2017 Midwest *Drosophila* Conference

November 4-5
Allerton Park & Retreat Center
Monticello, IL

2017 Midwest Drosophila Conference Schedule

Note: there is a poster and presentation competition for trainees

Saturday, November 4, 2017

1:00 PM Check In
1:30 PM Introduction *Organizers*

1:40 PM – 4:00 PM Session 1: Cell migration, tissue tension and wound healing/regeneration (Moderator: Jocelyn McDonald) *Allerton Library*

[1] 1:40 PM, **Nrf2 regulates tissue regeneration through ROS and JNK signaling in the *Drosophila* imaginal wing disc**
Amanda Brock and Rachel K. Smith-Bolton
Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign

[2] 2:00 PM, **Metabolomic analysis reveals that the Drosophila gene *lysine* influences diverse aspects of metabolism**
Samantha L. St. Clair, Hongde Li, Usman Ashraf, Jonathan Karty, and Jason M. Tennessen
Department of Biology. Indiana University. Bloomington, IN

[3] 2:20 PM, **Tumor suppressive roles of Nucleoporins 98 and 96 in Drosophila wing epithelium**
Ajai Pulianmackal, Kiriaki Kanakousaki, Kerry Flegel and Laura Buttitta
University of Michigan, Ann Arbor, MI

[4] 2:40 PM, **Investigating the roles of Fascin in collective cell migration using Drosophila border cell migration**
Maureen C. Lamb, Kelsey Anilker, and Tina L. Tootle
University of Iowa Carver College of Medicine, Iowa City, IA

[5] 3:00 PM, **Protein Phosphatase 1 is a switch for single cell to collective cell migration**
Yujun Chen[1], George Aranjuez[2], Ashley Burtscher[2], Ketki Sawant[1], Xiaobo Wang[3], Damien Ramel[3] and Jocelyn A. McDonald[1]
1) Division of Biology, Kansas State University, Manhattan, KS; 2) Lerner Research Institute, Cleveland Clinic, Cleveland, OH; 3) LBCMCP, Centre de Biologie Intégrative (CBI), Université de Toulouse, CNRS, UPS, France

[6] 3:20 PM **The role of prostaglandins in collective, invasive cell migration**
Emily Fox and Tina Tootle
Anatomy and Cell Biology Dept., University of Iowa

3:40 PM – 4 PM Break *Solarium*

4:00 PM – 5:20 PM Session 2: Chromosomes, transcriptional control and new *Drosophila* techniques and resources (Moderator: Nate Mortimer)
Allerton Library

[7] 4:00 PM, **Comparative Meiotic Cytology Among Drosophila Species**
Ahmed Majekodunmi and William Gilliland
DePaul University Department of Biological Sciences

[8] 4:20 PM, **CRISPR/Cas9-mediated mutagenesis reveals a novel functional domain of Zelda essential for development**
Danielle C. Hamm, Elizabeth D. Larson, Markus Nevil, Kelsey E. Marshall, Eliana R. Bondra, and Melissa M. Harrison
Department of Biomolecular Chemistry, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin

[9] 4:40 PM, **Update from the DGRC**
Andrew Zelhof, Director
Indiana University

[10] 5:00 PM, **Update from the BDSC**
Cale Whitworth, Collections Manager and Scientific Staff
Indiana University

5:20 PM – 6:00 PM Free Time

6:00 PM – 7:00 PM Dinner *Dining Room*

7:00 PM – 8:40 PM Session 3: Sleep, circadian rhythms and neurobiology (Moderator: Alysia Mortimer) *Allerton Library*

[11] 7:00 PM, **Circadian Regulation of Drosophila Feeding Behavior**
Austin P. Dreyer, Madison Martin, Daniel Jabr, Daniel Cavanaugh
Loyola University of Chicago

[12] 7:20 PM, **Correlating lifespan with sleep architecture in Drosophila**
Joshua Lisse[1], Courtney Fiebelman[1], Luyang Wang[2], Nuran Ercal[3], V.A. Samaranayake[2], Gayla Olbricht[2], and Matthew S. Thimgan[1]
1. Department of Biological Sciences, 2. Department of Mathematics and Statistics, 3. Department of Chemistry, Missouri University of Science and Technology

