Poster board number is in bold above the title. See page 6 for presentation schedule. The first author is the presenter. Abstracts begin on page 140.

Meiosis, Mitosis, and Cell Division

157A
The competitiveness of DNA repair. **Dena M. Johnson-Schlitz, Carlos C. Flores, Christine R. Preston, William R. Engels.** Department of Genetics, University of Wisconsin, Madison, WI.

158B
A genetic modifier screen identifies multiple genes that interact with the cycle regulator Rap/Fzr and suggests novel cellular functional roles through its activation of Ubiquitin ligases. **Margarita Kaplow[1], Laura Mannava[1], Angel Pimentel[2], Hector Fermin[1], Vanetta Hyatt[3], John Lee[1], Tadmiri Venkatesh[1].** 1) Dept of Biology, CCNY, New York, NY; 2) Dept of Molecular and Cellular Biology, University of Arizona, Tucson, AZ; 3) Weill Medical College of Cornell University, New York, NY.

159C
Characterisation of Drosophila Invadolysin, a novel metalloprotease linking mitosis with cell migration. **Bin Yu, Margarete Heck.** Wellcome Trust Centre for Cell Biology, Institute of Cell Biology, University of Edinburgh, Michael Swann Building, King's Buildings, Mayfield Road, Edinburgh, EH9 3JR UK.

160A
The meiotic mutant *ald* is a mutation in the Drosophila homolog of *mps1*. **William D. Gilliland[1], Sarah M. Wayson[2], R. Scott Hawley[1].** 1) Stowers Inst, Kansas City, MO; 2) Section of MCB, UC Davis, Davis CA.

161B
Cytological analyses of early pairing in Drosophila female meiosis by LacI-GFP tagging. **Wei Gong, R. Scott Hawley.** Stowers Institute for Medical Research, 1000E 50th Street, Kansas City, MO 64110.

162C
Histone modification, glucose transport, and regulation of meiosis. **Irena Ivanovska[1], Helena Kashevsky[1], Jillian Pesin[1,2], Terry Orr-Weaver[1,2].** 1) Whitehead Institute for Biomedical Research, Cambridge, MA; 2) Massachusetts Institute of Technology, Cambridge, MA.

163A
Structure and function of C(3)G in synaptonemal complex assembly. **Jennifer K. Jeffress[1], Lorinda K. Anderson[2], Elizabeth D. Belden[1,3], Scott L. Page[1], R. Scott Hawley[1].** 1) Stowers Institute for Medical Research, Kansas City, MO; 2) Colorado State University, Fort Collins, CO; 3) University of Missouri Kansas City, Kansas City, MO.

164B
A meiotic mutant with a delay in the recombination pathway has reduced crossing over. **Eric Joyce, Kim McKim.** Waksman Institute, Rutgers University, Piscataway, NJ.

165C
Investigation of the role of *axs* in the control of meiotic exit. **Joseph J. Kramer, R. Scott Hawley.** Stowers Institute for Medical Research, Kansas City, MO.

166A
Structural and functional comparison of the *Axs*-like gene family in Drosophila and humans. **Cathleen M. Lake, Joseph J. Kramer, Kathy Teeter, Susan M. Gustafson, R. Scott Hawley.** Stowers Inst Medical Research, Kansas City, MO.

167B
Genetic analysis of DSB formation and its relationship to crossover formation. **Sonam Mehrotra, Kim McKim.** Waksman Institute, Rutgers Univ, Piscataway, NJ.

168C
A germline clone screen for female meiotic mutants in Drosophila. **Scott L. Page[1], Rachel J. Nielsen[1], Kathleen R. Lindstrom[1,2], Kristen L. Dean[1,3], Kathy Teeter[1], SengKai Ong[1,4], Daniel Agne[1,2], Max R. Courington III[1,2], William D. Gilliland[1], Cathleen M. Lake[1], R. Scott Hawley[1,2].** 1) Stowers Institute for Medical Research, Kansas City, MO; 2) University of Kansas, Lawrence, KS; 3) University of Kansas Medical Center, Kansas City, MO; 4) University of Missouri, Kansas City, MO.

169A
Investigating the Role of a Meiosis-Specific APC/C Activator. **Jillian A. Pesin, Terry Orr-Weaver.** Dept Biol, MIT/Whitehead Inst, Cambridge, MA.

170B
leg-arista-wing complex mutations cause not only morphological abnormalities, but also chromosome non-disjunction. **Olga B. Simonova, Elena A. Modestova, Julia E. Vorontsova, Leonid I. Korochkin.** Neurogenetics, Institute of Gene Biology RAS, Moscow, Russia.

171C
SNM and MOD(MDG4)56.3 are required for territory maintenance in Drosophila spermatocytes. **Sharon E. Thomas, Bruce D. McKee.** BCMB, Univ Tennessee, Knoxville, TN.

172A
The mtrm Gene Encodes a 217 aa Protein Required for Heterochromatic Pairing to Ensure Centromere Co-orientation at Meiosis I and for Proper Regulation of the Cell Cycle. **Youbin Xiang, Joseph Kramer, Cathy Lake, Kathy Teeter, R. Scott Hawley.** Stowers Inst Medical Research, Kansas City, MO 64110.

173B
Functions of pf7 and vasa in male meiosis of *D. melanogaster*. **Rihui Yan, Sharon Thomas, Jermey Miller, Bruce McKee.** Dept Biochem, Cell, Molec Biol, Univ Tennessee, Knoxville, TN 37996.

174C
Drosophila Mps1 protein kinase is essential for spindle checkpoint establishment. **Mariana L. Faria[1], Paulo Alves[1], Silvia Pimentel[2], Susana Godinho[1], Celia Domingues[1], Claudia Florindo[1], Ana Martins[1], Rui Gomes[2], Alvaro Tavares[1,3].** 1) Cell Division Group, Inst Gulbenkian Ciencia, Oeiras, Portugal; 2) Fac de Ciências Univ Lisboa, Lisboa, Portugal; 3) Dept Eng Quimica Inst Sup Técnico, Lisboa, Portugal.

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175A
Dhrp/Gkap functions in the G2/M checkpoint. **Gwo-Jen Liaw[1,2], Hsing-Hsi Li[1], Hsiao-Yu Huang[2], Chuen-Sheue Chiang[3].** 1) Faculty Life Sci, Natl Yang-Ming Univ, Taipei 112, Taiwan; 2) Institute of Genetics, Natl Yang-Ming Univ, Taipei 112, Taiwan; 3) Dept Medical Research, Mackay Memorial Hospital, Danshui 251, Taipei, Taiwan.

176B
Energy dependent regulation of cell cycle in Drosophila. **Sudip Mandal, Preeta Guptan, Utpal Banerjee.** Dept MCDB, Univ California, Los Angeles, Los Angeles, CA.

177C
Stonewall genetically interacts with grapes but acts in a distinct pathway to survive genotoxic stress. **Ody C. M. Sibon, Hilda I. de Vries, Willy Lemstra, Jeanette F. Brunsting, Freark Dijk, Harm H. Kampinga.** Dept Cell Biol, Univ Groningen, Groningen, Netherlands.

178A
Cdk1 activity mediates mitotic disassembly of the Nuclear Pore Complexes and the Annulate Lamellae Pore Complexes in syncytial Drosophila embryos. **Evgeny Onishchenko[1,2], Natalia Gubanova[3], Elena Kiseleva[3], Einar Hallberg[2].** 1) Department of Biosciences at Novum, Karolinska Institute, SE-141 86 Huddinge, Sweden; 2) Sodertorns University College, SE-141 89 Huddinge, Sweden; 3) Institute of Cytology and Genetics, 630090 Novosibirsk, Russia.

179B
Regulation of the Young Arrest protein by phosphorylation. **Katharine L. Sackton, Norene A. Buehner, Mariana F. Wolfner.** Molecular Biology & Genetics, Cornell University, Ithaca, NY.

180C
Rbf1 is activated by dephosphorylation in the Drosophila embryo. **Shusaku Shibutani, Lisa Swanhart, Robert J. Duronio.** Department of Biology, University of North Carolina, Chapel Hill, NC.

181A
The role of the PNG kinase complex in the translational regulation of mitotic Cyclins in embryos. **Leah K. A. Vardy[1], Laura A. Lee[2], Terry L. Orr-Weaver[1].** 1) Whitehead Institute, Cambridge, MA 02142; 2) Department of Cell & Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN.

182B
Developmental control of pI asymmetric division in the dorsal microchaete lineage. **José-Eduardo Gomes, François Schweisguth.** CNRS UMR-8542, Ecole Normale Supérieure, Paris, France.

183C
Ribosome biogenesis and the control of growth in Drosophila. **Savraj S. Grewal, Ling Li, Amir Orian, Bruce A. Edgar.** Div Basic Sci, Fred Hutchinson Cancer Center, Seattle, WA.

184A
Drosophila homolog of Translationally Controlled Tumor Protein (dTCTP) is required for the growth of imaginal discs. **Ya-Chieh Hsu[1], Joshua J. Chern[2], Kwang-Wook Choi[1,2,3].** 1) Program in Developmental Biology; 2) Molecular and Cellular Biology; 3) Department of Ophthalmology, Baylor College of Medicine, Houston TX 77030.

185B
Notch pathway through Tramtrack short circuits the JNK induced positive regulation of cell cycle in Drosophila oogenesis. **Katherine C. Jordan, V. Schaeffer, K. Fischer, C. Althauser, H. Ruohola-Baker.** Dept Biochemistry, Univ Washington, Seattle, WA.

186C
The Function of The Transcription Factors Homothorax And Teashirt In Drosophila Eye Development. **Hsien-wei 'Wayne' Peng, Richard S. Mann.** CMBS & Department of Biochemistry, Columbia University Medical Center, New York, NY.

187A
Dissecting the CID/CENP-A deposition pathway. **Barbara Mellone[1], Sylvia Erhardt[1], Mike Blower[2], Gary Karpen[1].** 1) Department of Genome Sciences, Lawrence Berkeley Laboratory, 1 Cyclotron Road, Berkeley, CA, 94720; 2) University of California, Berkeley, Department of Molecular and Cell Biology, 315 LSA, Berkeley, CA 94720.

188B
The Kinesin-like protein Subito has a partially redundant role in mitotic spindle formation and cytokinesis. **Bethany J. Redding, Nishit Shah, Janet K. Jang, Kim S. McKim.** Genetics Dept and Waksman Inst, Rutgers University, Piscataway, NJ.

189C
PIP2 hydrolysis and calcium release are required for cytokinesis in Drosophila spermatocytes. **Julie A. Brill[1,2,3], Raymond Wong[1,2], Irene Hadjiyanni[1], Ho-Chun Wei[1], Gordon Polevoy[1].** 1) Program Developmental Biol, Hosp Sick Children, Toronto, ON, Canada; 2) Institute of Medical Science, University of Toronto, ON, Canada; 3) Department of Medical and Molecular Genetics, University of Toronto, ON, Canada.

190A
The Cytokinetic Function of the Drosophila Origin Recognition Complex. **Richard P. H. Huijbregts, Igor N. Chesnokov.** Dept. of Biochemistry and Molecular Genetics, UAB, Birmingham, AL.

191B
Identification of genetic interactors of the Drosophila RhoGEF, *pebble*. **Lynn M. Jones, Robert Saint.** Centre for the Molecular Genetics of Development, Research School of Biological Sciences, Australian National University, Canberra, ACT, Australia.

192C
A Characterization of Conditional Mutants Affecting Drosophila Cellularization. **Kate Monzo, Howard Wang, Travis White, Poornima Parameswaran, John C. Sisson.** The Section of MCD Biology and The Institute for Cellular and Molecular Biology, The University of Texas, Austin, TX.

193A
Role of the Orc6 in DNA replication and origin recognition. **Maxim L. Balasov, Igor N. Chesnokov.** Dept Biochem & Molec Gen, Univ Alabama, Sch Med, Birmingham, AL.

194B
Humpty dumpty is required for developmental DNA amplification and cell proliferation. **Jennifer L. Bandura[1], Eileen L. Beall[2], Maren Bell[2], Hannah R. Silver[1], Michael R. Botchan[2], Brian R. Calvi[1].** 1) Dept Genetics, Univ Pennsylvania Sch Medicine, Philadelphia, PA; 2) Molecular and Cell Biology, Univ California, Berkeley, CA.

195C
Replication stress stabilizes the origin binding protein Double-parked and its inhibitor Geminin. **Brian R. Calvi, Noah R. May, Marguerite Thomer, Garrick Kwok.** Dept Genetics, Univ Pennsylvania Sch Medicine, Philadelphia, PA 19104.

196A
Pr-Set7 Dependent Methylation of Histone H4 Lysine 20 Is a Cell Cycle Specific Mark and Is Essential for Mitosis. **Dmitry Karachentsev[1], Kavitha Sarma[2], Danny Reinberg[2], Ruth Steward[1].** 1) Waksman Institute, Rutgers University, 190 Frelinghuysen Road, Piscataway, NJ 08854-8020; 2) Howard Hughes Medical Institute Division of Nucleic Acid Enzymology, Department of Biochemistry, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, New Jersey 08854.

197B
Genotoxicity of inhibitors of topoisomerase II (etoposide) and I (camptothecin) in the mitotic recombination and sex-chromosome loss assay of *D. melanogaster*. **Rosario Rodriguez-Arnaiz, Guadalupe Ordaz Tellez, America N. Castañeda S.** Dept Cellular Biol, Sci Fac, UNAM, Mexico.

198C
The requirements of rca1 for cell cycle control during Drosophila development. **Norman Zielke, Ruth Grosskortenhaus, Silvia Querings, Frank Sprenger.** Institute for Genetics, Universität zu Köln, Cologne, NRW, Germany.

Cytoskeleton and Cellular Biology

199A
Cofilin/ADF is required for planar cell polarity patterning in Drosophila. **Adrienne Blair[1], Andrew Tomlinson[2], Hung Pham[1], Kristin C. Gunsalus[3, 4], Michael L. Goldberg[3].** 1) Dept MCDB, Univ California, Los Angeles, Los Angeles, CA; 2) College of Physicians and Surgeons, Columbia University, New York, NY 10032, USA; 3) Section of Genetics and Development, Cornell University, Ithaca, NY 14853-2703, USA; 4) Present address: Center for Comparative Functional Genomics, NYU Department of Biology, New York, NY 10003-6688, USA.

200B
The Muscle LIM protein Mlp84B regulates nuclear actin dynamics. **Kathleen A. Clark[1,2], Jennifer M. Bland[1], Mary C. Beckerle[1,2].** 1) Huntsman Cancer Inst, Univ Utah, Salt Lake City, UT; 2) Dept of Biology, Univ Utah, Salt Lake City, UT.

201C
Tricornered and Furry influence wing hair morphogenesis through regulation of the actin cytoskeleton. **Xiaolan Fang, Ying He, Paul Adler.** Dept Biol, Institute for Morphogenesis and Regenerative Medicine and the Cancer Center, University of Virginia, Charlottesville, VA.

202A
Functional analysis of Nirvana, a new protein involved in mitosis. **Sylvaine Fouix, Yves Bobinnec, Nina Karpova, Alain Debec.** Biologie du Développement, Observatoire Océanologique, Villefranche, 06 230 France.

203B
Control of bristle development by the actin regulators capping protein and the Arp2/3 complex. **Deborah J. Frank, Roberta Hopmann, Kathryn G. Miller.** Dept Biol, Washington Univ, St Louis, MO.

204C
Coordinated control of the morphology, dynamics and localisation of actin based protrusions in fly epithelial cells. **Marios Georgiou[1], Buzz Baum[2], Yohanns Bellaiche[1].** 1) Institut Curie, UMR 144, Paris, France; 2) Ludwig Institute for Cancer Research, London, UK.

205A
DRhoGEF2 controls actomyosin contractility throughout morphogenesis in Drosophila. **Udo Haecker[1], Mojgan Padash Barmchi[1], Stephen L. Rogers[2].** 1) Dept. of Cell & Molecular Biology, Lund University, Lund, Sweden; 2) HHMI and Dept. of Cellular and Molecular Pharmacology, UCSF, San Francisco, CA, USA.

206B
Miro, Twinstar and Capulet all restrict actin filament polymerization but have distinct developmental functions. **Florence Janody[1], Neal Jahren[2], William Hu[2], Jessica Treisman[2].** 1) LGPD, IBDM, Campus de Luminy, Case 907, 13288 Marseille, France; 2) Skirball Institute and Department of Cell Biology, NYU School of Medicine, 540 First Avenue, New York, NY 10016, USA.

207C
Jupiter, a new Drosophila protein associated with microtubules. **Nina N. Karpova, Sylvaine Fouix, Yves Bobinnec, Alain Debec.** Biologie du Développement, Observatoire Océanologique, Villefranche, 06230 France.

208A
The role of the PDZ domain in the function of RhoGEF2 in cell shape changes during Drosophila morphogenesis. **Effie Kitsou[1], Kathy Barrett[2].** 1) Biochemistry and Molecular Biology Department, Ludwig Institute for Cancer Research; 2) Anatomy Department, University College London, London, United Kingdom.

209B
Role of the PDZ-LIM protein Tungus in muscle fusion and assembly. **Jesus Mateos, Mary K. Baylies.** Developmental Biology Program, Sloan-Kettering Institute, New York, NY.

210C
A functional study of Moesin isoforms. **Amanda Neisch[1], Olga Speck[2], Rima Kulikauskas[2], Richard Fehon[1,2].** 1) MGCB, University of Chicago, Chicago, IL; 2) Dept. of Biology, Duke University, Durham, NC.

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211A
ik2, a Drosophila IκB kinase, destabilize F-actin and is required for directed cell elongation. **Kenji Oshima[1], Michiko Takeda[1], Toshiro Aigaki[2], Shigeo Hayashi[1].** 1) Ctr Developmental Biol, RIKEN Kobe, Kobe, Japan; 2) Dept. Biol., Tokyo Metropolitan Univ., Tokyo, Japan.

212B
The role of twinstar during Drosophila eye morphogenesis. **Hung D. Pham, Frank Laski.** MCDB, UCLA, Los Angeles, CA.

213C
Cellular Adhesion and dPINCH in the Wing. **Max V. Ranall, Mary C. Beckerle.** Department of Biology and Huntsman Cancer Institute, University of Utah, Salt Lake City, UT 84112.

214A
Spire, a WH2-containing protein, works with the Rho1 GTPases to regulate cytoskeletal dynamics. **Alicia E. Rosales-Nieves, Craig R. Magie, Susan M. Parkhurst.** Dept Basic Sci, FHCRC, Seattle, WA.

215B
Second site noncomplementation screen to identify genes that interact with *Rho*. **Shannon Stewart, Robert Ward.** Dept. of Molecular Biosciences, University of Kansas, Lawrence, KS.

216C
Specific interactions between integrin and talin mediate different functions during attachment to the ECM and connection to the cytoskeleton. **Guy Tanentzapf, Nicholas H. Brown.** The Wellcome Trust/Cancer Research UK Gurdon Institute of Cancer and Developmental Biology, University of Cambridge, Tennis Court Road, Cambridge CB2 1QR, UK.

217A
Characterization of Adenomatous Polyposis Coli (APC) function in cytoskeletal organization in Drosophila syncytial embryos. **Rebecca L. Webb, Jasper S. Weinberg, Brooke M. McCartney.** Biological Sciences, Carnegie Mellon University, Pittsburgh, PA.

218B
Understanding the mechanisms of Adenomatous polyposis coli (APC) function: Identification of *APC2* genetic interactors. **Sandra G. Zimmerman[1], Jennifer Cheng[1], Tabitha K. Sotomayor[1], Laura Lee[2], Peter A. Kolodziej[2], Brooke M. McCartney[1].** 1) Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 2) Developmental Biology Program, Vanderbilt University Medical Center, Nashville, TN.

219C
dVps16A is necessary for SNARE-mediated endocytic trafficking. **Mohammed A. Akbar, Suprabha Pulipparacharuvil, Evgueny Sevrioukov, Sanchali Ray, Helmut Krämer.** Cntr Basic Neurosci, UT Southwestern Med Cntr, Dallas, TX.

220A
Analysis of the function of Unc104 in axonal transport. **Rosemarie V. Barkus[1], Olga S. Klyachko[1], Barry J. Dickson[2], William M. Saxton[1].** 1) Indiana University, Bloomington, IN; 2) Research Institute of Molecular Pathology IMP, Vienna, Austria.

221B
The mechanism of apical mRNA anchoring in Drosophila embryos. **Renald Delanoue, Ilan Davis.** Wellcome Trust Center for Cell biology - University of Edinburgh, United Kingdom.

222C
Characterization of deletions removing the importin α1 locus of *D. melanogaster*. **Robert J. Fleming[1], Ravin Ratan[1], D. Adam Mason[2].** 1) Biol Dept, Trinity College, Hartford, CT; 2) Biol Dept, University of Rochester, Rochester, NY.

223A
Function of the kinesin associated protein UNC-76 in the Drosophila nervous system. **Joseph Gindhart[1], Monica Zapata[1], Melissa Faulkner[2].** 1) Dept Biology, Univ Richmond, Richmond, VA; 2) Dept Biology, Univ Massachusetts, Boston, MA.

224B
Distinct functional subcomplex of the Golgi in Drosophila cells. **Satoshi Goto[1, 2, 3], Hiroyuki Yano[1], Miki Yamamoto-Hino[1, 3], Masato Abe[1], Reiko Kuwahara[1], Shuka Haraguchi[1].** 1) Glycobio. and Glycotech., Mitsubishi-K. Inst. Life Sci., Machida, Tokyo, Japan; 2) PREST, JST, Kawaguchi, Saitama, Japan; 3) CREST, JST, Kawaguchi, Saitama, Japan.

225C
Kinesin-mediated transport and amyloid precursor protein (APP) cleavage in a Drosophila Model of Alzheimer's Disease (AD). **Shermali Gunawardena, Lawrence S. B. Goldstein.** Cell & Molec Medicine/HHMI, Univ California San Diego, La Jolla, CA.

226A
Organelle-specific control of intracellular transport: Distinctly targeted isoforms of the regulator Klar. **Yi Guo[1, 3], Sushrut Jangi[2,3], Sean Cotton[2,3], Michael Welte[2,3].** 1) Dept Biochemistry; 2) Dept Biology; 3) Rosenstiel Biomedical Research Center, Brandeis University, Waltham, MA.

227B
Death by dysgenesis: how a transposable element can hijack host RNA localisation mechanisms in the oocyte leading to significant changes in normal dorsal ventral patterning and embryo death. **Eve Hartswood, Cheryl Jones, Veronique Van De Bor, Ilan Davis, David Finnegan.** School of Biological Sciences, University of Edinburgh, Scotland, UK.

228C
mRNA localization and ER-based sorting events dictate which tER-Golgi units will be used for Gurken processing and transport. **Bram H. A. Herpers[1], Renald Delanoue[2], Ilan Davis[2], Catherine Rabouille[1].** 1) Department of Cell Biology, UMC Utrecht, Utrecht, The Netherlands; 2) Wellcome Trust Centre for Cell Biology, ICMB, University of Edinburgh, UK.

229A
Mutational analysis of Drosophila rab GDP dissociation inhibitor (GDi) function. **Daniel J. Holtzman, Michelle Keese, Alex Chen, Clarissa Cheney.** Biology, Pomona College, Claremont, CA.

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230B
Loss-of-function and gain-of-function studies of Drosophila JIP1/2 (APLIP1) in axonal transport. **Dai Horiuchi, Rosemarie V. Barkus, Andrew Gassman, William M. Saxton.** Biology, Indiana University, Bloomington, IN.

231C
A conserved genetic pathway regulates nuclear positioning. **Anna Javier, Nancy Tran, Michelle Mijares, Ying Wang, Ashley Holley, Rahul Warrior.** Developmental & Cell Biology, Univ. of California Irvine, Irvine, CA.

232A
Mechanisms of cargo-specific targeting of the motor regulator Klar. **Dae-Hwan Kim[1], Yi Guo[1], Monica Zapata[2], Joseph Gindhart[2], Michael Welte[1].** 1) Rosenstiel Center, Brandeis University, Waltham, MA; 2) Department of Biology, University of Richmond, Richmond, VA.

233B
mRNA localization through the Bic-D / Dynein / Lis-1 machinery: Identification and functional analysis of new components. **Rafael Koch, Maike Claussen, Zhao-Yang Jin, Stephane Larochelle, Beat Suter.** Institute for Cell Biology, University of Berne, Berne, Switzerland.

234C
A study of the molecular mechanism of autophagy; are there endocytic proteins involved? **Karine Lindmo[1], Anne Simonsen[2], Tor Erik Rusten[1], Harald Stenmark[1].** 1) Department of Biochemistry, The Norwegian Radium Hospital, Montebello, N-0310 Oslo, Norway; 2) Molecular and Cellular Biology Laboratory and Cellular Neurobiology Laboratory, The Salk Institute for Biological Studies, La Jolla, California 92037-1099.

235A
ER and Golgi dynamics in living *D. melanogaster* embryos. **Manos Mavrakis[1], Dave Frescas[1], Robert DeLotto[2], Jennifer Lippincott-Schwartz[1].** 1) NIH, Bethesda, MD; 2) University of Copenhagen, Denmark.

236B
Function of the Klarsicht protein during oogenesis. **Amanda Norvell[1], Yi Guo[2], Matt Molski[1], Michael Welte[2].** 1) Department of Biology, The College of New Jersey, Ewing, NJ; 2) Rosenstiel Center, Brandeis University, Waltham, MA.

237C
Drosophila GDP dissociation inhibitor interacts with a protein containing a ubiquitin-like domain. **Naveen Sangji, Katherine Ayres, Alex Chen, Brian Richardson, Clarissa Cheney.** Dept Biol, Pomona Col, Claremont, CA.

238A
Kinesin Heavy Chain and Neuronal Polarity. **Kristina Schimmelpfeng, Lawrence S. B. Goldstein.** Cellular and Molecular Medicine, University of California, San Diego, La Jolla, CA 92093.

239B
The role of autophagy in degradation of ubiquitin-containing proteins. **Anne Simonsen[1,2], Karine Lindmo[2], Tor Erick Rusten[2], Andreas Brech[2], Harald Stenmark[2], Kim Finley[1].** 1) Cellular Neurobiology Laboratory, the Salk Institute for Biological Studies, La Jolla, CA; 2) Dept. of Biochemistry, the Norwegian Radium Hospital, Oslo, Norway.

240C
Genetic and phenotypic analysis of Drosophila *dMRP/CG6214* mutants. **Jolene N. Tarnay[1], Steven Robinow[2].** 1) Cell & Molec Biol, Univ Hawaii - Manoa, Honolulu, HI; 2) Department of Zoology, Univ Hawaii -Manoa, Honolulu, HI.

241A
Molecular Characterization and Localization of the Directionality Determinant Halo. **Susan L. Tran, Michael A. Welte.** Biology, Brandeis University, Waltham, MA.

242B
Understanding the Rab-regulated vesicle trafficking in developmental signal transduction. **Jun Zhang, Stream Wang, Erika Bustamante, Matthew Scott.** Dept Developmental Biology, Stanford University, Stanford, CA.

243C
Cell chain migration: pioneers and followers. **Benoit Aigouy, Lea Lepelletier, Angela Giangrande.** Institut de Genetique et Biologie Moleculaire et Cellulaire, IGBMC/CNRS/ULP/INSERM - BP 10142 67404 ILLKIRCH, c.u. de Strasbourg, France.

244A
Characterization of Claudin interaction partners during epithelial Junction formation in Drosophila. **Matthias Behr[1], Daniele Scalzo[1], Christian Wingen[1], Reinhard Schuh[2], Michael Hoch[1].** 1) Molecular Developmental Biology, University of Bonn; 2) Molecular Developmental Biology, Max-Planck-Institute BPC Göttingen.

245B
The Drosophila CLIC-like gene is critical for viability during development, adult lifespan and resistance to oxidative stress. **Mark Berryman[1, 2], Soichi Tanda[2,3].** 1) Department of Biomedical Sciences, Ohio University, Athens; 2) Molecular and Cellular Biology Program, Ohio University, Athens; 3) Department of Biological Sciences, Ohio University, Athens, OH.

246C
Using an RNAi strategy to screen for genes controlling important developmental and physiological functions in the larval salivary gland. **Benjamin F. B. Costantino[1], Kelly Alexandre[1], Lynn Cooley[2], John Merriam[3], Andrew J. Andres[1].** 1) Department of Biology, UNLV, Las Vegas, NV; 2) Department of Genetics and Cell Biology, Yale University, New Haven, CT; 3) Department of Biology, University of California-Los Angeles, Los Angeles, CA.

247A
Opposing effects of two single amion acid point mutations within the myosin motor domain. **Corey M. Dambacher, Aileen F. Knowles, William A. Kronert, Jennifer A. Suggs, Sanford I. Bernstein.** Department of Biology and Molecular Biology Institute, San Diego State University, San Diego, CA.

248B
Search for novel interaction partners of the Crumbs complex of *D. melanogaster*. **Susann Fornacon[1], Nicola Wiethoelter[2], Sabine Metzger[2], Elisabeth Knust[1].** 1) Institute for Genetics, Heinrich-Heine-University, Düsseldorf, NRW, Germany; 2) BMFZ, Heinrich-Heine-University, Düsseldorf, NRW, Germany.

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249C
Morphogenesis and cell cycle: an interaction between DRhoGEF2 and MCC. **Laura Gardano[1], Charly Hiley[2,3], Kathy Barrett[1,4].** 1) Anatomy & Developmental Biology, University College London; 2) Laboratory for Molecular and Cellular Biology, University College London, London, England; 3) Ludwig Institute for Cancer Research, 91 Riding House Street, London W1W 7BS; 4) Department of Biochemistry & Molecular Biology, University College London.

250A
Balancing Polarities: Drosophila AIB-1 integrates signals from multiple junctions to regulate epithelial polarity and invasion. **Scott Goode, P. Szafranski, J. Wei.** Dept Pathology, Baylor Col Medicine, Houston, TX.

251B
Dystroglycan WW and SH3-domain binding motifs are required for the proper regulation of the Dystroglycan complex. **Elizabeth E. Gray, H. Ruohola-Baker, H. Shcherbata, A. Yatsenko, L. Patterson, V. Schherbatyy.** Biochemistry, University of Washington, Seattle, WA.

252C
The regulation of the cadherin-catenin complex during Drosophila development. **Kathryn P. Harris[1], Mary M. Kubesh[1], Paulina Niewiadomska[1], Mark Peifer[2], Ulrich Tepass[1].** 1) Zoology, University of Toronto, Toronto, Ontario, Canada; 2) Department of Biology, University of North Carolina, Chapel Hill, NC, USA.

253A
MorphoGenomics: genomic analysis of cellular elongation. **Amy A. Kiger.** Cell & Developmental Biology, UC San Diego, La Jolla, CA.

254B
Dynamic changes in the phosphorylation of Drosophila flightin. **Dominick J. Lemas.** Biology, University of Vermont, Burlington, VT.

