

# Society for Developmental Biology 68<sup>th</sup> Annual Meeting

July 23 – 27, 2009

Hyatt Regency, San Francisco, CA

**Organizing Committee:** Marianne Bronner-Fraser (Chair, SDB President), Claude Desplan, Robb Krumlauf and Andrea Streit

**Local Organizers:** Laura Burrus (SFSU) and Richard Schneider (UCSF)

Abstract program numbers are in *italics*

## PROGRAM

### Wednesday, July 22

**1 pm – 9 pm** [First SDB Faculty Re-Boot Camp](#) Marina  
*I* Chair: Karen L. Bennett. Univ Missouri-Columbia, SDB Professional Development & Education Committee

### Thursday, July 23

**8 am – 1 pm** *First SDB Faculty Re-Boot Camp* (continuation) Marina  
*I* Chair: Karen L. Bennett. Univ Missouri-Columbia, SDB Professional Development & Education Committee

**8 am – 5 pm** *Satellite Symposia* (not organized by SDB)  
**Symposium I** [Neural Crest and Ectodermal Placodes](#) Seacliff  
Co-Chairs: Paul Trainor, Andrea Streit and Robb Krumlauf. Stowers Institute for Medical Research, Kansas City, MO; Kings College London, UK

**Symposium II** [Plant Development in a Changing World](#) Bayview  
Co-Chairs: Dominique Bergmann, Andrew Groover and Chelsea Specht. Stanford University, CA; USDA Forest Service and UC Davis, CA; UC Berkeley, CA

1 – 5 pm SDB Committees Meetings TBA

2 – 6 pm Annual Meeting Registration Grand Ballroom Foyer

3 – 6 pm Exhibits and Poster Session I – set up Pacific Concourse

**6 – 8 pm** *Presidential Symposium* Grand Ballroom

6:00 *Welcome and introduction*  
**Marianne Bronner-Fraser**, CALTECH (SDB President)

*2* 6:15 *From Genome to Phenotype: Modeling the Interaction of Physical and Chemical Signals in Plant Meristems.*  
**Elliot M. Meyerowitz**. Division of Biology 156-29, California Institute of Technology, Pasadena, CA, USA.

6:50 *Gastrulation: from cells to embryo*  
**Claudio Stern**, University College London, UK.

7:25 *Enhancing regeneration in mouse and man*  
**Nadia Rosenthal**, EMBL, Italy.

**8 – 11 pm** *Opening Reception and Poster Session I, with Exhibits* Pacific Concourse

Poster Session I themes: *Education, Germ Cells and Gametogenesis, Early Embryo Patterning, Gene Regulation, Morphogenesis*

Author Presentation      Odd number poster boards: 8 – 9:30 PM  
Even number poster boards: 9:30 – 11 PM

**Friday, July 24**

7:30 – 9 am                      Continental breakfast at Posters                                      Pacific Concourse

7:45 – 9 am                      *Technical Tutorial by Applied Biosystems - SOLiD*                                      Seacliff

8 am – 5 pm                      Annual Meeting Registration                                      Grand Ballroom Foyer

**9 am – 12:30 pm                      *Concurrent Sessions***

**Concurrent Session 1: Germ and Embryonic Stem Cells**

Bayview

Chair: **Tony Mahowald**, Univ of Chicago (*Developmental Biology* Editor-in-Chief, 1981-84)