[13] 7:40 PM **An Investigation into the Behavioral and Physiological Effects of Chronic Circadian Misalignment in Drosophila melanogaster**
Alex Boomgarden, Gabriel Sagewalker, Pramathini Patel and Daniel Cavanaugh
Loyola University Chicago

[14] 8:00 PM **Serotonin signaling ties psychological experience with healthy aging in Drosophila**
Tuhin S Chakraborty[1], Christi M Gendron[1], Allyson S Munneke[2], Yang Lyu[1], Madeline N DeMarco[1], Zachary W Hoisington[1] and Scott D Pletcher[1]
1. Department of Molecular & Integrative Physiology, and 2. Program in Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI

[15] 8:20 PM **The Drosophila SK Potassium Channel Negatively Regulates Nociception**
Stephanie Mauthner [1,2], Kia Walcott[3], Asako Tsubouchi[4], Jessica Robertson[3], W. Dan Tracey[1,2]
1) Gill Center for Biomolecular Research, Bloomington, IN, 2) Indiana University, Biology, Bloomington, IN, 3) Duke University, Duke University Medical Center, Durham, NC, 4) The University of Tokyo, Graduate School of Arts and Sciences, Tokyo, Japan

8:40PM – 10:30 PM Poster Presentations *Solarium*

Sunday, November 5, 2017

8:00 AM – 9:00 AM Breakfast *Dining Room*
Please check out of your room at the front desk before 11:00 AM

9:00 AM – 10:40AM Session 4 Metabolism, mitochondria and disease models (Moderator: Jason Tennessen) *Allerton Library*

[16] 9:00 AM, **Drosophila tafazzin mutants have reduced exercise capacity**
Deena Damschroder, Robert Wessells
Department of Physiology, Wayne State University School of Medicine, Detroit, MI 48201

[17] 9:20 AM, **The protective effect of mitochondria complex I knockdown in a Drosophila model of chemotherapy-induced peripheral neuropathy**
Christopher Groen, Anthony Windebank
Mayo Clinic, Rochester, MN

[18] 9:40 AM, **Mechanical stress dissipation in the Drosophila wing imaginal disc through calcium signaling**
Jeremiah Zartman
University of Notre Dame, Notre Dame, IN

[19] 10:00 AM **Knockdown of multicopper oxidase 4 Eliminates the Peritrophic Matrix and Alters the Adult Microbiome in Drosophila**
Sean Conway and Edward M. Blumenthal
Biological Sciences, Marquette University Milwaukee, WI

10:20 AM – 10:40 AM Break and Group Photos *Solarium*

10:40 AM – 12:00 PM Oxidative Stress and neuronal damage and death (Moderator: Tina Tootle) *Allerton Library*

[20] 10: 40 – 11:00 **The Evolution of p38K MAP Kinases**
Kaitie Wildman[1], Sarah M. Ryan[2,3], Nathan T. Mortimer[1], and Alysia Vrailas-Mortimer[1,2]
1) School of Biological Sciences, Illinois State University, Normal, IL; 2) Department of Biological Sciences, University of Denver, Denver, CO.; 3) Chemical and Biological Engineering Department, Colorado School of Mines, Golden, CO.

[21] 11:00 AM, **Identification of a Novel Regulator of Glial Development**
Diana Luong, Luselena Perez and Jennifer Jemc Mierisch
Department of Biology, Loyola University Chicago, Chicago, IL

[22] 11:20 AM, **Understanding the role of Wg Signaling pathway in Aβ42 mediated neurodegeneration**
Ankita Sarkar, Amit Singh
University of Dayton

[23] 11:40 PM **Anesthetics influence mortality in a Drosophila blunt trauma model**
Julie A. Fischer, Barry Ganetzky, David A. Wassarman, Misha Perouansky
Department of Anesthesiology, University of Wisconsin-Madison SMPH

12:00 PM – 12:10 PM Business Meeting *Allerton Library*

12:20 PM – 1:30 PM Award Announcements, Lunch *Dining Room*

1:40 PM Departure

Poster Presentations

Poster board size 4' x 4'.