255C
Generation and characterization of new alleles of *l(3)00281*, a gene required during embryogenesis in *D. melanogaster*. **Miguel A. Mendoza-Ortiz, Juan R. Riesgo-Escovar.** Developmental Biology, Instituto de Neurobiologia, Queretaro, Qro, Mexico.

256A
The Drosophila Orthologue of ZBP/Vera/Vg1RBP is essential for cell migration during oogenesis. **Trent P. Munro[1], Sunjong Kwon[2], Bruce Schnapp[2], Daniel St Johnston[1].** 1) The Gurdon Institute, University of Cambridge, Cambridge, United Kingdom; 2) Department of Cell and Developmental Biology, Oregon Health Sciences University, 3181 S.W. Sam Jackson Park Road Portland, Oregon 97201-3098, USA.

257B
Characterization of a new dorsal closure gene *piragua (pra)* in *D. melanogaster*. **Nestor Nazario-Yepiz, Juan R. Riesgo-Escovar.** Development Biology, Instituto de Neurobiologia, Queretaro, Qro, Mexico.

258C
Functions of the Mmp1 hemopexin domain. **Andrea Page-McCaw.** Biology Department, Rensselaer Polytechnic Inst, Troy, NY.

259A
Ventral furrow formation in Drosophila depends on a ventral-specific proteasome/iron homeostasis regulatory loop. **Mamta Puri, S. Dowd, J. Minden.** Dept Biological Sci, Carnegie Mellon Univ, Pittsburgh, PA.

260B
Regulation of Autophagy by TOR Signaling in Drosophila. **Ryan C. Scott[1], Oren Schuldiner[2], Thomas P. Neufeld[1].** 1) Genetics, Cell Biology & Development, Univ Minnesota, Minneapolis; 2) Biological Sciences, Stanford Univ, Stanford, CA.

261C
Analysis of Drosophila Copper Transporters: The Essential Role of Copper in Development. **Michelle L. Turski[1], Hao Zhou[2], Ken M. Cadigan[3], Dennis Thiele[1].** 1) Dept. of Pharm and Mol Cancer, Duke University, Durham, NC; 2) Dept. of Biological Chemistry, University of Michigan Medical School, Ann Arbor, MI; 3) Dept. of Molecular Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI.

262A
Characterization and functional analysis of the *D. melanogaster unc-45 (dunc-45)* gene. **Qin Yu[1], Loretta Hipolito[1], William Kronert[1], Chi Lee[1], Hongjun Liu[1], Maureen Price[2], Henry Epstein[3], Sanford Bernstein[1].** 1) Dept Biol, San Diego State Univ, San Diego, CA 92182; 2) Dept Neurology, Baylor College of Med, Houston, TX 77030; 3) Dept Neuroscience and Cell Biol, Univ Texas Med Branch, TX 77555.

Genome and Chromosome Structure

263B
Investigation of Heterochromatin Protein 2 (HP2), An essential component of heterochromatin. **Kwame Adu-Wusu, Gena Stephens, Elizabeth Slawson, Christopher Shafer, Sarah Elgin.** Biology, Washington University, Saint Louis, MO.

264C
Developing a transgenic approach to elucidate mechanisms of transvection. **Jack R. Bateman, C.-Ting Wu.** Department of Genetics, Harvard Medical School, Boston, MA.

265A
GCN5 is the major histone-acetylase of histone H3 in Drosophila and is required at metamorphosis. **Clément Carré[1], Dimitri Szymczak[1, 2], Josette Pidoux[1], Christophe Antoniewski[1].** 1) Institut Pasteur, CNRS, Paris, France; 2) IJM, Paris, France.

266B
Drosophila Reptin and other TIP60 histone acetyltransferase complex components exert repressive effects on chromatin. **Qi Dai, Haining Jin, Tobias Lilja, Mattias Mannervik.** Developmental Biology, Wenner-Gren Institute, Stockholm, Stockholm, Sweden.

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267C
High-Resolution Mapping of Histone Modifications in Drosophila. **Matt Eckerle[1], Sasha Langley[2], Gary Karpen[3].** 1) Bioengineering, UC Berkeley, Berkeley, CA; 2) Molecular and Cell Biology, UC Berkeley, Berkeley, CA; 3) Lawrence Berkeley National Labs, Berkeley, CA.

268A
What are the functions of histone variant genes in Drosophila? **Sara A. Goldstein, Kami Ahmad.** Dept BCMP, Harvard Medical School, Boston, MA.

269B
Cohesion complexes redistribution after UV irradiation in *D. melanogaster* polytene chromosomes. **Anton Markov[1], Alexey Mikhaylutsa[1], Nadezhda Rodionova[1], Aleksandr Smirnov[1], Alexander Strunnikov[2].** 1) Dept Genetics & Breeding, Saint-Petersburg State University, St. Petersburg, Russia; 2) Laboratory of Gene Regulation and Development, NICHD, NIH, Bethesda, USA.

270C
Characterization of poly(ADP-ribose) polymerase (PARP) containing complexes. **Natalia M. Naumova, Alexei V. Tulin.** Basic Science, Fox Chase Cancer Center, Philadelphia, PA.

271A
RNAi machinery controls Polycomb silencing by reducing histone Lys 27 methylation in Drosophila. **Manika Pal-Bhadra[1], Srirangam N. C. V. L. Pushpavalli[2], Utpal Bhadra[2].** 1) Department of Pharmacology, Indian Institute Of Chemical Technology, Uppal Road, Hyderabad-500007, India; 2) Functional Genomics and Gene Silencing Group, Centre for Cellular and Molecular Biology, Uppal Road, Hyderbad-500007, India.

272B
Su(var)3-9 and HP1 are required for normal nucleolar organization by inhibiting formation of extrachromosomal repeated DNAs. **Jamy C. Peng, Samara Weiss, Gary Karpen.** Dept Mol Cell Biol, UC Berkeley/LBNL, Berkeley, CA.

273C
Drosophila Myb Protein Localizes to Specific Chromosomal Structures and is Cell Cycle Regulated. **Hong Wen[1], Stefan Heidmann[2], Tran Van[1], Laura Andrejka[1], Joseph Lipsick[1].** 1) Depts of Pathology and Genetics, Stanford University, Stanford, CA, USA; 2) Dept of Genetics, University of Bayreuth, 95440 Bayreuth, Germany.

274A
Loop domains formed by interacting Su(Hw) insulators are not sufficient for the enhancer blocking. **Pavel Georgiev, Ekaterina Savitskaya, Margarita Kostuchenko, Elena Kravchenko, Tatyana Boikova, Darya Chetverina, Aleksander Parshikov.** Dept Genetics, Inst Gene Biology RAS, Moscow, Russia.

275B
Where's the BEAF? Genetic analyses of the BEAF chromatin domain insulator proteins. **Craig M. Hart, Matthew Gilbert, Swarnava Roy, Yian Yee Tan.** Dept Biol Sci, Louisiana State Univ, Baton Rouge, LA.

276C
Role of Modifier 67.2 Protein in Establishing Independent Domains of Gene Function. **Oya Yazgan, Emily Kuhn Parnell, Pamela Geyer.** Department of Biochemistry, University of Iowa, Iowa City, IA.

277A
An eye-based screen for factors that interact with the trithorax group gene *brahma* (*brm*). **Jennifer A. Armstrong[1,2], Adam S. Sperling[2], Caroline I. Piatek[1], Mayra Garcia[1], John W. Tamkun[2].** 1) Joint Sciences Dept, Claremont Colleges, Claremont, CA; 2) Dept. of Molecular Cell, and Developmental Biology, University of California, Santa Cruz, Santa Cruz, CA.

278B
Comparative analysis of Trithorax group mutants in the wing. **Montserrat Corominas, Sergi Beltran, Mireia Angulo, Miguel Pignatelli, Florenci Serras.** Departament de Genetica, Universitat de Barcelona, Diagonal 645, 08028 Barcelona, Catalonia, Spain.

279C
RNA-silencing dependent nuclear interactions mediated by the *Fab-7* chromosomal element. **Charlotte Grimaud, Frederic Bantignies, Giacomo Cavalli.** Institute of Human Genetics, CNRS, Montpellier, France.

280A
The Drosophila Polycomblike Protein is present in multiple complexes that include the Polycomb complex PRC1 and the ESC/E(Z) complex. **Feng Tie, Jayashree Prasad-Sinha, Carl Stratton, Peter Harte.** Dept Genetics, Case Western Reserve Univ, Cleveland, OH.

281B
Distributions of Polycomb-group protein complexes at a target gene and their effects on chromatin structure. **Liangjun Wang, Silvana Constantinescu, Junyu Zhang, Judith Benes, Rick Jones.** Biological Sci, Southern Methodist Univ, Dallas, TX.

282C
Studies of the *Sir2* gene family in flies. **Heng Xie, Kent Golic.** Dept Biol, Univ Utah, Salt Lake City, UT.

283A
Testing the prevalent model of MSL complex assembly with new *roX1* mutations. **Xinxian Deng[1, 2], Victoria Meller[1].** 1) Dept Biological Sci, Wayne State Univ, Detroit, MI 48202; 2) Dept of Biology, Tufts University, Medford MA 02155.

284B
Chromatin structure in Drosophila telomeres. **Radmila C. Frydrychova[1], Trevor Archer[2], James Mason[1].** 1) Laboratory of Molecular Genetics, NIEHS, RTP, NC; 2) Laboratory of Molecular Carcinogenesis, NIEHS, RTP, NC.

285C
Suppressors of telomeric silencing on chromosome *3*. **James M. Mason, Alexander Y. Konev.** Lab Molec Genetics, NIH/NIEHS, Research Triangle Park, NC.

286A
Quantitation of TPE in the presence of suppressors in *D. melanogaster*. **Sudha Prasad, Rina Thomas, James Mason.** Lab Molecular Genetics, NIEHS, Res Triangle Park, NC.

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287B
Analysis of Chromosome 3 Heterochromatin in *D. melanogaster*. **Kathleen Fitzpatrick[1], Donald Sinclair[1], Monika Syrzycka[1], Sandra Schulze[2], Sheila MacLean[1], Catherine Jackson[1], Alex Banashkevic[1], Barry Honda[1].** 1) MBB, Simon Fraser University, Burnaby, BC, Canada, 2) Dept of Biochemistry, University of Iowa, Iowa City, IA.

288C
P Elements in PREs. **Katie Fillion, Welcome Bender.** Dept BCMP, Harvard Medical Sch, Boston, MA.

289A
Molecular analysis of the multiple binding sites analysis within the terminal inverted repeats of Bari1 transposon in *D. melanogaster*. **Simona Marconi, Renè M. Marsano, Ruggiero Caizzi.** Genetics Section, University of Bari, Italy.

290B
A combined evidence framework for the annotation of transposable elements in Drosophila genome sequences. **Hadi Quesneville[1], Casey Bergman[2], Olivier Andrieu[1], Delphine Autard[1], Danielle Nouaud[1], Michael Ashburner[2], Dominique Anxolabéhère[1].** 1) Dept Genome Dynamics & Evol, Inst Jacques Monod, Paris, France; 2) Department of Genetics, University of Cambridge, Cambridge, UK.

291C
Trans-Silencing Effect by telomeric transgenes inserted in sub-telomeric heterochromatin. **Stephane Ronsseray, Thibaut Josse, Laure Teysset, Daphne Reiss, Dominique Anxolabehere.** Dynamique du Genome et Evolution, Inst. Jacques Monod, Paris, France.

292A
Mitochondrial Biogenesis in Drosophila S2 Cells. **Jian Chen, Xiaoying Shi, Qiong Wang, Dan Garza, Hao Li.** Novartis Institute for Biomedical Research Inc., Cambridge, MA 02139.

293B
Disturbance of structure of polythene chromosome - dominant effects of sbr5 (l(1)K4) lethal alleles in *D. melanogaster*. **Elena V. Golubkova, Olga S. Sotnikova, Ekaterina G. Markova, Anton V. Markov, Ludmila A. Mamon.** Dept Genetics & Breeding, St Petersburg State University, St Petersburg, Russia.

294C
Mapping of *mus323*, a novel gene involved in DNA interstrand crosslink repair. **Nathan J. Harris, Kenneth C. Burtis.** Section of Molecular and Cellular Biology, University of California, Davis, CA.

295A
A BAC-Based Physical Map of Drosophila Heterochromatin. **Roger Hoskins, Erwin Frise, Cameron Kennedy, Joe Carlson, Gary Karpen.** Department of Genome Biology, Lawrence Berkeley Natl Lab, Berkeley, CA.

296B
DmGEN, a novel RAD2 family endo-exonuclease from *D. melanogaster*. **Yoshihiro Kanai[1], Gen Ishikawa[1], Kei-ichi Takata[2], Kaori Shimanouchi[1], Shizuka Murakami[1], Ryo Takeuchi[1], Tatsushi Ruike[1], Ryou-ichi Nakamura[1], Yoko Abe[1], Ayumi Ihara[1], Seisuke Kimura[1], Kengo Sakaguchi[1].** 1) Applied Biological Science, Tokyo University of Science, Noda-shi, Chiba-ken, Japan; 2) Hillman Cancer Center, University of Pittsburgh Cancer Institute, Research Pavillion, 5117 Centre Avenue, Suite 2.6, Pittsburgh, PA,USA.

297C
Threshold dependent modulation of *Adh* transcripts triggers post transcriptional transgene silencing. **Lekha D. Kumar[1], Manika Pal-Bhadra[2], Linga Mamatha[1], Utpal Bhadra[1].** 1) Functional Genomics & Gene Silence Group, Centre for Cellular and Molecular Biolology, Hyderabad 500007, India; 2) Department of Pharmacology, Indian Institute Of Chemical Technology, Hyderabad- 500007, India.

298A
Identification and characterization of IPOD, a novel interaction partner of the Dnmt2 DNA methyltransferase in Drosophila. **Natascha Kunert, Joachim Marhold, Katja Kramer, Frank Lyko.** Epigenetics, German Cancer Res Ctr, Heidelberg, Germany.

299B
Why is the dystrophin gene so large? Introns containing promoters are major contributors to the size of the gene in drosophila and mammals. **Uri Nudel, Sara Neuman, Moran Kovalio, David Yaffe.** Dept of Molecular Cell Biol, Weizmann Inst, Rehovot , Israel.

300C
Pattern of chromosome folding in interphase is outlined by linear gene density profile. **Dmitry I. Nurminsky[1], Alexander M. Boutanaev[1, 2], Lyudmila M. Mikhaylova[1].** 1) Dept Anatomy & Cellular Biol, Tufts Univ Sch Medicine, Boston, MA; 2) Institute of Basic Problems in Biology, Puschino, Russia.

301A
Chromosomal localization of nuclear lamina DNA in the species of the *D. melanogaster* subgroup. **Igor V. Sharakhov[1], Olga Grushko[2], Vladimir Stegnii[3].** 1) Department of Entomology, Virginia Tech, Blacksburg, VA, USA; 2) Department of Biological Sciences, University of Notre Dame, IN, USA; 3) Department of Cytology and Genetics, Tomsk State University, Russia.

302B
Somatic Homologue Pairing in Drosophila Cell Culture. **Benjamin R. Williams, Jack Bateman, Natasha D. Novikov, George M. Church, C.-Ting Wu.** Department of Genetics, Harvard Medical School, Boston, MA.

Regulation of Gene Expression

303C
MNF is regulated by dpp in the embrionic midgut and nervous system development. **Sergio Casas-Tinto Sr., Begoña Granadino.** Dept Cell Biol & Development, CIB-CSIC, Madrid, Spain.

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304A
Differential roles of mitochondrial transcription factors B2, B1 and TFAM in regulation of mitochondrial DNA copy number and transcription. **Laurie S. Kaguni[1], Yuichi Matsushima[1], Rafael Garesse[2].** 1) Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI; 2) Departamento de Bioquímica, Instituto de Investigaciones Biomédicas "Alberto Sols" CSIC-UAM, Facultad de Medicina, Universidad Autónoma de Madrid. c/ Arzobispo Morcillo 4, 28029 Madrid, Spain.

305B
Characterization of the testis-specific *ryan express* gene. **Mary Smyrnioudis, Todd Burstyn, Mark Hiller.** Biological Science, Goucher College, Towson, MD.

306C
Integration of the Hedgehog and Wingless Pathways in leg sensory organ patterning. **Denis Bulanin, Jonathon Wong, Teresa Orenic.** Dept Biological Sciences, Univ Illinois, Chicago, Chicago, IL.

307A
Direct repression of Notch pathway genes by Su(H) is required to preserve the neural precursor fate during lateral inhibition. **Brian R. Castro[1], Scott Barolo[2], James Posakony[1].** 1) Div Biol/ CDB, Univ California, La Jolla, CA; 2) Dept CDB, Univ Michigan Medical School, Ann Arbor, MI.

308B
A general regulatory mechanism for six Drosophila co-regulated muscle genes, involving two functional equivalent enhancers, establishes the correct protein quantities in distinct muscle types. **Margarita Cervera, Jose Antonio Mas, Jorge Vivar, Elena García-Zaragoza.** Dept. Bioquimica, Facultad de Medicina, U.A.M., Madrid, Spain.

309C
High-level organization of regulatory modules in Drosophila development. **Albert J. Erives.** Biological Sciences, Dartmouth College, Hanover, NH.

310A
Direct regulation of *knot* gene expression by Ultrabithorax and the evolution of cis-regulatory elements in Drosophila. **Bradley M. Hersh, Sean Carroll.** University of Wisconsin-Madison and HHMI, Madison, WI.

311B
Transcriptional regulation of the pannier gene in early Drosophila embryos. **Hsiao-Lan Liang, Yi-Chun Chuang, Mu Xu, Christine Rushlow.** Biology, New York Univ, New York, NY.

312C
Brakeless is a transcriptional repressor required for proper gap gene expression in the early Drosophila embryo. **Mattias Mannervik[1], Achim Haecker[1], Dai Qi[1], Tobias Lilja[1], Bernard Moussian[2], Nina Vogts[2], Stefan Luschnig[2].** 1) Dept Dev. Biol., Wenner-Gren Institute, Stockholm Univ, Stockholm, Sweden; 2) Max-Planck-Institute for Dev. Biol., division of Genetics, Tübingen, Germany.

313A
Dpp expression and function in the posterior spiracle: direct activation by combinatorial activity of the Dpp and Wg pathways and independence from Dpp function in dorsal-ventral patterning. **Stuart J. Newfeld, Norma Takaesu.** Sch Life Sci, Arizona State Univ, Tempe, AZ 85287-4501.

314B
Development of a predictive model for Dpp-dependent enhancers in the early Drosophila embryo. **Brant K. Peterson[1], Michael B. Eisen[1,2], Michael Levine[1].** 1) Molecular and Cell Biology, UC Berkeley, Berkeley, CA; 2) Genome Sciences Department, Genomics Division, Lawrence Berkeley National Laboratory, Berkeley, CA.

315C
A genetic selection to identify regulatory information driving the earliest zygotic transcription in *D. melanogaster*. **William J. Rowell, Thomas W. Cline.** Molecular and Cell Biology, University of California, Berkeley, CA.

316A
TAGteam Sequences Control the Onset of Transcription in Pre-Blastoderm Embryos. **John R. ten Bosch, Joseph A. Benavides, Thomas W. Cline.** Dept Molecular and Cellular Biology, University of California, Berkeley, CA.

317B
Armadillo and dTcf directly repress *dpp* in response to Wg signaling. **Heidi Theisen[1], Adeela Syed[1], Tamas Lukacsovich[1], Boachi Nguyen[2], Judy Purcell[1], Marion Waterman[3], Qing Nie[2], Karen Gaudenz[1], J. Lawrence Marsh[1].** 1) Dept Cell & Dev Biol, Univ California, Irvine, Irvine, CA; 2) Dept of Mathematics, Univ California, Irvine, Irvine, CA; 3) Dept of Microbiology & Molecular Genetics, Univ California, Irvine, Irvine, CA.

318C
Integrating information: Hox proteins physically and genetically interact with proteins from multiple cellular systems. **Sarah Elizabeth Bondos, Xin-Xing Tan, Kathleen Matthews.** Biochemistry and Cell Biology, Rice University, Houston, TX.

319A
Mitochondrial biogenesis in Drosophila. **Miguel A. Fernandez-Moreno[1], Cristina Adan[1], De la Peña Pablo[1], Clemente Paula[1], García-Vallejo Carmen[1], Marie Carmen Gil[1], Hernandez Rosana[1], Ochoa Pilar[1], Sanchez-Martinez Alvaro[1], Seguido Ana[1], Kaguni Laurie[2], Garesse Rafael[1].** 1) Bioquimica/IIB, CSIC/UAM, Madrid, Madrid, Spain; 2) Department of Biochemistry and Molecular Biology, Michigan State University, Michigan, USA.

320B
bhringi: A novel Twist co-regulator. **Katie Gonzalez[1], Mary Baylies[2].** 1) Development, Cornell University Medical College, New York, NY; 2) Development, Sloan Kettering Institute, New York, NY.

321C
Relating the transcription and phosphatase activities of Eyes Absent. **Jennifer C. Jemc, Ilaria Rebay.** Dept Biol, MIT, Cambridge, MA.

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322A
Implementation Of A Differentiation Program In A Cell Lineage: Sox15 Is Required For External Sense Organ Development. **Steven W. Miller, James W. Posakony.** Div Biol, Univ California, San Diego, San Diego, CA.

323B
Gene expression profile of migratory cells in the Drosophila ovary. **Xuejiao Wang[1], Jinyan Bo[1], Katherine D. Dugan[2], Nathalie Innocent[2], Alexander Stoddard[2], Lewis A. Chodosh[2], Denise J. Montell[1].** 1) Dept of Biological Chemistry, Johns Hopkins Univ, Baltimore, MD; 2) Dept of Cancer Biology and Abramson Family Cancer Research Institute, University of Pennsylvania School of Medicine, Philadelphia, PA.

324C
DLMO is a coactivator of transcription in the thorax. **Shamir Zenvirt, Yael Nevo-Caspi, Daniel Segal.** Dept. Molec. Microbiol. & Biotech., Tel Aviv Univ., Israel.

325A
Orphan nuclear receptor βFTZ-F1 directs stage-specific response to 20-hydroxyecdysone through recruitment of a coactivator. **Jinsong Zhu, Li Chen, Guoqiang Sun, Andrew Hufford, Alexander Raikhel.** Dept Entomology, Univ. of California, Riverside.

326B
Does the torso mediated repression complex include GAGA, Z, TTK69 and HSF? **Yu-Chein Chen[1], Sue-Wei Lin[2], Jia-Shiun Liu[2], Gwo-Jen Liaw[1,2].** 1) The Institute of Genetics; 2) Faculty of Life Sciences National Yang-Ming University, 155 Sec. 2, Li-Nuh St., Taipei, Taiwan, ROC.

327C
Effects of tethering HP1 mutants on gene silencing. **Karrie A. Hines, John R. Danzer, Yuhong Li, Lori L. Wallrath.** Department of Biochemistry, University of Iowa, Iowa City, IA.

328A
Inductive activity of photoreceptor cells is regulated by Su(H)/SMRTER/Ebi co-repressor complex that represses taco, a Drosophila NRSF/REST-like molecule. **Leo Tsuda[1], Masako Kaido[1], Young-Mi Lim[1], Kagayaki Kato[1], Toshiro Aigaki[2], Shigeo Hayashi[1].** 1) RIKEN, CDB, Chuo-ku Kobe, Hyogo, Japan; 2) Tokyo Metropolitan University, Tokyo, Japan.

329B
The Drosophila Tra2 protein represses splicing through an intronic splicing silencer. **Junlin Qi, William Mattox.** Department of Molecular Genetics, University of Texas, M.D. Anderson Cancer Center, Houston, TX.

330C
The Role of U7 snRNA in Histone Pre-mRNA Processing. **Ashley Godfrey, Jeremy Kupsco, Ryan Zimmerman, William F. Marzluff, Robert J. Duronio.** Department of Biology, University of North Carolina, Chapel Hill, NC 27599.

331A
R2D2 links siRNA and miRNA pathways. **Savitha Kalidas[1], Tim Rand[2], Qinghua Liu[2], Xiaodong Wang[2], Dean Smith[1].** 1) Pharmacology, UT Southwestern Medical Center, Dallas, TX; 2) Biochemistry. UT Southwestern Medical Center, Dallas, TX.

332B
Genetic Interactions Between Splicing and RNA Editing in Drosophila. **Lee A. Smith[1], Barry Hoopengardner[2], Robert Reenan[2].** 1) Biology, Benedictine University, Lisle, IL; 2) Genetics and Developmental Biology, University of Connecticut Health Center, Farmington, CT.

333C
Pervasive regulation of Drosophila Notch target genes by GY box-, Brd box-, and K box-class microRNAs. **Eric C. Lai, Gerald Rubin.** Dept Molec & Cell Biol, Univ California, Berkeley, Berkeley, CA.

334A
Notch-dependent down-regulation of homeobox gene *cut* is required for temporal control of follicle-cell differentiation and cell-cycle switch. **Jianjun Sun, Wu-Min Deng.** Biological Science, Florida State University, Tallahassee, FL.

335B
Identification of *nanos* mRNA localization factors in *D. melanogaster*. **Agata N. Becalska, Elizabeth R. Gavis.** Molecular Biology, Princeton University, Princeton, NJ.

336C
Potential regulators of gurken expression. **Katherine N. Clouse, Trudi Schüpbach.** Dept Molecular Biol, Princeton Univ, Princeton, NJ.

337A
Finding *neverland*: Identifying requirements for *nanos* mRNA localization. **Roshan A. Jain, Elizabeth R. Gavis.** Dept Molec Biol, Princeton Univ, Princeton, NJ.

338B
Screening for proteins involved in gurken mRNA localization in the Drosophila ovary. **Inna Rom, Alice Faicevici, Roni Mintz, Shira Neuman-Silberberg.** Genetics and Dev. Biology, Ben-Gurion University of the Negev, Beer Sheva, Israel.

339C
Evolutionary significance of pair-rule transcript localization in early Dipteran embryos. **Urs C. Schmidt-Ott[1, 3], Simon L. Bullock[2], Michael Stauber[3], Alexander Prell[3], Julian R. Hughes[2], David Ish-Horowicz[2].** 1) Organismal Biol & Anatomy, Univ Chicago, Chicago, IL; 2) Developmental Genetics, Cancer Research, London, UK; 3) Molecular Developmental Genetics, Max-Planck-Institute for Biophys. Chemistry, Göttingen, Germany.

340A
Regulation of maternal transcript destabilization in the early Drosophila embryo. **Wael Tadros[1,2], Craig A. Smibert[2], Howard D. Lipshitz[1,2].** 1) Dept Developmental Biology, Hospital for Sick Children, Toronto, ON, Canada; 2) University of Toronto, Toronto, ON, Canada.

341B
Embryonic expression patterns of the UDP-GalNAc:Polypeptide N-Acetylgalactosaminyltransferase genes responsible for Mucin-type O-Glycosylation in *D. melanogaster*. **E. Tian, Kelly G. Ten Hagen.** Biological Chemistry Section, NIDDK, NIH, Bethesda, MD.

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342C
Resolving the Localization Mechanism of *bicoid* RNA by Direct Visualization of Endogenous RNA. **Timothy T. Weil, Kevin M. Forrest, Elizabeth R. Gavis.** Dept Molecular Biol, Princeton Univ, Princeton, NJ.

343A
Elucidating the ecdysone-responses of early-larval salivary glands. **Kelly Alexandre[1], Aaron Bjarnson[1], John Merriam[2], Danial Garza[3], Andrew J. Andres[1].** 1) Department of Biological Science, University of Nevada, Las Vegas, Las Vegas, NV; 2) Department of Biology, University of California-Los Angeles, Los Angeles, CA; 3) Department of Functional Genomics, Novartis Institutes of Biomedical Research, Cambridge, MA.

344B
Regulation of microRNA expression in the early Drosophila embryo. **Fred Biemar[1], Matthew Ronshaugen[1], Eric Lai[2], Michael Levine[1].** 1) Center for Integrative Genomics, Molecular and Cell Biology, UC Berkeley, Berkeley, CA; 2) Howard Hughes Medical Institute, Molecular and Cell Biology, UC Berkeley, Berkeley, CA.

345C
Do polymorphisms in the proximal promoter cause variation in gene expression between *D. melanogaster* strains? **Rebecca P. Brown, Martin E. Feder.** Organismal Biol & Anatomy, Univ Chicago, Chicago, IL.

346A
In vivo role of the PBAP chromatin remodeling complex in Drosophila. **Inés Carrera, Jessica Treisman.** Skirball Institute of Biomolecular Medicine and Department of Cell Biology, NYU School of Medicine, New York, NY 10016.

347B
Tissue-specificity in the ecdysone response: A microarray analysis of cell lines of diverse histological origin. **Lucy Cherbas, Yi Zou, Peter Cherbas.** Center for Genomics & Bioinformatics and Drosophila Genomics Resource Center, Indiana Univ, Bloomington, IN.

348C
Characterization of *Drosophila Tis11*. **Robert Fedic[1], Elisabeth A. Kennington[2], Deborah J. Stumpo[2], Perry J. Blackshear[2], James M. Mason[1].** 1) Lab of Molecular Genetics, NIEHS, Research Triangle Park, NC 27709; 2) Lab Signal Transduction, NIEHS, Research Triangle Park, NC 27709.

349A
Automated Embryo Injection and Fly Sorting. **William Fisher, Earl Cornell, Robert Nordmeyer, Derek Yegian, Ming Dong, Mark Biggin, Susan Celniker, Jian Jin.** Berkeley Drosophila Transcription Network Project, Lawrence Berkeley National Lab, Berkeley, CA.

350B
Building Composite Maps of Gene Expression Patterns: Registering Morphology and Gene Expression Between 3D Representations of Drosophila Embryos. **Charless C. Fowlkes[1], Cris L. Luengo Hendriks[2], Soile V. E. Keränen[2], Mark D. Biggin[2], David W. Knowles[2], Damir Sudar[2], Jitendra Malik[1], Berkeley Drosophila Transcription Network Project.** 1) Computer Science Division, University of California, Berkeley, CA; 2) Life Sciences and Genomics Divisions, Lawrence Berkeley National Laboratory. CA.

351C
The Mcp element from the bithorax complex contains an insulator that is responsible for the interaction between the Mcp elements and facilitation of the enhancer-promoter communication. **Natalia M. Gruzdeva, Olga V. Kyrchanova, Andrey P. Kullyev, Pavel G. Georgiev.** Institute of Gene Biology RAS, Moscow, Russia.

352A
Analyzing genetic modifiers of the purine synthesis gene *Prat*. **Joanne M. Hackett, Denise V. Clark.** Department of Biology, University of New Brunswick, Fredericton, NB, Canada.