- 3**    9:00    *Asymmetric stem cell division ensured by anaphase spindle repositioning.*  
**Yukiko M. Yamashita**, Hebao Yuan, Jun Cheng, Alan J. Hunt. Life Sciences Institute, Center for Stem Cell Biology; Department of Cell and Developmental Biology; Department of Biomedical Engineering, Center for Ultrafast Optical Science.
- 4**    9:30    *A travelling niche: Steel factor controls primordial germ cell survival and motility throughout their migration.*  
**Ying Gu**, Chris Runyan, Amanda Shoemaker, Azim Surani, Chris Wylie. Div. of Dev. Biol., Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, USA; Graduate Program in Mol. & Dev. Biol., Univ. of Cincinnati, Cincinnati, OH, USA; Gurdon Institute, Univ. of Cambridge, Cambridge, UK.
- 5**    9:45    *Specifying root/shoot stem cells during Arabidopsis embryogenesis.*  
**Jeff A. Long**. Plant Biology Laboratory, Salk Institute for Biological Studies, La Jolla, CA, USA.
- 6**    10:15    *Molecular Dissection of Germ Cell Development in the Planarian Schmidtea Mediterranea.*  
**Yuying Wang**, Joel M. Stary, Phillip A. Newmark. Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign, Urbana, IL, USA; Howard Hughes Medical Institute.
- 10:30    Coffee Break
- 7**    11:00    *Development rooted in interwoven networks.*  
**Philip N. Benfey**, Hongchang Cui, Richard Twigg, Terri Long, Anjali Iyer-Pascuzzi, Hironaka Tsukagoshi, Rosangela Sozzani, Terry Jackson, Jaimie Van Norman, Miguel Moreno-Risueno. Biology Dept., Duke University, Durham, NC USA; IGSP Center for Systems Biology, Duke University, Durham, NC USA.
- 8**    11:30    *Cdx2 and FGF cooperate to specify brachial and thoracic spinal identity of mouse embryonic stem cell-derived motor neurons.*  
**Mirza Peljto**, Esteban O. Mazzoni, Vladimir Korinek, Hynek Wichterle. Dept. of Pathology, Center for Motor Neuron Biology and Disease, Columbia University, New York, NY, USA; Dept of Cell Dev. Biol., Institute of Molecular Genetics AS CR, Prague, Czech Republic.

- 9 11:45 *Vive la difference: The creation of sexual dimorphism in the soma and germline.*  
**Mark Van Doren.** Dept. of Biology, Johns Hopkins University, Baltimore, MD, USA.
- 10 12:15 *Role of Nanos and 'S bodies' in distinguishing somatic from germ cell fate in Drosophila.*  
**Howard D. Lipshitz.** Dept. of Molecular Genetics, Univ. of Toronto, Toronto, Ontario, Canada; Prog. in Developmental & Stem Cell Biol., Hosp. for Sick Children Res. Inst., Toronto.
- Concurrent Session 2: Developmental Neurobiology** Grand Ballroom A  
 Chair: **Sally Moody**, George Washington Univ Sch of Med (SDB Treasurer)
- 11 9:00 *The Evolution of Chemosensory Perception in Insects.*  
**Leslie B. Vosshall.** Howard Hughes Medical Institute, New York, NY USA; Lab. Neurogenet. Behav., Rockefeller Univ., New York, NY, USA.
- 12 9:30 *Id2 is essential for regulating growth and patterning of the vertebrate retina.*  
**Rosa A. Uribe,** Jeffrey M. Gross. Mol. Cell and Dev. Biol., Univ. of Texas at Austin, Austin, Tx, USA.
- 9:45 *TBA.*  
**Josh Sanes.** Harvard University, Cambridge, MA.
- 13 10:15 *Function of microRNA during Neuromuscular Junction Development.*  
**David Van Vactor,** Carlos M. Loya, Cecilia S. Lu, Tudor A. Fulga. Dept. of Cell Biology, Harvard Medical School, Boston, MA, USA.
- 10:30 Coffee Break
- 14 11:00 *Feedback regulation of neurogenesis.*  
 Rosa Gonzalez-Quevedo, Dorothy F. Sobieszczuk, Alexei Poliakov, Yoonsung Lee, Kenneth D. Poss,  
**David G. Wilkinson.** Div Dev Neurobiol, MRC-NIMR, Mill Hill, UK; Dept Cell Biol, Duke Univ Med Ctr, Durham, NC, USA.
- 15 11:30 *Sequential Neuropilin receptor signaling guides neural crest and motor axon segmentation..*  
**Laura S. Gammill,** Julaine Roffers-Agarwal. Dept of Genetics, Cell Biology and Development, U of MN, Minneapolis, MN 55455.
- 16 11:45 *Antagonistic actions of Olig2 and the Notch signaling pathway in the assignment of neuronal and glial cell fates.*  
 Lin Lin Yang, Zachary B. Gaber, Steven E. Weicksel, Eric Dessaud, David L. Rousso, James Briscoe,  
**Bennett G. Novitch.** Department of Neurobiology and Broad Center of Regenerative Medicine & Stem Cell Research, David Geffen School of Medicine at UCLA, Los Angeles, CA, USA; Department of Cell & Developmental Biology, University of Michigan, Ann Arbor, MI, USA; Developmental Neurobiology, National Institute for Medical Research Mill Hill, London, UK.
- 17 12:15 *Linking asymmetric division to the terminal differentiation program of postmitotic neurons in C. elegans.*  
**Vincent Bertrand,** Oliver Hobert. Columbia Univ., New York.
- Concurrent Session 3: Mechanisms of Developmental Patterning** Grand Ballroom B-C  
 Chair: **Igor Dawid**, NICHD-NIH (*Developmental Biology* Editor-in-Chief, 1975-80)
- 18 9:00 *Dynamic interpretation of the Hedgehog gradient drives wing disc patterning in Drosophila.*  
 Marcos Nahmad, **Angela Stathopoulos.** Dept. of CDS, Caltech, Pasadena, CA, USA; Div. of Biol., Caltech, Pasadena, CA, USA.