1. A transcriptional mechanism controls expression of temporal patterning factor Sloppy-paired in Drosophila medullary neuroblasts

Alokananda Ray and Xin Li
Department of Cell and Developmental Biology, University of Illinois Urbana-Champaign, Urbana, IL 61801-3761

2. The role of p53 isoforms in the Drosophila female germline

Ananya Chakravarti[1], Binqing Zhang[2], Heshani Thiramanne[3] and Brian R. Calvi[1]
1Department of Biology, Indiana University, Bloomington, IN 47405, 2current address, Advanced Cell Diagnostics, CA 94560, 3current address, University of Washington, Seattle, WA

3. Downstream targets of the Forkhead domain transcription factor Jumeau mediate cardiac progenitor cell specification and division.

Andrew J. Kump [1,2], Manoj Panta[1,2], Ye Chen[3], Xujing Wang[3], Shaad M. Ahmad [1,2]
1) Department of Biology, Indiana State University, Terre Haute, IN; 2) The Center for Genomic Advocacy, Indiana State University, Terre Haute, IN; 3) National Heart, Lung and Blood Institute, NIH, Bethesda, MD.

4. Role of drop dead in spermatogenesis

Anika Benske and Edward Blumenthal
Biological Sciences, Marquette University Milwaukee, WI

5. Capicua's Role in the Regulation of Tissue Regeneration

Aria Darbandi, Rachel Smith-Bolton
Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign

6. Investigating the role of metabolic regulation during an immune response

Ashley L. Waring and Nathan T. Mortimer
School of Biological Sciences, Illinois State University

7. Using the D. melanogaster accessory gland as a model for prostate cancer

Allison Box, Jaimian Church, David Hayes and Laura Buttitta
University of Michigan, Dept. of Molecular, Cellular and Developmental Biology, Ann Arbor, MI

8. The Role of Kinase Fusion DNAJB1-PRKACA in Fibrolamellar Hepatocellular Carcinoma

Cassandra A Kersten (1), Elise N. Sloey (1), Eric Zhou (1), Bing Shui (1), Robert J. Plummer (1), Lixia Guo (2), Angela L. Gregor (1), Kenneth C. Uy (1), Yanan Yang (1,2), Michael S. Torbenson (3), Ying Peng (1), Yi Guo (1,4)
(1)Department of Biochemistry and Molecular Biology, (2) Division of Pulmonary and Critical Care Medicine, (3) Laboratory Medicine and Pathology, (4) Division of Gastroenterology and Hepatology, Mayo Clinic, MN 55905

9. Transport of the SERCA virulence factor through parasitoid wasp venom
Chris Lark and Nathan T. Mortimer
School of Biological Sciences, Illinois State University

10. The Role of the Dop Kinase in Hedgehog Signaling and Cell Morphology
CJ Patel and Bob Holmgren
Dept. of Molecular Biosciences, Northwestern University, Evanston, Il

11. The Notch signaling pathway specifies cardiac cell subtypes by regulating the expression of different pericardial genes through distinct permissive and instructive mechanisms.
John M. Dalloul[1,2,3], Manoj Panta[2,3], Andrew J. Kump[2,3] Mason B. Gay [2,3], Kristopher Schwab[2,3] Shaad M. Ahmad [2,3]
1) Terre Haute South High School, Terre Haute, IN; 2) Department of Biology, Indiana State University, Terre Haute, IN; 3) The Center for Genomic Advocacy, Indiana State University, Terre Haute, IN.

12. Quantitative analysis of Ca2+ signaling downstream of Decapentaplegic signaling in the Drosophila wing imaginal disc
Dharsan K. Soundarrajan[1], *, #, Qinfeng Wu[1], *, Pavel A. Brodskiy[1], Jianxu Chen [2], Peixian Liang [2], Danny Z. Chen [2], and Jeremiah J. Zartman [1]
1Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN 46556, USA; 2Department of Computer Science and Engineering, University of Notre Dame, Notre Dame, IN 46556, USA. *Collaborative contributors, # presenter

13. Exploring the relationships between nuclear actin, prostaglandins, and the cell cycle
Dylane Wineland and Tina Tootle
Department of Anatomy and Cell Biology, University of Iowa, Carver College of Medicine