353B
Comparative analysis of early developmental gene expression in closely-related Drosophilid species. **Emily E. Hare[1], Aziz A. Aboobaker[1], Angela H. DePace[2], Nipam H. Patel[1,3], Michael B. Eisen[2].** 1) Department of Molecular and Cell Biology, Univ. of California, Berkeley, Berkeley, CA; 2) Genome Sciences Department, Genomics Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3) Department of Integrative Biology, Univ. of California, Berkeley, Berkeley, CA.

354C
Function of the putative thioredoxin reductase gene *trxr-2* in *D. melanogaster*. **Jana Havranova, Christopher J. Jones.** Biology Department, Moravian College, Bethlehem, PA.

355A
The Gene Structures of *kayak* and *fig*: A Complex Chromosome Region with a Nested Gene. **Stephanie G. Hudson, Elliott S. Goldstein.** Sch Life Sci, Arizona State Univ, Tempe, AZ.

356B
Counting Gene Expressing Nuclei in Whole Drosophila Blastoderm Embryos. **Soile V. E. Keränen, Cris L. Luengo Hendriks, Damir Sudar, Mark D. Biggin, David W. Knowles, Berkeley Drosophila Transcription Network Project.** Life Sciences and Genomics Divisions, Lawrence Berkeley National Laboratory, Berkeley, CA 94720.

357C
Genome Wide Analysis of DNA Sequences Bound by Endogenous Transcription Factors Regulating the Pregastrula Network in Drosophila. **Xiao-Yong Li[1], D. Nix[1], D. Biermann[1], V. Sementchenko[2], T. R. Gingeras[2], M. B. Eisen[1], M. D. Biggin[1].** 1) Berkeley Drosophila Transcription Network Project, Genomics Division, Lawrence Berkeley National Lab, Berkeley, CA; 2) Affymetrix, Inc, Santa Clara, CA.

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358A
Automated Delineation of Cells and Nuclei and Quantification of Gene Expression in 3D Images of Whole Drosophila Blastoderm Embryos. **C. L. Luengo Hendriks[1], D. W. Knowles[1], S. V. E. Keränen[1], G. H. Weber[2], M. D. Biggin[1], D. Sudar[1].** 1) Life Sciences and Genomics Division, Lawrence Berkeley Natl Lab, Berkeley, CA; 2) Institute for Data Analysis and Visualization, University of California, Davis, CA.

359B
Enhancer blocking depends on the size of the chromatin domain formed by the Su(HW) insulators. **Larisa Melnikova[1], Ekaterina Pomerantseva[1], Elena Gracheva[1,2], Pavel Georgiev[1].** 1) Dept Genetics, Inst Gene Biology RAS, Moscow, Russia; 2) Department of Biology, Washington University, St. Louis, Missouri 63130, USA.

360C
Identification and characterization of methylated sequences in the genome of *D. melanogaster*. **Madeleine Meusburger, Matthias Schaefer, Frank Lyko.** Epigenetics, German Cancer Research Center, Heidelberg, Germany.

361A
No nonsense: RNA surveillance in *D. melanogaster*. **Erika L. Meyer, Elizabeth R. Gavis.** Dept Molecular Biol, Princeton Univ, Princeton, NJ.

362B
The MSL Complex Remodels the Chromatin Structure of a Compensated Gene. **Steven C. Minear, Antonio Pannuti, John Lucchesi.** Biology, Emory Univ, Atlanta, GA.

363C
The role of SUMO in early Drosophila development. **Minghua Nie[1], Pinmanee Boonheung[2,3], Joseph Loo[2,3], Albert Courey[1].** 1) Department of Chemistry and Biochemistry, UCLA, Los Angeles, CA; 2) Keck Functional Proteomics Center, Department of Biochemistry & Biological Chemistry, UCLA, Los Angeles, CA; 3) Department of Medicine, Division of Clinical Immunology and Allergy, David Geffen School of Medicine, UCLA, Los Angeles, CA.

364A
Development of Data Analysis Methods for ChIP-Chip Tiled Genomic Microarray Experiments. **David Nix[1], Xiao-Yong Li[1], Victor Sementchenko[2], Stefan Bekiranov[2], Thomas R. Gingeras[2], Lisa Simirenko[1], Mark D. Biggin[1], Michael B. Eisen[1].** 1) Berkeley Drosophila Transcription Network Project, Genomics Division, Lawrence Berkeley National Lab, Berkeley, CA; 2) Affymetrix, Inc. Santa Clara, CA.

365B
Determining the *in vitro* DNA Binding Specificities of Transcription Factors Involved in Early Embryogenesis. **N. Ogawa, L. Zeng, D. Nix, L. Simirenko, M. Stapleton, B. Grondona, M. Eisen, M. Biggin.** Berkeley Drosophila Transcription Network Project, Lawrence Berkeley National Laboratory, Berkeley, CA..

366C
Molecular and genetic analysis of the dHNF4 orphan nuclear receptor. **Laura Palanker, Carl Thummel.** Dept of Human Genetics, HHMI, Univ of Utah, Salt Lake City, UT.

367A
A Plasmid Model for the study of dosage compensation. **Antonio Pannuti, Gypsy Hernandez, John Lucchesi.** Dept Biol, Emory Univ, Atlanta, GA.

368B
Reconstructing a Developmental Time Series of 3D Gene Expression Patterns in Drosophila Embryos. **Hanchuan Peng[1], Soile V. E. Keränen[1], David W. Knowles[1], Damir Sudar[1], Mark Biggin[1], Michael B. Eisen[1,2], Eugene W. Myers[1,3], Berkeley Drosophila Transcription Network Project.** 1) Genomics Division, Lawrence Berkeley National Lab, Berkeley, CA; 2) Department of Molecular and Cell Biology, University of California, Berkeley, CA; 3) Computer Science Division, University of California, Berkeley, CA.

369C
Alignment and Visualization of Six Whole-Genome Assemblies of Drosophila Species in VISTA. **Alexander Poliakov[1], Michael Brudno[2], Serafim Batzoglou[3], Inna Dubchak[1].** 1) Genomics Division, Lawrence Berkeley Natl Lab, Berkeley, CA 94720; 2) Computer Science Division, UC Berkeley, Berkeley CA 94720; 3) James H. Clark Center, 318 Campus Drive, Stanford CA 94305.

370A
Utilizing Yeast for the Creation of Drosophila Fly Lines Carrying Temperature Sensitive Alleles of Factors Involved in *hsp70* Transcription. **Abbie Saunders, Soyoun Kim, Lea Filippone, Alexander Spector, John Lis.** Department of Molecular Biology and Genetics, Biotechnology Building, Cornell University, Ithaca, New York 14853, USA.

371B
The pairing between *gypsy* insulators located in homologous chromosomes facilitates the enhancer action in *trans* throughout the Drosophila genome. **Mikhail Savitsky[1], Elena Kravchenko[1], Ekaterina Savitskaya[1, 2], Alexander Parshikov[1], Pavel Georgiev[1].** 1) Institute of Gene Biology RAS, Moscow, Russia; 2) Biomedical Center of Oslo University, Moscow, Russia.

372C
A gbb-dependent transcriptional feedback mechanism is required to control Dpp levels during wing patterning. **Lorena D. Soares, Kristi A. Wharton.** Molec, Cell Biol & Biochem, Brown Univ, Providence, RI.

373A
Doa regulates *TrxR-1*^{481} and *Sod-2*. **W. D. Staatz, S. T. Weston, D. Ingram, J. Spera, G. Powis.** Arizona Cancer Ctr, Tucson, AZ.

374B
Visualization Tools for Three-dimensional Gene Expression Data in Drosophila. **G. H. Weber[1,2], C. L. Luengo Hendriks[2], S. V. E. Keränen[2], S. E. Dillard[1], B. Hamann[1], Berkeley Drosophila Transcription Network Project.** 1) Institute for Data Analysis and Visualization, University of California, Davis, CA; 2) Genomics and Life Sciences Divisions, Lawrence Berkeley National Laboratory, Berkeley, CA.

375C
Twist activity is regulated by its structure, dimer partner, and tissue context. **Ming-Ching Wong[1], Mary K. Baylies[2].** 1) Weill Graduate School of Medical Sciences at Cornell University, NY, NY; 2) Developmental Biology Program, Sloan-Kettering Institute, NY, NY.

376A
Gene transcription pattern and aging in *D. melanogaster* - biomarkers of aging. **Junsheng Yang, Gary Landis, Beth Rabin, John Tower.** Molecular & Computational Biology, University of Southern California, Los Angeles, CA.

377B
Transcriptional regulation of metal homeostasis. **Hasmik Yepiskoposyan, Dieter Egli, Balamurugan Kuppusamy, Anand Selvaraj, Alla Vardanyan, Haiqing Hua, Oleg Georgiev, Walter Schaffner.** Inst Molecular Biology, Zurich, Switzerland.

Signal Tranduction

378C
The Protein Phosphatase 1 interactome in Drosophila. **Daimark Bennett, Luke Alphey, Ekaterina Lioultcheva (Lyulcheva).** Department of Zoology, Oxford University, Oxford, United Kingdom.

379A
The serine/threonine kinase dPak is required for planar polarization of the actin cytoskeleton and apical-basal polarity in the Drosophila follicular epithelium. **Ryan Conder, Hong Yu, Nicholas Harden.** Molecular Biology and Biochemisty, Simon Fraser University, Burnaby, BC, Canada.

380B
in vivo analysis of Lipid Phosphate Phosphohydrolases (LPPs) function in Drosophila photoreceptors. **Isaac Garcia-Murillas[1], Elaine MacDonald[2], Raghu Padinjat[1].** 1) Inositide Laboratory, The Babraham Institute, Cambridge, UK; 2) Department of Anatomy, The University of Cambridge, Downing Street, Cambridge, UK.

381C
A Genetic Screen To Identify Novel Positive Regulators In The dTOR Pathway. **Pankuri Goraksha, Thomas Neufeld.** MCDB&G, University of Minneapolis, Minneapolis, MN.

382A
TOR-dependent activation of S6 Kinase is a central step in the transduction of nutritional information during egg development in mosquitoes. **Immo A. Hansen, Geoffrey M. Attardo, Alexander S. Raikhel.** Entomology, UC Riverside, Riverside, CA.

383B
Modulation of Smad activity by MAP kinase during wing development. **Svetlana E. Korochkina, Mingfa Li, Jing Cao, Viet Le, Laurel Raftery.** Cutaneous Biology Research Center, Massachusetts General Hospital/Harvard Med. School, Charlestown, MA 02129.

384C
MAP kinase subcellular localization controls both pattern and proliferation in the developing Drosophila wing. **Daniel R. Marenda, Alysia D. Vrailas, Kevin Moses.** Dept. of Cell Biology, Whitehead Research Bldg, Emory University School of Medicine, Atlanta, GA, USA.

385A
ZD6474 suppresses Oncogenic RET Isoforms in a Drosophila model for Multiple Endocine Neoplasia Type 2. **Marcos Vidal[1], Samuel Wells[2], Ross Cagan[1].** 1) Mol Biol & Pharm, Washington University, St Louis, MO; 2) Duke University Medical Center, Durham, NC.

386B
The non-receptor tyrosine kinase ACK participates in Dpp signaling during Drosophila embryogenesis. **Bari Zahedi, Xing Xu, Nicholas Harden.** Dept Molec Biol & Biochem, Simon Fraser Univ, Burnaby, BC, Canada.

387C
Genetic Cross-Talk During Head Development in Drosophila. **Amr A. Amin.** Biol Dept, UAE Univ, Al-Ain, United Arab Emirates.

388A
Mars: a novel Discs-large Associated Protein in Drosophila. **Daimark Bennett, Shengjiang Tan, Jon Dean, Sarah Carpenter, Ekaterina Lioultcheva (Lyulcheva), Eleanor Taylor.** Department of Zoology, Oxford University, Oxford, United Kingdom.

389B
Regulation of Drosophila Wnt-1/Wingless signaling by lipid modification. **Wendy Ching, Roel Nusse.** Developmental Biology, Stanford University, Stanford, CA.

390C
Notch ligands and Neuralized in macrochaete SOP lateral inhibition. **Christos Delidakis[1,2], Chrysoula Pitsouli[1,2], Vasilis Baousis[1,2].** 1) Institute of Molecular Biology & Biotechnology, FORTH, Heraklion, Crete, Greece; 2) Department of Biology, University of Crete, Heraklion, Crete, Greece.

391A
Characterization of Kek5 function during Drosophila development. **Timothy A. Evans, Joseph B. Duffy.** Dept Biol, Indiana Univ, Bloomington, IN.

392B
Analysis of the *Drosophila Wnt8* gene: Evidence for a role in modifying Toll-Dorsal signaling in both embryonic patterning and the adult immune response. **Michael D. Gordon[1], Marc S. Dionne[2], David S. Schneider[2], Roel Nusse[1].** 1) Department of Developmental Biology, Stanford University, Stanford, CA; 2) Department of Microbiology and Immunology, Stanford University, Stanford, CA.

393C
Characterisation of *deltex* mutant alleles and their genetic interactions. **Abdul R. Hamzeh, Jenny Higgs, Martin Baron.** Faculty of Life Science, University of Manchester, Manchester, UK.

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394A
A genetic screen to identify novel components of Egfr signaling. **Martin Kerr, Saroj Saurya, Matthew Freeman.** MRC Laboratory of Molecular Biology, Cambridge, UK.

395B
Drosophila Dpp morphogen movement is independent of Dynamin-mediated endocytosis, but regulated by the glypican members of heparan sulfate proteoglycans. **Xinhua Lin[1,2], Tatyana Belenkaya[1], Chun Han[1,2], Dong Yan[1,2], Robert Opoka[1], Marat Khodoun[1], Hongzhu Liu[1].** 1) Division of Developmental Biology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229; 2) The Graduate Program in Molecular and Developmental Biology, University of Cincinnati College of Medicine, Cincinnati, OH 45229.

396C
Warts and Melted regulate subset-specific opsin expression in R8 photoreceptors. **Tamara Mikeladze-Dvali, Mathias Wernet, Claude Desplan.** Dept Biol, New York Univ, New York, NY.

397A
The acyltransferase Rasp adds an essential palmitate modification to the EGF receptor ligand Spitz. **Grant I. Miura[1], John Buglino[2], Marilyn D. Resh[2], Jessica E. Treisman[1].** 1) Skirball Institute for Biomolecular Medicine and Department of Cell Biology, New York Univ Sch Medicine, New York, NY; 2) Cell Biology Program, Memorial Sloan-Kettering Cancer Center, New York, NY.

398B
Characterization of *daltonien*, a new mutation affecting cell-cell communication between R7 and R8. **Daniela Pistillo, Claude Desplan.** Dept Biol, New York Univ, New York, NY.

399C
Notch signaling mediates cell proliferation non-autonomously through Unpaired during eye development. **Jessica Reynolds-Kenneally, Marek Mlodzik.** Mol. Cell and Dev. Biology, Mt. Sinai School of Medicine, New York, NY.

400A
Characterization of a temperature sensitive allele of Epidermal Growth Factor Receptor (*Egfr^{tsla}*). **Aloma B. Rodrigues, Kevin Moses.** Dept Cell Biol, Emory Univ, Atlanta, GA.

401B
A putative β1-3-galactosyltransferase encoded by *twiggy* is required for growth and morphogenesis in Drosophila. **Monika Rosén, Florian Lüders, Udo Häcker.** Cell & Molecular Biology, Lund, Sweden.

402C
Decapentaplegic peripodial expression controls the morphogenesis of the adult head capsule. **Brian G. Stultz, Heuijung Lee, Deborah A. Hursh.** Laboratory of Immunology and Developmental Biology, Division of Cellular and Gene Therapies, CBER/FDA, Bethesda, MD.

403A
Arrow, a Wg receptor subunit, functions both in initiation and amplification of the Wg signal. **Marcel Wehrli, Shahana Baig.** Cell and Developmental Biology, OHSU, Portland, OR.

404B
Modeling Numb cell bias in the Notch pathway, a systems biology approach. **Joanna M. Young.** Informatics, University of Edinburgh, Edinburgh, UK.

405C
The heterotrimeric G proteins regulate various cell movements during Drosophila gastrulation. **Naoyuki Fuse, Susumu Hirose.** Dept. of Dev. Genetics, National Institute of Genetics, Mishima, Japan.

406A
In vivo functional analysis of the small Ras-related GTPase, RIC. **Susan M. W. Harrison[1], Jennifer L. Rudolph[2], Michael L. Spencer[2], Paul D. Wes[3], Craig Montell[3], Douglas A. Andres[2], Douglas A. Harrison[1].** 1) Dept. of Biology, University of Kentucky, Lexington, KY; 2) Dept. of Molecular and Cellular Biochemistry, University of Kentucky College of Medicine, Lexington, KY; 3) Depts. of Biological Chemistry and Neuroscience, The Johns Hopkins University School of Medicine, Baltimore, MD.

407B
Characterisation of the Drosophila Insulin-like Peptides. **Priyanka Belawat, Ernst Hafen.** Zoology Institute, University Zurich, Zurich, Switzerland.

408C
Fourth Chromosome TGF-β Ligands in Drosophila. **J. Ellis[1], S. Kadam[1], L. Parker[1], P. Lo[2], M. Frasch[2], K. Arora[1].** 1) Department of Developmental & Cell Biology, University California, Irvine, Irvine, CA; 2) Brookdale Center for Molecular, Cell, and Developmental Biology, Mount Sinai School of Medicine, New York, NY.

409A
A novel null mutant allele of *deltex* reveals the involvement of *dx* in ligand dependent and tissue-specific activation of Notch signaling. **Takashi J. Fuwa[1], Kazuya Hori[1], Takeshi Sasamura[1,2], Kenji Matsuno[1,2].** 1) Dept Biol Sci/Tech, Tokyo Univ Science, Chiba, Japan; 2) PRESTO, Japan Science and Technology Agency.

410B
Distinct roles of Drosophila Activin-like ligands during development. **Scott C. Gesualdi, Theodor E. Haerry.** Biology, Florida Atlantic University, Boca Raton, FL.

411C
Differences in Response to Hh versus HhN Signaling in Drosophila Neuroblasts. **Ana M. Hernandez, Jonathan Lindner, Sumana Datta.** Biochemistry and Biophysics, Texas A&M University, College Station, TX.

412A
Drosophila Deltex mediates Suppressor of Hairless-independent and late-endosomal activation of Notch signaling. **Kazuya Hori[1], Maggy Fostier[2], Mikiko Ito[3], Takashi J. Fuwa[1], Masahiro J. Go[4], Hideyuki Okano[5], Martin Baron[2], Kenji Matsuno[1,6,7].** 1) Dept Biol Sci/Tec, Tokyo Univ Sci, Chiba, Japan; 2) Sch Biological Sci, Univ Manchester, Manchester, UK; 3) Dept Nutrition, Sch Medicine, Univ Tokushima, Tokushima, Japan; 4) Dept Neuroscience and Immunology, Kumamoto Univ, Kumamoto, Japan; 5) Dept Physiol, Keio Univ, Tokyo, Japan; 6) Genome and Drug Research Center, Tokyo Univ Sci, Chiba, Japan; 7) PRESTO, JST, 4-1-8 Honcho, Kawaguchi, Saitama, Japan.

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413B
Mechanism of receptor synergy in BMP pathways. **Sangbin Park, Dean G. Stathakis, Kavita Arora.** Department of Cell and Developmental Biology, University of California - Irvine, Irvine, CA.

414C
Molecular and genetic characterization of *upd* and *os*. **Liqun Wang.** Department of Biology, University of Kentucky, Lexington, KY.

415A
Analysis of Upd2/CG5988, one of three related JAK/STAT pathway ligands. **Martin P. Zeidler[1], Steven Brown[2,3], Ho-Ryun Chung[1], James Castelli-Gair Hombria[2,4].** 1) Dept Dev Mol Biol, MPI for BPC, Goettingen, Germany; 2) Dept of Zoology, University of Cambridge, Downing Street, Cambridge, CB2 3EJ, UK; 3) University of Manchester, Faculty of Life Sciences, 3.132 Stopford Building, Oxford Road, Manchester M13 9PT, UK; 4) Centro Andaluz de Biología del Desarrollo, Universidad Pablo de Olavide, Carretera de Utrera Km 1, 41013 Seville, Spain.

416B
A specific amino acid transporter regulates TOR-dependent growth via a novel nutrient sensing mechanism. **Deborah C. I. Goberdhan, David Meredith, C. A. R. Boyd, Clive Wilson.** Human Anatomy & Genetics, University of Oxford, Oxford, United Kingdom.

417C
Characterization of Ebi and Warts in Drosophila Oogenesis. **Chad A. Hall[1], Min Zhao[2], Scott Goode[1,2,3].** 1) Department of Molecular and Human Genetics; 2) Department of Pathology; 3) Department of Molecular and Cellular Biology, Program in Development, Program in Cell and Molecular Biology, Baylor College of Medicine, Houston, TX.

418A
Loss of cell polarity drives tumor growth and metastasis through JNK activation in Drosophila. **Tatsushi Igaki, Raymond Pagliarini, Tian Xu.** Genetics, HHMI, Yale Univ Sch Med, New Haven, CT.

419B
Analyses of Genetic Interactions between components of Hpo signaling pathway. **Madhuri Kango-Singh[1], Georg Halder[1,2].** 1) Dept Biochemistry & Molec Biol, MD Anderson Cancer Ctr, Houston, TX; 2) Program in Developmental Biology, Baylor College of Medicine, One Baylor Plaza, Houston 77030.

420C
The Sav complex. **Nic Tapon.** Cancer Research UK, London, United Kingdom.

421A
dsRNAi-based whole genome screen for modifiers of Tor inhibitor RAD001. **Qiong Wang, Xiaoying Shi, Dan Garza, Hao Li.** Functional Genomics, NIBRI, Cambridge, MA.

422B
Drosophila Signal Peptide Peptidase is an Essential Intramembrane Aspartyl Protease. **David J. Casso, Thomas Kornberg.** Dept Biochemistry & Biophysics, Univ California, San Francisco, San Francisco, CA 94143.

423C
A novel Dlg-interacting metalloprotease and Strabismus regulate cell growth by modulating the level of Discs Large. **Kyung-Ok Cho.** Dept Molecular Cell Biol, Baylor Col Medicine, Houston, TX.

424A
A novel mode of SREBP activation. **Amit S. Kunte, Krista A. Matthews, Robert B. Rawson.** Department of Molecular Genetics, University of Texas Southwestern Medical Center, Dallas, TX.

425B
Developmental roles of Int6/eIF3e, an interactor of the COP9 signalosome. **Sigal Rencus-Lazar[1], Yaniv Amir[1], Daniel Chamovitz[2], Daniel Segal[1].** 1) Department of Molecular Microbiology & Biotechnology, Tel-Aviv University, Tel-Aviv, Israel; 2) Department of Plant Sciences, Tel-Aviv University, Tel-Aviv, Israel.

426C
InsP3 signaling in larval aminergic cells. **Rohit Joshi, K. Venkatesh, Gaiti Hasan.** NCBS, TIFR, Bangalore-560065, India.

427A
Novel intracellular localisations and functions of SPoCk, a Drosophila Ca^{2+}/Mn^{2+}ATPase. **Selim Terhzaz[1], Tony D. Southall[1,2], Pablo Cabrero[1], Julian A. T. Dow[1], Shireen A. Davies[1].** 1) Division of Molecular Genetics, University of Glasgow, Glasgow, United Kingdom; 2) Wellcome/CRUK Gurdon Institute, Cambridge, United Kingdom.

428B
Mechanisms and tissue specificity of hypoxic signalling in *D. Melanogaster*. **Nathalie Arquier[1], Eric Duplan[1], Paul Vigne[1], Pascal Paul Thérond[2], Christian Frelin[1], Gisela D'Angelo[1].** 1) Neurobiologie Vasculaire, U615 INSERM, Nice cedex 2, France; 2) ISBDC, CNRS UMR6543 Nice cedex 2, France.

429C
The nuclear RRM proteins Spen and dOTT are required for Wingless signaling. **J. Chang, H. V. Lin, J. Li, M. Fang, T. Blauwkamp, K. M. Cadigan.** MCDB, University of Michigan, Ann Arbor, MI.

430A
Brinker's function in Drosophila oogenesis. **Yu Chen, Trudi Schüpbach.** Dept Molecular Biol, Princeton Univ, Princeton, NJ.

431B
Nitric oxide signaling in mediating responses to hypoxia. **Pascale F. Dijkers, Patrick H. O'Farrell.** Dept Biochemistry & Biophysics, Univ California, San Francisco, San Francisco, CA.

432C
Bunched, the Drosophila homolog of the mammalian tumor suppressor TSC-22, is involved in growth control. **Silvia Gluderer[1], Hugo Stocker[1], Felix Rintelen[1,2,3], Sean Oldham[1,4], Andrea Sulzer[1], Corina Schuett[2], Xiaodong Wu[5], Laurel Raftery[5], Ernst Hafen[1].** 1) Zoologisches Institut, Universität Zürich, Zürich, Switzerland; 2) The Genetics Company Inc, Schlieren, Switzerland; 3) current address: Serono International SA, Geneva, Switzerland; 4) current address: The Burnham Institute, Cancer Research Center, La Jolla, CA; 5) Cutaneous Biology Research Center, Massachusetts General Hospital/Harvard Medical School, Charlestown, MA.

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433A
Using salivary glands to study the cell biology of Hh signaling. **Robert A. Holmgren, Barbara Sisson, Kelly McCabe, Megan Killingsworth.** Dept Biochemistry, Northwestern Univ, Evanston, IL.

434B
In vivo studies of Costal2 localization and interactions. **Joel M. Hyman[1], Matthew P. Scott[2].** 1) Department of Developmental Biology, Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA; 2) Departments of Developmental Biology and Genetics, Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA.

435C
RacGap50C negatively regulates Wingless pathway activity during embryonic development. **Whitney M. Jones, Tracy M. Addy, Amy Bejsovec.** Biol, Duke Univ, Durham, NC.

436A
Protein and mRNA profiling of the insulin response in Drosophila cells. **Martin A. Jünger[1,6], Jürg Lerch[1], Erich Brunner[2,3], Mingliang Ye[4,5], Ruedi Aebersold[4,6], Ernst Hafen[1].** 1) Zoologisches Institut der Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich, Switzerland; 2) Institute of Neuropathology, University Hospital of Zürich, Schmelzbergstrasse 21, CH-8091 Zürich; 3) current address: Zoologisches Institut der Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich, Switzerland; 4) Institute for Systems Biology, 1441 North 34th Street, Seattle, Washington 98103-8904, USA; 5) current address: Laboratory of Biotechnology, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, 457 Zhongshan Road, Dalian 116023, China; 6) current address: Institute of Biotechnology, Swiss Federal Institute of Technology, ETH Hönggerberg HPT, CH-8093 Zürich, Switzerland.

437B
Characterization of Fatty Acid Synthase in the SREBP Pathway. **Carol J. Lah, Rob Rawson.** Molecular Genetics, UT Southwestern, Dallas, TX.

438C
Pico: a novel regulator of growth and proliferation. **Ekaterina Lioultcheva (Lyulcheva), Daimark Bennett.** Department of Zoology, Oxford University, Oxford, United Kingdom.

439A
Analysis of the Transducer of Regulated CREB (TORC) in Drosophila. **Jodi Meltzer, Kenneth Yoon, Mark Bittinger, Mark Labow, Dan Garza.** Functional Genomics, Novartis, Cambridge, MA.

440B
Activated Drosophila Ras1 induces flat morphology and growth arrest in S2 cells. **Lia Mittelman, Zeev Lev.** Department of Biology, Technion, Haifa, Israel.

441C
Biochemical characterization of Pygopus in Wingless signaling. **David S. Parker, Ken M. Cadigan.** Dept MCDB, Univ Michigan, Ann Arbor, MI.

442A
Mago nashi, a component of the exon-exon junction complex, is required for EGFR signaling in Drosophila eye. **Jean Y. Roignant, Florence Janody, Jessica E. Treisman.** Dept Developmental Genetics, Skirball Inst, New York, NY.

443B
Micro-array analysis of JNK signaling during Drosophila embryogenesis. **Raphaël Rousset, Fabrice Carballes, Melanie Gettings, Fanny Pignolé, Pauline Speder, Delphine Cerezo, Stéphane Noselli.** Institute of Signaling, Developmental Biology and Cancer Research, CNRS-UMR6543, University of Nice-Parc Valrose, Nice, France.

444C
Identify insulin pathway genes through whole genome dsRNAi-based screen in S2 cells. **Xiaoying Shi, Qiong Wang, Dan Garza, Hao Li.** Functional Genomics, NIBRI, Cambridge, MA.

445A
Integrin effector PINCH functions in dorsal closure and regulates JNK activity and epithelial migration with Ras suppressor 1. **Mark A. Smith[1,2], Julie L. Kadrmas[2], Kathleen A. Clark[1,2], Stephen M. Pronovost[2], Nemone Muster[3], John R. Yates III[3], Mary C. Beckerle[1,2,4].** 1) Department of Biology, Univ Utah, Salt Lake City, UT; 2) Huntsman Cancer Institute, Univ Utah, Salt Lake City, UT; 3) Department of Cell Biology, Scripps Research Institute, La Jolla; 4) Department of Oncological Sciences, Univ Utah, Salt Lake City, UT.

446B
Identification and analysis of a novel TGF-β signaling component. **Catherine F. Trivigno, Theodor E. Haerry.** Biology, Florida Atlantic University, Boca Raton, FL.

447C
Mae, a dual regulator of the EGFR signaling pathway, is a target of Ets transcription factors Pnt and Yan. **Pavithra Vivekanand[1], Tina L. Tootle[1,2], Ilaria Rebay[1,2].** 1) Whitehead Institute, Cambridge, MA 02142; 2) Department of Biology, Massachusetts Institute of Technology, Cambridge, MA 02142.

448A
MAPK Subcellular Localization in the Developing Drosophila Eye. **Alysia D. Vrailas, Daniel R. Marenda, Kevin Moses.** Cell Bioloy, Emory University, Atlanta, GA.

449B
Insulin/IGF signaling regulates cardiac aging by controlling energy storage and usage in the myocardium. **Robert J. Wessells, Claire Davies, Erin Fitzgerald, Sean Oldham, Rolf Bodmer.** Burnham Inst, La Jolla, CA.

450C
The role of negative feedback in Toll signaling. **Wen Xiong, Steven Wasserman.** Cell and Developmental Biology, Univ. of Cal, San Diego, La Jolla, CA.

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451A
Transcriptional profiling of EGFR inhibition by Argos, Kekkon, and Sprouty. **Nir Yakoby[1, 2], Chris A. Bristow[1, 2], Irina Gouzman[3], Rachel Kalifa[1, 2], Joseph B. Duffy[4], Trudi Schupbach[5], Stanislav Y. Shvartsman[1, 2].** 1) Genomics, Princeton University, Princeton, NJ; 2) Chemical Engineering, Princeton University, Princeton, NJ; 3) Chemistry, Princeton University, Princeton, NJ; 4) Biology, Indiana University, Bloomington, IN; 5) Molecular Biology, Princeton University, Princeton, NJ.