- 19 9:30 *Planarian anterior-posterior axis is established by interaction of voltage-dependent Ca<sup>2+</sup> influx and  $\beta$ -catenin signaling at the early stage of regeneration.*  
**Taisaku Nogi**, Dan Zhang, John D. Chan, Jonathan S. Marchant. Department of Pharmacology & The Stem Cell Institute, University of Minnesota Medical School, MN, USA.
- 9:45 *The regulation of leaf shapes.*  
**Neelima Sinha**. University of California, Davis.
- 20 10:15 *The diverse functions of transcriptional factor AP2 (TFAP2) targets in neural crest development.*  
**Ting Thalia Luo**, Yan Xu, Janaki Rangarajan, Trevor Hoffman, Yoo-Seok Hwang, Thomas Schilling, Thomas Sargent. Lab of Mol. Genet., NICHD/NIH, Bethesda, MD 20892; Dept. of Dev. and Cell. Biol. Univ. of California, Irvine, CA 92697.
- 10:30 Coffee Break
- 21 11:00 *Anterior and posterior neural plates from epiblast are derived by distinct molecular mechanisms.*  
**Hisato Kondoh**, M Iwafuchi, M Yoshida, V E. Papaioannou, R Lovell-Badge, M Uchikawa, T Takemoto. Osaka Univ, Osaka, Japan; Columbia Univ, NY, USA; MRC, NIMR, London, UK.
- 22 11:30 *Crosstalk between NF- $\kappa$ B and Wnt/beta-catenin pathways involved in skin appendages development.*  
**Celine Cluzeau**, Chunyan Mou, Sylvie Fraitag, Christine Bodemer, Arnold Munnich, Gilles Courtois, Heather Etchevers, Denis J. Headon, Asma Smahi, . INSERM U781, Hôpital Necker, Université Paris Descartes, Paris, France; The Roslin Institute and Royal (Dick) School of Veterinary Studies, University of Edinburgh, Roslin, Midlothian EH25 9PS, United Kingdom; Service d'anatomopathologie, Hôpital Necker, Paris, France; Service de dermatologie, Hôpital Necker, Paris, France.
- 23 11:45 *Pathways controlling cell fate decisions in the early mouse embryo.*  
**Elizabeth J. Robertson**, Sebastian Arnold, Mathias Groszer, Elizabeth Bikoff. Dept. Pathology, Univ Oxford, Oxford, UK; Wellcome Trust Centre Human Genetics, Univ Oxford, UK.
- 24 12:15 *Localized Xenopus trim36 regulates cortical rotation and dorsal axis formation.*  
**Douglas W. Houston**, Tawny N. Cuykendall. Dept. of Biology, The University of Iowa, Iowa City, IA, USA.
- 12:30 – 2 pm Lunch on your own  
 Poster Session I – tear down Pacific Concourse  
 Poster Session II – set up
- 1 – 2 pm **Funding Opportunities in Developmental Biology** Seacliff  
 Moderator: **Ida Chow**, SDB, with participation of representatives from NSF, NIH and other agencies.
- 2 – 4 pm **Postdoctoral Symposium** A session sponsored by Genentech Grand Ballroom  
 Co-Chairs: **Tara Alexander**, Stowers Institute and **Sujata Bhattacharyya**, Emory University  
 Eight short talk speakers will be selected from abstracts submitted by postdoctoral fellows who are current SDB members. Program and abstracts will be included in *Program Addendum*
- 4 – 4:30 pm **SDB Business Meeting** Grand Ballroom
- 4 – 4:30 pm Coffee Break
- 4:30 – 7 pm **Plenary Session I** Grand Ballroom

## Developmental Biology Symposium: Evolution of Developmental Regulatory Systems

Chair: **Claude Desplan**, NYU (*Developmental Biology* Section Editor)