14. Determining the function of the transcription factor Zelda in driving neural stem cell fate
Elizabeth D. Larson[1], Danielle C. Hamm[1], Hideyuki Komori[2], Cheng-Yu Lee[2] and Melissa Harrison[1]
1 Department of Biomolecular Chemistry, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin 53706
2 Department of Cell and Developmental Biology and Life Sciences Institute, University of Michigan, Ann Arbor, MI

15. A Drosophila model of bacteremia
Joshua R. Hill and Nathan T. Mortimer
School of Biological Sciences, Illinois State University

16. Interactions Between the COG Complex and ATP7A in Neurodegenerative Disease
Jake McArthy, C.J. Ponton, Savanah Taylor, and Alysia D. Vrailas-Mortimer
School of Biological Sciences, Illinois State University, Normal, IL

17. Differential roles of calcium signaling channels on epithelial tissue morphogenesis and homeostasis
Jamison Jangula, Qinfeng Wu, Cody Narciso, and Jeremiah Zartman
Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN

18. Circadian environmental cues modulate aging in Drosophila melanogaster
Jacob C Johnson and Scott D Pletcher
University of Michigan, Department of Molecular & Integrative Physiology, Ann Arbor, MI

19. The role of CG17352 in Drosophila photoreceptor homeostasis
Johnathan Rylee and Andy Zelhof
Indiana University

20. TEL-mediated dysregulation requires the activity of higher order polymers
Juana Delao and Ilaria Rebay
University of Chicago, IL

21. The adaptor protein, Dreadlocks, is essential for normal ring canal expansion and membrane stability in the developing egg chamber
Kara Stark, Olivia Crowe and Lindsay Lewellyn
Butler University, Biological Sciences

22.Cloning of Muscular Dystrophy Genes in Drosophila
Katelyn Anderson, Rita Gebreselassie, and Alysia Vrailas-Mortimer
School of Biological Sciences, Illinois State University, Normal, IL

23. Dystrophin's structure, subcellular organization, and roles in development.
Miranda Villarreal, Srishti Goel, Lavanya Sathyamurthy, Andres Vidal-Gadea, Kevin Edwards.
School of Biological Sciences, Illinois State University, Normal IL

24. Identification and analysis of JAK-STAT pathway regulator genes in Drosophila immunity
Pooja KR and Nathan T. Mortimer
School of Biological Sciences, Illinois State University

25. Metabolic Dysregulation following Traumatic Brain Injury in Drosophila melanogaster
Laura C. Swanson, Kelly L. Wassarman, Rebeccah J. Katzenberger, Barry Ganetzky and David A. Wassarman
Department of Medical Genetics, School of Medicine and Public Health, University of Wisconsin-Madison

26. Do cells select against a high frequency of mitochondrial DNA mutations?
Leah Anderson (1), Leo Pallack (2)
1. Ohio State University, Columbus, OH 2. University of Washington, Seattle, WA

27. The role of Forkhead domain transcription factors and their downstream targets in mediating proper positioning of cardiac cells

Manoj Panta[1, 2], Andrew J. Kump[1, 2], Ye Chen[3], Xujing Wang[3] , Neal Jeffries[3], Shaad M. Ahmad[1,2].
1) Department of Biology, Indiana State University, Terre Haute, IN; 2) The Center for Genomic Advocacy, Indiana State University, Terre Haute, IN; 3) National Heart, Lung and Blood Institute, NIH, Bethesda, MD.

28. The Role of Btk29A in Tissue Regeneration

Matthew Contreras, Benjamin Wang, Mabel Seto, Amanda R. Brock, and Rachel K. Smith-Bolton Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign

29.Identifying Natural Variation in Midline Axon Guidance Using the Drosophila melanogaster Genetic Reference Panel

Maya Gosztyla and Mark Seeger
Molecular Genetics, Ohio State University, Columbus OH

30.Calcium-dependent regulation of actomyosin contractility after epithelial wounding

Megan Levis[1], Jamison Jangula[1], Ali Nematbakhsh[2], Mark Alber[2], Jeremiah Zartman[1]
1. Department of Chemical and Biomolecular Engineering, University of Notre Dame, McCourtney Hall, Notre Dame, IN 46556
2. Department of Mathematics, University of California Riverside, Surge, Riverside, CA 92521, USA

31. Drosophila Lamin Acts in Both Motor Neurons and Muscle to Regulate Locomotor Functions

Megan Knoernschild and Alysia D. Vrailas-Mortimer
School of Biological Sciences, Illinois State University, Normal, IL

