



November 16-17, 2024
Allerton Park and Retreat Center
Monticello, IL

2024 Midwest *Drosophila* Conference

All times are in Central Standard Time

Saturday, November 16

12:00 – 1:30 PM Registration and check-in at Allerton Park and Retreat Center
(Allerton: 217-333-3287; 515 Old Timber Rd, Monticello, IL)

1:30 – 1:45 PM Welcome and Opening Remarks

1:45 – 3:00 PM Platform Session I: Cell and Developmental Biology
Moderator: Rebecca Palu (Purdue University Fort Wayne)

1:45 PM	[1] Polarized trafficking of cell-cell adhesion proteins facilitates collective migration during embryonic wound healing	Katheryn Rothenberg <i>University of Iowa</i>
2:00 PM	[2] A rosette is not a rosette is not a rosette: a geometric model for deconstructing axis elongation kinetics	George Roy <i>Stern Lab, University of Michigan</i>
2:15 PM	[3] Dpp and Defective Proventriculus: a tug-of-war in determining eye and head fate	Anjali Sangeeth <i>Singh Lab, University of Dayton</i>
2:30 PM	[4] Control of Crag's localization and activity in the polarized deposition of basement membrane proteins in epithelial cells	Hemin Shah <i>Devergne Lab, University of Northern Illinois</i>
2:45 PM	[5] Condensin upregulation is associated with Crohn's Disease and drives cellular senescence, cell death, and intestinal permeability in <i>Drosophila melanogaster</i>	Michelle Longworth <i>Case Western Reserve University</i>

3:00 – 3:15 PM Break

3:15 – 4:30 PM Platform Session II: Neurobiology
Moderator: Douglas Brusich (University of Wisconsin-La Crosse)

3:15 PM	[6] Lineage-based dissection of the nervous system organization	Haluk Lacin <i>University of Missouri Kansas City</i>
3:30 PM	[7] Loss of <i>Fic</i> causes progressive neurodegeneration in a <i>Drosophila</i> model of hereditary spastic paraplegia	Amanda Lobato <i>Zhai Lab, University of Chicago</i>
3:45 PM	[8] Characterization of an OPTN-associated model of ALS in <i>Drosophila melanogaster</i>	Hubert Osei Acheampong <i>Insolera Lab, Wayne State University</i>
4:00 PM	[9] A glutamate receptor important for cold sensation in <i>Drosophila melanogaster</i>	Amanda Xu <i>Ye Lab, University of Michigan</i>
4:15 PM	[10] Loss of Neuropeptide F (NPF) signaling reduces the strength of circadian rest-activity rhythms but not feeding-fasting rhythms	Katelyn Wendt <i>Cavanaugh Lab, Loyola University of Chicago</i>

4:30 – 4:40 PM Break

4:40 – 4:45 PM Introduction of Keynote Speaker

4:45 – 5:45 PM Keynote Address

Harnessing the power of *Drosophila* for therapeutic discovery for genetic neuropathies
R. Grace Zhai (University of Chicago)

5:45 – 6:00 PM Business Meeting

6:00 – 7:15 PM Dinner

7:15 – 8:35 PM Poster Session #1: *odd-numbered posters*
A posters judged 7:15 – 7:55 PM; B posters judged 7:55 – 8:35 PM

8:35 – 8:45 PM Poster swap

8:45 – 10:05 PM Poster Session #2: *even-numbered posters*
A posters judged 8:45 – 9:25 PM; B posters judged 9:25 – 10:05 PM

Sunday, November 17

8:00 – 9:00 AM Breakfast

9:00 – 10:15 AM Platform Session III: Gametogenesis and Metabolism
Moderator: Eduardo Perez-Mojica (Van Andel Institute)

9:00 AM	[11] <i>Lamp1</i> deficiency differentially affects lipid regulation in larval fat bodies and midgut and causes lipid transport defects	Gustavo MacIntosh <i>Iowa State University</i>
9:15 AM	[12] <i>Drosophila</i> ejaculatory duct as a model to study post-eclosion growth and post-mitotic polyploid tissue regeneration	Navyashree Ramesh <i>Buttitta Lab, University of Michigan</i>
9:30 AM	[13] Regulation of spermatogenesis by the Notch signaling pathway	Emma O'Flaherty <i>Mierisch Lab, Loyola University of Chicago</i>
9:45 AM	[14] Maternal diet influences embryo development and offspring phenotype in <i>Drosophila melanogaster</i>	Krittika Sudhakar <i>Lempradl Lab, Van Andel Institute</i>
10:00 AM	[15] Tyrosine metabolism is required for protecting <i>Drosophila melanogaster</i> oogenesis from the negative effects of a high sugar diet	Rodrigo Dutra Nunes <i>Drummond-Barbosa Lab University of Wisconsin-Madison</i>