452B
Identification of multiple Dpp response elements in the *brinker* promoter. **Li-Chin Yao, Rahul Warrior, Kavita Arora.** Dept Developmental/Cell Biol, Univ California, Irvine, CA.

453C
rosy Is Required For Juvenile Hormone Action In The Abdominal Epidermis In Drosophila. **Xiaofeng Zhou, Lynn Riddiford.** Department of Biology, University of Washington, Seattle, WA.

454A
Role of Nedd4 family proteins in ovary development. **Tanveer Akbar, Ann-Marie Carbery, Martin Baron.** Faculty of Life Science, University of Manchester, Manchester, UK.

455B
Investigating interactions between the JAK/STAT and raf/MAPK pathways in the embryo. **Aidee Ayala, Collisha Wright, Erika A. Bach.** Pharmacology, New York University, New York, NY.

456C
Regulation of Notch signalling by the ubiquitin-ligase Suppressor of Deltex. **Sylvaine Clémence[1], Masato Motoki[1], Marian Wilkin[1], Alexey N. Veraska[2], Martin Baron[1].** 1) Faculty of Life Sciences, University of Manchester, Manchester, United-Kingdom; 2) Department of Cell Biology, General Hospital Cancer Center, Harvard Medical School, Charleston, MA.

457A
The role of JAK/STAT signaling in eye imaginal disc growth. **Laura A. Ekas, Erika A. Bach.** Dept. Pharmacology, New York Univ Sch Medicine, New York, NY.

458B
Timing requirements for extension of lifespan by altered IIS in adult female Drosophila. **Maria E. Giannakou[1], Jake Jacobson[1], Martin Goss[1], Sally J. Leevers[2], Linda Partridge[1].** 1) Dep. Biology Darwin Building , University College London, London, United Kingdom; 2) Growth Regulation Laboratory, Cancer Research UK, London Research Institute, UK.

459C
Characterization of F-box genes in Drosophila. **Margaret S. Ho, Cheng-Ting Chien.** Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan.

460A
The Control of Axon fasciculation by De Novo GMP Synthesis in the Drosophila Visual System. **Hong Long, Yong Rao.** Centre for Research in Neuroscience and Department of Neurology and Neurosurgery, McGill University Health Centre, 1650 Cedar Avenue, Montreal, Quebec H3G 1A4, Canada.

461B
Isolation of a mutant *SCAP* allele in Drosophila. **Krista A. Matthews, Amit S. Kunte, Robert B. Rawson.** Molecular Genetics, UT Southwestern Medical Center, Dallas, TX.

462C
Elucidating the developmental roles of the COP9 signalosome in *D. melanogaster*. **Efrat Oron[1], Ling Lee[2], Sigal Rencus[3], Bruce A. Edgar[2], Daniel Segal[3], Daniel A. Chamovitz[1].** 1) Department of Plant Science, Tel Aviv University, Tel Aviv, Israel; 2) Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA, USA; 3) Department of Molecular Microbiology and Biotechnology, Tel Aviv University, Tel Aviv, Israel.

463A
Identification of novel genes regulating growth in Drosophila. **Carmen Rottig[1], Hugo Stocker[1], Knud Nairz[1], Felix Rintelen[1,2,3], Sean Oldham[1,4], Ernst Hafen[1].** 1) Zoological Institute, University of Zürich, Zürich, Switzerland; 2) The Genetics Company Inc, Schlieren, Switzerland; 3) Current address: Serono International SA, Geneva, Switzerland; 4) The Burnham Institute, Cancer Research Center, La Jolla, CA.

464B
Genetic interactions with activated Ras and Cyclin E implicates the novel gene, *deflated*, in the regulation of cell proliferation. **Rachael J. Rutkowski, William D. Warren.** Comparative Genomics Centre, James Cook University, Townsville, Queensland, Australia.

465C
Amnioserosal Function in Dorsal Closure. **Anne B. Scuderi, Anthea Letsou.** Dept Human Genetics, Univ Utah, Salt Lake City, UT.

466A
Drosophila Nedd4 regulates endocytosis of Notch and suppresses its ligand-independent activation. **Tadashi Sakata[1,2], Hiromi Sakaguchi[1], Leo Tsuda[2], Atsushi Higashitani[1], Toshiro Aigaki[3], Kenji Matsuno[4], Shigeo Hayashi[1,5].** 1) CDB, RIKEN, Kobe, Japan; 2) Graduate School of Life Science, Tohoku University, Sendai, Japan; 3) Department of Biology, Tokyo Metropolitan University, Tokyo, Japan; 4) Department of Biological Science and Technology, Tokyo University of Science, Noda, Japan; 5) Department of Life Science, Kobe University Graduate School of Science and Technology, Kobe, Japan.

467B
Extensive phosphorylation of multiple pathway components in response to Hedgehog signaling. **Chi Zhang[1], Elizabeth H. Williams[1], Yurong Guo[2], Lawrence Lum[1], Philip A. Beachy[1].** 1) Dept Molec Biol & Gen, Johns Hopkins Univ Sch Med, Baltimore, MD; 2) Division of Pulmonary and Critical Care Medicine, Johns Hopkins Univ Sch Med, Baltimore, MD.

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Pattern Formation

468C
Functional analysis of the segmentation gene pangolin in *Tribolium castaneum*. **Laila Farzana, Susan J. Brown.** Division of Biology, Kansas State University, Manhattan, KS.

469A
Spatial dependence of positional errors in segmentation: pair-rule positioning displays autonomy from maternal gradients. **David M. Holloway[1,2], Lionel G. Harrison[2], Carlos E. Vanario-Alonso[3], Ekaterina Myasnikova[4], Alexander V. Spirov[3].** 1) Mathematics, Brit. Col. Inst. Tech., Burnaby, BC, Canada; 2) Chemistry, U. Brit. Col., Vancouver, BC, Canada; 3) Developmental Genetics, SUNY, Stony Brook, NY, USA; 4) Computational Biology, St. Petersburg State Poly. U., Russia.

470B
Early fly development as a model for studying expression noise in biological pattern formation. **David M. Holloway[1], Carlos E. Vanario-Alonso[2], John Reinitz[2], Alexander V. Spirov[2].** 1) Mathematics, Brit. Col. Inst. Tech., Burnaby, BC, Canada; 2) Developmental Genetics, SUNY, Stony Brook, NY, USA.

471C
Characterization of the role of Nemo in embryonic segmentation. **W. Lee, A. C. Uetrecht, E. M. Verheyen.** Dept MBB, Simon Fraser Univ, Burnaby, BC, Canada.

472A
Role of Blimp1 in anterior-posterior patterning of *D. melanogaster*. **Gozde Yucel.** Biology, New York University, New York, NY.

473B
Pleiotropy, purifying selection, and the phenotypic consequences of HOX protein evolution. **Chris Todd Hittinger[1,2], Sean B. Carroll[1,2,3].** 1) Howard Hughes Medical Institute, University of Wisconsin-Madison, Madison, WI; 2) Laboratory of Genetics, University of Wisconsin-Madison, Madison, WI; 3) Laboratory of Molecular Biology, University of Wisconsin-Madison, Madison, WI.

474C
Identification of *Ultrabithorax* target genes in the developing Drosophila haltere through microarray analysis. **David D. O'Keefe[1], Ansgar Klebes[2], Thomas B. Kornberg[3], Bruce A. Edgar[1].** 1) Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA; 2) Institut für Biologie, Genetik, Freie Universität Berlin, Berlin, Germany; 3) Dept of Biochemistry, University of California, San Francisco, San Franciso, CA.

475A
Generation of morphological diversity in the Drosophila adult legs. **Stuti Shroff, Meghana Joshi, Teresa Orenic.** Dept. of Biological Sciences, University of Illinois, Chicago, Chicago, IL.

476B
Maternal Short gastrulation patterns the embryonic dorsal-ventral axis through delayed induction. **Helena Araujo, Katia Carneiro, Marcio Fontenele, Erika Negreiros.** Dept Histology & Embriology, Fed Univ Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil.

477C
Parcas, a novel regulator of non-receptor tyrosine kinase activity, is required both for anterior-posterior patterning and somatic muscle specification and morphogenesis. **Karen L. Beckett[1], Mary K. Baylies[2].** 1) Weill Graduate School of Medical Sciences at Cornell University, New York; 2) Program in Developmental Biology, Sloan-Kettering Institute, New York.

478A
Production of *gurken* in the nurse cells is sufficient for axis determination in the Drosophila oocyte. **Lucia Caceres, Laura Nilson.** Dept Biol, McGill Univ, Montreal, PQ, Canada.

479B
Quantifying the Gurken gradient in dorsoventral patterning during oogenesis. **Lea A. Goentoro[1,3], Trudi Schupbach[2], Stanislav Y. Shvartsman[1,3].** 1) Dept Chemical Engineering, Princeton Univ, Princeton, NJ; 2) Dept Molecular Biology, Princeton Univ, Princeton, NJ; 3) Lewis-Sigler Institute of Integrative Genomics, Princeton Univ, Princeton, NJ.

480C
An implication for the requirement of the midline structure in left-right asymmetry of Drosophila embryo. **Reo Maeda, Shunya Hozumi, Kiichiro Taniguchi, Takeshi Sasamura, Kenji Matsuno.** Dept. Biol. Sci./Tech., Tokyo Univ. of Science, Chiba, Japan.

481A
The role of nuclear mRNA export factors in asymmetric transcript localization during Drosophila oogenesis. **Carine Meignin, Ilan Davis.** University of Edinburgh, Wellcome Trust for Cell Biolog, Edinburgh, UK.

482B
Investigation of the mechanisms underlying the establishment of nuclear density domains in the syncytial blastoderm of *D. melanogaster*. **Silke Pichler[1,2], Thomas Gregor[2], Eric Wieschaus[2], David Glover[1].** 1) Department of Genetics, Cambridge University, Cambridge, Cambridgeshire, United Kingdom; 2) Department of Molecular Biology, Princeton University, Princeton, United States.

483C
Uncoupling the activation and repression abilities of Dorsal in the Drosophila embryo. **Girish S. Ratnaparkhi, Songtao Jia, Albert J. Courey.** Department of Chemistry and Biochemistry, University of California at Los Angeles, Los Angeles, CA.

484A
Computational analysis of EGFR inhibition by Argos. **Gregory T. Reeves[1,2], Rachel Kalifa[2], Daryl E. Klein[3], Mark A. Lemmon[3], Stanislav Y. Shvartsman[1,2].** 1) Dept Chemical Engineering, Princeton Univ, Princeton, NJ; 2) Lewis-Sigler Institute for Integrative Genomics, Princeton Univ, Princeton, NJ; 3) Department of Biochemistry and Biophysics, University of Pennsylvania School of Medicine, Philadelphia, PA.

485B
Distribution and movement of the potential morphogen Unpaired during oogenesis. **Travis R. Sexton, Rongwen Xi, Douglas A. Harrison.** Department of Biology, University of Kentucky, Lexington, KY.

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486C
gurken (TGFα) and the I factor retrotransposon RNAs share common localization signals and machinery. **Veronique van de Bor, Eve Hartswood, Cherryl Jones, David Finnegan, Ilan Davis.** WTCCB, University of Edinburgh, Edinburgh, United Kingdom.

487A
The Sulfotransferase Activity of Pipe in the Drosophila Embryonic Salivary Glands and the Establishment of Embryonic Dorsal-ventral Polarity. **Xianjun Zhu, Jason Goltz, David Stein.** Section of Molecular Cell and Developmental Biology, Institute for Cellular and Molecular Biology, University of Texas at Austin, Austin, Texas 78712.

488B
A dominant negative allele of *bunched* blocks *bunched* function during tissue patterning. **David Ash, Michelle Jean-Francois, Leonard Dobens.** Sch Biological Sci, Univ Missouri-Kansas City, Kansas City, MO.

489C
Differences in cell affinity mediated by the EGF Receptor affect Wingless protein distribution and selector gene expression during Drosophila eye-antennal imaginal disc patterning. **Jennifer Curtiss, Marek Mlodzik.** MCDB, Mount Sinai Sch Medicine, New York, NY., USA.

490A
Defining the mechanism of action of the *drumstick*/*lines*/*bowl* regulatory pathway. **Victor Hatini[1], Teru Hayashi[1], Stephen DiNardo[2].** 1) Anatomy & Cellular Biology, Tuft University, Boston, MA; 2) Cell & Developmental Biology, University of Pennsylvania, Philadelphia, PA.

491B
Characterization of expression pattern of *tth* and *dd4* genes of *D. melanogaster*. **Dina A. Kulikova[1,2], Olga B. Simonova[2], Leonid I. Korochkin[1, 2], Vladimir L. Buchman[3], Ilja B. Mertsalov[2].** 1) Kolzov Institute of Developmental Biology, Russian Academy of Sciences, 26, Vavilov Street, 117334 Moscow, Russia; 2) Institute of Gene Biology, Russian Academy of Sciences, 34/5, Vavilov Street, 117334 Moscow, Russia; 3) Department of Preclinical Veterinary Sciences, University of Edinburgh, Summerhall, Edinburgh, EH9 1QH, Scotland, UK.

492C
Compartments are autonomous units of growth in wing disc. **Francisco A. Martin, Gines Morata.** CBMSO (CSIC-UAM), UAM (Cantoblanco), Madrid, Spain.

493A
The position and orientation of the mid-line marker, *Racing Stripe*, in supernumerary eyes. **Cathy McElwain.** Department of Biology, Loyola Marymount University, Los Angeles, CA.

494B
Threshold responses to morphogen gradients by zero-order ultrasensitivity. **Gustavo J. Melen[1], Sagi Levy[1, 2], Naama Barkai[1, 2], Ben-Zion Shilo[1].** 1) Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel; 2) Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot, Israel.

495C
The LRR protein CAPS mediates differential cell positioning in the Drosophila limb. **Kayoko Sakurai[1,3], Tetsuya Kojima[2], Toshiro Aigaki[3], Shigeo Hayashi[1].** 1) CDB, RIKEN, Japan; 2) Dept. of Biophys. & Biochem., Gra. Sch. of Sci., Univ. of Tokyo; 3) Dept. Biol. Sci., Tokyo Met.Univ.

496A
Antagonistic interaction of ventral growth control genes with Wg signaling pathway and homothorax define the ventral margin of Drosophila eye. **Amit Singh[1], Kwang-Wook Choi[1,2,3].** 1) Molecular and Cellular Biology; 2) Program in Developmental Biology; 3) Department of Opthalmology, Baylor College of Medicine, Houston, TX, 77030.

497B
Dorsal-ventral patterning of the presumptive nerve cord in the early Drosophila embryo. **Angela Stathopoulos[1,2], Mike Levine[1].** 1) Dept. of MCB, Univ. of Calif., Berkeley, CA; 2) Div. of Biology, Caltech, Pasadena, CA.

498C
Studying Fibroblast growth factor (FGF) mediated cell migration in Drosophila air sacs. **Clemens Cabernard, Markus Affolter.** Dept Cell Biol, Biozentrum, Univ Basel, Basel, Switzerland.

499A
A role for the planar cell polarity genes *frizzled* and *strabismus* in morphogenetic cell movements in the Drosophila ovary. **Rebecca Bastock, David Strutt.** Centre for Developmental Genetics, Sheffield University, Sheffield, UK.

500B
Spindle orientation during asymmetric division of the sensory organ precursor cell. **Nicolas B. David, Charlotte Martin, François Rosenfeld, Yohanns Bellaïche.** CNRS UMR 144, Institut Curie, 75248 Paris Cedex 05, France.

501C
Functional analysis of Prickle isoforms in planar cell polarity signalling. **Yung-Yao Lin[1], Michael Ashburner[1], David Gubb[2].** 1) Department of Genetics, University of Cambridge, Cambridge, United Kingdom; 2) CIC Biogune, Parque Tecnológico de Bizkaia, Edificio 801A, Derio, Spain.

502A
Identification of the kojak gene and the profiling of pupal wing RNA. **Nan Ren, C. Zhu, H. Lee, B. He, D. Stone, Paul N. Adler.** Dept Biol, University of Virginia, Morphogensis and Regenerative Medicine Institute and Cancer Center, Charlottesville, VA 22903.

503B
Involvement of the Crumbs complex in photoreceptor morphogenesis and survival in Drosophila eyes. **Melisande A. Richard, Elisabeth Knust.** Institut fuer Genetik, Heinrich-Heine Universitaet Duesseldorf, Duesseldorf, Germany.

504C
The function of *inturned*, *fuzzy* and *fritz* in controlling planar polarity. **Jie Yan, Chunming Zhu, Nan Ren, Paul Adler.** Dept Biol, Univ Virginia, Charlottesville, VA.

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505A
Screen for gain-of-function phenotypes in imaginal discs. **Nicole C. Grieder[1], Ulrich Schaefer[2], Ilias Charlafti[1], Herbert Jaeckle[2], Walter J. Gehring[1].** 1) Dept Cell Biol, Biozentrum, Basel, Switzerland; 2) Dept. of Molecular Developmental Biology, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany.

506B
Dpp utilizes two distinct mechanisms to regulate nonoverlapping subsets of pericardial cells, Odd-skipped-expressing and Tinman-expressing, to pattern the embryonic heart. **Aaron N. Johnson, Stuart J. Newfeld.** School of Life Sciences, Arizona State University, Tempe, AZ 85287-4501.

507C
Temporal control of differentiation by the Insulin receptor/Tor pathway. **Helen McNeill, Joseph Bateman.** Developmental Patterning, Cancer Research UK/ICRF, London, United Kingdom.

508A
abd-A regulates the specification and differentiation of the genital disc in *D. melanogaster*. **Audrey Christiansen, Bruce Baker.** Dept Biological Sci, Stanford Univ, Stanford, CA.

509B
Extrusion of cells with inappropriate Dpp signaling from imaginal disc epithelia. **Christian Dahmann, Jie Shen.** MPI-CBG, Dresden, Germany.

510C
Function of the *tailup* gene in the Drosophila wing discs. **Joaquín de Navascués, Juan Modolell.** CBM "Severo Ochoa", UAM-CSIC, Madrid, Spain.

511A
A genetic screen to identify genes critical for the development of the genitalia in *D. melanogaster*. **Benjamin J. Dean, Audrey E. Christiansen, Bruce S. Baker.** Biological Sciences, Stanford University, Stanford, CA.

512B
The Drosophila gene disconnected (disco) acts downstream of Distal-less to pattern antenna. **Bijan K. Dey, Ana R. Campos.** Dept Biol, McMaster Univ, Hamilton, ON, Canada.

513C
dlim1 Organizes Ventral Appendage Development in Drosophila. **Pedro Fernandez-Funez[1], Jessie Chu[2], Grace Boekhoff-Falk[3], Juan Botas[4].** 1) Dept Neurology, Univ Texas Medical Branch, Galveston, TX; 2) Department of Cell Biology, The Scripps Research Institute, 10550 N. Torrey Pines Rd., La Jolla, CA; 3) Department of Anatomy, University of Wisconsin, Madison, WI; 4) Department of Molecular and Human Genetics, Baylor College of Medicine, 1 Baylor Plaza, Houston, TX.

514A
Role of Notch and the Lines/Bowl cassette in Antennal segmentation. **Clare F. Garvey[1], Jesus deCelis Ibeas[1], Victor Hatini[2], Sarah Bray[1].** 1) Anatomy, University of Cambridge, Cambridge, England; 2) Department of Anatomy and Celular Biology, Tufts University School of Medicine, Boston, MA.

515B
Progressive patterning of sensory bristles in the Drosophila pupal leg. **Meghana Joshi[1], Kathryn Buchanan[2], Teresa Orenic[1].** 1) Dept Biol Sci, Univ Illinois, Chicago, IL; 2) Northwestern Univ., Chicago, IL.

516C
De-repression of Notch-target genes upon loss of Su(H)-function during wing development. **Thomas Klein.** Institute of Genetics, University of Cologne, Cologne, Cologne, Germany.

517A
Regulation of the eye specification gene eyes absent in Drosophila. **Justin P. Kumar, Claire L. Salzer.** Dept Biology, Indiana Univ, Bloomington, IN.

518B
Functional dissection of the Six family proteins sine oculis and optix in Drosophila eye development. **Justin P. Kumar, Brandon P. Weasner.** Dept Biology, Indiana Univ, Bloomington, IN.

519C
Odd-paired regulates adult head capsule formation in a pathway that includes *dpp*. **Heuijung Lee, Brian G. Stultz, Deborah A. Hursh.** Laboratory of Immunology and Developmental Biology, Division of Cellular and Gene Therapies, CBER/FDA, Bethesda, MD.

520A
The *zinc finger homeodomain-2* gene interacts with *Notch* signaling in leg joint morphogenesis. **C. Manjon, E. Sanchez-Herrero, M. Suzanne.** CBMSO (CSIC-UAM), Madrid, Spain.

521B
Expession of *hedgehog* in the Drosophila eye is regulated by the Ets family transcription factor *pointed* from an intronic enhancer. **Edward M. Rogers, Catherine A. Brennan, Kevin Moses.** Cell Biology, Emory University, Atlanta, GA.

522C
Antagonistic interaction between Notch and EGFR signaling establishes the joint of the Drosophila leg. **Tetsuya Shirai[1], Naruto Kiritooshi[1], Fumio Matsuzaki[2], Hideki Nakagoshi[1].** 1) Graduate School of Natural Science and Technology, Okayama University, Japan; 2) Laboratory for Cell Asymmetry, Center for Developmental Biology, RIKEN, Kobe, Japan.

523A
Genetic differences between elytra and hindwing in the red flour beetle *Tribolium castaneum*. **Yoshinori Tomoyasu, Robin E. Denell.** Div Biol, Kansas State Univ, Manhattan, KS.

524B
Regulation of *Nasonia vitripennis hunchback* gene in Drosophila. **Chiao-Lin Chen, Jeremy Lynch, Micheal Brauchle, Claude Desplan.** Biology, New York Univ, New York, NY.

525C
The evolution of *caudal* as a posterior patterning gene. **Eugenia C. Olesnicky, Claude Desplan.** Biology, New York University, New York, NY.

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526A
Mis-specified cells die by an active gene-directed process in patterning mutants. **Andreas Bergmann[1], Tom V. Lee[1], Peter L. Lee[1], Melinda Lackey[1], Christian Werz[2].** 1) UT MD Anderson Cancer Center, Department of Biochemistry & Molecular Biology, Houston, TX 77030; 2) Universität Zürich, Zoologisches Institut, Winterthurerstrasse 190, Zürich, Switzerland.

527B
Identification of a novel gene that fuctions both in enhancing Fu activity in Hh pathway and in interacting with Drok pathway in planar cell polarity. **Se-Yeon Chung[1], Sangjoon Kim[1], Jungsook Yoon[1], Paul N. Adler[2], Jeongbin Yim[1].** 1) Sch Biological Sci, Seoul National Univ, Seoul, Korea; 2) Department of Biology, University of Virginia, Charlottesville, VA.

528C
A Role for Wingless in an Early Pupal Cell Death Event that Contributes to Patterning the Drosophila Eye. **Julia B. Cordero, Omar Jassim, Sujin Bao, Ross Cagan.** Dept Molec Biol & Pharmacology, Washington Univ, St Louis, St Louis, MO.

529A
Identifying Genetic Interactors of *strabismus*. **Jennifer L. Fetting, Tanya Wolff.** Dept Genetics, Washington Univ, St Louis, MO.

530B
Role of Mod(mdg4)-67.2 domains in mediating of Su(Hw) insulator action in *D. Melanogaster*. **Anton Golovnin[1,2], Alexander Mazur[1,3], Marina Kopantseva[1,4], Maria Kurshakova[1], Brian Gilmore[5], Pamela Geyer[5], Vincenzo Pirrotta[6], Pavel Georgiev[1].** 1) Department of the Control of Genetic Processes, Institute of Gene Biology, Russian Academy of Sciences, Moscow 119334; 2) Center for Medical Studies of Oslo University, Moscow 119334; 3) Moscow Institute of Physics and Technology; 4) Institute of Molecular Biology, Moscow 119334; 5) Department of Biochemistry, University of Iowa, Iowa City, Iowa 52242; 6) Department of Zoology, University of Geneva, Geneva, Switzerland.

531C
Genetic Regulation of Cone Cell Contacts during Pupal Eye Development. **Bree K. Grillo-Hill, Tanya Wolff.** Genetics Dept, Washington Univ, St Louis, MO.

532A
Abbott and Costello meet Drosophila: body shape regulation in the developing fly. **Xiao Guan[1], Brooke W. Middlebrooks[1], Sherry Alexander[2], Steven A. Wasserman[1].** 1) Dept Biol, Univ California, San Diego, La Jolla, CA; 2) Dept Biochemistry, Univ Texas Southwestern Medical Center, Dallas, TX.

533B
T48 is involved in gastrulation in Drosophila. **Verena Koelsch, Thomas Seher, Maria Leptin.** University of Cologne, Institute for Genetics, Cologne, Germany.

534C
Potential regulation of *D. melanogaster* development by *miR-10* through repression of Hox protein expression. **Derek Lemons, William McGinnis.** Division of Biology, UCSD, La Jolla, CA.

535A
Mechanism of Hedgehog Distribution. **Vivian F. Su, Kelly Donovan, Inge The.** Gene Function & Expression, Univ Massachusetts Med Sch, Worcester, MA.

536B
Analysis of genes that enhance or suppress multipotency. **Anne E. Sustar[1], Ansgar Klebes[2,3], Tom Kornberg[2], Gerold Schubiger[1].** 1) Dept Biology, Univ Washington, Seattle, WA; 2) Dept Biochemistry, UCSF, San Francisco, CA; 3) Institut für Biologie, Genetik, Freie Universität Berlin.

Gametogenesis and Sex Determination

537C
Identification and molecular characterization of new "spindle" genes. **Vitor J. Barbosa, Frankie Kimm, Ruth Lehmann.** Developmental Genetics, NYU, Skirball Inst, New York, NY.

538A
The role of caspases in ovarian cell death. **Jason S. Baum[1], John Lien[1], Eli Arama[2], Hermann Steller[2], Kim McCall[1].** 1) Biology, Boston University, Boston, MA; 2) HHMI, Rockefeller University, NY, NY.

539B
Gene circuitry controlling a stem cell niche. **Dahua Chen, Dennis McKearin.** Dept Molecular Biol, Univ Texas SW Medical Ctr, Dallas, TX.

540C
midlife crisis is required germline stem cell maintenance in the ovary. **David Dansereau[1], Niankun Liu[1], Andrew Wilde[2], Paul Lasko[1].** 1) Biology, McGill University, Montreal, Quebec, Canada; 2) Department of Medical Genetics and Microbiology, University of Toronto, Ontario, Canada.

541A
Insulin-like peptides directly control the rate of germline stem cell division and cyst development in the adult ovary. **Daniela Drummond-Barbosa, Leesa LaFever.** Department of Cell and Developmental Biology, Vanderbilt University Medical Center, Nashville, TN.

542B
The nuclear pore complex component Nup154 functionally interacts with Cup during *D. melanogaster* oogenesis. **Silvia Gigliotti, Franco Graziani.** IGB, CNR, Via Pietro Castellino 111, 80131 Naples, Italy.

543C
Characterization of a Drosophila mutant displaying polytene chromosomes in the nurse cells. **Tom Hartl, Sarah Sweeney, Paula Campbell, Jodi Mosely, Giovanni Bosco.** Molecular & Cellular Biology, University of Arizona, Tucson, AZ.

544A
Drosophila Germline stem cell division is regulated by the microRNA pathway. **Steven D. Hatfield[1], Halyna R. Shcherbata[1], Karin A. Fischer[1], Rich W. Carthew[2], Hannele Ruohola-Baker[1].** 1) Dept. of Biochemistry, Box 357350, Univ Washington, Seattle, WA. 98105, USA; 2) Dept. of Biochemistry, Northwestern University, 2205 Tech Drive, Evanston, IL., 60208, USA.

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545B
Analysis of *stonewall* function in early oogenesis. **Jean Z. Maines[1], Nicole T. Minor[2], Joseph K. Park[1], Dennis M. McKearin[1].** 1) Molecular Biology, UT Southwestern, Dallas, TX; 2) Dept of Biological Sciences, Northern Kentucky University, Highland Heights, KY.

546C
Visualizing Apoptosis in the Drosophila Germline. **Stacy M. Mazzalupo, Lynn Cooley.** Dept Genetics, Yale University, New Haven, CT 06520.

547A
Gene expression studies of the germline stem cell and cystoblast. **Joseph K. Park, Dennis M. McKearin.** Molecular Biology, UT Southwestern Medical Ctr, Dallas, TX.

548B
Studying multiple isoforms of *hu-li tai shao* in oogenesis. **Lisa N. Petrella, Lynn Cooley.** Dept of Genetics, Yale Univ, New Haven, CT 06520.

549C
Mechanism of follicle cell-oocyte signaling that leads to oocyte polarity formation. **John Poulton, Wu-Min Deng.** Biology, Florida State University, Tallahassee, FL.

550A
Characterization of mule, a gene encoding a deubiquitinating enzyme required for ovary and testes germline development. **Jeronimo P. Ribaya[1], Frank A. Laski[1, 2].** 1) Dept MCDB, Univ California, Los Angeles, Los Angeles, CA; 2) Molecular Biology Institute, Univ California, Los Angeles, CA.

551B
A spectraplakin is the fusome component that organizes the polarized microtubule array essential for oocyte specification in Drosophila. **Katja Röper, Nicholas H. Brown.** Wellcome Trust/ Cancer Research UK Gurdon Institute and Dept. of Anatomy, University of Cambridge, Cambridge, United Kingdom.

552C
Identification of Genes Required for Developmental Programmed Cell Death During Oogenesis. **Britton P. Saxby, Jay Baum, Kim McCall.** Dept Biol, Boston Univ, Boston, MA.

553A
Genetic interaction studies and biochemical approaches to explore the female sterile mutant *missing oocyte*. **Stefania Senger, Takako Iida, Deepti Nagarkar, Dawn Sokolowski, Mary Lilly.** CBMB, NICHD/NIH, Bethesda, MD.

554B
The *Drosophila cbl* gene downregulates Egfr signaling by two distinct mechanisms. **Pei-Yu Wang[1], Shu-Ru Chen[1], Gail Barcelo[2], Wei-Ling Chang[1], Laura Nilson[3], Trudi Schüpbach[2], Li-Mei Pai[1].** 1) Department of Biochem. and Molec. Biol., Basic Medicine, Tao-Yuan, 333, Taiwan; 2) Department of Molecular Biology, Princeton University, Princeton, New Jersey, 08544, USA; 3) Department of Biology, McGill University, Montreal, QC H3A 1B1, Canada.

555C
Squash encodes a novel protein that is required during oogenesis to establish the dorsal-ventral axis of the egg. **Kristina Wehr, Trudi Schüpbach.** Dept Molecular Biol, Princeton Univ, Princeton, NJ.

