

## 8<sup>th</sup> Annual Boston Area Drosophila Meeting

Tuesday, May 21, 2024

UMass Chan Medical School

### Local organizers

Neal Silverman, PhD, Professor of Medicine

Phillip Zamore, PhD, Gretchen Stone Cook Professor of Biomedical Sciences

Andreas Bergmann, PhD, Professor of Molecular, Cell and Cancer Biology

Travis Thomson, PhD, Assistant Professor of Neurobiology

9:00 AM Registration, 1st Floor Lobby, **Albert Sherman Center**

### **Session I: (Albert Sherman Center; AS2.2102 Auditorium)**

**Moderators:** Panos Velentzas, Instructor, UMass Chan and Lucas Restrepo, Graduate Student, UMass Chan, Heya Zhao, Postdoctoral Fellow, UMass Chan

9:30 AM Opening remarks: Travis Thomson, PhD, Assistant Professor of Neurobiology, UMass Chan

9:40 AM **Peter M'Angale**, PhD, UMass Chan  
*Cryo-EM Structure of the Copia Capsid hints at Structural Antagonism with dArc1 to Regulate Synaptic Plasticity*

9:55 AM **Mikhail S. Klenov**, PhD, RNA Therapeutics Institute, UMass Chan  
*Piwi and piRNAs Repress Transcription of Aberrant rRNA Genes containing Retrotransposon Fragments*

10:10 AM **Ratna Chaturvedi**, PhD, UMass Chan  
*A Glia-Enriched Transporter Controlling Sleep in Drosophila*

10:25 AM **Emily Rivard**, Harvard University  
*Evolving Molecular Mechanisms of Fate Specification within the Drosophila Genus*

10:40 AM Coffee Break (Outside Auditorium)

11:00 AM **Roger White**, University of Rochester  
*Monitoring fatty acid trafficking in follicles reveals a critical role for the triglyceride synthase DGAT1 in protecting mitochondrial integrity*

11:15 AM **Torrey Mandigo**, PhD, Massachusetts General Hospital, Harvard  
*Dissecting the Causal Role of Insomnia in Cardiovascular Disease*

11:30 AM **Indrayani Waghmare**, PhD, UMass Lowell  
*Understanding Glypican-Based Mechanisms of Extracellular Wnt Distribution*

11:45 AM **Amelie Raz**, PhD, Whitehead Institute, MIT  
*Combinatorial signal integration in the maintenance and renewal of adult germline stem cell fate*

12:00 PM **Aditya Tandon**, Project Engineer, ABB Inc.  
*Automated Drosophila Transfer Solution for stock maintenance in cardboard racks without use of anesthesia*

**12:05 PM Lunch (Medical School; Faculty Conference Room S1-342)**

**1:00 PM Poster Session (Lobby in Medical School Building)**

**Session II: (Albert Sherman Center; AS2.2102 Auditorium)**

**Moderators:** Prathibha Yarikipati, Postdoctoral Fellow, UMass Chan, Molly Murphy, Graduate Student, UMass Chan and Bao Ho, Graduate Student, UMass Chan

- 3:00 PM **Loiselle Gonzalez-Baez**, Boston College  
*Melanization Regulates Wound Healing by Limiting Polyploid Cell Growth in the Drosophila Abdominal Epithelium*
- 3:15 PM **Sarah Crawford**, PhD, Southern Connecticut State University  
*Innate Immune System Involvement in Brain Tumor Formation in Drosophila melanogaster Brat mutant: A Research Model of Pediatric Brain Tumor Development*
- 3:30 PM **Nelson Lau**, PhD, Boston University  
*Traffic jam regulates the Drosophila piRNA cluster flamenco via novel shadow enhancer elements to ensure female fertility*
- 3:45 PM **Lianne Cohen**, PhD, Boston University  
*Identifying the Enhancers and Regulatory Logic of the Drosophila Innate Immune System*
- 4:00 PM **Pushpa Verma Sharma**, PhD, Harvard Medical School  
*Brain specific microRNA mediated regulation of metabolic homeostasis in Drosophila melanogaster*
- 4:15 PM Coffee Break (Outside auditorium)
- 4:45 PM **Yu-Chieh David Chen**, PhD, New York University  
*Codes of cell surface proteins coordinate stochastic and deterministic cell fates during Drosophila color vision circuit assembly*
- 5:00 PM **Ting Miao**, PhD, Harvard Medical School  
*Role of Malpighian tubule-specific Coenzyme A biosynthesis in systematic metabolic control and maintenance of tissue homeostasis in high-turnover tissues*
- 5:15 PM **Vanitha Nithianandam**, PhD, Brigham and Women's Hospital, Harvard Medical School  
*Integrative Multi-Omics Analysis Reveals a Conserved Role for the Amyloid Precursor Protein in Proteostasis*
- 5:30 PM **Beverley Matthews**, PhD, Harvard University  
*New and Classic Features in FlyBase*
- 5:45 PM Speaker Introduction: Phillip Zamore, PhD, Gretchen Stone Cook Professor of Biomedical Sciences, UMass Chan
- 5:50 PM **Yukiko Yamashita**, PhD, Whitehead Institute, MIT,  
*Asymmetric cell divisions in Drosophila*
- 7:00 PM Closing remarks: Neal Silverman, PhD, Professor of Medicine, UMass Chan