10:15 – 10:45 AM Group Photo & Break

10:45 – 11:45 AM Platform Session IV: Research Resources & Techniques
Moderator: Navyashree Ramesh (University of Michigan)

10:45 AM	[16] Fluorescent reporters for cellular processes and signal transduction	Sam Zheng <i>Bloomington Drosophila Stock Center, Indiana University</i>
10:55 AM	[17] Updates from the <i>Drosophila</i> Genomics Resource Center	Arthur Luhur <i>Drosophila Genomics Resource Center, Indiana University</i>
11:05 AM	[18] Fly-CURE and connecting curriculum: multi-institutional course-based undergraduate research experiences in genetics and beyond	Julie Merkle <i>Fly-CURE, University of Evansville</i>
11:15 AM	[19] Single-embryo metabolomics reveals developmental metabolism in the early <i>Drosophila</i> embryo	J. Eduardo Perez-Mojica <i>Lempradl Lab, Van Andel Institute</i>
11:30 AM	[20] A low-cost, versatile behavioral system for sensorimotor and memory studies in head-fixed <i>Drosophila</i>	Sal Khorbtli <i>Huang Lab, Washington University in St. Louis</i>

11:45 AM – 12:00 PM Presentation & Science Art Awards

12:00 PM Departure

Posters (listed by number)

- [21A] **Validating the role of cyclin E in fly models of degeneration**
Sayka Alam and Rebecca Palu; Purdue University Fort Wayne
- [22A] **Sex-specific metabolic shifts and altered enzyme expression in *Nep115* knock-out *Drosophila***
Shahira H. Arzoo and Surya Jyoti Banerjee; Texas Tech University
- [23B] **Interaction of dorsal-ventral patterning selector gene *defective proventriculus* with growth regulatory Hippo pathway coactivator *yorkie* in the developing eye of *Drosophila melanogaster***
Rohith Basavanahalli Nanjundaiah, Amit Singh, and Madhuri Kango-Singh; University of Dayton
- [24B] **Multiple mechanisms of action of an extremely painful venom**
Lydia J. Borjon, Luana C. de Assis Ferreira, Jonathan C. Trinidad, Sunčica Šašić, Andrea G. Hohmann, W. Daniel Tracey; Indiana University
- [25A] **Genetic mapping and preliminary identification of the *bang-sensitive 1* gene**
Douglas Brusich, Jack Burgess, Esther Oswald, Rachel Faessler; University of Wisconsin-La Crosse, University of Wisconsin-Green Bay
- [26A] **Eyeing the future: Dve's functional domains and their impact on development and growth**
Anuradha V. Chimata, Madhuri Kango-Singh, Amit Singh; University of Dayton
- [27B] **Design of experiments facilitates development of digital twins in systems biology**
Stephen Cini, Jeremiah Zartman, Alexander W. Dowling; University of Notre Dame
- [28B] ***Drosophila* CRC models to study tumor-promoting signaling interactions**
Brandon J. Clark, Arushi Rai, Amit Singh, Madhuri Kango-Singh; University of Dayton
- [29A] **Genetic screen for proprioceptor morphology and function**
Dorian J. Dale, Madison Bougess, Dr. Liping He, Dr. W. Dan Tracey Jr.; Indiana University
- [30A] **Clevidipine to the rescue: a potential treatment for *LMNA*-associated muscular dystrophy**
Zachary T. Darr, Brenna A. Powers, Nathaniel P. Mohar, Lori L. Wallrath; University of Iowa
- [31B] **Investigating gene regulatory networks in somatosensory-processing neurons**
Gasser Elwasefi, Zariion Marshall, Elizabeth Heckscher; University of Chicago
- [32B] **Qualitative and quantitative evaluation of the differences between Indy and Indy-2 protein in male and female *Drosophila melanogaster***
Sarah Adanna Ene and Surya Jyoti Banerjee; Texas Tech University
- [33A] **Regulation of Rap1 GTPase signaling during collective epithelial migration**
Olivia R. Fortman and Katheryn Rothenberg; University of Iowa
- [34A] **Elucidating the interaction between ion channels Piezo and SERCA**
David Gazzo and Jeremiah Zartman; University of Notre Dame
- [35B] **From neurogenesis to oogenesis: Investigating Inscuteable's role in *Drosophila* oocytes**
Sahel Ghasemzadeh, Elijah Sidiropoulos, Audrey Garoutte, Dan T. Bergstralh; University of Missouri Columbia