- 25 4:30 *Evolution of an anterior morphogenetic center in long germ insects.*  
**Claude Desplan**, Ava Brent, Eugenia Olesnick, Miriam Rosenberg, Claude Desplan. Dept. Biology, NYU, New York, NY, USA.
- 26 5:00 *How many ways to make a chordate : comparison of the developmental programmes of ascidians and vertebrates.*  
Daniel Sobral, Andrea Pasini, **Patrick Lemaire**. IBDML, CNRS-Université de la Méditerranée, Marseille, France.
- 27 5:30 *Diversity of X-chromosome inactivation patterns during early mammalian development.*  
Ikuhiro Okamoto, Veronique Duranthon, Dominique Thepot, Nathalie Peynot, Jean Paul Renard, **Edith Heard**. Mammalian Developmental Epigenetics Group, Institut Curie, CNRS UMR3215, INSERM U934, 26 rue d'Ulm, Paris 75005; Biologie du Développement et de la Reproduction, INRA 78 352 Jouy en Josas Cedex..
- 47 6:00 *Gene regulatory networks and the encoded logic of development.*  
**Eric Davidson**. CALTECH, CA.
- 28 6:30 *Planarians, Stem Cells, and Regeneration.*  
**Alejandro Sánchez Alvarado**. Dept. of Neurobiology & Anatomy, Howard Hughes Medical Institute, University of Utah, Salt Lake City, UT, USA.

7 –8 pm *Meet the SDB Directors Reception for Students and Postdocs* Garden Room

7– 8 pm Dinner on your own

8 – 11 pm *Poster Session II, with Exhibits* Pacific Concourse

Poster Session II themes: *Development and Evolution, Functional Genomics, Cell Proliferation, Cell Motility and Guidance, Cell-Cell Signaling, Intracellular Signaling Pathways, Organogenesis*

Author Presentation Odd number poster boards: 8 – 9:30 PM  
Even number poster boards: 9:30 – 11 PM

### Saturday, July 25

7:30 – 9 am Continental breakfast at Posters Pacific Concourse

8 – 9 am *What's New in Peer Review @ NIH?* Seacliff  
**René Etcheberrigari**, Director, Div of Neuroscience, Development and Aging, CSR/NIH

8 am – 5 pm Annual Meeting Registration Grand Ballroom Foyer

9 am – 12:30 pm *Concurrent Sessions*

**Concurrent Session 4: Neural and Tissue Specific Stem Cells** Bayview

Chair: **Andrea Streit**, University College London, UK

9:00 *The regulation of stem cell self-renewal.*  
**Sean Morrison**. University of Michigan, Ann Arbor.

- 29 9:30 *Foxd3 Regulates Neural Crest Multipotency and Self-Renewal.*  
**Nathan A. Mundell**, Audrey Y. Frist, Patricia A. Labosky. Departments of Pharmacology, Cell and Developmental Biology; Center for Stem Cell Biology, Vanderbilt University, Nashville, TN, USA.
- 30 9:45 *The role of Gli3 in the neurogenesis of the forebrain.*  
Hui Wang, Guannan Ge, **Sohyun Ahn**. Unit on Developmental Neurogenetics, PGD, NICHD, NIH, Bethesda, MD, USA.
- 31 10:15 *The Role of Cyclical Ph-Snail1 Expression During Stem Cell Migration.*  
**Roberta L. Hannibal**, Nipam H. Patel. Department of Molecular & Cell Biology, University of California, Berkeley, USA; Department of Integrative Biology & Howard Hughes Medical Institute, University of California, Berkeley, USA.
- 10:30 Coffee Break
- 32 11:00 *Blood Stem Cells: Regulation by the niche.*  
Shane R. Mayack, Jennifer Shadrach, Koen Schepers, Emmanuelle Passegue, **Amy J. Wagers**. Joslin Diabetes Center, Boston, MA; University of California, San Francisco, San Francisco, CA.
- 33 11:30 *Wnt16 is Required for Specification of Hematopoietic Stem Cells.*  
**Wilson K. Clements**, Karen G. Ong, David Traver. Division of Biological Sciences, University of California at San Diego, La Jolla, CA 92093.
- 34 11:45 *Dynamic binding of transcription factors and chromatin modifiers during endoderm formation in hESCs.*  
**Julie Baker**, Se Jin Yoon, Chuba Oyolu, Edward Chuong, Si Wan Kim. Department of Genetics, Stanford University Medical School, Stanford, CA USA.
- 35 12:15 *Interplay between Nodal and BMP signaling in the maintenance of the zebrafish mesodermal precursor pool.*  
**Andreas Fritz**, Robert Esterberg. Biology Dept., Emory Univ., Atlanta, GA.
- Concurrent Session 5: Pattern Formation** Grand Ballroom A  
Chair: **Henry Krause**, U Toronto, Canada (SDB Canada Representative)
- 36 9:00 *Generation and Interpretation of Segmentation Clock Pattern during Zebrafish Somitogenesis.*  
**Scott Holley**. Dept. of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, USA.
- 37 9:30 *FoxH1 and Nodal Signaling During Zebrafish Development.*  
**Christopher E. Slagle**, Rebecca R. Burdine. Dept. of Mol. Biol., Princeton University., Princeton, NJ, USA.
- 38 9:45 *Pattern and polarity in the plant epidermis.*  
**Dominique Bergmann**, Juan Dong, Greg Lampard, Marta Paciorek, Cora MacAlister. Biology, Stanford Univ, Stanford, CA.
- 39 10:15 *Retrograde Intraflagellar Transport and Smoothed Localization in the Neural Tube.*  
**Polloneal J. Ocbina**, Kathryn V. Anderson. Developmental Biology Program, Memorial Sloan-Kettering Institute; Neuroscience Prog, Weill Graduate School of Medical Sciences of Cornell University.
- 10:30 Coffee Break

