphosine-like protein facilitates border cell migration during oogenesis. **Lathiena A. Manning, Michelle Starz-Gaiano.** Biological Sciences, University of Maryland Baltimore County, Baltimore, MD. 69

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An *in vivo* RNAi screen identifies components of the JAK/STAT signaling that regulate cell migration. **Afsoon Saadin, Michelle Starz-Gaiano.** Biological Sciences, UMBC, Baltimore, MD. 69

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Drosophila glypican Dally regulates Upd distribution and JAK/STAT signaling activity in eye development. **Jia You[1], Yan Zhang[2], Wenyan Ren[2], Xinhua Lin[1,2].** 1) Dev Biol, Cincinnati Chld Hosp Med Ctr, Cincinnati, Oh; 2) 1State Key Laboratory of Biomembrane and Membrane Biotechnology, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101, China. 70

211A
Spatial and temporal analysis of axonal transport in primary neuronal cultures from Drosophila larvae. **Gary Iacobucci, Noura Abdel Rahman, Aida Andrades Valtueña, Shermali Gunawardena.**Biological Sciences, State University of New York at Buffalo, Buffalo, NY. 70

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Drosophila Tempura, a novel Rab geranylgeranyl transferase subunit, modulates Notch signaling via Rab1 and Rab11. **Wu-Lin Charng[1], Shinya Yamamoto[1,2], Manish Jaiswal[2,6], Vafa Bayat[1,3], Bo Xiong[1], Ke Zhang[4], Hector Sandoval[2], Gabriela David[1], Hsiang-Chih Lu[1], Kuchuan Chen[1], Hugo Bellen[1,2,4,5,6].** 1) Program in Developmental Biology; 2) Dept of Molecular and Human Genetics; 3) Medical Scientist Training Program; 4) Program in SCBMB; 5) Dept of Neuroscience; 6) Howard Hughes Medical Institute; The Neurological Research Institute; Baylor College of Medicine, Houston, TX. 70

213C
Identification of novel maternal neurogenic genes that are potential components of Notch signaling in *Drosophila*. **Takuma Gushiken[1,2], Kenjiroo Matsumoto[1,2], Takahiro Seto[2], Ryo Hatori[1,2], Shunsuke Shimaoka[1,2], Tomoko Yamakawa[1], Takeshi Sasamura[1], Kenji Matsuno[1].** 1) Department of Biological Science, Osaka university, Japan; 2) Department of Biological Science and Technology, Tokyo University of Science, Japan. 71

214A
Direct regulation of *broad* expression by Notch signaling during the mitotic/endocycle switch in *Drosophila* follicle cells. **Dongyu Jia[1], Yoichiro Tamori[1], George Pyrowolakis[2,3], Wu-Min Deng[1].** 1) Department of Biological Science, Florida State University, Tallahassee, FL. USA; 2) Institute for Biology I, Faculty of Biology, Albert-Ludwigs-University of Freiburg, Hauptstrasse 1, Freiburg, Germany; 3) BIOSS Centre for Biological Signalling Studies, 71

Albert-Ludwigs-University of Freiburg, Freiburg, Germany.

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Rescue of Notch signaling in cells incapable of GDP-L-fucose synthesis by gap junction transfer of GDP-L-fucose in *Drosophila*. **Kenjiroo Matsumoto[1], Tomonori Ayukawa[2], Ishikawa O. Hiroyuki[3], Akira Ishio[1], Tomoko Yamakawa[1], Takuya Suzuki[1], Kenji Matsuno[1].** 1) Biological Science, Osaka university, Toyonaka,Osaka, Japan; 2) Medical Science, Akita university, Toyonaka,Akita, Japan; 3) Science, Chiba university, Chiba,Chiba, Japan. 71

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The *Drosophila* CREB binding protein gene *nejire* is involved in multiple signaling and cell migration processes in follicle cells. **Zhiqiang Shu, Dongyu Jia, Wu-Min Deng.** Biological Science, Florida State University, Tallahassee, FL. 71

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Identification of me31B from an in vivo RNAi screen as a potential regulator of Notch Signaling. Muhammed Soylemez, Dongyu Jia, Wu-Min Deng. Department of Biological Science, Florida State University, Tallahassee, FL. **Muhammed Soylemez, Dongyu Jia, Wu Min Deng.** BIOLOGICAL SCIENCE , FLORIDA STATE UNIVERSITY, TALLAHASSEE , FL. 72