- [36B] **Effect of *drop-dead* mutation on the integrity of the cortex glial network in *Drosophila* pupal brains**
Grace Ghiselli and Edward M. Blumenthal; Marquette University
- [37A] **The effects of *Upd*, *Ets21c*, and mTOR on cell competition in regenerating wing imaginal discs**
Jamie Gonzales, Felicity Hsu, Rachel-Smith Bolton; University of Illinois at Urbana-Champaign
- [38A] **Biological validation of lifespan modeling in *Drosophila melanogaster***
Jennifer Harrell and Matthew Thimgan; Missouri University of Science and Technology
- [39B] **Investigating the role of Lactate dehydrogenase in the intestinal stem cell niche**
Kyle Hart, Michael Haydon, Rafael Demarco; University of Louisville
- [40B] **Genome-wide expression profiling and phenotypic analysis of downstream targets identify the Fox transcription factor Jumeau as a master regulator of cardiac progenitor cell division**
M. Rezaul Hasan, Andrew J. Kump, Evelyn C. Stepaniak, Manoj Panta, Kuncha Shashidhar, Rajnandani Katariya, Mofazzal K. Sabbir, Kristopher R. Schwab, Mark H. Inlow, Ye Chen, Shaad M. Ahmad; Indiana State University
- [41A] **Impact of expression of candidate modifier genes of apoptosis on models of retinal degeneration in *Drosophila***
Casey L. Hulfachor and Rebecca Palu; Purdue University Fort Wayne
- [42A] **Alzheimer's Disease related dysfunction of circadian rhythms**
Gavin Hutchison, Olivia Christensen, Alder Yu; University of Wisconsin – La Crosse
- [43B] ***trithorax (trx)* and *trithorax group (trxG)* gene regulation of cardiac *Hox* gene expression and anterior-posterior patterning of the *Drosophila* heart tube**
Sumaiya Islam, Md. Sayeed Abu Rayhan, Adam J. Farmer, Shaad M. Ahmad, and Kristopher R. Schwab; Indiana State University
- [44B] **Twin roles of the zinc-finger transcription factor Castor: specification of cardiac cell subtypes and regulation of cardiac progenitor cell division**
Rajnandani Katariya, Abbigayle J. Gamble, Brelin Dickerson, Andrew J. Kump, Melissa Spognardi, M. Rezaul Hasan, Kuncha Shashidhar, Mufazzal Karim Sabbir, and Shaad M. Ahmad; Indiana State University
- [45A] **The role of the Lithium-inducible SLC6 transporter (*List*) in lithium toxicity in *Drosophila***
Junko Kasuya, Karina Kruth, Aislinn Williams, Dongkeun Lee, Jong Sung Kim, Toshihiro Kitamoto; University of Iowa
- [46A] **Altered nociception in a *Drosophila* larvae model of Neurofibromatosis type 1**
Anneke Knauss and Seth Tomchik; University of Iowa
- [47B] **Regulation of cell fate gene *engrailed* in late regeneration of *Drosophila melanogaster* wing imaginal discs**
Chandril Sai Kodali, Anish Bose, Rachel Smith-Bolton; University of Illinois at Urbana-Champaign
- [48B] **Nuclear NAD⁺ synthase NMNAT1 contributes to nuclear atypia and promotes glioma growth**
Jiaqi Liu, Yi Zhu, Tijana Canic, Zoraida Diaz-Perez, Sakir Humayun Gultekin, R. Grace Zhai; University of Chicago and University of Miami Miller School of Medicine
- [49A] **Testing the role of Discoidin domain receptors in nociception**
Victoria Lopez, Stephanie Mauthner, W. Dan Tracey; Indiana University