- 11:00 *BMP antagonists.*  
**Richard Harland.** University of California, Berkeley.
- 40** 11:30 *Regulation of FoxD3 in the neural crest..*  
**Sonja McKeown,** Marianne Bronner-Fraser. Div. of Biol., Caltech, Pasadena, CA, USA.
- 41** 11:45 *Regulation of dorsal-ventral axis formation by the control of protein stability.*  
**Igor B. Dawid,** Hyunju Ro. Laboratory of Molecular Genetics, NICHD, NIH, Bethesda MD, USA.
- 42** 12:15 *New aspects of the control of retinoic acid synthesis in the chick embryo.*  
**Malcolm Maden,** Susan Reijntjes. Dept. Zool & UF Genet. Inst., Univ. Florida, Gainesville, Florida, USA; Inst. Med. Sci., Univ. Aberdeen, Scotland, UK..
- Concurrent Session 6: Evolution of Complex Body Plan** Grand Ballroom B-C  
Chair: **Richard Behringer,** UT M.D. Anderson Cancer Center (SDB Southwest Representative)
- 43** 9:00 *Petal Development: Variations on a Theme.*  
**Vivian Irish.** Dept. of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, USA; Dept. of Ecology and Evolutionary Biology, Yale University, New Haven, CT, USA.
- 44** 9:30 *Yolk utilization depends on thyroid hormone in a direct developing frog..*  
**Srikanth Singamsetty,** Richard P. Elinson. Department of Biological Sciences., Duquesne University., Pittsburgh, PA 15282.
- 45** 9:45 *Deep conservation of deuterostome anterior patterning: origins of the vertebrate head.*  
**Christopher J. Lowe,** Ariel Pani, Sebastien Darras, Jochanan Aronowicz. Dept. of OBA, University of Chicago, Chicago, IL, USA; IBDML, CNRS, Luminy, Marseille, France.
- 46** 10:15 *Small Molecule-Mediated “Phenotypic Engineering” Reveals a Role for Retinoic Acid in Anuran Gut Evolution.*  
**Stephanie Bloom,** Carlos Infante, Anne Everly, James Hanken, Nanette Nascone-Yoder. Molecular Biomedical Sciences, College of Veterinary Medicine, North Carolina State University; Museum of Comparative Zoology, Department of Organismic and Evolutionary Biology, Harvard University.
- 10:30 Coffee Break
- L1** 11:00 *Genomic approaches to the early transcriptional network specifying the neurogenic domain in the sea urchin embryo.*  
**Lynne M. Angerer,** Zheng Wei, Shunsuke Yaguchi, Junko Yaguchi, Robert C. Angerer. National Institute of Dental and Craniofacial Research/National Institutes of Health, Bethesda, MD.
- 141** 11:15 The Regulation of Mouse Hoxb9. **Tara B. Alexander,** Y. Ahn, R. Krumlauf. Stowers Institute of Medical Research, Kansas City, MO, USA.
- 48** 11:30 *Decoding embryonic cis-regulatory modules at Drosophila Hox genes.*  
**Robert A. Drewell,** Margaret C. Ho, Sara E. Goetz, Benjamin J. Schiller, Esther Bae, John M. Allen, Welcome Bender, William Fisher, Susan E. Celniker. Biology Department, Harvey Mudd College, Claremont, CA; Western University of Health Sciences. Pomona, CA; Harvard Medical School Boston, MA; Lawrence Berkeley National Laboratory Berkeley, CA.
- 49** 11:45 *Choanoflagellate colonies and the origin of animal development.*  
**Nicole King.** Dept. of Molecular and Cell Biology, University of California, Berkeley.