556A
Analysis of somatic ring canals in Drosophila. **Stephanie J. Airoldi, Lynn Cooley.** Department of Genetics, Yale University School of Med, New Haven, CT, 06520.

557B
Cleavage of Delta by Kuzbanian-like (Kul) Regulates Formation of Stalk Cells During Oogenesis. **Efrat Assa-Kunik, Eyal Schejter, Ben-Zion Shilo.** Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel.

558C
Cell shapes and signaling in *twk* dorsal appendages. **Michael J. Boyle[1,2], Rachael L. French[2], K. Amber Cosand[2], Celeste A. Berg[1,2].** 1) Molecular and Cellular Biology Program, University of Washington, Seattle, WA; 2) Department of Genome Sciences, University of Washington, Seattle, WA.

559A
DIAP1 and Ral regulate cell shape changes of migrating centripetal cells in the Drosophila ovary. **Mirjana Gagic[1], Thomas Kessler[1], Maria Balakireva[2], Jacques Camonis[2], H-Arno J. Müller[1].** 1) Institute for Genetics, Heinrich-Heine University, Düsseldorf, Germany; 2) Inserm U528, Institute Curie, Paris, France.

560B
Identification of X-linked mutations with pleiotropic effects on eggshell protein accumulation. **Erin Greene, G. L. Waring.** Dept Biological Sci, Marquette Univ, Milwaukee, WI.

561C
stall: a somatic regulator of ovarian follicle formation. **Emily F. Ozdowski, Claire Cronmiller.** Dept Biol, Univ Virginia, Charlottesville, VA.

562A
Negative regulation of *Notch* function by the sex determination gene *Sex-lethal*. **Jill K. M. Penn, Paul Schedl.** Molecular Biology, Lewis Thomas Labs, Princeton University, Princeton, NJ.

563B
Introduction of a mutant *dec-1* transgene into wild type females results in dominant female sterility. **D. K. Spangenberg, G. L. Waring.** Dept Biological Sci, Marquette Univ, Milwaukee, WI.

564C
The role of evolutionarily conserved cysteines in the sV23 vitelline membrane protein in Drosophila eggshell assembly. **Tianyi Wu, G. L. Waring.** Dept Biological Sci, Marquette Univ, Milwaukee, WI.

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565A
The leucine zipper transcription factor *bunched* regulates proliferation and growth. **Xiaodong Wu[1], Megumu Mabuchi[1], Silvia Gluderer[2], Erick Morris[3], Hugo Stocker[2], Nick Dyson[3], Ernst Hafen[2], Laurel Raftery[1].** 1) Cutaneous Biology Research Center, Massachusetts General Hospital/Harvard Med. School, Charlestown, MA 02129, USA; 2) MGH Cancer Center, Massachusetts General Hospital/Harvard Med. School, Charlestown, MA, 02129 USA; 3) Zoological Inst., Univ. Zurich, Zurich, Switzerland.

566B
Role of *noodle* during Drosophila spermatogenesis. **Amanda C. Aldridge, Karen G. Hales.** Department of Biology, Davidson Col, Davidson, NC.

567C
Protein interaction partners of the calcium sensor protein Androcam in the Drosophila testis. **Kathleen M. Beckingham, Yung-Sheng R. Lee, Rebecca A. Simonette.** Dept Biochem & Cell Biol, Rice Univ, Houston, TX.

568A
Jak-STAT signaling and the somatic stem cells. **Crista M. Brawley, Megan Lai, Erika Matunis.** Dept Cell Biol, Johns Hopkins Univ, Baltimore, MD.

569B
Identification of factors required for germline and somatic stem cell self-renewal in the Drosophila testis. **Erin L. Davies[1], D. Leanne Jones[2], Margaret T. Fuller[1].** 1) Developmental Biology, Stanford University, Stanford, CA; 2) Laboratory of Genetics, Salk Institute for Biological Studies, La Jolla, CA.

570C
Androcam - a light chain for Myosin Vi in the Drosophila testis? **Deborah J. Frank[1], Stephen Martin[2], Yung-Sheng R. Lee[3], Rebecca A. Simonette[3], Peter M. Bayley[2], Kathryn G. Miller[1], Kathleen M. Beckingham[3].** 1) Dept. Biology, Washington Univ., St Louis, MO; 2) Divn. Physical Chemistry, Natl. Inst. Med. Res., Mill Hill, London UK; 3) Dept. Biochemistry & Cell Biology, Rice Univ., Houston, TX.

571A
Role of *Rb97D* in expression of transcripts from the *ks-1* locus of the Y chromosome. **Susan R. Haynes, John Charles Rodenberry.** Dept Biochemistry, Uniformed Services Univ, Bethesda, MD.

572B
Candidate somatic regulators of post-meiotic spermatogenesis identified in a partial screen of a GFP-tagged protein trap collection. **Christina A. Hickey, Cecylia Stabrawa, James Fabrizio.** Biology Department, College of Mount Saint Vincent/Manhattan College, Bronx, NY.

573C
A small GTPase-GEF functions in the somatic stem cells and regulates both germline and somatic stem cell self-renewal in Drosophila testis. **Steven X. Hou, Hong Wang, Zhiyu Zheng, Su-Wan Oh, Xiu Chen, Shree Ram Singh.** The Laboratory of Immunobiology, NCI-Frederick, Frederick, MD. 21702-1201.

574A
Identification of testis-specific genes in *D. melanogaster* using oligonucleotide microarrays. **Lyudmila Mikhaylova, Dmitry Nurminsky.** Dept. of Anatomy, Tufts Univ. Sch. of Medicine, Boston, MA.

575B
In Drosophila, both *don juan* and *don juan like* encode proteins of the sperm nucleus and the flagellum and both are regulated at the transcriptional level by the TAFII80 Cannonball while translational repression is achieved by distinct elements. **Christina Rathke[1], Leonie Hempel[2], Sunil Jayaramaiah Raja[1], Renate Renkawitz-Pohl[1].** 1) Developmental Biology, Philipps-University, Marburg, Germany; 2) Laboratory of Cellular and Developmental Biology, NIDDK, NIH, Bethesda, MD, USA.

576C
Characterization of primordial germ cell behavior in the male drosophila gonad. **Xuting Sheng[1], Matthew Wawersik[2], Mark Van Doren[2], Erika Matunis[1].** 1) Cell Biology, Johns Hopkins University, Baltimore, MD; 2) Biology, Johns Hopkins University, Baltimore, MD.

577A
Milton functions in mitochondrial elongation during Drosophila spermatogenesis. **Benjamin T. Whigham[1], Monica M. Siegenthaler[1], R. Steven Stowers[2], Karen G. Hales[1].** 1) Department of Biology, Davidson College, Davidson, NC; 2) Department of Molecular and Cellular Biology, UC Berkeley, Berkeley, CA.

578B
Spermeye, a hot spot for spermiogenesis mutations in Drosophila. **Bibi Shalimar Yamin, Janet Rollins, Tania Nevers, Christopher Bazinet.** Dept Biol, St John's Univ, Queens, NY,11439.

579C
Spermatogenic expression patterns and male-sterile phenotypes associated with testis-specific proteasome subunit genes. **Lei Zhong, Xiazhen Li, John Belote.** Department of Biology, Syracuse University, Syracuse, NY.

580A
Regulation of sexual dimorphism in the Drosophila gonad. **Tony J. De Falco, Mark Van Doren.** Dept. of Biology, Johns Hopkins University, Baltimore, MD.

581B
Fusion of the male reproductive tract depends on *dmrt11E* and *dmrt93B*, two *doublesex*-related genes. **William Mattox, Shihuang Su, M. Elaine McGuffin, Shoubin Wen, Jeff Villinski, Dong-Qing Xu.** Department of Molecular Genetics, University of Texas, M.D. Anderson Cancer Ctr, Houston, TX.

582C
Acp36DE mediates organization of sperm in the uterus of mated female *D. melanogaster*. **Erika M. Adams, Mariana F. Wolfner.** Molecular Biology and Genetics, Cornell University, Ithaca, NY.

583A
GFP-based RNA splicing reporters reveal widespread activity of sex determination factors. **Diana R. O'Day, M. Elaine McGuffin, Sihuang Su, William Mattox.** Dept. of Molecular Genetics, M.D. Anderson Cancer Center, Houston, TX.

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584B
Germline-dependent gene expression in somatic tissue. **Michael J. Parisi[1], Rachel Nuttall[2], Jining Lu[1], Scott Eastman[2], Brian Oliver[1].** 1) LCDB, NIDDK/National Institutes of Health, Bethesda, MD; 2) Incyte Genomics, Palo Alto, CA.

585C
Destinations of male accessory gland proteins in mated female *D. melanogaster* and their functional implications. **Kristipati Ravi Ram, Shuqing Ji, Mariana F. Wolfner.** Department of Molecular Biology & Genetics, Cornell University, Ithaca, NY 14853, USA.

586A
Characterization of Egg Activation in *D. melanogaster.*. **Vanessa L. Horner, Mariana F. Wolfner.** Dept Molec Biol & Genetics, Cornell Univ, Ithaca, NY.

587B
A male sterile mutation, *ms(2)n55*, affects sperm utilization by female, sperm entry into the egg and the male pronuclear formation. **Fumihiko Kakizaki[1], Hara Masanori[1], Takashi Ohsako[1,2], Masa-Toshi Yamamoto[1].** 1) Drosophila Genet. Res. Ctr., Kyoto Inst. Tech., Kyoto, Japan; 2) Soc. Edu. Found., Nara, Japan.

588C
misfire, a paternal fertilization gene, encodes a member of the ferlin family protein. **Takashi Ohsako[1,2], Hiroshi Matsubayashi[1], Masa-Toshi Yamamoto[1].** 1) Drosophila Genet. Res. Ctr., Kyoto Inst. Tech., Kyoto, Japan; 2) Soc. Edu. Found., Nara, Japan.

589A
The tumor suppressor APC potentiates Wolbachia's interaction with the cytoskeleton during Drosophila oogenesis. **Horacio M. Frydman, Jennifer M. Li, Eric F. Wieschaus.** Dept Molecular Biol, HHMI, Princeton Univ, Princeton, NJ.

590B
Poe: a gene affecting organizational dynamics of germline cells. **Janet E. Rollins, Christopher Bazinet.** Dept Biological Sci, St John's Univ, Queens, NY.

Organogenesis

591C
Function of Tinman in cardiomyocyte maturation via regulation of the ABC-type membrane protein encoded by dSUR. **Takeshi Akasaka, Susan Klinedinst, Rolf Bodmer.** The Burnham Institute, La Jolla, CA.

592A
Projectin as the elastic component of IFM myofibril. **Agnes J. Ayme-Southgate[1], Richard J. Southgate[1], Judith Saide[2], Kristen Williams[1], Kathleen Kirven[1], Rachel Fowler[1], Magdalena Winkowski[1].** 1) Dept Biol, Col Charleston, Charleston, SC; 2) Dept of Physiology, Boston University School of Medicine, Boston, MA.

593B
Targeting and interactions of various domains of the protein projectin to the myofibrillar apparatus during muscle development. **Agnes J. Ayme-Southgate, Richard Southgate, Christy Larkins, Kristen Williams, Kathleen Kirven, Rachel Fowler, Magdalena Winkowski.** Dept Biol, Col Charleston, Charleston, SC.

594C
Rac1 Controls Myoblast Behaviour during Flight Muscle Development in Drosophila. **Krishan Badrinath, Amita Desai, Rachel Hall, Meatal Patel, Joyce Fernandes.** Department of Zoology, Miami Univ, Oxford, OH 45056.

595A
The Role of MEF2 in Post-Embryonic Muscle Development. **Phillip W. Baker, Jennifer Brower, Richard M. Cripps.** Biology, Univ New Mexico, Albuquerque, NM.

596B
Essential Tyrosine residues in its cytodomain direct SNS-mediated myoblast fusion. **Kiranmai S. Kocherlakota[1, 2], Susan M. Abmayr[1].** 1) Stowers Institute for Medical Research, 1000 E 50th St, Kansas City, MO; 2) Cell and Developmental Biology, Huck Institute of Life Sciences, Penn State University, University Park, PA 16802.

597C
Analysis of myoblast fusion using genetics, live imaging, and primary cell culture. **Brian E. Richardson[1], Mary K. Baylies[2].** 1) Weill Graduate School of Medical Sciences at Cornell University, New York, NY; 2) Developmental Biology Program, Sloan-Kettering Institute, New York, NY.

598A
Hox Genes and the Patterning of the Drosophila Dorsal Vessel. **Kathryn M. Ryan, Jennifer Ikle, Richard Cripps.** Biology, University of New Mexico, Albuquerque, NM.

599B
Remodeling of the Drosophila heart during metamorphosis. **Ankita Shah, Christina O. Fridrick, Damian Trujillo, Richard M. Cripps.** Department of Biology, University of New Mexico, Albuquerque, NM.

600C
Investigating the role of SNS post-translational modification in myoblast adhesion and migration. **Claude Shelton IV[1,3], Jungwook Hwang[2], Susan Abmayr[1,2,3].** 1) Interdisciplinary Graduate Program in Biomedical Sciences, University of Kansas Medical Center, Kansas City, Kansas 66160; 2) Department of Biochemistry and Molecular Biology, Penn State University, University Park, PA 16802; 3) Stowers Institute for Medical Research, 1000 E 50th Street, Kansas City, MO 64110.

601A
Identification of novel HOW mRNA targets using a microarray screen and consensus-RNA binding motif. **Hila Toledano-Katchalski, David Israeli, Ronit Nir, Talila Volk.** Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel.

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602B
AdfR functions downstream of *twist* to regulate mesoderm function. **Gregor Zimmermann[1], Eileen Furlong[2], Matthew Scott[1].** 1) Department of Developmental Biology, Stanford University, Stanford, CA; 2) Developmental Biology Programme, EMBL, Heidelberg, Germany.

603C
The screening of 700 Drosophila lines from an EMS mutagenesis collection revealed several heart phenotypes. **Stefanie Albrecht, Achim Paululat.** Department of Biology, University of Osnabrueck, Osnabrueck, Germany.

604A
Hematopoietic Development in the Drosophila Lymph Gland. **Cory J. Evans, Seung Hye Jung, Utpal Banerjee.** Dept MCD Biol, Univ California, Los Angeles, Los Angeles, CA.

605B
Role of the *sprite* gene encoding a PDZ domain protein in the Drosophila heart development. **Yong-Ou Kim, Sang-Joon Park, Kazuyo Takeda, Robert Balaban, Yongsok Kim.** National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD.

606C
neuromancer T-box genes promote cardiac cell fate specification and morphogenesis. **Li Qian[1,2], Jiandong Liu[1,2], Rolf Bodmer[2].** 1) Dept Biol, Univ Michigan, Ann Arbor, MI; 2) The Burnham Institute, La Jolla, CA.

607A
Dynamics of heart differentiation, visualized utilizing heart enhancer elements of the *D. melanogaster* bHLH transcription factor Hand. **Julia Sellin, Achim Paululat.** Department of Biology, University of Osnabrueck, Osnabrueck, Germany.

608B
Genetic control of lumen diameter expansion in the trachea. **Satish J. Arcot, Kirsten-André Senti, Johanna Hemphälä, Christos Samakovlis.** Developmental Biology, Wenner Gren Institute, Stockholm University, Stockholm, Sweden.

609C
Tec29 is necessary for the invagination of the embryonic salivary glands. **Vidya Chandrasekaran, Steven K. Beckendorf.** Department of Molecular and Cell Biology, University of California, Berkeley, CA.

610A
derailed and *Wnt5* Guide Salivary Gland Migration in the Drosophila Embryonic Salivary Glands. **Katherine E. Harris, Steven K. Beckendorf.** Dept Molecular & Cell Biol, Univ California, Berkeley, CA.

611B
Hedgehog and Decapentaplegic instruct polarized growth of cell extensions in the Drosophila trachea. **Kagayaki Kato[1], Takahiro Chihara[2], Shigeo Hayashi[1].** 1) CDB, RIKEN, KOBE, Hyogo, Japan; 2) Biological Sciences, Stanford University, Stanford, CA.

612C
Axon guidance molecules NETRIN and SLIT also mediate salivary gland migration. **T. Kolesnikov, S. K. Beckendorf.** Dept MCB, Univ California, Berkeley, Berkeley, CA.

613A
Rac GTPase controls salivary gland morphogenesis through cadherin-mediated adhesion. **Monn M. Myat, Carolyn Pirraglia, Rakhi Jattani.** Cell & Dev Biol, Weill Med Col, Cornell Univ, New York, NY.

614B
Non-ion pump activities of the Na K ATPase are required for tracheal tube-size control and septate junction function. **Sarah M. Paul[1], Michael J. Palladino[2], Greg J. Beitel[1].** 1) Dept. BMBCB, Northwestern Univ, Evanston, IL; 2) Dept. Pharmacology, Univ. of Pittsburgh, Pittsburgh, PA.

615C
Malpighian tubule and cryptonephridial organ development in *Tribolium castaneum*. **Teresa D. Shippy, Robin E. Denell.** Div Biol, Kansas State Univ, Manhattan, KS.

616A
Characterization of a new tracheal tube expansion mutant. **Erika L. Tang, Anne E. Uv.** Dept. of Medical Biochemistry, Gothenburg, Sweden.

617B
A role for luminal extra cellular matrix in tracheal tube expansion. **Anna Tonning, Erika L. Tång, Anne E. Uv.** Medical Biochemistry, Gothenburg, Sweden.

618C
Segmental groove morphogenesis in the Drosophila embryo. **Stephane Vincent[1], Norbert Perrimon[2], Jeff Axelrod[1].** 1) Dept Pathology, Stanford Uni. Sch. of Medicine, Stanford, CA; 2) Dpt Genetics, Harvard Medical School, Boston, MA.

619A
Characterization of *dumpy* mutations at the molecular level. **Amber Carmon, Micheal Guertin, Ross MacIntyre.** Molecular Biology and Genetics, Cornell University, Ithaca, NY., United States.

620B
The Role of Dorsal Closure in Heart Morphogenesis. **Allison MacMullin, J. Roger Jacobs.** Dept Biol, McMaster Univ, Hamilton, ON, Canada.

621C
Grainy head regulates the biosynthesis and assembly of the apical extracellular matrix during tubulogenesis. **Shenqiu Wang[1], Johanna Hemphälä[1], Marco Gallio[1], Haining Jin[1], Rafael Cantera[2], Christos Samakovlis[1].** 1) Department of Developmental Biology, Wenner-Gren Institute, Stockholm University, S-10691 Stockholm, Sweden; 2) Department of Zoology, Stockholm University, S-10691 Stockholm, Sweden.

622A
Identification of the upstream factors of *homothorax*. **Su-Yi Chen[1,2], Ju-Yu Wang[2], Y. Henry Sun[1,2].** 1) Genetics, National Yang-Ming University, Peitou, Taiwan; 2) Molecular Biology, Academia Sinica, Taipei, Nankang, Taiwan.

623B
Role of *D-Six4* in embryonic muscle and gonad development. **Ivan B. N. Clark[1], Joanna Boyd[1], Theo Kiosses[2], Raphaella Kitson-Pantano[1], David J. Finnegan[2], Andrew Jarman[1].** 1) Division of Biomedical Sciences, University of Edinburgh, Scotland; 2) Institute of Cell Biology, University of Edinburgh, Scotland.

624C
Identification and molecular analysis of cis-regulatory elements of *unpaired* in Drosophila eye development. **Ya-Hsin Liu[1,2], Y. Henry Sun[1,2].** 1) Institute of Genetics, National Yang-Ming University, Taipei, Taiwan, Republic of China; 2) Institute of Molecular Biology, Academia Sinica, Nankang, Taipei, Taiwan, Republic of China.

625A
Archipelago regulates tracheal morphogenesis in the Drosophila embryo. **Nathan T. Mortimer, Kenneth H. Moberg.** Department of Cell Biology, Emory University, Atlanta, GA.

626B
Mutation of a small GTPase-GEF results in the supernumerary spermathecae formation of the females of *D. melanogaster*. **Shree R. Singh, Su-Wan Oh, Zhiyu Zheng, Xiu Chen, Kevin Edwards, Steven X. Hou.** The Laboratory of Immunology, National Institutes of Health, National Cancer Institute, Frederick, MD 21702.

627C
Localized Notch signal acts through *upd* to promote global growth in Drosophila eye. **Yu-Chen Tsai, Y. Henry Sun.** Inst of Molecular Biol, Academia Sinica, Taipei,Taiwan, Republic of China.

628A
Overexpression of the transcription factor Dip3 causes a negative effect on the eye formation. **Cheng Wei Wang[1], Su Yi Cheng[2], Hao Anh Duong[3], Vinay Bhaskar[3], Albert J. Courey[3], Y. Henry Sun[1,2].** 1) Academia Sinica, Institute of Molecular Biology, Taipei, Nankang, Taiwan, Republic of China; 2) Institute of Genetics, National Yang-Ming University, Taipei, Taiwan, Republic of China; 3) Chemistry and Biochemistry, UCLA, Los Angeles, CA.

629B
Identification and characterization of cis-regulatory element of eyg in Drosophila eye development. **Lan-Hsin Wang[1,2], Henry Y. Sun[1,2].** 1) National Defense Medical Center, Graduate Institute of Life Sciences, Taipei, Taiwan, Republic of China; 2) Academia Sinica, Institute of Molecular Biology, Taipei, Nankang, Taiwan, Republic of China.

630C
Varicose encodes a septate junction associated MAGUK required for tracheal tube size control. **Victoria M. Wu, Marcus Yu, Greg Beitel.** Dept Biochemistry, Northwestern Univ, Evanston, IL.

631A
The Pax protein Eyg acts as a transcriptional repressor in promoting eye development in Drosophila. **Jih-Guang Yao[1,2], Y. Henry Sun[1,2].** 1) Institute of Genetics, National Yang-Ming University, Shipai, Taipei; 2) Institute of Molecular Biology, Academia Sinica, Nankang, Taipei, Taiwan, Republic of China.

Neurogenetics and Neural Development

632B
The Non-Classical Cadherin Flamingo Specifies Photoreceptor Target Selection via Interactions Amongst Afferent Growth Cones. **Pei-Ling Chen, Thomas R. Clandinin.** Neurobiology, Stanford University, Stanford, CA.

633C
A screen for mutants defective in synaptic partner choice in the Drosophila lamina. **Kwang-Min Choe, Ali Bright, Thomas R. Clandinin.** Department of Neurobiology, Stanford University, Stanford, CA.

634A
The egghead gene is required for axon targeting of photoreceptor neurons in the Drosophila visual system. **Yun Fan[1], Matthias Soller[2], Martin Hollmann[3], Martin Müller[1], Susanne Flister[1], Bruno Bello[1], Boris Egger[4], Heinrich Reichert[1].** 1) Biozentrum/Pharmazentrum, University of Basel, CH4056 Basel, Switzerland; 2) Department of Biology and Volen Center for Complex Systems, Brandeis University, Massachusetts 02454, USA; 3) FB18 Zoologie/Entwicklungsbiologie, University of Kassel, Kassel 34132, Germany; 4) Wellcome Trust/Cancer Research Gurdon Institute, University of Cambridge, Cambridge CB2 1QR, U.K.

635B
Genome-wide search for the neuromuscular target recognition molecules in Drosophila using single cell expression analysis. **Mikiko Inaki[1], Yoshie Sizuki[1], Hiroyuki Aburatani[2], Akinao Nose[1].** 1) Department of Physics, Graduate School of Science, University of Tokyo; 2) Research Center of Advanced Science and Technology, University of Tokyo.

636C
Characterization of receptor tyrosine phosphatase PTP4E. **Mili Jeon[1], Aloisia Schmid[2], Kai Zinn[1].** 1) Division of Biology, Caltech, Pasadena, CA; 2) Eccles Institute of Human Genetics, University of Utah, Salt Lake City, UT.

637A
Axon Sorting in the Adult Olfactory System. **Marc Lattemann, Ariane Zierau, Georg Steffes, Daniel Engelen, Thomas Hummel.** Dept Neurobiology, University Muenster, Muenster, Germany.

638B
A screen for dominant enhancers of a *trio* mutant phenotype. **Eric C. Liebl[1], Jessica A. Smith[1], Julianne R. McCall[1], Mark A. Seeger[2].** 1) Dept Biol, Denison Univ, Granville, OH; 2) Neurobiotechnology Center, The Ohio State University, Columbus, OH.

639C
Genetic analysis of photoreceptor target choice. **Joshua D. Mast, Thomas R. Clandinin.** Department of Neurobiology, Stanford University, Stanford, CA.

640A
Elucidation of the signaling pathway and role of Alp23b in neuronal development. **Louise Parker[1], Jeremy Ellis[1], Jason E. Duncan[2], Kavita Arora[1].** 1) Developmental and Cell Biology, U.C. Irvine, Irvine, CA 92697; 2) HHMI, Department of Cellular and Molecular Medicine, U.C. San Diego, La Jolla, CA 92093.

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641B
Signal transduction through Drl, an atypical receptor tyrosine kinase and Wnt receptor. **Renee D. Read, John B. Thomas.** Molecular Neurobiology Laboratory, The Salk Institute, San Diego, CA.

642C
DWnt4 regulates the dorsoventral specificity of retinal projections in the Drosophila visual system. **Makoto Sato[1], Daiki Umetsu[1], Satoshi Murakami[1], Takeshi Awasaki[2], Kei Ito[2], Tetsuya Tabata[1].** 1) Lab. of Morphogenesis, IMCB, Univ Tokyo, Tokyo, Japan; 2) Lab. of Structural Information, IMCB, Univ Tokyo, Tokyo, Japan.

643A
Frazzled Regulation of Myosin. **Joy N. Talbot, Mark F. A. VanBerkum.** Biological Sciences, Wayne State University, Detroit, MI.

644B
Requirement of N-Cadherin Functions in Synaptogenesis. **Shu-Ning Hsu[1], Shinichi Yonekura[2], Youichi Iwai[3], Irina Vasenkova[4], Tadashi Uemura[3], Hugh M. Robertson[4], Chi-Hon Lee[2], Akira Chiba[1,4].** 1) Neuroscience Program, Univ. of Illinois, Urbana; 2) Unit on Neuronal Connectivity, LGRD, NICHD, NIH; 3) School of Science and The Virus Institute, Kyoto University, Kyoto, Japan; 4) Department of Cell and Structural Biology, University of Illinois, Urbana.

645C
Mutations Affecting Synaptic Specificity in the Adult Olfactory System. **Thomas Hummel, Georg Steffes, Ariane Zierau, Britta Kuhlmann, Milan Petrovic.** Dept of Neurobiology, University Muenster, Muenster, Germany.

646A
A Genetic Screen for Suppressors of NSF2 Neuromuscular Junction Overgrowth. **Matthew J. Laviollette[1], Paula Nunes[1], Jean Baptiste Peyre[2], Toshiro Aigaki[2], Bryan A. Stewart[1].** 1) Div Life Sci, Univ Toronto, Toronto, ON, Canada; 2) Tokyo Metropolitan University, Tokyo, Japan.

647B
Heparan sulfate proteoglycans play a role in synapse assembly and function. **Yi Ren, Joel Rawson, Scott Selleck.** Department of Genetics, Cell Biology & Developmental Biology, University of Minnesota, Minneapolis, MN.

648C
Autonomous Growth Cones Require Cell Body at Synaptogenesis. **Scott A. Siechen, Akira Chiba.** Dept Cell & Structural Biol, Univ Illinois, Urbana, IL.

649A
Dynamic Switching of Axonal Transport for the Drosophila Hikaru genki and Amyloid Precursor-like Proteins during synaptogenesis. **Masaki Sone[1, 2], Megumi Utsugi-Asada[1, 2], Daisuke Yamashita[1], Mikio Hoshino[1, 2], Yo-ichi Nabeshima[1].** 1) Dept Pathology Tumor Biol, Kyoto Univ Grad Sch Medicine, Kyoto, Japan; 2) PRESTO, JST, Japan.

650B
Exploring the interaction between Notch/Numb pathway members and genes of temporal cascade in Drosophila CNS. **Burcu Babaoglan, Jim Skeath.** Dept Genetics, Washington Univ, St. Louis, St. Louis, MO.

651C
Spalt transcription factors are required for R3/R4 specification and establishment of planar cell polarity in the Drosophila eye. **Pedro M. Domingos[1], Marek Mlodzik[2], César S. Mendes[1], Samara Brown[1], Hermann Steller[1], Bertrand Mollereau[1].** 1) Howard Hughes Medical Institute, Strang Laboratory of Cancer Research, The Rockefeller University, Box 252, 1230 York Avenue. New York, NY 10021, USA; 2) Brookdale Department of Molecular, Cell and Developmental Biology, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029, USA.

652A
A conserved function for two Drosophila homologs of *Chx10* in the optic lobe. **Ted Erclik[1], Volker Hartenstein[2], Rod McInnes[1], Howard Lipshitz[1].** 1) Dept Developmental Biology, Hospital for Sick Children, Toronto, ON, Canada; 2) Dept Molecular, Cell and Developmental Biology, UCLA, Los Angeles, CA.

653B
Notch and Delta are sequestered in endocytic vesicles in *fred* mutant tissue. **Mike Gitcho, Susan Spencer.** Biology, Saint Louis University, St. Louis, MO.

654C
Genome-wide analysis of the downstream genes of the proneural genes in the embryonic nervous system. **Eimear E. Holohan, Anna Kremer, Andrew P. Jarman.** Biomedical and Clinical Sc, The University of Edinburgh, Edinburgh, Scotland.

655A
seven-up controls switching of transcription factors that specify temporal identities of Drosophila neuroblasts. **Makoto Kanai[1], Masataka Okabe[1,2], Yasushi Hiromi[1,2,3].** 1) Developmental Genetics, National Inst Genetics, Mishima, Japan; 2) Department of Genetics, SOKENDAI, Mishima, Japan; 3) CREST, JST, Japan.

656B
Chimaeric proteins of Amos and Atonal show that functional specificity does not reside in the bHLH domain alone. **Sam S. M. T. Maung, Andrew P. Jarman.** Biomedical and Clinical Sci, University of Edinburgh, Edinburgh, Midlothian, Scotland.

657C
Defective proventriculus specifies opsin patterning for color vision of Drosophila. **Hideki Nakagoshi, Hideaki Kitagoori, Masato Takeuchi.** Graduate School of Natural and Science Technology, Okayama University, Japan.

658A
Alternative splicing removes an Ets interaction domain from Lozenge during eye development. **John A. Pollock[1], Tara Cheung[1], Kristina Behan[2], Shalini Singh[1].** 1) Div Biological Sci, Duquesne Univ, Pittsburgh, PA; 2) University of West Florida, Pensacola, FL.