- [50A] **Investigating the relationship between *drop-dead (drd)* expression in the cardia and peritrophic matrix (PM) formation in *Drosophila melanogaster***
Mac M. Maciulewicz and Edward M. Blumenthal; Marquette University
- [51B] **Investigating the role of Immune cells during *Drosophila* wing imaginal disc regeneration**
Kaela Maghinang, Snigdha Mathure, Rachel Smith-Bolton; University of Illinois at Urbana-Champaign
- [52B] **Amino acid starvation during development induces neurotransmitter switching in *Drosophila melanogaster***
Marianne Maughan, Erin Beck, Lacin Haluk; University of Missouri – Kansas City
- [53A] **Identification of the G-protein coupled receptors controlling the basal deposition of basement membrane proteins in epithelial cells**
Paige Minogue, Margaret Myers, Lindsey Price, Olivier Devergne; Northern Illinois University
- [54A] **Circadian regulation of and by coactivator complexes mutated in human disease**
Kara M. Costanzo, Clay D. Talton, Jin-Yuan Fan, Jeffrey L. Price, Ryan D. Mohan; Wayne State University School of Medicine
- [55B] **SMAD7 is a modifier gene of LMNA-associated muscular dystrophy and a therapeutic target**
Nathaniel P. Mohar, Christopher J. Langland, Zachary Darr, Benjamin W. Darbro, Lori L. Wallrath; University of Iowa
- [56B] **Determining the effect of short and long-term ethanol exposure on olfactory preference in *Drosophila melanogaster***
Riley Mooney and Emily Petrucelli; Southern Illinois University Edwardsville
- [57A] **An *in vivo* platform to identify pathogenic loci**
Sibani G. Nachadalingam, Shigehiro Yamada, Tiffany Ou, William B. Little, PreMIER Consortium, Shuo Yang, Aaron N. Johnson; Washington University School of Medicine in St. Louis
- [58A] **Regulation of proteostasis by sleep in *Drosophila* models of Tauopathy**
Natalie Ortiz-Vega, Amanda G Lobato, Tijana Canic, Sheyum Syed, R. Grace Zhai; University of Chicago and University of Miami
- [59B] **Regulation of the competency to generate INPs**
Cyrina Ostgaard, Arjun Rajan, Cheng-Yu Lee; University of Michigan
- [60B] **Disruption of dopamine release from DL1 cluster neurons induces locomotive deficits in *Drosophila* larvae**
Stacy Murphy, Nick More, Sarah Perry; Austin Peay State University
- [61A] **The effects of autophagy inhibition and overexpression on the *Drosophila* testis stem cell niche**
Ayog Prasad and Rafael Demarco; University of Louisville
- [62A] **Rcp, a regulator of G-protein-coupled receptor signaling, controls the polarized deposition of basement membrane proteins in epithelial cells**
Lindsey Price, Rebecca Brnot, Trent Davids, Alejandro Salas, Tracie Yiqing Kong, Trudi Schüpbach, Olivier Devergne; Northern Illinois University

- [63B] **Investigating the effects of a high sucrose diet on the male germline stem cell niche in *Drosophila***
Mohammad Mustafizur Rahman, Mark A. Yorio, Suleman M. Khan, Rafael Sênos Demarco;
University of Louisville
- [64B] **“Hippo’s dynamic duo”: how Wg and Yki orchestrate tumor growth**
Arushi Rai, Amit Singh, Madhuri Kango-Singh; University of Dayton
- [65A] **Investigating the effects of ethanol exposure on associative memory and light cue preference in *Drosophila melanogaster***
Taneil Ramirez and Emily Petruccelli; Southern Illinois University of Edwardsville
- [66A] **Characterization of Phosducin-like Protein 3 in gametogenesis**
Gabriella Rant, Anthony Roukoz, Christopher Petit, Claire Chaikin, Michaela Marra, Elizabeth Kojak, Stefan Kanzok, Jennifer Jemc Mierisch; Loyola University Chicago
- [67B] ***Polycomb (Pc)* and *Pc Group (PcG)* genes repress *trithorax (trx)*-mediated *Hox* expression and cardiac patterning within the *Drosophila* heart tube**
Md. Sayeed Abu Rayhan, Sumaiya Islam, Adam J. Farmer, Shaad M. Ahmad, and Kristopher R. Schwab; Indiana State University
- [68B] **Cell reintegration function of the Fasciclin II intracellular domain in the *Drosophila* follicular epithelium**
Hannah Rice, Tara Finegan, Dan Bergstralh; University of Missouri
- [69A] **Functional analysis of the cariogenic roles of *spalt major* and *spalt-related*, *Drosophila* orthologs of human zinc finger transcription factor-encoding genes associated with congenital heart defects**
Mofazzal K. Sabbir, Karim Zaher, M. Rezaul Hasan, Rajnandani Katariya, Kuncha Shashidhar, Shaad M. Ahmad; Indiana State University
- [70A] **Exercise mimetics rescue endurance and climbing speed in circadian mutants**
Maryam Safdar and Robert Wessells; Wayne State University School of Medicine
- [71B] **Using *Drosophila* denticles as a model system to investigate possible cargos for *ck/Myosin VIIA* during the formation of actin-based protrusions**
Hannah Jones, Lauren Martin, Brooke Allen, Jennifer Sallee; North Central College
- [72B] **Exploring the effect of mutation rates on lifespan in fruit flies**
Daniel Shappard and Takuya Akiyama; Indiana State University
- [73A] **Fox transcription factor-mediated morphogenesis of the alary muscles associated with the *Drosophila* heart**
Kuncha Shashidhar, Rajnandani Katariya, M. Rezaul Hasan, Mofazzal K. Sabbir, Shaad M. Ahmad; Indiana State University
- [74A] **Investigating the role of SWI/SNF in posterior cell fate regulation in *Drosophila* wing discs**
Anushka Singh, Anish Bose, Rachel Smith-Bolton; University of Illinois at Urbana-Champaign
- [75B] **Stem cell lineages in the *Drosophila melanogaster* ovary require glucose instead of trehalose as a primary sugar source for glycolysis**
Lexi Menendez, Nina Rau, Rodrigo Dutra Nunes, Mallory G. Spencer, Daniela Drummond Barbosa; University of Wisconsin-Madison