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Polyploid Hindgut Cells in *Drosophila* Undergo Multipolar Mitosis and Tolerate Aneuploidy. **Kevin Schoenfelder[1], Ruth Montague[2], Sarah Paramore[2], Donald Fox[1,2].** 1) Duke University Program in Genetics and Genomics, Durham, NC 27710; 2) Department of Pharmacology and Cancer Biology, Duke University School of Medicine, Durham, NC 27710. 100

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pΔTubHA4C, a new versatile vector for constitutive expression in Drosophila. **Stephanie M. Arcia[1,2], Yan Zhang[1], Pedro Fernandez-Funez[1,3,4], Diego E. Rincon Limas[1,4].** 1) Department of Neurology; 2) HHMI Science for Life Undergraduate Program; 3) Department of Neurosciences; 4) Genetics Institute and Center for Translational Research on Neurodegenerative Diseases; McKnight Brain Institute, University of Florida, Gainesville, FL. 247

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Allele-specific expression analysis in a large panel of intraspecific Drosophila melanogaster crosses. **Daniel Campo[1], Justin Fear[2], Rita Graze[2], Peter Poon[1], Matt Salomon[1], John Tower[1], Lauren McIntyre[2], Sergey Nuzhdin[1].** 1) University of Southern California, Los Angeles, CA; 2) University of Florida, Gainesville, FL. 247

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Identification of a tissue-specific transcription factor required for ecdysone production in the prothoracic gland of Drosophila. **Erik Thomas Danielsen[1], Morten E. Møller[1], Rachel Harder[2], Michael B. O'Connor[2], Kim F. Rewtiz[1].** 1) Department of Biology, Copenhagen University, Faculty of Science, Copenhagen, Denmark; 2) Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, USA. 248

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Mapping the cis-regulatory landscape of early embryonic development in Drosophila with hundreds of TFs. **C. Blatti[1], M. Kazemian[1], S. Celniker[2], M. Brodsky[3], S. Sinha[1].** 1) U of Illinois, Urbana, IL; 2) LBL, Berkeley, CA; 3) U Mass Med School, Worcester, MA. 249

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Thermodynamic models predict quantitative expression levels driven by synthetic *cis*-regulatory modules in the *Drosophila* embryo. **Daniel K. Bork[1,2], Adam S. Brown[2], Lily Li[2], Robert A. Drewell[2], Jacqueline M. Dresch[1].** 1) Mathematics Department, Harvey Mudd College, Claremont, CA; 2) Biology Department, Harvey Mudd College, Claremont, CA. 250

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Temporal coordination of two enhancers relies on the modulation of a common inductive signal. **Lily S. Cheung[1], Alisa Fuchs[2], David S. A. Simakov[3], Len M. Pismen[3], Giorgos Pyrowolakis[2], Stanislav Y. Shvartsman[1].** 1) Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ; 2) Institute for Biology I, Albert-Ludwigs University of Freiburg, Germany; 3) Department of Chemical Engineering, Technion-Israel Institute of Technology, Israel. 250

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REDfly: The Regulatory Element Database for *Drosophila*. **Marc S. Halfon[1,2,3,4], Jeffrey T. Palmer[2,5], Michael Simich[1,2], Benjamin Des Soye[1,2], Steven M. Gallo[2,5].** 1) Department of Biochemistry, SUNY at Buffalo, Buffalo, NY; 2) NYS Center of Excellence in Bioinformatics & Life Sciences, Buffalo, NY; 3) Department of Biological Sciences, SUNY at Buffalo, Buffalo, NY; 4) Molecular and Cellular Biology Department, Roswell Park Cancer Institute, Buffalo, NY; 5) Center for Computational Research, SUNY at Buffalo, Buffalo, NY. 251

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Context-dependent requirements for DNA-binding by Runt in transcription activation and repression. **Michael L. Higgins[1], Lisa Prazak[2], J. Peter Gergen[3].** 1) Graduate Program in Biochemistry and Structural Biology, Stony Brook University, Stony Brook, NY. 11794; 2) Graduate Program in Molecular and Cellular Biology, Stony Brook University, Stony Brook, NY 11794-5215; 3) Department of Biochemistry and Cell Biology and the Center for Developmental Genetics, Stony Brook University, Stony Brook, NY 11794-5215. 251

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Dissecting the cis-regulatory DNA that controls the POU-domain transcription factor genes, *pdm-1* and *pdm-2*. **Jermaine Ross[1,2], Thomas Brody[1], Ward F. Odenwald[1].** 1) Neural Cell-Fate Determinants Section, NINDS, NIH, Bethesda, MD; 2) Brown University, Providence, RI. 252