659B
Structure-Function Analysis of the Neurogenic Gene Product Big Brain. **Maia K. Renihan[1,2], Gabrielle L. Boulianne[1,2].** 1) Developmental Biology, Hospital for Sick Children, Toronto, Ontario, Canada; 2) Department of Medical Genetics and Microbiology, University of Toronto, Toronto, ON.

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660C
Cell lineage analysis of the brain insulin-producing neurons reveals a single bilateral neuroblast progenitor. **Eric J. Rulifson, Daniel Carlin.** Cell & Developmental Biology, University of Pennsylvania, Philadelphia, PA.

661A
Notch lacking the intracellular domain is involved in neurogenesis. **Cedric S. Wesley, Matthew LeComte, Lee-Peng Mok, Boris Bardot.** Micro. and Molecular Genetics, The University of Vermont, Burlington, VT.

662B
Multiple mechanisms govern dendritic targeting of Drosophila Dscam. **Jacob S. Yang[1], Jia-min Bai[2], Jian Wang[1], Tzumin Lee[1,2].** 1) Cell and Structural Biology, University of Illinois, Urbana, IL; 2) Neuroscience Program, University of Illinois, Urbana, IL.

663C
Chinmo: a novel BTB-zinc finger protein required for specification of neuronal temporal identity in the developing Drosophila nervous system. **Sijun Zhu[1], Tzumin Lee[2].** 1) Department of Molecular and Integrative Physiology, University of Illinois at Urbana-Champaign, IL; 2) Department of Cell and Structural Biology, University of Illinois at Urbana-Champaign, Urbana, IL.

664A
Programmed cell death of identified peptidergic neurons in *D. melanogaster*. **Youn J. Choi, Gyunghee Lee, Jae H. Park.** Biochemistry & Cellular & Molecular Biology, University of Tennessee, Knoxville, TN.

665B
Investigations into apoptosis in the developing embryonic nervous system of *D. melanogaster*. **Ana Rogulja-Ortmann, Karin Lüer, Janina Seibert, Gerd Technau.** Institute for Genetics, University of Mainz, Mainz, Germany.

666C
The Drosophila longevity gene *Dlag1* is involved in neuronal development. **Reinhard Bauer, Franka Eckardt, Michael Hoch.** Institute of Molecular Physiology and Developmental Biology, Bonn, Germany.

667A
Transcriptional control of glial cell development in Drosophila: cis-regulatory elements of the Gcm target gene repo. **Bradley W. Jones[1,2], Bruce P. Lee[2].** 1) Department of Biology, The University of Mississippi, Oxford, MS; 2) Skirball Institute, NYU School of Medicine, New York, NY.

668B
Increased Ras activity in the prothoracic gland decreases fly size. **Philip E. Caldwell, Magdalena A. Walkiewicz, Michael Stern.** Department of Biochemistry and Cell Biology, Rice University, Houston, TX.

669C
The function of EcR-A during steroid hormone induced neuronal remodeling in Drosophila. **Kate A. Reifsnider, Michael Bender.** Department of Genetics, University of Georgia, Athens, GA.

670A
Gene misexpression screen to identify novel determinants of embryonic CNS development. **Heather T. Broihier[1,2], Yi Zhu[2], Aaron DiAntonio[3], James B. Skeath[2].** 1) Neurosciences, Case Western Reserve Univ., Cleveland, OH; 2) Genetics, Washington University School of Medicine, St. Louis, MO; 3) Molecular Biology and Pharmacology, Washington University School of Medicine, St. Louis, MO.

671B
Development of the pars intercerebralis in Drosophila. **Begona de Velasco, Volker Hartenstein.** Dept MCDB, Univ California, Los Angeles, Los Angeles, CA.

672C
A neurodegenerative disease in Drosophila mutant for the tumor suppressor morphogen Patched. **Michal Gazi, Baragur V. Shyamala, Krishna Moorthi Bhat.** Department of Cell Biology, Emory University School of Medicine, Atlanta, GA.

673A
Regulation of temporal identity transitions in Drosophila neuroblasts. **Ruth Grosskortenhaus, Bret J. Pearson, Amanda Marusich, Chris Q. Doe.** Institutes of Neuroscience and Molecular Biology and Howard Hughes Medical Institute, University of Oregon 1254, Eugene, OR 97403.

674B
Analysis of an *orb* related gene, *orb2*, in the Drosophila central nervous system. **Nathaniel S. Hafer, Paul Schedl.** Dept Molecular Biol, Princeton Univ, Princeton, NJ.

675C
Neurodegenerations and mutations in *D. melanogaster* instable loci as the reasons of accelerative aging in induced mutants. **Nataliya Holub, Yaroslava Chernyk.** Department of Genetics & Biotechnology, National University, Lviv, Ukraine.

676A
A molecular map of CNS midline cell development. **Joseph B. Kearney[1], Scott R. Wheeler[1], Patricia Estes[2], Beth Parente[1], Stepen T. Crews[1].** 1) Program in Molecular Biology and Biotechnology, UNC Chapel Hill, Chapel Hill, NC; 2) Department of Genetics, NC State University, Raleigh, NC.

677B
Disruption of the MAP1B-related protein FUTSCH leads to changes in the neuronal cytoskeleton, axonal transport defects and progressive neurodegeneration in Drosophila. **Doris Kretzschmar[1], Alexandre Bettencourt da Cruz[1], Martin Schwaerzel[2], Sabine Schulze[1], Martin Heisenberg[2].** 1) Dept CROET, Oregon Health & Sciences Univ, Portland, OR; 2) Lehrstuhl für Genetik und Neurobiologie, Biozentrum, Universität Würzburg, Am Hubland, 97074 Würzburg, Germany.

678C
The role of ZFH-1 during development of the Drosophila NB7-3 lineage. **Hyung-Kook Lee, Martha J. Lundell.** Dept Biol, Univ Texas, San Antonio, San Antonio, TX.

679A
Genetic control of *D. melanogaster* neurodegenerative mutants induced by ethylmethanesulphonate. **Matiytsiv Nataliya.** Department of Genetics and Biotechnology, Ivan Franko National University, L'viv, Ukraine.

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680B
The role of Notch and Wingless signaling in the serotoninergic lineage of Drosophila. **Ernesto Pérez, Jr.** Dept Biol, Univ Texas, San Antonio, San Antonio, TX.

681C
Transcriptional targets of Prospero in the developing nervous system of Drosophila. **Tony D. Southall, Adrian Carr, Semil Choksi, Andrea Brand.** Wellcome CRUK Gurdon Institute, Cambridge, UK.

682A
vnd and *msh* function in embryonic brain development of *D. melanogaster*. **Simon G. Sprecher[1], Rolf Urbach[2], Frank Hirth[1], Gerhard M. Technau[2], Heinrich Reichert[1].** 1) Institute of Zoology, Biozentrum/Pharmazentrum, Basel, Switzerland; 2) Institut für Genetik, Universität Mainz, Germany.

683B
ptpmeg is required for mushroom body morphogenesis. **Jessica L. Whited, Timothy D. Tayler, Myles B. Robichaux, Caleb J. Kennedy, Monique Brouillette, Joyce C. Yang, Paul A. Garrity.** Biol, MIT, Cambridge, MA.

684C
Senseless, a binary switch for sensory organ precursor selection. **Melih Acar[1], Hamed Jafar-Nejad[2], Gabriela David[2], Sasidhar Yallampalli[3], Hugo J. Bellen[1,2,4].** 1) Program in Developmental Biology, Baylor College of Medicine, Houston, TX; 2) Department of Molecular and Human Genetics; 3) Medical School; 4) HHMI.

685A
Negative Regulators of the Notch signaling component, Neuralized. **Allison J. Bardin.** Biology, Ecole Normale Supérieure, Paris, France.

686B
A study of the allelic nature of the synergistic interaction observed in the *discs-large^{misb}* and *strawberry notch* double mutant. **Catherine A. Coyle-Thompson, Mila Lemos, Joy Hill, Elsa Garcia, Virginia Avila, Claudia Hernandez, Jessica Liu.** Dept Biol, California State Univ, Northridge, CA.

687C
A genetic screen to identify rhodopsin maturation and trafficking mutants. **Karen L. Hibbard, Joseph E. O'Tousa.** Biological Science, Univ. of Notre Dame, Notre Dame, IN.

688A
Role of Gα49B in the visual and olfactory system of *D. melanogaster*. **Pinky Kain[1], Gaiti Hasan[1], Veronica Rodrigues[1,2].** 1) National Centre for Biological Sciences (TIFR), GKVK Campus Bellary Road, Bangalore, Karnataka, India; 2) Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India.

689B
Identification of *eyes shut*, a novel gene involved in lumen formation and retinal morphogenesis. **Nicole E. Miller[1], Tom Clandinin[2], Ulrich Tepass[1].** 1) Zoology, University of Toronto, Toronto, ON, Canada; 2) Department of Neurobiology, Stanford University, Stanford, California.

690C
insensitive makes bristles numb. **Nick L. Reeves, James W. Posakony.** Div Biol/CDB, MC 0349, Univ California, San Diego, La Jolla, CA.

691A
Characterization of the Drosophila *ninaB* and *ninaD* genes involved in rhodopsin chromophore biosynthesis. **Jing Yang, Joseph O'Tousa.** Dept. Biological Sci, Univ. of Notre Dame, Notre Dame, IN 46556.

692B
Specificity of Bnl and Hh signaling for neuroblast reactivation in the larval CNS. **Andrea L. Barrett, Sumana Datta.** Biochemistry and Biophysics, Texas A&M University, College Station, TX.

693C
Development of a genetic marking system for mushroom body dendrites in primary neuronal culture. **Mindy M. Escobar, Robert Kraft, Linda L. Restifo.** ARL Division of Neurobiology, University of Arizona, Tucson, AZ.

694A
Screens for Genes Regulating the Spatiotemporal Division Patterns of Neuroblasts. **Julia L. Pendred, Cedric Maurange, Louise Cheng, Alex Gould.** MRC Nat. Inst. Medical Res., London, UK.

695B
AP-1 regulation of neuronal growth and polarity in-vitro. **Cortnie C. Short[1], Subhabrata Sanyal[2], Mani Ramaswami[2,3], Richard B. Levine[1,3].** 1) Physiological Sciences, University of Arizona, Tucson, AZ; 2) Molecular and Cellular Biology; 3) Neurobiology.

696C
Structure-function analysis of the Drosophila protein Bazooka. **Nannette Fischer, Andreas Wodarz.** Institute for Genetics, Heinrich-Heine-University, Düsseldorf, NRW, Germany.

697A
Transferring the presenilin gene from *Arabidopsis thaliana* to *D. melanogaster*. **Tara M. Kiss, Christopher J. Jones.** Department of Biology, Moravian College, Bethlehem, PA.

698B
A Drosophila model of SPG4 linked Hereditary Spastic Paraplegia. **Genny Orso[1,2], Maria Giovanna Rossetto[1,2,3], Elena Sartori[1,2], Andrea Daga[1,2,3].** 1) Dept Pharmacology, Univ Padova, Padova, Italy; 2) Dulbecco Telethon Institute, Univ Padova, Italy; 3) Scientific Institute E. Medea, Conegliano, Italy.

699C
Functional analysis of the Drosophila atlastin gene. **Giorgia Pantano[1,2,3], Alessia Gazziero[1,3], Andrea Daga[1,2,3].** 1) Dept Pharmacology, Univ Padova, Padova, Italy; 2) Dulbecco Telethon Institute, Univ Padova, Italy; 3) Scientific Institute E. Medea, Conegliano, Italy.

700A
What is the role of Drosophila *beached* in motor nervous system development? **Ashley P. Wright[1], Kai G. Zinn[1], Rachel Kraut[2].** 1) Biology, California Institute of Tech, Pasadena, CA; 2) Institute of Bioengineering and Nanotechnology, 1 Biopolis Way, The Nanos, #04-01, Singapore 138669.

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701B
Comparison of the Mechanisms Underlying Dendrite and Axon Development in Drosophila Peripheral Neurons. **Bing Ye, Wesley Grueber, Lily Yeh Jan, Yuh Nung Jan.** Physiology, UCSF, San Francisco, CA.

Neural Physiology and Behavior

702C
Heterologous expression of bovine opsin in *D. melanogaster* photoreceptor cells. **S. Tariq Ahmad, Kathleen A. Mitchell, Joseph E. O'Tousa.** Department of Biological Sciences, University of Notre Dame, Notre Dame, IN.

703A
Analysis of the Drosophila PICK1 homologue as an interactor of the Deg/ENaC/ASIC family member pickpocket1. **Joshua A. Ainsley, Wayne A. Johnson.** Physiology and Biophysics, University of Iowa, Iowa City, IA.

704B
Expression of myospheriod RNAi in the Drosophila central brain causes decreased olfactory sensitivity to a subset of odors. **Poonam Bhandari, Michael S. Grotewiel.** Department of Human Genetics, Virginia Commonwealth University, Richmond, VA.

705C
Characterization of genes of polytene region 36D: *Neural-Cadherin 2*, *Pray for Elves* and *elfless*. **Jason C. Caldwell, Daniel F. Eberl.** Dept Biological Sci, Univ Iowa, Iowa City, IA.

706A
A single high-concentration dose of ethanol induces cell death in olfactory neurons. **Rachael L. French, Ulrike Heberlein.** Department of Anatomy, University of California, San Francisco, CA.

707B
The role of dprestin in Drosophila sensory systems. **Janice L. Fritz, Daniel F. Eberl.** Dept Biological Sci, Univ Iowa, Iowa City, IA.

708C
The Molecular Basis of Odor Coding in the Drosophila Antenna. **Elissa A. Hallem, John R. Carlson.** MCDB Department, Yale University, New Haven, CT.

709A
Mapping and Characterization of *smetana* and *touch insensitive larva B*, Two Genes involved in Hearing and Male Fertility. **Ryan G. Kavlie[1], Elena Sivan-Loukianova[2], Maurice J. Kernan[3], Daniel F. Eberl[1,2].** 1) Dept of Genetics, Univ of Iowa, Iowa City, IA; 2) Dept of Biological Sciences, Univ of Iowa, Iowa City, IA; 3) Dept of Neurobiology and Behavior, State Univ of New York at Stony Brook, Stony Brook, NY.

710B
Localization of the *su(rdgB)69* to the 100B2 region of chromosome 3. **Mikaela K. Maughan, Maria F. Khan, Molly M. Maloy, Don W. Paetkau.** Department of Biology, Saint Mary's College, Notre Dame, IN.

711C
Ion channels modulate larval behavior associated with pain perception. **Kathryn G. McFadden, Elaine R. Reynolds.** Department of Biology, Lafayette College, Easton, PA.

712A
yuri gagarin - a gene with a role in gravitaxic responses. **Ravi P. Munjaal, Michael J. Texada, Rebecca A. Simonette, Faraz Sultan, Kathleen M. Beckingham.** Dept. Biochem. & Cell Biol., Rice Univ., Houston, TX.

713B
ninaG acts in the rhodopsin chromophore biosynthesis in *D. melanogaster*. **Joseph E. O'Tousa[1], S. Tariq Ahmad[1], Shanta Sarfare[1], Bill Boggess[2], Michelle V. Joyce[2].** 1) Department of Biological Sciences; 2) Department of Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN.

714C
Subcellular localization of the Drosophila DEG/ENaC/ASIC channel subunit Pickpocket1 in higher order dendrites of class IV multiple dendritic neurons. **Janette M. Pettus, Wayne A. Johnson.** Dept Physiology/Biophysics, University of Iowa, Iowa City, IA.

715A
The Drosophila hypergravity response requires a functional mushroom body. **Steve Stowers[1], Max Sanchez[2], Tom Fahlen[2], Maryam Shenasa[2], Sharmila Bhattacharya[1].** 1) NASA Ames Res Cntr, Moffett Field, CA; 2) Space Station Biological Research Projects, Lockheed Martin Space Operations, NASA Ames Research Center, Moffett Field, CA 94035.

716B
Myosin VIIA is structurally and functionally important for the Drosophila auditory organ. **Sokol V. Todi[1], Josef D. Franke[2], Daniel P. Kiehart[2], Daniel F. Eberl[1].** 1) Neuroscience Graduate Program & Department of Biological Sciences, The University of Iowa, Iowa City, IA; 2) Department of Biology, Duke University, Durham, NC.

717C
Fratboy, a Dynamin related protein, affects mitochondrial morphology and transport and is required for mobilization of the reserve pool at the synapse. **Cindy V. Ly[1], Patrik Verstreken[2,4], Koen J. T. Venken[3], Tong-Wey Koh[3], Yi Zhou[4], Hugo J. Bellen[1,2,3,4].** 1) Neuroscience, Baylor College of Medicine, Houston, TX; 2) Molecular and Human Genetics; 3) Program in Developmental Biology; 4) Howard Hughes Medical Institute.

718A
Synapse Morphology and Function Require the PDZ protein d-Veli. **M. Firoz Mian[1], U. Cheung[2], A. MacMullin[1], H. L. Atwood[2], J. R. Jacobs[1].** 1) Biology, McMaster University, Hamilton, ON, Canada; 2) Physiology, University of Toronto, Toronto, ON, Canada.

719B
Synaptic vesicle mobility depends upon actin and is impaired in larvae expressing dominant-negative NSF2. **Paula Nunes, Bryan A. Stewart.** Dept Life Sci, Univ Toronto, Toronto, ON, Canada.

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720C
The small glutamine-rich tetratricopeptide containing protein (SGT) is required for neurotransmitter release at Drosophila motor nerve terminals. **Andrea J. Wellington[1], Konrad E. Zinsmaier[1, 2].** 1) ARLDN, University of Arizona, Tucson, AZ; 2) Dept. of Molecular and Cellular Biology, University of Arizona, Tucson, AZ.

721A
A Novel Regulatory Mechanism for GTP Cyclohydrolase in *D. melanogaster*. **Zhinong Huang, Christopher Funderburk, Kevin Bowling, Janis O'Donnell.** Dept. Biological Sciences, University of Alabama, Tuscaloosa, AL.

722B
Functional analysis of Drosophila Catecholamines up protein in S2 cells. **Iyare E. Izevbaye, Janis O'Donnell.** Dept Biol, Univ Alabama, Tuscaloosa, AL.

723C
Genetic Interactions Between Neural Activity and Bioamine Metabolism Mutants. **Patricia K. Rivlin, Gretchen E. Rohrs, Matthew C. Mitschelen, Virginia M. Woods, Kristin Gawera, Claudia Lutz, Ronald R. Hoy.** Dept Neurobiology & Behavior, Cornell Univ, Ithaca, NY.

724A
Direct, Sequential Activation of Multiple Peptidergic Neural Networks by Ecdysis Triggering Hormone. **Young-Joon Kim[1], Dusan Zitnan[2], Kook-Ho Cho[1], C. Giovanni Galizia[1], Michael Adams[1].** 1) Depts of Entomology and Neuroscience, Univ California, Riverside, CA, USA; 2) Institute of Zoology, SAV, Dubravska cesta 9, 84206 Bratislava, Slovakia.

725B
Tissue-, Stage-, and Sex-specific Regulation of the Drosophila Neuropeptide F-encoding gene. **Gyunghee Lee, Jae Park.** Department of Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, TN.

726C
Characterization of a Drosophila prothoracicotropic hormone (PTTH) homologue. **Zofeyah L. McBrayer[1], Mary Jane O'Connor[1,2], Michael B. O'Connor[1,2].** 1) Department of Genetics, Cell Biol, and Dev, University of Minnesota, Minneapolis, MN; 2) HHMI, University of Minnesota, Minneapolis, MN.

727A
The Drosophila proprotein convertase 2 *amontillado* may function in the insulin pathway by processing the Drosophila insulin-like peptide 2. **Jeanne M. Rhea, Lowell Y. M. Rayburn, Steven Jocoy, Michael Bender.** Department of Genetics, University of Georgia, Athens, GA 30602.

728B
Rapid Organization of Hunger Response by Insulin-like Signaling in Drosophila. **Qi Wu, Yan Zhang, Jie Xu, Ping Shen.** Department of Cellular Biology, and Biomedical and Health Sciences Institute, University of Georgia, Athens, GA.

729C
short neuropeptide F (sNPF) regulates food intake and body size in *D. melanogaster*. **Kweon Yu, Kyu-Sun Lee, Yong-Mahn Han.** Development & Differentiation, Korea Research Institute of Bioscience & Biotechnology, Daejeon, Korea.

730A
Genetics and pharmacology of calcium channel currents in Drosophila larval muscle. **Linda M. Hall, Hongjian Xu.** Functional Insect Genomics, Davis, CA.

731B
Persistent tetrodotoxin-sensitive sodium current resulting from U-to-C RNA editing of an insect sodium channel. **Zhiqi Liu, Weizhong Song, Ke Dong.** Entomology, Michigan State University, East Lansing, MI.

732C
Transcriptional Regulation of the Drosophila KCNQ potassium channel gene: Promoter Identification and Tissue-Specific Expression. **Enrique Massa, Octaviano Beltran.** MSC 158-Biology, Texas A&M University-Kingsville, 700 University Boulevard, Kingsville, TX. 78363.

733A
Characterization of Drosophila ERG Potassium Channel Transcriptional Regulation. **Enrique Massa, Omar Salgado, Roel Valadez.** Texas A&M Univ, Kingsville, MSC 158-Biology, 700 University Boulevard, Kingsville, TX. 78363.

734B
Wing Expansion by Temporal Enhancement of Excitability in CCAP-Expressing Neurons. **Nathan C. Peabody, William C. Lemon, Haojiang Luan, Benjamin H. White.** Laboratory of Molecular Biology, NIMH/NIH, Bethesda, MD.

735C
Gene discovery using mushroom body specific enhancer trap lines. **Christine N. Serway, David S. Green, J. Steven de Belle.** Dept Biological Sci, Univ Nevada, Las Vegas, Las Vegas, NV.

736A
Nicotine attraction in *D. melanogaster*. **Ellen Shimakawa[1], Kanani Kilbey[2].** 1) California State University San Bernardino, San Bernardino CA; 2) Chaminade University of Honolulu, Honolulu HI.

737B
Drosophila mushroom body development and odor memory are impaired by ecologically-relevant heat shock. **Xia Wang, David S. Green, J. Steven de Belle, Stephen P. Roberts.** Biological Sciences, University of Nevada Las Vegas, Las Vegas, NV.

738C
A possible role for a DEG/ENaC ion channel in courtship behavior. **Yehuda Ben-Shahar, Michael Welsh.** HHMI, Univ of Iowa, College of Medicine, Iowa City, IA.

739A
A role for the adult fat body in courtship behavior. **Brigitte Dauwalder[1], Anna A. Lazareva[1], William W. Mattox[2], Paul E. Hardin[1].** 1) Dept. of Biology/Biochemistry, University of Houston, Houston, TX; 2) Dept. of Molecular Genetics, University of Texas M.D. Anderson Cancer Center, Houston, TX.

740B
Identification of ovulation neurons requiring *transformer*-independent feminization. **Daniel S. Evans, Thomas W. Cline.** Department of Molecular and Cell Biology, University of California-Berkeley, Berkeley, CA.

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741C
A male specific cytochrome P450 enzyme is required for efficient male sexual performance in *D. melanogaster*.. **Shinsuke Fujii, Hubert Amrein.** Molecular Genetics & Microbiol, Duke Univ Medical Ctr, Durham, NC.

742A
Visual cues mediate the quality of *D. melanogaster* courtship behavior. **Joy E. C. Hatzidakis[1], Devanand S. Manoli[2], Bruce S. Baker[1, 2].** 1) Dept of Biological Sciences, Stanford University, Stanford, CA; 2) Neuroscience Program Stanford University, Stanford CA.

743B
Gradual release of sperm-bound Sex-Peptide controls female post-mating mating behavior. **Eric Kubli, Jing Peng, Shanjun Chen, Susann Buesser, Huanfa Liu, Thomas Honegger.** Dept Zoology, Univ Zurich-Irchel, Zurich, Switzerland.

744C
Dissection of divergent mating preference between Drosophila behavioral races. **Tsung-Han Kuo[1], I-Fan Tsai[1], Chau-Ti Ting[1,2], Chung-I Wu[3], Shu Fang[4].** 1) Institute of Molecular & Cellular Biology, National Tsing Hua University, Hsinchu, Taiwan, ROC; 2) Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan, ROC; 3) Department of Ecology & Evolution, University of Chicago, Chicago, IL; 4) Research Center for Biodiversity, Academia Sinica, Taipei, Taiwan, ROC.

745A
Characterizing the phenotype of *slamdance* in *D. melanogaster* using RNAi. **John W. Loughney, Christopher J. Jones.** Department of Biology, Moravian College, Bethlehem, PA.

746B
Median bundle mediated coordination and processing during Drosophila courtship. **Devanand S. Manoli[1,2], Bruce S. Baker[1,2].** 1) Neurosciences Program, Stanford University, Stanford, CA; 2) Dept Biological Sci, Stanford Univ, Stanford, CA.

747C
Behavioral roles of neuronal clusters expressing the male-specific Fruitless proteins. **Geoffrey W. Meissner[1,2], Devanand S. Manoli[1,2], Emily A. Ochoa[1], Robin J. Stevens[1], Jose F. Chavez[1], Wendy W. Woo[1], Bruce S. Baker[1,2].** 1) Department of Biological Sciences, Stanford University, Stanford, CA; 2) Neuroscience Program, Stanford University, Stanford, CA.

748A
Differences in courtship behavior between the Z and M races of *D. melanogaster*. **Jennifer R. Moran[1], Anthony J. Greenberg[2], Chung-I Wu[1,2].** 1) Committee on Genetics, University of Chicago, Chicago, IL; 2) Department of Ecology and Evolution, University of Chicago, Chicago, IL.

749B
Genetic regulation of neural circuits: *fruitless* and degeneration of Drosophila wing song. **R. J. Stevens, D. S. Manoli, G. W. Meissner, E. A. Ochoa, W. W. Woo, J. F. Chavez, B. S. Baker.** Biological Sciences, Stanford University, Stanford, CA.

750C
Variations in Courtship Behavior Between Lab and Wildtype *D. melanogaster* Stocks. **Michael Windelspecht[1], Heather Stockdale[2], J. Kenneth Shull[1].** 1) Biology, Appalachian State University, Boone, NC; 2) Auburn University.

751A
Rescue of arrhythmic *D. melanogaster Pdf* mutant by the *D. virilis Pdf* gene. **Jae Hoon Bahn, Gyunghee Lee, Jae Park.** BCMB, University of Tennessee, Knoxville, TN.

752B
A novel *roundabout* mutation alters the pace of the clock in Drosophila. **Jimena Berni, Esteban Beckwith, M. Fernanda Ceriani.** Fundación Instituto Leloir, Buenos Aires, Argentina.

753C
Non-circadian regulation of clock genes, period and timeless in the ovary of *D. melanogaster*. **Brandy Rush, Barbara Gvakharia, Jadwiga Giebultowicz.** Dept Zoology, Oregon State Univ, Corvallis, OR.

754A
Role of FOXO in adaptation to food restriction in Drosophila. **Xiangzhong Zheng, Amita Sehgal.** HHMI, Department of Neuroscience, University of Pennsylvania Medical School, Philadelphia, PA 19104.

755B
Ecdysis Deficiency Induced by Inka Cell-specific RNA Silencing of the Orphan Nuclear Receptor β*FTZ-F1*. **Kook-Ho Cho[1], Yoonseong Park[2], Michael E. Adams[1].** 1) Dept Entomology, Univ California, Riverside, Riverside, CA; 2) Dept Entomology, Kansas State University, Manhattan, KS.

756C
Drosophila stress reaction - mechanism and role in fitness. **Natalia E. Gruntenko, Inga Yu Rauschenbach.** Institute of Cytology and Genetics SD RAS, Novosibirsk, Russia.

757A
Mapping the neurons that control larval locomotion. **Cynthia Hughes, John Thomas.** Molecular Neurobiology, The Salk Institute, La Jolla, CA.

758B
The Role of the *foraging* Gene in Food Intake and Food-mediated Plasticity. **Karla R. Kaun, Craig Riedl, Munmun Chatterjee, Marla B. Sokolowski.** Dept. Zoology, University of Toronto, Mississauga, Ontario, Canada.

759C
Effect of genetic background and life span-extending mutations on locomotor activity senescence. **Ian Martin, Julia Warner Gargano, Poonam Bhandari, Michael Grotewiel.** Human Genetics, VCU, Richmond, VA.

760A
Absence of Glutathione S-transferase S1 (GstS1-1) renders flies flightless. **Ashis K. Mondal[1], Yan-Ping Feng[1], Umesh K. Jinwal[1], James R. Cypser[1], Alexander J. Whitworth[2], Leo J. Pallanck[2], Piotr Zimniak[1], Helen Benes[1].** 1) Univ. of Arkansas for Med. Sciences & Central AR Vet. Healthcare Syst., Little Rock, AR; 2) Dept. Genome Sci., Univ. of Washington, Seattle, WA.

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761B
Functional analysis of Drosophila Sialyltransferase mutants. **Elena Repnikova[1], Jarred Pitts[1], Stylianos Kosmidis[2], Efthimios M. C. Skoulakis[2], Kate Koles[1], Vlad Panin[1].** 1) Biochemistry/Biophysics, Texas A&M University, College Station, 77843-2128 TX; 2) Alexander Fleming Biomedical Research Center, Vari, Greece, 16602.

762C
Analysis of mutant oviposition behavior in the laboratory strain Oregon R P-2. **Jon D. Schnorr, Pua Watanabe, Jesse Pollard.** Biology Department, Pacific University, Forest Grove, OR.

763A
A molecular and physiological ventral-dorsal gradient of neuromuscular transmission and larval locomotion control. **Chun-Fang Wu, Lyle Fox, Jihye Lee, Atsushi Ueda.** Dept Biological Sci, Univ Iowa, Iowa City, IA.

Evolution and Quantitative Genetics

764B
Molecular Population Genetics and Evolution of Telomere-Associated DNA. **Jennifer Anderson[1], Susan Celniker[2], Alfredo Villasante[3], Charles Langley[1].** 1) Evolution & Ecology, Univ California, Davis, Davis, CA 95616; 2) Drosophila Genome Center, Lawrence Berkeley National Lab, 1 Cyclotron Rd. , Berkeley, CA 94720; 3) Centro de Biología Molecular "Severo Ochoa", Universidad Autonoma de Madrid Cantoblanco, 28049 Madrid, Spain.

765C
Molecular evolution of Y-chromosomal genes in Drosophila. **Andrew G. Clark[1], A. Bernardo Carvalho[2].** 1) Dept Molec Biol & Genetics, Cornell Univ, Ithaca, NY; 2) Federal University of Rio de Janeiro, Brazil.

766A
Chip based analysis of cis and trans divergence in gene expression. **Rita M. Graze[1], Matthew W. Hahn[2], Sergey V. Nuzhdin[2].** 1) Genetics Graduate Group, UCD, Davis, CA; 2) Evolution and Ecology Section, UCD, Davis, CA.