- [76B] **Exploring the role of miRNAs in craniofacial syndromes: a genome-wide approach using *Drosophila* models**
Manivannan Subramanian, Madhuri Kango-Singh, Amit Singh; University of Dayton and Indiana State University
- [77A] **Phenotypic mapping of *Drosophila* ventral nerve cord lineage**
Daniel J Sytkowski, Marianne Maughan, Haluk Lacin; University of Missouri-Kansas City
- [78A] **The role of retrotransposable elements in neurodevelopment**
Mary Jo Talley, Bert Crawford, Joshua Russman, Michelle Longworth; Cleveland Clinic and Case Western Reserve University School of Medicine
- [79B] ***Drosophila* models reveal converging mechanisms of Snyder-Robinson Syndrome and Alzheimer's disease**
Xianzun Tao, Yi Zhu, Jiaqi Liu, Zoraida Diaz-Perez, Jackson R. Foley, Tracy Murray Stewart, Robert A Casero Jr., R. Grace Zhai; University of Chicago, University of Miami Miller School of Medicine, Johns Hopkins School of Medicine
- [80B] **Metabolomic profiling reveals altered metabolism in a *Drosophila melanogaster* model of PLA2G6-associated neurodegeneration (PLAN)**
Rubaia Tasmin, Anushka Patil, Surya Jyoti Banerjee; Texas Tech University
- [81A] **Biochemical identification of Myosin7A binding partners**
Kate Taylor and Jennifer Sallee; North Central College
- [82A] **Functional interrogation of somatic mosaicism induced by heterozygous BMP receptor deletion in *Drosophila* wing development**
Cassidy Tickle and Takuya Akiyama; Indiana State University
- [83B] **Influence of genetic variation on obesity in *Drosophila melanogaster* utilizing the AKHR pathway**
Allison Velie, Katie Henschel, Emily Wentland, Nay Maung, Malaika Ahmed, Chelsea Fischer, John Garces, Grace Lewis, Shana Newman, Nicholas Molisani, Audrey Nicol, Sophia Petrov, Rebecca A.S. Palu; Purdue University Fort Wayne
- [84B] **Genetic guardians: The critical role of Dna2 in genome stability**
Christian Villegas, Ivan Rivera, Elyse Bolterstein; Northeastern Illinois University
- [85A] ***Drosophila's* method of calcium propagation under starvation**
Carson Walters, Min Kang; Anthea Luo, Robert Holmgren; Northwestern University
- [86A] **Fate in focus: investigating *Dve* and *Chb* roles in *Drosophila* eye development**
Sunanda Yogi, Madhuri Kango-Singh, Amit Singh; University of Dayton
- [87B] **The impact of insertion bias into piRNA clusters on the invasion of transposable elements**
Shashank Pritam, Almorò Scarpa, Robert Kofler, Sarah Signor; North Dakota State University
- [88B] **Motor Pattern Alterations in a Model of Neurofibromatosis Type 1**
Hannah M. Brunner, Genesis Omana Suarez, Seth M. Tomchik; University of Iowa
- [89A] **The Effects of MAST Kinases on Hedgehog Signaling and Compartmentalization**
Omar S. Talaat and Robert A. Holmgren; Northwestern University