- 50 12:15 *Evidence for multiple signaling events during the early cleavages of the mollusc Ilyanassa.*  
**Lisa M. Nagy**, Maey Gharbiah, Ayaki Nakamoto, Jessie Wandelt. Molecular and Cellular Biology, University of Arizona, Tucson, AZ USA; School of Biological Sciences, University of Texas, Austin, TX, USA.
- 12:30 pm – 1:30 pm **Technical Roundtable by Gene Tools** Seacliff
- 12:30 pm – 1:30 pm Lunch on your own  
 Poster Session II – tear down  
 Poster Session III – set up Pacific Concourse
- 1:30 – 3:30 pm Education Symposium** Grand Ballroom A  
 Co- Chairs: **Steven Farber**, Carnegie Institution and **Diana Darnell**, U of Arizona
- 51 1:30 *Talking About and Teaching Evolution.*  
**George V. Coyne**. Vatican Observatory, Tucson, AZ, USA.
- 52 2:00 *Talking about Science/Evolution to a Fellow Bus Rider.*  
**Steven A. Farber**, Diana K. Darnell, George V. Coyne. Dept. of Embryology, Carnegie Institution for Science, Baltimore, MD, USA; Dept. of Cell Biology & Anatomy, U of Arizona, Tucson, AZ, USA; Department of Planetary Sciences, U of Arizona, Tucson, AZ, USA.
- 2:30 – 4 pm Historical Session** Grand Ballroom B-C  
**SDB, Then and Now**  
 Chair: **Marnie Halpern**, Carnegie Institution for Science.
- 507 2:30 Marnie Halpern, CIS. *SDB then and now*  
 3:00 Presidents' Roundtable – participation by SDB past, current and future Presidents
- 4 – 4:30 pm Coffee Break
- 4:30 – 7 pm Plenary Session II** Grand Ballroom  
**History of Developmental Biology**  
 Chair: **Carole LaBonne**, Northwestern (SDB Midwest Representative)
- 53 4:30 *Celebrating Modern Science: The Anniversaries of Galileo, Darwin, & Einstein.*  
**Diana Buchwald**. Division of Humanities & Social Sciences, Einstein Papers Project, Caltech, Pasadena, CA, USA.
- 54 4:55 *From Goethe to MADS-box genes: Two centuries of botanical thought on homology and evolutionary developmental biology.*  
**William E. Friedman**. Department of Ecology and Evolutionary Biology, University of Colorado, Boulder, CO, USA.
- 55 5:20 *Development and evolution from Darwin to Davidson: Steps in towards a mechanistic explanation of phenotypic evolution.*  
**Manfred D. Laubichler** School of Life Sciences, ASU, Tempe, AZ, USA.
- 56 5:45 *Offerings from an Urchin.*  
**Susan G. Ernst**. Dept. of Biology, Tufts Univ., Medford, MA.
- 6:10 *Organizers and genes - Waddington's legacy.*  
**Claudio Stern**. University College London, UK.



57 6:35 *Regeneration, Transplantation, and Translation: What's New, What's Not, and Why it Matters.*  
**Jane Maienschein.** School of Life Sciences 874501, ASU, Tempe AZ 85287-4501.

7 – 8 pm Dinner on your own

8 – 11 pm **Poster Session III, with Exhibits** Pacific Concourse  
Poster Session III themes: *Stem Cells and Tissue Regeneration, Development and Molecular Medicine, Cell Fate Specification, Patterning and Transcription Factors*  
Author Presentation Odd number poster boards: 8 – 9:30 PM  
Even number poster boards: 9:30 – 11 PM

### Sunday, July 26

7:30 – 9 am Continental breakfast at Posters Pacific Concourse  
Exhibits and Poster Session III – tear down

8 am – 5 pm Annual Meeting Registration Grand Ballroom Foyer

9 am – 12:30 pm **Concurrent Sessions**

#### **Concurrent Session 7: Development and Tissue Engineering** Bayview

Chair: **Robb Krumlauf**, Stowers Institute (*Developmental Biology* Editor-in-Chief, 2006-present)

58 9:00 *Adult Stem Cells and Nanomaterials in Skeletal Tissue Engineering and Regeneration.*

**Rocky S. Tuan.** Cartilage Biology and Orthopaedics Branch, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, Bethesda, MD, USA.