767B
The structure and function of a nested gene is influenced by its spatial arrangement relative to the including gene. **Corbin D. Jones[1], David J. Begun[2].** 1) Department of Biology & Carolina Center for Genome Sciences, University of North Carolina, Chapel Hill, NC; 2) Center for Population Biology, UC Davis, Davis, CA.

768C
Conservation of the Androcam gene cluster and its unusual dicistronic transcript in other Drosophila species. **Vanaja Konduri, Paige C. Pavlik, Kathleen M. Beckingham.** Dept. Biochem. & Cell Biol., Rice Univ., Houston, TX.

769A
Drosophila Inversions Can Induce Complete Gene Duplication at the Breakpoints. **Richard P. Meisel[1], Stephen W. Schaeffer[2].** 1) Intercollege Graduate Program in Genetics, The Pennsylvania State University, University Park, PA; 2) Institute of Molecular Evolutionary Genetics and Department of Biology, The Pennsylvania State University, University Park, PA.

770B
Patterns of synonymous codon usage in genes with sex-biased expression. **John Parsch, Tina Hambuch.** Univ. of Munich, Germany.

771C
Cross-species comparison of the duplicated *Prat*, and *Prat2* genes in Drosophila. **Jay Penney, Denise V. Clark.** University of New Brunswick, Fredericton, NB, Canada.

772A
Evolution of nuclear mitochondrial interactions in Drosophila. **David M. Rand, Robert Haney, Jeannette Kanefsky, Rebecca Wagaman, Lietta Nicolaides.** Department of Ecology and Evolution, Brown University, Providence, RI.

773B
Positive selection of *abnormal oocyte (abo)* in Drosophila. **Monica A. Rodriguez, Harmit S. Malik.** Basic Sciences, Fred Hutchinson Cancer Research Center, 1100 Fairview Ave N, A1-162, Seattle, WA 98109.

774C
Patterns of positive selection in the Drosophila immune system. **Timothy B. Sackton[1], Andrew G. Clark[1,2].** 1) Field of Ecology and Evolutionary Biology, Cornell Univ, Ithaca, NY; 2) Molecular Biology and Genetics, Cornell Univ, Ithaca, NY.

775A
X-chromosomes and autosomes evolve at similar rates in Drosophila - no evidence for faster-X protein evolution. **Kevin Thornton[1], Doris Bachtrog[2], Peter Andolfatto[2].** 1) Molecular Biology & Genetics, Cornell University, Ithaca, NY; 2) Ecology, Behavior and Evolution, Univ. of California San Diego, La Jolla, CA.

776B
An alien promoter capture as a primary step of the evolution of testes-expressed repeats in the *D. melanogaster* genome. **Lev A. Usakin, Galina L. Kogan, Alla I. Kalmykova, Vladimir A. Gvozdev.** Institute of Molecular Genetics, Moscow 123182, Kurchatov sq 2, Russia.

777C
Codon Usage Bias through Development in Drosophila. **Saverio Vicario[1], Kevin White[2], Jeffrey Powell[1].** 1) Dept. Ecology & Evolutionary Biol, Yale Univ, New Haven, CT; 2) Dept. Genetics, Yale Univ. School of Medicine, New Haven, CT.

778A
Regulatory differences within and between species. **Patricia J. Wittkopp, Belinda K. Haerum, Andrew G. Clark.** Molecular Biol & Gen Dept, Cornell Univ, Ithaca, NY.

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779B
More may not be better- with multiple "heads", the expression of *hydra*, a fast-evolved testis-specific gene in *D. melanogaster*, is dramatically reduced. **Hsiao-Pei Yang, Shou-Tao Chen.** Institute of Genetics, National Yang-Ming University, Taipei, Taiwan, Taiwan.

780C
Recovery of Positively Selected Transposable Elements in the Drosophila Genome by Transposon Display. **Hsiao-Pei Yang, Hong-Ya Liao.** Institute of Genetics, National Yang-Ming University, Taipei, Taiwan.

781A
Patterns of sequence polymorphism and divergence in genes of spermatogenesis. **Alberto Civetta, Barbara Brouwers.** Biology, University of Winnipeg, Winnipeg, MB, Canada.

782B
Variation in global gene expression patterns in chromosome substitution lines of *D. melanogaster*. **Glen E. Collier, Ajula Vaid, Morgen Hickey.** Dept Biological Sci, Univ Tulsa, Tulsa, OK.

783C
Adaptations to environmental stress in altitudinal populations of two Drosophila species. **Subhash Rajpurohit, Ravi Parkash, Pankaj Tyagi, Indu Sharma.** Department of Biosciences, Maharshi Dayanand University, Rohtak, Haryana, India.

784A
Ecological and evolutionary dynamics of reproductive diapause in *D. melanogaster*. **Paul S. Schmidt.** Dept Biology, Univ Pennsylvania, Philadelphia, PA.

785B
Genetic structure of natural population of *D. littoralis* inferred from mitochondrial HinfI RFLP analysis. **Svetlana Y. Sorokina[1], Boris V. Andrianov[2], Vladimir G. Mitrofanov[1].** 1) Dept Genetics, Koltsov Inst Dev Biology, Moscow, Russia; 2) Dept Mol Genetics, Vavilov Inst Gen Genetics, Moscow, Russia.

786C
Fluctuation in linkage disequilibrium scale in *D. melanogaster* genome. **Toshiyuki Takano-Shimizu[1, 2], Nobuyuki Inomata[3], Masanobu Itoh[4], Rumi Kondo[5], Noriko Nanba[4], Masako Hasegawa[4], Miki Ohshima[5], Yutaka Inoue[6].** 1) Dept Population Genetics, National Inst Genetics, Japan; 2) School of Advanced Sciences, SOKENDAI, Japan; 3) Dept Biology, Kyushu University, Japan; 4) Dept Applied Biology, Kyoto Inst Technology, Japan; 5) Dept Biology, Ochanomizu University, Japan; 6) Dept International Studies, Osaka University of Foreign Studies, Japan.

787A
A recent, severe, population bottleneck, rather than natural selection, is consistent with patterns of nucleotide variation in European populations of *D. melanogaster*. **Kevin R. Thornton.** Molecular Biol & Genetics, Cornell Univ, Ithaca, NY.

788B
Geographical divergence for fecundity in Indian populations of *D. biarmipes*. **Pankaj K. Tyagi, Ravi Parkash, Sudhir Ahalawat.** Department of Biosciences, Maharshi Dayanand University, Rohtak, Haryana, India.

789C
Biological stoichiometry of growth rate in five Drosophila species. **Benjamin G. Bitler, Thomas D. Watts, Therese A. Markow.** Center for Insect Science, Dept. of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ.

790A
The evolution of alternative splicing in the mating behavior gene *courtless*. **Justin P. Blumenstiel, Daniel Hartl.** Organismic and Evol. Biology, Harvard University, Cambridge, MA.

791B
Understanding the functional evolution of trunk Hox genes in arthropods. **Cheryl C. Hsia, William McGinnis.** Dept Biol, Univ California, San Diego, La Jolla, CA.

792C
Counting the cost of an adaptive trait: a life history and population cage study of DDT resistance in Drosophila. **Caroline McCart, Richard H. ffrench-Constant.** Department of Biology and Biochemistry, University of Bath, Bath, UK.

793A
A quantitative analysis of resource allocation to reproduction and soma in Drosophila. **Kyung-Jin Min[1], Megan Hogan[2], Diane O'Brien[2], Marc Tatar[1].** 1) Dept Ecology/Evolutionary Biology Brown University, Providence, RI; 2) Department of Biological Sciences Wellesley College, Wellesley, MA.

794B
Muscleblind protein isoforms are not functionally redundant. **Lidon Monferrer[1], Marta Vicente[1], Maya Pascual[1], Maria E. Miranda[1], Jonathan Houseley[2], Yaiza Belacortu[1], Michael Poulos[3], Kevin O'Dell[2], Darren Monckton[2], Maurice Swanson[3], Ruben D. Artero[1].** 1) Dept Genetics, Univ Valencia, Valencia, Spain; 2) Division of Molecular Genetics Institute of Biomedical and Life Sciences, Univ Glasgow, Glasgow; 3) Dept Molecular Genetics & Microbiology, Univ Florida College Medicine, Gainesville, FL.

795C
Roles of a *rho* enhancer and positional information in evolution of Drosophila eggshell shape. **Yukio Nakamura[1], Tatsuo Kagesawa[1], Yoshiki Hayashi[2], Satoru Kobayashi[2,3,4], Teruyuki Niimi[5,6], Kenji Matsuno[1].** 1) Dept Biol Sci/Tech, Tokyo Univ Sci, Chiba, Japan; 2) Dept Biosci, Grad Univ Advanced Studies, Aichi, Japan; 3) Okazaki Natl Res Inst, Ctr Integrative Biosci, NIBB, Aichi, Japan; 4) CREST, JST; 5) Nagoya Univ, Grad Sch of Bioagricultural Science, Nagoya, Japan; 6) PRESTO, JST.

796A
Conservation and turnover of transcription factor binding sites within the genus Drosophila: Evidence for purifying constraints and adaptive changes in the evolution of *cis*-regulatory sequences. **Daniel A. Pollard[1, 2], Alan M. Moses[1, 2], Venky N. Iyer[1, 3], Michael B. Eisen[1, 3].** 1) Genome Sciences, LBNL, Berkeley, CA; 2) Biophysics Graduate Group, University of California, Berkeley, CA; 3) Molecular and Cell Biology Department, University of California, Berkeley, CA.

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797B
Functional divergence of Ultrabithorax during evolution. **Ouarda Taghli-Lamallem[1], Matthew Ronshaugen[2], William McGinnis[1].** 1) Section of Cell and Developmental Biology, University of California, San Diego, La Jolla, California 92093, USA; 2) Department of Molecular and Cellular Biology, Division of Genetics and Development, University of California, Berkeley, CA 94720, United States.

798C
Sindbis virus-mediated RNAi reveals essential and conserved role of a transcription factor BR-C during insect metamorphosis. **Mirka Uhlirova[1,4], Brian Foy[2], Barry Beaty[2], Ken Olson[2], Lynn Riddiford[3], Marek Jindra[4].** 1) Department of Biomedical Genetics, University of Rochester, Rochester, NY, USA; 2) AIDL, Colorado State University, Fort Collins, CO, USA; 3) Department of Biology, University of Washington, Seattle, WA, USA; 4) Institute of Entomology CAS, Ceske Budejovice, Czech Republic.

799A
The Evolution of Homeotic Response. **Christopher M. Walsh, Sean B. Carroll.** HHMI and Laboratory of Molecular Biology, Univ Wisconsin, Madison, Madison, WI.

800B
Does Mitochondrial Haplotype Influence Sperm Competition in Drosophila? **Bruce C. Bryan, David M. Rand.** Dept EEB, Brown Univ, Providence, RI.

801C
Pleiotropic effects of Methoprene-tolerant (Met), a gene involved in juvenile hormone metabolism, on life history traits in *D. melanogaster*. **Thomas K. Flatt[1], Tadeusz Kawecki[2].** 1) Ecology and Evolution, Brown University, Providence, RI; 2) Ecology and Evolution, University of Fribourg, Fribourg, Switzerland.

802A
Is variation for ovariole number and body size maintained through mutation-selection balance in *D. melanogaster*? **Laura A. Higgins, Marta L. Wayne.** Zoology Department, University of Florida, Gainesville, FL.

803B
Dominance, additivity, and sex-specificity for activity of spontaneous behavior in *D. melanogaster*. **Laura A. Higgins[1], Candice Keenum[1], Lauren M. McIntyre[2], Marta L. Wayne[1].** 1) Zoology, University of Florida, Gainesville, FL; 2) Computational Genomics, Department of Agronomy, Purdue University, West Lafayette, IN.

804C
The genetic architecture of thermotolerance. **T. J. Morgan, L. H. Duncan, M. U. Naseer, T. F. C. Mackay.** Dept Genetics, North Carolina State Univ, Raleigh, NC.

805A
Phenotypic plasticity of body size and ovariole number in Drosophila immigrans. **Ravi Parkash, Seema Dubey, Subhash Rajpurohit, Pankaj Tyagi, Veer Bhan.** Department of Biosciences, Maharshi Dayanand University, Rohtak, Haryana, India.

806B
Analyses of the quantitative genetic architecture of ovariole number and body size in *D. melanogaster* using diallels. **Marina Telonis-Scott[1], Lisa Bono[2], Lauren McIntyre[2], Marta Wayne[1].** 1) Department of Zoology, University of Florida, Gainesville, FL, USA; 2) Department of Agronomy, Purdue University, West Lafayette, IN, USA.

807C
Quantitative Trait Loci Affecting Oxidative Stress Susceptibility and Reproduction in *D. melanogaster*. **Yue Wang[1], Stephen Kachman[2], David Pot[3], Sergey Nuzhdin[3], Lawrence Harshman[1].** 1) School of Biological Sciences, University of Nebraska at Lincoln, Lincoln, NE 68588-0118; 2) Department of Statistics, University of Nebraska at Lincoln, Lincoln, NE 68583-0712; 3) Section of Evolution and Ecology, University of California at Davis, Davis, CA 95616.

808A
Paternal effect of starvation on body size in *D. melanogaster*. **Marta L. Wayne[1], James S. Andrews[1], Lauren M. McIntyre[2].** 1) Dept. Zoology, University of Florida, Gainesville, FL; 2) Dept. Agronomy, Purdue University, West Lafayette, IN.

809B
Molecular evolutionary analysis of the *Hybrid male rescue* gene. **Daniel A. Barbash[1], Philip Awadalla[2].** 1) Dept. Mol. Bio. & Genetics, Cornell Univ, Ithaca, NY; 2) Dept. of Genetics, N. Carolina State Univ, Raleigh, NC.

810C
Functional analyses of the hybrid sterility gene, *Odysseus* (*OdsH*), in *D. melanogaster*. **Yi-Ling Chen[1], Chau-Ti Ting[1,2].** 1) Institute of Molecular and Celluar Biology, National Tsing Hau University, Hsinchu, Taiwan, ROC; 2) Department of Life Science, National Tsing Hau University, Hsinchu, Taiwan, ROC.

811A
Evolution of courtship song variation in the *D. saltans* species group. **Jennifer M. Gleason.** Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS.

812B
Molecular population genetics of racial differentiation in *D. melanogaster*. **Anthony J. Greenberg[1], Sarah Moorhead[2], Chung-I Wu[1,2].** 1) Dept Ecology & Evolution, Univ Chicago, Chicago, IL; 2) Committee on Genetics, Univ Chicago, Chicago, IL.

813C
Speciation in progress? A continuum of reproductive isolation in *D. bipectinata*. **Artyom Kopp, Amanda Frank.** Dept Evolution and Ecology, University California, Davis, Davis, CA.

814A
The role of two independent complexes of morphological traits in divergence of species in the *D. virilis* group. **Oleg E. Lazebny, Ksenia S. Tcheslavskaia, Alex M. Kulikov, Lyudmila M. Temkina, Anton I. Melnikov, Vladimir G. Mitrofanov.** Genetics, Koltsov Inst of Dev Biology, Moscow, Russian Federation.

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815B
The expression basis of Haldane's rule. **Xue-Mei Lu[1], Chau-Ti Ting[2, 3], Chung-I Wu[1].** 1) Ecology and Evolution, University of Chicago, Chicago, IL; 2) Institute of Molecular and Cellular Biology, National Tsing Hua University, Hsinchu, Taiwan, ROC; 3) Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan, ROC.

816C
Reinforcement in the *D. arizonae-D. mojavensis* model system: myth or reality? **Katie R. Massie, Therese A. Markow.** EEB, University of Arizona, Tucson, AZ.

817A
Cytogenetic studies of hybrids in the *D. bipectinata* species complex. **Paras K. Mishra, B. N. Singh.** Department of Zoology, Banaras Hindu University, Varanasi- 221005, Uttar Pradesh, India.

818B
Spermatogenesis in sterile hybrid males of *D. arizonae* and *D. mojavensis*. **Jose M. Mojica, Therese A. Markow.** EEB & Center for Insect Science, University of Arizona , Tucson, AZ.

819C
QTL analysis of hybrid male sterility. **Laura K. Reed, Brooke A. LaFlamme, Therese A. Markow.** EEB & Insect Sci, Univ Arizona, Tucson, AZ.

820A
Sex-ratio: Molecular genetics and evolutionary implications. **Yun Tao, Dan Hartl.** Organismic and Evolutionary Biology, Harvard Univ, Cambridge, MA.

821B
Comparing Auto-fluorescent Patterns of the Face and Genitalia in Drosophila Species With Their Evolutionionary Relationships. **Ashley E. Hisel, Thomas M. Wolf.** Washburn University Drosophila Reasearch Group, Washburn Univ, Topeka, KS.

822C
B-chromosome and Reproductive Isolation Among Geographic Populations of Drosophila pseudoananassae Bock 1971. **Muneo Matsuda[1], Yasuko Tonomura[2], Yae Goto[2], Yoshiko Tobari[3].** 1) Dept Biol, Sch Medicine, Kyorin Univ, Tokyo, Japan; 2) Tokyo Metropolitan Univ, Tokyo, Japan; 3) Institute of Evolutionary Biology, Tokyo, Japan.

823A
Investigating the role of cytochrome P450 genes in insecticide resistance by transgenic over-expression. **Phillip J. Daborn, Michael Bogwitz, Sheena Rigby, Philip Batterham.** Centre for Environmental Stress and Adaptation Research, Department of Genetics, The University of Melbourne, Parkville, Victoria, 3010, Australia.

824B
Codon usage bias in *D. willistoni* and the expression of *tRNA-guanine transglycosylase*. **Rachel P. Galimidi[1], Jennifer M. Gleason[2].** 1) Division of Biology, University of Kansas, Lawrence, KS; 2) Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS.

825C
Accessory Gland Gene Expression in Mated *D. Mojavensis*. **Erin S. Kelleher, Luciano M. Matzkin, Therese A. Markow.** EEB, University of Arizona, Tucson, AZ.

826A
Molecular phylogeny of the *sex-ratio* chromosomal inversion (X:SR) of *D. mediopunctata*. **Flavia J. Krsticevic, Antonio B. Carvalho.** Genetica, UFRJ, Rio de Janeiro, RJ, Brazil.

827B
Heritable endosymbionts in species of Drosophila. **Mariana Mateos, Therese Markow, Nancy Moran.** Ecology and Evolutionary Biol., University of Arizona, Tucson, AZ.

828C
Molecular evolution of orthologous olfactory and gustatory receptors between two closely-related species of Drosophila. **Carolyn McBride.** Center for Population Biology, University of California, Davis, CA.

829A
Developmental stress expressed as fluctuating asymmetry in mutation accumulation and stress sensitive genotypes. **James N. Thompson, Jr.[1], Ronny C. Woodruff[2], Clayton N. Hallman[1], Alexander J. Williams[1], Joseph K. Fleming[1], Scott A. Street[1], David Jeremy Madrid[1], Andrew E. Miller[1], Brandon W. Pierson[1], Bryan M. Potthoff[1], Travis L. Teel[1], Major J. Cunningham[1].** 1) Dept Zoology, Univ Oklahoma, Norman, OK; 2) Dept Biol Sci, Bowling Green State Univ, Bowling Green, OH.

Immune System and Cell Death

830B
Streptococcus pneumoniae infections in *D. melanogaster*. **Linh N. Pham, Marc S. Dionne, David S. Schneider.** Department of Microbiology & Immunology, Stanford University, Stanford, CA, USA.

831C
Regulation of Drosophila immunity genes in response to wasp infection. **Todd A. Schlenke[1], Jorge Morales[2], Shubha Govind[2], Andrew G. Clark[1].** 1) Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY 14853; 2) Department of Biology and the Graduate Center, City College of the City University of New York, New York, NY 10031.

832A
Lesswright regulates hematopoiesis by interacting with the Toll and the JAK/STAT pathways. **Ying Shen[1], Jinu Abraham[1,2], Soichi Tanda[1,2].** 1) Dept Biological Sci, Ohio Univ, Athens, OH; 2) Molecular and Cellular Biology Program, Ohio University, Athens, OH.

833B
Identification and characterization of *Salmonella typhimurium* factors involved *D. melanogaster* infection. **Kristina L. H. Treanor, Kaman Chan, David S. Schneider.** Microbiology & Immunology, Stanford University, Stanford, CA.

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834C
The catalytic Peptidoglycan Recognition Protein-SC1a is essential for phagocytosis of *Staphylococcus aureus* in Drosophila. **L. Wu, J. Wu, L. Garver, K. Randle, M. Erdinc.** Ctr Biosystems Research, UMBI, College Park, MD.

835A
Toll and Imd: working together for a healthier fly. **Christopher Paul Arnold, Steven A. Wasserman.** Biology, UCSD, La Jolla, CA.

836B
Drosophila MstProx - a regulator of localized immunity? **Kristin S. Benjamin, Steven A. Wasserman.** University of California at San Diego.

837C
dTAK1-JNK signaling acts parallel to the NF-κB/Relish pathway to activate the Drosophila innate immune response. **Joseph R. Delaney[1], Svenja Stöven[2], Kathryn Anderson[3], Marek Mlodzik[1].** 1) Dept MCDB, Mount Sinai Sch Medicine, New York, NY; 2) UCMP, Umeå University, Umeå, Sweden; 3) Sloan Kettering Institute New York, NY.

838A
Identification of novel components of the Imd signaling pathway in Drosophila. **Anni Leinonen[1], Susanna Valanne[1], Henna Myllymäki[1], Johanna Ulvila[2], Heidi Enwald[2], Jenni Kallio[1], Mika Rämet[1].** 1) Institute of Medical Technology, Tampere, Tampere, Finland; 2) Biocenter Oulu, Finland.

839B
Suppression of Drosophila Innate Immunity by *Yersinia pestis* Virulence factor YopJ. **N. P. Paquette, C. R. Sweet, A. Pereira, N. Silverman.** Department of Medicine, Divison of Infectious Disease, UMass Medical School, Worcester, MA.

840C
Negative regulation of the IMD pathway by PGRP-LF prevents cell death mediated developmental defects. **Julien Royet, Cécile Vignal, Vincent Bischoff.** IBMC UPR 9022 CNRS, Strasbourg, France.

841A
Effects of segregating variation on the third chromosome on the age-related decline in immune response in *D. melanogaster.* **Adrienne M. Starks, Leanne Foster, Jeff Leips.** Biological Sciences, UMBC, Baltimore, MD.

842B
Functional genomic analysis of the Toll signaling pathway in Drosophila. **Susanna Valanne[1], Anni Leinonen[1], Johanna Ulvila[2], Henna Myllymäki[1], Jenni Kallio[1], Heidi Enwald[2], Mika Rämet[1].** 1) Institute of Medical Technology, University of Tampere, Finland; 2) Biocenter Oulu, Finland.

843C
The mitochondria take center stage in caspase activation during spermatid maturation. **Eli Arama, Hermann Steller.** Howard Hughes Medical Institute, Strang Laboratory of Apoptosis and Cancer Research, The Rockefeller University, 1230 York Avenue, New York, NY 10021 USA.

844A
Molecular genetic characterization of *dronc* mutations. **Dongbin Xu, Ying Li, Melinda Lackey, Michael Acaro, Andreas Bergmann.** UT MD Anderson Cancer Center, Dept of Biochemistry and Mol Biol, 1515 Holcombe Blvd. - Unit 117, Houston, TX 77030.

845B
Localization of apoptosis regulatory proteins in living and dying Drosophila cells. **Eltyeb Abdelwahid, Takakazu Yokokura, Kristin White.** CBRC, Massachusetts General Hosp, Charlestown, MA.

846C
The role of Bcl-2 proteins in Drosophila development and response to DNA damage. **John Burr, Julie Wu, Eric Huang, Dianne Purves, Anthony Tran, Eyun Song, Jessica Monserrate, Carrie Baker Brachmann.** Dept Developmental & Cell Biol, Univ California, Irvine, Irvine, CA.

847A
Analysis of a Klumpfuss-regulated glycerol kinase and its potential role in developmental apoptosis. **Uma Gayathri Challa, Jamie Rusconi.** Biological Sciences, University at Albany, Albany, NY.

848B
Programmed cell death in the larval somatic musculature during Drosophila metamorphosis. **Kate E. Moffitt, Michael Lehmann.** Biological Sciences, University of Arkansas, Fayetteville, AR.

849C
A novel role of the Drosophila Bcl-2 protein Buffy in immunity. **Jessica P. Monserrate, Cynthia Ortega, Carrie Brachmann.** Dev Cell Biol, Univ California, Irvine, Irvine, CA.

850A
Analysis of a *klumpfuss*-regulated Serine/Threonine kinase during apoptosis in the retina. **Kimberly Ann Morrissette, Jamie Rusconi.** Biological Sciences, University at Albany, Albany, NY.

851B
UV irradiation of the Drosophila Retina in flies deficient for Bcl-2 proteins. **Cynthia V. Ortega, Jessica P. Monserrate, Carrie B. Brachmann.** Developmental and Cell Biology, University of California, Irvine, Irvine, CA.

852C
Sphingolipid Accumulation Induces Apoptosis-Associated Reproductive Deficiency in Drosophila. **Van H. Phan[1], Deron R. Herr[1], Dionne L. Panton[1], Julie D. Saba[2], Greg L. Harris[1].** 1) Dept Cell and Mol Biol, San Diego State Univ, San Diego, CA; 2) Children's Hosp Oakland Res Inst., Oakland, CA.

853A
The role of Drosophila Bcl-2 proteins in apoptosis. **Dianne Purves, Eric Huang, Jocelyn Sandoval, Alice Chreng, Carrie Baker Brachmann.** Developmental and Cell Biology, University of California, Irvine, Irvine, CA.

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854B
Regulation of Larval Salivary Gland Cell Death by the Steroid Hormone Ecdysone. **Lei Wang[1], Arash Bashirullah[1], Carl Thummel[1, 2].** 1) Department of Human Genetics, University of Utah, Salt Lake City, UT; 2) Howard Hughes Medical Institute, Salt Lake City, Utah.

855C
A role for programmed cell death in patterning the arista. **Kristen Cullen, Brian Czervionke, Kimberly McCall.** Dept Biol, Boston Univ, Boston, MA.

856A
Computer Guided Promoter Bashing: Cracking the Code of Drosophila Immunity. **Matthew S. Busse, Christopher P. Arnold, Steven A. Wasserman.** Biological Sciences, U of California, San Diego, San Diego, CA.

857B
Sex-Peptide stimulates innate immunity after mating. **Elena Domanitskaya, Jing Peng, Eric Kubli.** Dept Zoology, Univ Zürich, Zürich, Switzerland.

858C
New regulators of the *Drosophila Cecropin A1* gene isolated by Double Interaction Screen in yeast. **Anna Junell[1], Eleanor Innala[1], Hanna Uvell[1], Leslie Pick[2], Ylva Engström[1].** 1) Department of Molecular Biology and Functional Genomics, Stockholm University, S-10691 Stockholm, Sweden; 2) Department of Entomology, University of Maryland, 4112 Plant Sciences Building, College Park, MD 20742-4454, USA.

859A
Development of p53-dependent Reporters to Monitor Stress-Induced Responses. **Wan-Jin Lu, Joe A. Chapo, John M. Abrams.** Department of Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX.

860B
dE2F is important for proper cell death patterning of drosophila wing disc upon DNA damage. **Nam S. Moon[1], Maxim Frolov[1], Erick Morris[1], Barbie Taylor-Harding[1], Kristin White[2], Nick Dyson[1].** 1) Cancer Research Ctr, Massachusetts General Hosp, Charlestown, MA 02129; 2) Cutaneous Biology Research Center, Massachusetts General Hosp, Charlestown, MA 02129.

861C
Homology of mammal skin and fly cuticle: Analysis of an epidermal barrier wound response enhancer in Drosophila Embryos. **Joseph C. Pearson[1], Kimberly A. Mace[2], William J. McGinnis[1].** 1) Biological Sciences, UC San Diego, La Jolla, CA; 2) University of California, San Francisco, San Francisco, CA.

862A
Klumpfuss-regulated molecules and apoptosis. **Jamie C. Rusconi, Kimberly Morrissette, Uma Challa, Joseph Frasca.** Dept. of Biological Sciences, University at Albany, Albany, NY.

863B
Dorsal regulates Toll antifungal immune pathway in the female mosquito, *Aedes Aegypti*. **Sang Woon Shin, Vladimir Kokoza, Guowu Bian, Hyang-Mi Cheon, Alexander S. Raikhel.** Entomology, UC, Riverside, Riverside, CA.

864C
A novel promoter element required for the innate immune response in Drosophila. **Hanna Uvell, Ylva Engström.** Molecular Biology, Stockholm University, Stockholm, Sweden.

865A
Death of Drosophila larval hemocytes activates phenoloxidase during hemolymph coagulation by exposure of inner membrane phospholipids. **Gawa Bidla[1], Christoph Scherfer[1], Mitchell S. Dushay[2], Ulrich Theopold[1].** 1) Dept Molecular Biology and Functional Genomics, Stockholm Univ, Stockholm, Sweden; 2) Dept of Natural Sciences, Södertön Högskola, Huddinge, Sweden.

866B
Using Drosophila as a Model Genetic System to Understand Malaria Transmission. **Stephanie M. Brandt, David S. Schneider.** Dept Microbiology & Immunology, Stanford University, Stanford, CA.

867C
CSN5 regulates immune responses in *D. melanogaster*. **Orit Harari-Steinberg[1], Daniel Segal[2], Rafael Cantera[3], Daniel A. Chamovitz[1].** 1) Plant Sciences Department, Tel Aviv University, Tel Aviv, Israel; 2) Molecular Microbiology and Biotechnology Department, Tel Aviv University, Tel Aviv, Israel; 3) Zoology Department, Stockholm University, Stockholm, Sweden.

868A
Natural Variation in Immunosenescence in *D. melanogaster*. **Karen J. Lesser, JoAnna Paiusi, Jeffery Leips.** Biology, UMBC, Baltimore, MD.

869B
Mutation of the *CG4749* gene leads to autophagic programmed cell death in Drosophila larval hindgut. **Xiuli Sun[1], Robert Hikida[2], Soichi Tanda[1,3].** 1) Biological Sciences, Ohio University, Athens, OH; 2) Biomedical Sciences, College of Osteopathic Medicine, Ohio University, Athens, OH; 3) Molecular and Cellular Biology Program, Ohio University, Athens, OH.

870C
Immune senescence in *D. melanogaster*. **Marc Tatar[1], Epaht Harel[1], Melissa Zerofsky[1], Neal Silverman[2].** 1) Dept Ecology & Evol Biol, Brown Univ, Providence, RI; 2) University of Massachusetts Medical School, Department of Medicine, Worchester, MA.