32. The Role of the Immunoglobulin Superfamily Protein Dpr11 in the Development of the Neural Circuit for Nociception in Drosophila

Melanie Chin and WD Tracey
Indiana University, Bloomington, IN

33. The Aging Gene lamin Is Regulated by the p38 MAPK and the CASA Complex

Michael J. Almassey[1], Sarah M. Ryan[2,3], Basheer Beccera[1], Kaitie Wildman[1], Nathan T. Mortimer[1], Alysia D. Vrailas-Mortimer[1,2].
1) School of Biological Sciences, Illinois State University, Normal, IL; 2) Department of Biological Sciences, University of Denver, Denver, CO.; 3) Chemical and Biological Engineering Department, Colorado School of Mines, Golden, CO.

34. Defining how dERR regulates growth during Drosophila Oogenesis

Nader Mahmoudzadeh, Chunyang Zhang, Lauryn Adams, Brian R. Calvi, Jason M. Tennessen Department of Biology, Indiana University Bloomington, IN 47405

35. Growth Regulatory Pathway collaborates with Axial Patterning Genes to regulate Patterning and Growth in Drosophila Eye

Neha Gogia[1], Madhuri Kango-Singh[1,2,3], Amit Singh[1,2,3,4]
1) Department of Biology, University of Dayton, 300 College Park Drive, Dayton, OH; 2) Premedical Program, University of Dayton; 3) Center for Tissue Regeneration & Engineering (TREND), University of Dayton, 300 College Park Drive, Dayton, OH; 4) Center for Genomic Advocacy (TCGA), Indiana State University, Terre Haute, IN

36. HIB Ensures Hh Robustness By Preferentially Targeting CiR

Nicole Roberto and Bob Holmgren
Dept. of Molecular Biosciences, Northwestern University, Evanston, Il

37. Collective Cell Migration in the Drosophila Ovary: Connecting the Dots to Tumor Invasion

Nirupama Kotian and Jocelyn A. McDonald
Division of Biology, Kansas State University, Manhattan, KS

38. Ndc80 complex members relocalize during hypoxia in female meiosis but not mitosis

Gabrielle Presbitero, Doreen Elrad, Olivia Johnson, William Gilliland DePaul University
Department of Biological Sciences

39. Large Scale Genetic Screen to Identify Metabolic Regulators of Specification and Differentiation

Rose C. Massey, Sara Hardman, Rachael Lawson, Aumunique Page, Kudakwashe Tshililiwa, Joy Morounfolu, and Jason M. Tennessen
Department of Biology. Indiana University. Bloomington, IN 47405

40. Mito-nuclear interactions modify Drosophila exercise performance

Alyson Sujkowski[1], Thiviya Rajagopalan[1], Maryam Safdar[1], Dinko Imsirovic[1], Robert Arking[2], Adam Spierer[3], David Rand[3], Robert Wessells[1]
1 – Department of Physiology, Wayne State University, Detroit, MI
2 – Department of Biological Sciences, Wayne State University, Detroit, MI
3 – Department of Ecology and Evolutionary Biology, Brown University, Providence, RI

41. Ribbon Regulates Gonad Development and Function

Usama Khan, Manuel Alvarez, Sana Moqeet, and Jennifer Jemc Mierisch
Department of Biology, Loyola University Chicago, Chicago, IL

42. Correlating lifespan with sleep architecture in Drosophila

Joshua Lisse[1], Courtney Fiebelman[1], Luyang Wang[2], Nuran Ercal[3], V.A. Samaranayake[2], Gayla Olbricht[2], and Matthew S. Thimgan[1]
1. Department of Biological Sciences, 2. Department of Mathematics and Statistics, 3. Department of Chemistry, Missouri University of Science and Technology

43. Understanding the role of Wg Signaling pathway in Aβ42 mediated neurodegeneration

Ankita Sarkar, Amit Singh
University of Dayton

44. Identification of the *Drosophila* Tribbles conserved COP1 binding site

Christopher E. Nauman, Trevor Landon, and Leonard L. Dobens
Department of Molecular Biology and Biochemistry, University of Missouri – Kansas City, Kansas City, Missouri