59 9:30 *Tgf- $\beta$  and Intervertebral Disc Development.*

**Megan K. Cox**, Ajay Tambralli, Philip Sohn, Ho-Wook Jun, Rosa Serra. Dept. of Cell Biol., Univ. of Alabama at Birmingham, Birmingham, AL, USA; Dept. of Biomedical Engineering, Univ. of Alabama at Birmingham, Birmingham, AL, USA.

9:45 *Integrating molecular and macroscopic cues to engineer bone development.*

**Linda Griffith.** MIT.

60 10:15 *A role for Cdc42 in spindle positioning and planar orientation of cell divisions during vertebrate neural tube closure.*

**Esther K. Kieserman**, John B. Wallingford. MCDB., Univ. of Texas at Austin., Austin, TX, USA.

61 11:00 *Morphogenesis of model tissues.*

**Celeste M. Nelson.** Depts. of Chem. Eng. and Mol. Biol., Princeton Univ., Princeton, NJ, USA.

11:30 *Computational exploration of the evolutionary landscape of multicellular phenotypes.*

**Anand Asthagiri.** Caltech.

12:00 *Imaging vessel dynamics in mammalian development and tissue engineering.*

**Mary Dickinson.** Baylor College of Medicine.

#### **Concurrent Session 8: Epigenetic Influences on Development**

Grand Ballroom A

Chair: **Mary Mullins**, U Pennsylvania (SDB Secretary)

- 62** 9:00 *Angiogenic-like response to hypoxia of the Drosophila tracheal system.*  
Lazaro Centanin, Andres Dekanty, Nuria M. Romero, Thomas A. Gorr, **Pablo Wappner**. Instituto Leloir, Patricias Argentinas 435, Buenos Aires (1405), ARGENTINA; Institute of Veterinary Physiology, Vetsuisse Faculty and Zurich Center for Integrative Human Physiology (ZIHP), University of Zurich, Wintherthurerstrasse 260, CH-8057 Zurich, Switzerland.
- 63** 9:30 *Oxygen-sensitive gene expression in C. elegans development and longevity.*  
**Jo Anne Powell-Coffman**, Yi Zhang, Zhiyong Shao, Dingxia Feng, Zhiwei Zhai. Dept. of Genetics, Development, and Cell Biology, Iowa State Univ., Ames, IA, USA.
- 64** 9:45 *Epigenetic erasure during C. elegans primordial germ cell specification.*  
**Sujata Bhattacharyya**, Hirofumi Furuhashi, William G. Kelly. Biol. Dept., Emory Univ., Atlanta, GA 30322..
- 65** 10:15 *The Interaction of the Wnt and Nodal Pathways during Organizer Formation in Xenopus laevis.*  
**Christine D. Reid**, Daniel S. Kessler. Dept. of Cell and Dev Biol, Univ of PA, Philadelphia, PA.
- 11:00 *Directional collective migration of neural crest cells: interplay between contact inhibition of locomotion and chemoattractants.*  
**Roberto Mayor**. University College London, UK.
- 66** 11:30 *A variant histone H3.3 mutant reveals a role for epigenetic remodeling in the specification of the multipotent cranial neural crest.*  
**Samuel G. Cox**, Hyunjung Kim, Woojin An, Gage D. Crump. Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research, University of Southern California, Los Angeles, CA, USA.
- 11:45 *Sox in the city - partners, transient interactions, and context.*  
**Carole LaBonne**. Northwestern University.
- 67** 12:15 *Neurodevelopmental functions of the epigenetic machinery in the zebrafish embryo: Histone Deacetylase 1 regulates transformation of neural progenitors into neurons and glia.*  
**Michael R. Harrison**, Aristophanes S. Georgiou, Elewys G. Lightman, Adam J. Buckle, Herman P. Spaink, Vincent T. Cunliffe. MRC Centre for Developmental & Biomedical Genetics, University of Sheffield, Sheffield, UK; Institute of Biology, Leiden University, Leiden, The Netherlands.
- Concurrent Session 9: Organ Development** Grand Ballroom B-C  
Chair: **Blanche Capel**, Duke University (SDB Southeast Representative)
- 9:00 *Everything you wanted to know about the development of the lymphatic vasculature but were afraid to ask.*  
**Guillermo Oliver**. St. Jude Children's Research Hospital.
- 68** 9:30 *The EVERSLED receptor-like kinase modulates floral organ shedding in Arabidopsis.*  
**Michelle E. Leslie**, Michael W. Lewis, Arden Larberg, Sarah J. Liljegren. Curr. in Genetics and Mol. Bio., UNC-Chapel Hill, NC, USA; Dept. of Bio., UNC-Chapel Hill, NC, USA.
- 69** 9:45 *Deaf and Dizzy Mice: a genetic dissection of inner ear development.*  
**Lisa Goodrich**, Victoria Abaira, Tony Del Rio, Sayeeda Ahsanuddin. Dept. of Neurobiology, Harvard Medical School, Boston, MA, USA.
- 70** 10:15 *shorthand is critical for limb development and the keratinocyte proliferation-differentiation switch..*