871A
Role of Drosophila TRAF1-mediated JNK activation in the mushroom bodies. **Takeyasu Tomioka[1, 2], Erina Kuranaga[1], Hideyuki Okano[2], Masayuki Miura[1].** 1) Dept. Genetics, Grad. Sch. Pharma. Sci, University of Tokyo, Bunkyo-ku, Tokyo, Japan; 2) Dept. Physiol., Grad. Sch. Med., Keio University, Shinjuku-ku, Tokyo, Japan.

872B
Identification of defender against cell death signal using genetic screen. **A. Tonoki[1], E. Kuranaga[1], T. Tomioka[1,2], M. Miura[1].** 1) Department of Genetics, Graduate School of Pharmaceutical Science, University of Tokyo, Bunkyo-ku, Tokyo, Japan; 2) Department of Physiology, Keio University School of Medicine, Shinjyku-ku, Tokyo, Japan.

873C
Identification of genes essential for RNA interference in Drosophila cells. **Johanna Ulvila[1], Anni Leinonen[2], Mataleena Parikka[1], Mika Rämet[1,2].** 1) Biocenter Oulu, University of Oulu, Oulu, Finland; 2) Institute of Medical Technology, University of Tampere, Tampere, Finland.

Techniques and Genomics

874A
Microarray-based screens to identify genes specific to the fusion-competent myoblasts. **Shruti Haralalka, Susan Abmayr.** Stowers Institute for Medical Research, Kansas City, MO 64110.

875B
The genetics of fertilization and sperm storage: gene expression in the lower reproductive tract of mated vs. unmated female *D. melanogaster*. **Paul Mack[1], Yael Heifetz[2], Michael Bender[1].** 1) Dept Genetics, Univ Georgia, Athens, GA; 2) Dept. Entomomology, Hebrew University of Jerusalem; Rehovot, Israel.

876C
Differential Gene Expression of Previtellogenic Ovaries. **Sharona R. Thompson[1], Simon Kasif[1], Kimberly McCall[2].** 1) Bioinformatics Program, Boston Univ, Boston, MA; 2) Department of Biology , Boston Univ, Boston, MA.

877A
Transcriptome analysis of Drosophila renal tubule by Affymetrix Arrays. **Jing Wang, Laura Kean, Jingli Yang, Adrian K. Allan, Shireen A. Davies, Pawel Herzyk, Julian A. T. Dow.** IBLS Division of Molecular Genetics, University of Glasgow, Glasgow G11 6NU, UK.

878B
GeneChip Affymetrix UK Drosophila Service. **Jing Wang[1], Mark D. Lynch[1], Steve Russell[2], Julian A. T. Dow[1].** 1) IBLS, Division of Molecular Genetics, University of Glasgow, Glasgow G11 6NU, UK; 2) Department of Genetics, University of Cambridge, Cambridge CB2 3EH, UK.

879C
Transcriptional profiling of EGFR signaling in Drosophila ovary. **Nir Yakoby[1, 2], Chris A. Bristow[1, 2], Rachel Kalifa[1, 2], Trudi Schupbach[3], Stanislav Y. Shvartsman[1, 2].** 1) Genomics, Princeton University, Princeton, NJ; 2) Chemical Engineering, Princeton University, Princeton, NJ; 3) Molecular Biology, Princeton University, Princeton, NJ.

880A
The purine synthesis gene *Prat2* is required for Drosophila metamorphosis, as revealed by inverted-repeat-mediated RNA interference. **Yingbiao Ji, Denise Clark.** Dept Biol, Univ New Brunswick, Fredericton, NB, Canada.

881B
A Novel Technique Using RNA Interference in Forward Mutagenesis. **Ryan Joseph, Mark Stern, Steven K. Beckendorf.** Department of Molecular and Cell Biology, University of California, Berkeley, CA.

882C
Genome wide analysis of Akt signaling. **Lutz Kockel[1], Kim Kerr[1], Michael Melnick[2], Norbert Perrimon[1].** 1) Dep. of Genetics, Harvard Medical School, Boston, MA; 2) Cell Signaling Technologies, 01915 Beverley, MA.

883A
Establishing knock-down of gene expression in *D. melanogaster* by feeding dsRNA. **Svetlana N. Radyuk[1], William C. Orr[1], Rajindar S. Sohal[2].** 1) Department of Biological Sciences, Southern Methodist University, Dallas, TX; 2) Department of Molecular Pharmacology and Toxicology, University of Southern California, Los Angeles, CA.

884B
High-Resolution Magnetic Resonance Imaging of Drosophila. **Brian H. Null[1], Corey Liu[2], Maj Hedehus[3], Steven Conolly[4], Ronald W. Davis[1].** 1) Biochemistry; Genome Technology Center and Bio-X Program, Stanford Univ, Stanford, CA; 2) Stanford Magnetic Resonance Lab, Stanford, CA; 3) Varian Instruments, Palo Alto, CA; 4) Electrical Engineering, Stanford Univ.; Electrical Engineering, U.C. Berkeley, Berkeley, CA.

885C
Gene targeting with zinc finger nucleases at multiple genomic sites. **Kelly J. Beumer, Jon Trautman, Josh Checketts, Dana Carroll.** Dept Biochemistry, Univ Utah, Salt Lake City, UT.

886A
Development of a "split transcription factor" system for refined spatial manipulation of neuronal activity in Drosophila. **Haojiang Luan, Jon Marsh, Benjamin White.** Lab of Molecular Biology, NIMH, Bethesda, MD.

887B
Ectopic homologous recombination as a method to introduce large DNA segments into P-element transgenes. **Hajime Takeuchi, Oleg Georgiev, Walter Schaffner, Dieter Egli.** Institute of Molecular Biology, University of Zurich, Zurich, Switzerland.

888C
RNomics: a computational search for box C/D snoRNA genes in the Drosophila genome revealed an unexpected exonic localization. **Maria C. Accardo, Sara Riccardo, Maria Furia.** Department of Genetics, General and Molecular Biology, University of Naples, Naples, Italy.

889A
High-Throughput cDNA Library Screening. **Roger Hoskins, Mark Stapleton, Reed George, Charles Yu, Ken Wan, Joe Carlson, Susan Celniker.** Drosophila Genome Center, Lawrence Berkeley Nat'l Lab, Berkeley, CA.

890B
Comparisons of dot chromosome sequences from *D. melanogaster* and *D. virilis* reveals an enrichment of transposon sequences in heterochromatic domains. **Elizabeth E. Slawson[1], Christopher D. Shaffer[1], Colin D. Malone[1], Rachel B. Shevchek[1], Carolyn A. Craig[1], Mary-Lou Pardue[2], Jeremy Buhler[3], Elaine Mardis[4], Sarah C. R. Elgin[1], Bio 4342 Students.** 1) Biology Department, Washington University, St. Louis, MO; 2) Department of Biology, Massachusetts Institute of Technology, Cambridge, MA; 3) Computer Science and Engineering, Washington University, St. Louis, MO; 4) Genome Sequencing Center and Department of Genetics, Washington University, St. Louis, MO.

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891C
The Drosophila Gene Collection: completion and analysis of a functional genomics resource. **M. Stapleton, J. W. Carlson, R. A. George, R. A. Hoskins, J. Pacleb, S. Park, K. Wan, C. Yu, S. E. Celniker.** Drosophila Genome Center, Department of Genome Biology, Lawrence Berkeley National Laboratory, Berkeley, CA.

892A
Conserved sequence signatures underlying the spatio-temporal expression landscape of the Drosophila embryo. **Benjamin P. Berman[1,6], Alan M. Moses[2,6], Pavel Tomançak[3], Amy Beaton[3], Venky Iyer[1,6], Daniel A. Pollard[2,6], Volker Hartenstein[4], Susan E. Celniker[5], Michael B. Eisen[1,6], Gerald M. Rubin[3].** 1) Department of Molecular & Cell Biology; 2) Biophysics Graduate Group; 3) and Howard Hughes Medical Institute, University of California, Berkeley; 4) Department of Molecular, Cell, and Developmental Biology, University of California, Los Angeles; 5) Drosophila Genome Center; 6) and Division of Genome Sciences, Lawrence Berkeley National Laboratory.

893B
Identification of novel transposable elements from multiple alignments. **Anat Caspi[1], Lior Pachter[2].** 1) Dept. Bioengineering, U.C. Berkeley, Berkeley, CA; 2) Dept. Mathematics, U.C. Berkeley, Berkeley, CA.

894C
Computational annotation of view, orientation and stage of fruit fly gene expression pattern images from early developmental stages. **Madhusudhana Gargesha[1,3,4], Jian Yang[1,2], Bernard Van Emden[1,2], Sethuraman Panchanathan[1,4], Sudhir Kumar[1,2].** 1) Center for Evolutionary Functional Genomics, The Biodesign Institute, Arizona State University, Tempe, AZ 85287-5301; 2) School of Life Sciences, Arizona State University, Tempe, AZ 85287-4501; 3) Department of Electrical Engineering, Ira A. Fulton School of Engineering, Arizona State University, Tempe, AZ 85287-5706; 4) Department of Computer Science and Engineering, Ira A. Fulton School of Engineering, Arizona State University Tempe, AZ 85287 - 8809.

895A
Implementation of LSGraph in Drosophila biology. **Pavel Hradecky, Pierre Stanislawski, Simon de Bernard, Laurent Buffat.** IT.Omics, Loos, France.

896B
Launch of the **FlyExpress** resource: The Drosophila *in situ* Gene Expression Pattern Database and Search Tool. **Sudhir Kumar[1,2], | FlyExpress Consortium[1,2].** 1) Center for Evol Func Genomics, The Biodesign Institute, Arizona State Univ, Tempe, AZ 85287-5301; 2) School of Life Sciences, Arizona State University, Tempe, AZ 85287-4501.

897C
Functional genomics screen in the eye by a consortium of undergraduate students. **Gerald B. Call, Jiong Chen, Joy Wu, The UCLA Undergraduate Research Consortium in Functional Genomics, Utpal Banerjee.** Mol., Cell & Dev. Biology, UCLA, Los Angeles, CA.

898A
A piggyBac enhancer trap screen for genes involved in photoreceptor differentiation. **Arzu Celik, Claude Desplan.** Dept Biol, New York Univ, New York, NY.

899B
Filling in the gaps: The efforts of the Bloomington Stock Center to improve deletion coverage. **Kevin R. Cook, Rachel S. Andrade, Jennifer A. Deal, Megan E. Deal, Thomas C. Kaufman.** Dept Biol, Indiana Univ, Bloomington, IN.

900C
Using a Biomarker of Aging Based Screening System to Identify Single Gene Mutations that Extend Life Span in *D. melanogaster*. **Stephan Goupil, Johannes H. Bauer, Stephen L. Helfand.** Genetics and Dev. Biology, UConn Health Center, Farmington, CT.

901A
Identification of genes involved in growth factor signaling using a *piggyBac*-based modular misexpression system. **Shai Mulinari, Monika Rosén, Udo Häcker.** Dept. of Cell & Molecular Biol, Lund , Sweden.

902B
Genetic mapping and characterization of a gene involved in salivary gland glue expulsion. **Elana A. Paladino, Andrew J. Andres.** Department of Biological Sciences, University of Nevada-Las Vegas, Las Vegas, NV.

903C
Immunolocalization in cultured cells: Striking differences in Notch and other Drosophila proteins. **Kris M. Klueg, Johnny Roberts, Jackie Lopez, Lucy Cherbas, Peter Cherbas.** Dros. Genomics Resource Center, Indiana University, Bloomington, IN.

904A
Curation and characterization of candidate non-coding transcripts in *D. melanogaster*. **Adina Bailey[1,2], Jonathan Tupy[1,3], Gina Dailey[1], Martha Evans-Holm[1], Christian Siebel[1,2], Sima Misra[1,3], Susan Celniker[3,4], Gerald Rubin[1,2,3,4].** 1) Dept. of Molecular & Cell Biol, UC Berkeley; 2) Howard Hughes Medical Institute; 3) Berkeley Drosophila Genome Project, Lawrence Berkeley National Laboratory; 4) Department of Genome Sciences, Lawrence Berkeley National Laboratory.

905B
The Drosophila Heterochromatin Genome Project. **Cameron Kennedy, David Acevedo, Chris Smith, Paula Belfiore, Joseph Carlson, Roger Hoskins, Susan Celniker, Gary Karpen.** Life Sci Division, LBNL, Berkeley, CA.

906C
Transformation Services at Model System Genomics. **Jamie Roebuck, Jeremy Erickson, Eric Spana.** DCMB Group, Duke University, Durham, NC.

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Drosophila Models of Human Diseases

907A
Pharmacological prevention of Huntington's disease using combination drug treatment in Drosophila. **Namita Agrawal[1], Judit Pallos[1], Barbara L. Apostol[2], Leslie Michels Thompson[2], J. Lawrence Marsh[1].** 1) Department of Dev. & Cell Biology, UCI, Irvine, CA; 2) Department of Psychiatry and Human Behavior, UCI, Irvine, CA.

908B
Biochemical and genetic analysis of Tau protein kinases in Drosophila. **W. K. Katy Chau, H. Y. Edwin Chan.** Molecular Biotechnology Programme, Department of Biochemistry, The Chinese University of Hong Kong, Hong Kong.

909C
Dopamine pathway modulation of oxidative stress response in *D. melanogaster*. **A. Chaudhuri, J. Brown, J. O'Donnell.** Dept. Biological Sciences, University of Alabama, Tuscaloosa, AL.

910A
The effects of imprecise excisions, amino acid substitutions and protein truncations on dMLF capacity to suppress polyglutamine toxicity. **Zahra Fayazi, Srimoyee Ghosh, Susan Marion, Xiankun Bao, Marlene Shero, Parsa Kazemi-Esfarjani.** Dept Physiology & Biophysics, Univ Buffalo, Buffalo, NY.

911B
dNpc1a, a Drosophila homolog of hNpc1, is required for cholesterol trafficking and viability. **Megan L. Fluegel, Tracey J. Parker, Leo J. Pallanck.** Genome Sciences, University of Washington, Seattle, WA.

912C
BMAA (β-methylamino-L-alanine) cycad toxin induced model of amyotrophic lateral sclerosis/Parkinsonism dementia complex (ALS/PDC). **Joy J. Goto[1], Rodney L. Williamson[2].** 1) Neurosciences, Beckman Res Inst City of Hope, Duarte, CA; 2) Biology, Beckman Res Inst City of Hope, Duarte, CA.

913A
Modifiers of Alzheimer's Abeta42-associated toxicity in Drosophila. **Anju Kelkar[1], Ho-Juhn Song[1], Lihua Tan[2], Paul Schedl[2], Dan Garza[1], Mary Konsolaki[3].** 1) Novartis Institutes of Biomedical Research, Cambridge, MA; 2) Princeton University, Princeton, NJ; 3) Dept Genetics, Nelson Biological Lab, Rutgers Univ., Piscataway, NJ.

914B
Studying Infant and Juvenile Onset NCL in Drosophila. **Christopher A. Korey, Alysa Bell, Erin E. Gallagher.** Department of Biology, College of Charleston, 66 George Street, Charleston, SC 29424.

915C
Proteomic analysis of polyglutamine disease in Drosophila. **Wun Lam[1], Ho-Yin Chan[2].** 1) Laboratory of *Drosophila* Research, Molecular Biotechnology Programme, Department of Biochemistry, The Chinese University of HK, Shatin, Hong Kong, China; 2) Department of Biochemistry, The Chinese University of HK, Shatin, Hong Kong, China.

916A
A Drosophila model of spinocerebellar ataxia type 7. **Veronique Monnier[1], Morwena Latouche[2], Christelle Lasbleiz[1], Elodie Martin[2], Alexis Brice[1], Giovanni Stevanin[2], Herve Tricoire[1].** 1) Genetics of Develop & Evolut, Inst Jacques Monod, Paris, France; 2) Institut des Neurosciences, INSERM U289, Paris, France.

917B
Delay of degeneration processes and prolongation of lifespan under the influence of pharmacological medication in neurodegenerative mutants of *D. melanogaster*. **V. Radysh, M. Kucherenko, V. Plahta, I. Stupnycka, Y. Chernyk, D. Maksymiv.** Chair of Genetic and Biotechnology, Lviv National University , Lviv, Ukraine.

918C
The role of nitric oxide in neurodegenerative processes in mutants of *D. melanogaster*. **Oksana Shcherbakova, Daria Maksymiv.** Genetics and Biotechnology, Lviv National University, Lviv, Ukraine.

919A
Drosophila Alzheimer's model for toxicity. **Ho-Juhn Song[1], Mythreyi Shastri[1], Kenneth Yoon[1], Alex Gaither[1], Mary Konsolaki[2], Dan Garza[1].** 1) Functional Genomics, Novartis Institute for Biomedical Research, Cambridge, MA; 2) Department of Genetics, Rutgers University, New Jersey.

920B
Boat, an AXH domain protein, suppresses the cytotoxicity of mutant ataxin-1, a SCA1 neurodegenerative disorder protein. **Chih-Cheng Tsai, Akifumi Mizutani, Harini Rajan, Lei Wang.** Department of Physiology & Biophysics, UMDNJ-Robert Wood Johnson Medical School, 683 Hoes Lane, Piscataway, NJ 08854.

921C
Exploring Circadian Defects in a Drosophila Model for Fragile X Syndrome. **Yan Wang[1], Amita Sehgal[2], Thomas A. Jongens[1].** 1) Department of Genetics, University of Pennsylvania School of Medicine, Philadelphia, PA; 2) Department of Neuroscience, HHMI, University of Pennsylvania School of Medicine, Philadelphia, PA.

922A
The role of zinc in neuronal toxicity in *D. melanogaster*. **O'Neil Wright, Kimberly Lackey, Janis O'Donnell.** Biological Sciences, University of Alabama, Tuscaloosa, AL.

923B
Modulation of polyglutamine toxicity and aggregation by dMLF and its interaction with 14-3-3zeta and dMADM. **Chia-Yen Wu, Zahra Fayazi, Susan Marion, Xiankun Bao, Marlene Shero, Parsa Kazemi-Esfarjani.** Physiology & Biophysics, University at Buffalo, Buffalo, NY.

924C
Genetic dissection of alveolar rhabdomyosarcoma pathogenesis in Drosophila. **Rene L. Galindo[1], Eric N. Olson[2].** 1) Dept Pathology, Univ Texas SW Medical Ctr, Dallas, TX; 2) Dept Mol Biol, Univ Texas SW Medical Ctr, Dallas, TX.

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925A
Connecting tumor suppressor pathways: Wts kinase acts downstream of the Discslarge basolateral scaffold to control polarity and to suppress proliferation and invasion. **Scott Goode, Min Zhao, Chad Hall, Sirish Kishore.** Pathology, Baylor College of Medicine, Houston, TX.

926B
The role of dopamine biosynthesis in angiogenesis. **Anita Hsouna[1], Janis M. O'Donnell[2], Tien Hsu[1].** 1) Department of Pathology and Laboratory Medicine, Hollings Cancer Center, Medical University of South Carolina, Charleston, SC; 2) Department of Biological Sciences, University of Alabama, Tuscaloosa, AL.

927C
Dopamine Regulation of the Tracheal Development of *D. melanogaster* . **Hakeem O. Lawal[1], Anita Hsouna[2], Tien Hsu[2], Janis M. O'Donnell[1].** 1) Department of Biological Sciences, University of Alabama, Tuscaloosa, AL; 2) Department of Pathology and Laboratory Medicine, and Hollings Cancer Center, Medical University of South Carolina, Charleston, SC.

928A
Drosophila Midgut as a Model for Human Colorectal Cancer. **Tong-Ruei Li, Kevin White.** Dept. of Genetics, Yale Univ. Sch. of Medicine, New Haven, CT.

929B
Merlin and Expanded function cooperatively to modulate signaling pathways that regulate proliferation. **Sushmita Maitra[1], Rima M. Kulikauskas[2], Heather Gavilan[2], Richard G. Fehon[1,2].** 1) Molecular Genetics and Cell Biology Department, University of Chicago, Chicago, IL; 2) DCMB Group, Department of Biology, Duke University, Box 91000, Durham, NC.

930C
Drosophila as a model for developmental genomics of tumorigenesis and cancer progression. **Subhabrata Pal[1], Sumbul J. Khan[1], Amit Sinha[1], Ashish Anand[2], Kalyanmoy Deb[2], Pradip Sinha[1].** 1) Bio. Sci. & Bioeng., Indian Institute of Technology, Kanpur, UP, India; 2) Kanpur Genetic Algorithms Laboratory, Dept. of Mechanical Engineering, Indian Institute of Technology, Kanpur, UP, India.

931A
Leukemia associated AML1-ETO chimera protein affects differentiation and proliferation of Drosophila blood cells. **Sergey A. Sinenko, Utpal Banerjee.** Department of Molecular, Cell, and Developmental Biology, University of California, Los Angeles, CA.

932B
Domains controlling cell polarity and proliferation in the Drosophila tumor suppressor Scribble. **Jennifer Zeitler, Cynthia Hsu, Heather Dionne, David Bilder.** Dept MCB, Univ California, Berkeley, Berkeley, CA.

933C
A multigenic approach for investigating the synergistic effects of Down syndrome congenital heart disease candidate genes using the Drosophila heart. **Tamar R. Grossman[1], Robert J. Wessells[2], Gillian M. Barlow[3], Rolf Bodmer[2], Julie R. Korenberg[3], Ethan Bier[1].** 1) Dept of Biology, UCSD, La Jolla, CA; 2) The Burnham Inst, La Jolla, CA; 3) Med Genet, Cedars-Sinai Medical Center, UCLA, Los Angeles, CA.

934A
Mis-expression of the *D. melanogaster* orthologue of human DMC1 disrupts the hedgehog signaling pathway in the fly wing. **L. Hull[1], D. Cohn[2], L. King[2], L. Reiter[1], E. Bier[1].** 1) Department of Biology, University of California at San Diego, La Jolla, CA; 2) Medical Genetics Institute, Cedars-Sinai Medical Center, Los Angeles, CA.

935B
Analysis of Drosophila transgenic lines expressing mutant forms of Lamin C. **Reza Imani, Sandra R. Schulze, Beatrice Curio-Penny, Lena Rydburg, Yuhong Li, Pamela K. Geyer, Lori L. Wallrath.** Biochemistry, University of Iowa , Iowa City , IA.

936C
A Drosophila model for human congenital disorder of glycosylations IIc. **Hiroyuki O. Ishikawa[1], Shunsuke Higashi[2], Tomonori Ayukawa[2], Takeshi Sasamura[2, 3], Kazuhisa Aoki[4], Nobuhiro Ishida[4], Yutaka Sanai[4], Kenji Matsuno[1, 2, 3].** 1) Genome & Drug Research Ctr, Tokyo University of Science, Japan; 2) Dept. Biological Sci. and Tech., Tokyo University of Science, Japan; 3) PRESTO, JST, Japan; 4) Dept. Biochem. Cell Res., The Tokyo Metropolitan Institute of Medical Science, Japan.

937A
Essential role for the Drosophila orthologue of the Menkes / Wilson's P-type ATPases, DmATP7, in development and pigmentation. **Melanie Norgate[1,2], Adam Southon[1,2], Esther Lee[1,2], Ashley Farlow[1,2], Phil Batterham[1,2], James Camakaris[1], Richard Burke[1,2].** 1) Department of Genetics, University of Melbourne, Melbourne, Victoria, Australia; 2) Centre for Environmental Stress and Adaptation Research, University of Melbourne, Victoria, Australia.

938B
A Drosophila model of human ACTA1 nemaline rod myopathies? **John C. Sparrow[1], Sarah Haigh[1], Upendra Nongthomba[2], Vikash Kumar[1,3], Michelle Peckham[3].** 1) Dept Biol, Univ York, York, United Kingdom; 2) MRDG, Indian Institute of Science, Bangalore, India; 3) School of Biosciences, Univ Leeds, Leeds, United Kingdom.

939C
Antioxidant response and resistance to oxidative stress in Drosophila with respect to ageing. **Ruth A. Akhtar[1], Julie Z. Bone[1], Joanne Mathers[2], Lesley I. McLellan[2], Robert D. C. Saunders[1].** 1) Biological Sciences, The Open University, Milton Keynes, UK; 2) Biomedical Research Centre, University of Dundee, Ninewells Hospital and Medical School, Dundee, UK.

940A
Molecular genetic characterisation of Glutathione Synthetase in *D. melanogaster*. **Joanne C. Gilfillan[1], Pushpa Kansagra[1], Emma Shanks[2], Lesley I. McLellan[2], Robert D. C. Saunders[1].** 1) Dept Biological Sciences, Open University, Milton Keynes, UK; 2) Biomedical Research Centre, Ninewells Hospital and Medical School, University of Dundee, Scotland, UK.

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941B
Developing Hardware to Support *D. melanogaster* Experiments in Microgravity. **Max E. Sanchez[1], Maryam Shenasa[2], Araceli Maldonado[3], Ali Kakavand[1], David Leskovsky[1], Sharmila Bhattacharya[4].** 1) Lockheed Martin Space Operations, NASA Ames Research Center, Moffett Field, CA; 2) Education Associates Program, Moffett Field, CA; 3) Base Line Engineering, Moffett Field, CA; 4) NASA Ames Research Center, Moffett Field, CA.

942C
Mitochondrial genetics of aging in Drosophila: nuclear-mtDNA interactions modulate oxidative stress resistance and longevity-extending effects of caloric restriction and insulin signaling. **Rebecca A. Wagaman[1], David M. Rand[2].** 1) Molecular Biology, Cellular Biology, and Biochemistry, Brown University, Providence, RI; 2) Ecology and Evolutionary Biology, Brown University, Providence, RI.

943A
JNK and Insulin-like signals converge on Foxo to regulate stress resistance and longevity. **Meng Wang, Dirk Bohmann, Heinrich Jasper.** Biomedical Genetics, University of Rochester, Rochester, NY.

944B
Hsp70 Overexpression Enhances Lifespan But Not Stress Resistance in Drosophila. **Chengfeng Xiao, R. Meldrum Robertson, Laurent Seroude.** Department of Biology, Queen's University, Kingston, Ontario, Canada.

945C
Do flies show similar pharmaceutical drug-drug interactions as humans? **Benjamin D. Aronson, Manuel Valladolid.** Dept Biol, Univ Redlands, Redlands, CA.

946A
Functional conservation of Nibrin assessed by complementation of human and mouse Nijmegen Breakage Syndrome cells with Drosophila Nbs1 homolog. **M. A. Bangash, Lars Stöckl, Gabriele Hildebrand, Janina Radszewski, Susanne Rothe, Lars Krüger, Karl Sperling, Martin Digweed.** Institut für Humangenetik, Charite - Virchow-Klinikum, Berlin, Germany.

947B
Vibrio cholerae is a pathogen of arthropods. **Nathan S. Blow, Paula I. Watnick.** Geographic Medicine and Infectious Diseases, Tufts-New England Medical Center , Boston, MA.

948C
Interrelationships Between Sphingolipid, Fatty Acid and Ergosterol Metabolism in Drosophila: Involvement of the Sphingolipid Metabolic Pathway in Obesity. **Greg B. Brulte[1], Deron Herr[1], Michael Creason[1], Veleka Boyd[1], Julie D. Saba[2], Greg L. Harris[1].** 1) Cell and Molecular Biology, San Diego State University, San Diego, CA; 2) Children's Hospital Oakland Research Institute, Oakland, CA.

949A
Using Drosophila as a Model Genetic System to Understand Host-Pathogen Interactions during Listeria monocytogenes infection. **Janelle S. Lamberton, David S. Schneider.** Microbiology and Immunology, Stanford University, Palo Alto, CA.

950B
Drosophila PKD2, a model for polycystic kidney disease and how cilia sense the environment. **Xiangyi Lu, Ping Lao, Elizabeth Thomas.** Environmental Hlth Sci, Univ Alabama at Birmingham, Birmingham, AL.

951C
A P-element screen for genes conferring hypoxia tolerance and sensitivity in *D. melanogaster*. **Patrick Morcillo, Reza Farahani, Robert Douglas, Dan Zhou, Gabriel Haddad.** Dept Ped, 329 Kennedy, Albert Einstein Coll Med, Bronx, NY.

952A
Genetics of alcohol sensitivity in *D. melanogaster*. **Tatiana V. Morozova[1,2], Paul J. Gilligan III[1,2,3], Trudy F. C. Mackay[2,3], Robert R. H. Anholt[1,2,3].** 1) Dept of Zoology, NCSU, Raleigh, NC; 2) W. M. Keck Center for Behavioral Biology, NCSU, Raleigh, NC; 3) Dept of Genetics, NCSU, Raleigh, NC.

953B
Stress Affects Dopaminergic Signaling Pathways in *D. melanogaster*. **Wendi S. Neckameyer, Julianne T. Zerr, Joshua Weinstein.** Department of Pharmacological & Physiological Science, St Louis University Medical Center, St Louis, MO.

954C
Using phenotypic suppression to analyze mutations of uracil and β-alanine metabolism. **John Rawls.** Department of Biology, University of Kentucky, Lexington, KY.

955A
The Nuclear Envelope and Human Disease: Modeling laminopathies in Drosophila. **Sandra R. Schulze, Beatrice Curio-Penny, Yuhong Li, Reza Imani, Pamela K. Geyer, Lori L. Wallrath.** Dept. Biochemistry, Univ of Iowa, Iowa City, IA.

956B
Drosophila as a model system of muscular dystrophy: a molecular-genetic analysis of Dystroglycan-Dystrophin complex. **Halyna R. Shcherbata[1], Andriy S. Yatsenko[1], Larissa Paterson[1], Elizabeth E. Gray[1], Uri Nudel[2], Hannele Ruohola-Baker[1].** 1) Dept Biochemistry, Univ Washington, Seattle, WA; 2) Molecular Cell Biology, The Weizmann Institute of Science, Rehovot 76100, Israel.

957C
Utilization of *D. melanogaster* and the S2 Cell Line to Characterize the HIV-1 Related Gene, *OTK18*. **Cole R. Spresser, Kimberly A. Carlson.** Department of Biology, University of Nebraska at Kearney, Kearney, NE.

958A
Genetic enhancers of ovarian epithelial tumor invasion in Drosophila. **Min Zhao[1], Jun Hui Bian[1], Sirish Kishore[1], Scott Goode[1,2,3,4,5].** 1) Dept of Pathology, Baylor Coll Med, Houston, TX; 2) Dept of Molecular and Human Genetics, Baylor Coll Med, Houston, TX; 3) Dept of Molecular and Cellular Bio, Baylor Coll Med, Houston, TX; 4) Program in Developmental Bio, Baylor Coll Med, Houston, TX; 5) Program in Cell and Molecular Bio, Baylor Coll Med, Houston, TX.

959B
Phenotypic Changes in Long-Term Hyperoxia-Selected *D. melanogaster*. **Dan Zhou, Patrick Morcillo, Jin Xue, Nuny Morgan, Ying Lu-Bo, Orit Gavrialov, Christopher Haddad, Gabriel Haddad.** Dept. of Pediatrics, Albert Einstein College of Medicine of Yeshiva University, Bronx, NY 10461.