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Spatial and temporal regulation of cell adhesion is mediated by discrete regulatory elements in the *delilah* locus. **Adi Salzberg, Atalya Nachman, Naomi Halachmi, Nirit Egoz-Matia.** Gen/Rappaport Fac Medicine, Technion Israel Ins Technology, Haifa, Israel. 252

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A screen for developmental enhancers targeted by the Notch effector Su(H). **Elizabeth K. Stroebele[1], Andrew Brittain[1], Xin Yuan[1], Seth Brown[2], Albert J. Erives[1].** 1) Department of Biology, University of Iowa, Iowa City, IA; 2) Carver College of Medicine, University of Iowa, Iowa City, IA. 253

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Direct Quantification of Transcriptional Regulation at an Endogenous Gene Locus. **Heng Xu[1], Anna Sokac[1], Ido Golding[1,2].** 1) Department of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, TX; 2) Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL. 275

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Phylogenetic footprinting and comparative analysis of related cis-regulatory modules reveals structural constraints on enhancer evolution and function. **Thomas Brody[1], Alexander Kuzin[1], Mukta Kundu[1], Jermaine Ross[1], Amar Yavatkar[2], Ward F. Odenwald[1].** 1) Neural Cell-Fate Determinants Section; 2) Information Technology Program, NINDS/NIH, Bethesda, MD. 275

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Impact of P278A mutation conferring Breast Cancer susceptibility in the p53 DNA-Binding Core Domain interacting partners. **Yeguvapalli Suneetha, Chitrala Kumaraswamy Naidu.** Department of zoology, Sri venkateswara University, Tirupati, India. 277

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Leveraging a knowledge base of *Drosophila cis*-regulatory modules for regulatory element discovery in diverged insect species. **Kushal Suryamohan[1], Majid Kazemian[2], Jia-Yu Chen[2], Yinan Zhang[2], Marc Halfon[1,3,4], Saurabh Sinha[2].** 1) Department of Biochemistry and Center of Excellence in Bioinformatics and Life Sciences, State University of New York at Buffalo; 2) Department of Computer Science, University of Illinois Urbana-Champaign, IL; 3) Department of Biological Sciences, State University of New York at Buffalo; 4) Molecular and Cellular Biology Department, Roswell Park Cancer Institute, Buffalo, NY. 278

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Transposon-based forward and reverse genetics in Anopheles mosquitoes. **David A. O'Brochta[1,2], Kristina L. Pilitt[1], Robert A. Harrell, II[1], Channa Aluvihare[1], Robert T. Alford[1].** 1) Institute for Bioscience and Biotechnology Research, University of Maryland, College Park, MD; 2) Department of Entomology, University of Maryland, College Park, MD. 279

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Ultrastructural analysis of Drosophila melanogaster using Helium Ion Microscopy. **Dennis R. LaJeunesse[1,3], Adam Boseman[1], Kyle Nowlin[1], Jijin Yang[2].** 1) Dept Nanoscience, Joint School of Nanoscience and Nanoengineering, Greensboro, NC; 2) Carl Zeiss NTS, LLC, Peabody, Massachusetts; 3) Department of Biology, UNCG, Greensboro, NC 27402. 280

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A high-throughput template for optimizing Drosophila organ culture with response surface methods. **Jeremiah J. Zartman[1,2], Simon Restrepo[2], Konrad Basler[2].** 1) Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN; 2) Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland. 280

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*dm*FUCCI - a novel tool for studying cell proliferation in complex tissues. **Norman Zielke, Jerome Korzelius, Monique van Straaten, Hanna Reuter, Katharina Bender, Gregor Schuhknecht, Juliette Pouch, Bruce Edgar.** DKFZ/ZMBH Alliance, Im Neuenheimer Feld 282, 69120 Heidelberg, Germany. 281

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Biochemistry, Simon Fraser University, Burnaby, British Columbia, Canada; 2) Defence Research and Development Canada - Suffield, Biotechnology Section, Medicine Hat, Alberta, T1A 8K6, Canada.

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Pk17e regulates Drosophila NMJ synapse development and function. **Guoli Zhao[1], Li Du[2], Qifu Wang[1], Yongqing Zhang[1].** 1) Institute of Genetics and Developmental Biology, Beijing, Beijing 100101, China; 2) College of Life Science, Hubei University, Wuhan, Hubei 430062, China. 295

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