**Scott D. Weatherbee.** Genetics Dept. Yale Univ. Medical School. New Haven, CT, USA.

**71** 11:00 *Insights into the Organization of Dorsal Spinal Cord Pathways from an Evolutionarily-Conserved Raldh2 (Aldh1a2) Intronic Enhancer.*

**José Xavier-Neto.** Laboratory of Genetics and Molecular Cardiology; InCor-HC-FMUSP, São Paulo-SP, Brazil.

**72** 11:30 *Characterization of a genetic network sufficient to convert cells to functional eyes.*

**Michael E. Zuber,** Yung Lyou, Andrea S. Viczian. Dept. of Ophthalmology, SUNY Upstate Medical Univ., Syracuse, NY, USA.

**73** 11:45 *Macro- and Micro- Environmental regulation of ectodermal organ stem cells.*

**Cheng-Ming Chuong.** Dept of Pathology, University of Southern California, Los Angeles. CA, USA.

**74** 12:15 *The novel actin nucleator Cordon-bleu interacts with Syndapins during epithelial development.*

**Laura Custer,** Elizabeth Driver, Kent Wood, John Klingensmith. Dept of Cell Biology, Duke Univ, Durham, NC.

12:30 pm – 1:30 pm Lunch on your own

**1:30 – 3:30 pm** *Plenary Session III* Grand Ballroom

**Past Presidents: What are they up to now?**

Chair: **Marianne Bronner-Fraser,** CALTECH (SDB President)

1:30 *Sprouty genes and vertebrate organogenesis*

**Gail Martin,** UCSF.

**75** 2:00 *Evolution of Eye Degeneration in Cavefish.*

**William R. Jeffery.** Department of Biology, University of Maryland, College Park, MD 20742.

2:30 *Germ cell migration in vivo*

**Ruth Lehmann,** NYU.

3:00 *The Cell Biology and Biophysics of Shape Change in the Drosophila Embryo*

**Eric Wieschaus,** Princeton.

3:30 – 4 pm Coffee Break

**4 - 6 pm** *Awards Lectures* Grand Ballroom

4:00 *Special Education Award to MBL Embryology Course* - Presented by Richard Harland, SDB President-elect

4:15 *Edwin G. Conklin Medal* - Presented by Richard Harland, SDB President-elect.

**L2** **David Kingsley,** Stanford. *Fishing for the secrets of vertebrate evolution*

4:50 *DB-SDB Lifetime Achievement Award* - Presented by Marianne Bronner-Fraser, SDB President.

**76** **Donald Brown,** Carnegie Institution for Science. *Studying gene expression for a long time*

5:25 *Viktor Hamburger Outstanding Educator Prize* - Presented by Bill Wood, SDB Professional Development and Education Committee Chair.

**Sean B. Carroll,** Univ of Wisconsin-Madison. *Remarkable creatures: Epic adventures in the search for the origins of species*

**7:30 – 11 pm** *Awards Reception and Banquet with Best Student Poster Awards Presentation* Grand Ballroom

Chair: **Dominique Bergmann**, Stanford (SDB Junior Faculty Representative and Organizer of Best Student Poster Competition)

**Monday, July 27, 2009**

**Departure**

8:30 am – 5 pm            SDB Board of Directors Meeting

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**Exhibitors:** Aquatic Habitats, BioMicro Systems, Cold Spring Harbor Lab Press, *Developmental Biology*-Elsevier, *Developmental Dynamics*, EMAGE Gene Expression Database, FASEB-MARC, Gene Tools, Intavis, National Center for Science Education, National Institutes of Health, National Science Foundation, Phalanx Biotech, Sinauer Associates, The Company of Biologists, Wiley-Blackwell, Zymo Research Corporation

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