**Sponsorship provided by:**



*DrosokING, a Biologix Group Company, provides premium products tailored for drosophila research. All our offerings proudly hold ISO and CE certifications for quality and compliance. With the emphasis on safety, innovation, and efficiency, we welcome you to unleash the full spectrum of drosophila experimentation through our diverse, quality-assured products.*

Company website: [DrosokING](#) and [Biologix USA, Inc.](#)

*ABB has made the world's first collaborative robot that can transfer fruit flies between vials without the need for anesthesia. This new robot can revolutionize the maintenance and transfer of Drosophila strains, a task that previously consumed countless hours of manual labor in labs and stock centers globally.*

Website: [Life Sciences and healthcare | ABB Robotics - Industries | ABB Robotics](#)

**Poster presentations:**

2 Xuefeng Meng, Whitehead Institute

*Asymmetric segregation of Stellate during meiosis leads to meiotic drive in Drosophila melanogaster*

3 Mónica C. Quiñones-Frías, Brandeis University

*The ER shaping protein Atlastin regulates synaptic ER tubule integrity and dynamics*

6 Anne M Silveira, Brandeis University

*Shared and Distinct Functions of the Dynammin Isoforms at Drosophila synapses*

7 Pakinee Phromsiri, University of Rochester

*Drosophila H2A.Z regulates developmental timing and the global transcriptome*

8 Noshin Nawar, Boston University

*Developing a Quantitative Understanding of Heterogeneity in Drosophila melanogaster's Innate Immune Responses*

9 Alex Dyson, Massachusetts General Hospital

*MEK Inhibition as a Potential Therapeutic Strategy for the Non-Tumor Manifestations of Neurofibromatosis Type 1 (NF1)*

10 Elizabeth Lane, Harvard Medical School

*Drosophila as a Model to Study the Intestine in Cystic Fibrosis*

13 Torrey Mandigo, Massachusetts General Hospital

*Dissecting the Causal Role of Insomnia in Cardiovascular Disease*

14 Jillian Ness, Boston University

*Exploring the Functional Role of Shadow Enhancer Architecture in Development*

15 Camilla Regalia, Brown University

*Characterization of Protein Processing and the Endoplasmic Reticulum Pathway in a Drosophila Model of Amyotrophic Lateral Sclerosis*

16 Jorel R. Padilla, Boston College

*Crosslinking of Microtubules and Actin is Necessary to Maintain Myonuclear Spacing*

17 Amelie Raz, Whitehead Institute

*Combinatorial signal integration in the maintenance and renewal of adult germline stem cell fate*

18 Lucas Restrepo, UMass Chan Medical School

*A mitochondrial surface protein regulates Vps13D-dependent mitophagy*

19 Kaylah B Samuelson, University of Connecticut

*Elucidating the role of Polo kinase activity and regulation in the meiotic drive of B chromosomes in *D. melanogaster**

20 Jacob Paiano, Harvard Medical School

*Constructing Inter-Organ Communication Networks of Cellular Stress Responses*

21 Nathan Brownstein, Brandeis University

*Oligonucleotide directed proximity interactome mapping to study RNA-protein interactions in Drosophila*

22 Ben Ewen-Campen, Harvard Medical School

*The proventriculus contains a ring of cycling cells that responds to local and systemic signaling*

23 Ben Ewen-Campen, Harvard Medical School

*Wnt signaling modulates the response to DNA damage in the Drosophila wing imaginal disc by regulating the EGFR pathway*

24 Michael Allara, UMass Boston

*The Toll Pathway Regulates Crystal Cell Production*

25 Vanitha Nithianandam, Brigham and Women's Hospital, Harvard Medical School

*Integrative Multi-Omics Analysis Reveals a Conserved Role for the Amyloid Precursor Protein in Proteostasis*

26 Younshim Park, Harvard Medical School

*Metabolic reprogramming in tumors: a Drosophila model to decipher isoform dynamics*

27 Ankita Singh, Harvard Medical School

*A proximity-tagging system to identify secreted interorgan communication factors*

28 Carolina I. Ferrer, UMass Boston

*The Immune Signaling pathways Toll and Imd play a role in Drosophila Hematopoiesis*

29 Pooja Rai, UMass Chan

*Studying non-apoptotic functions of caspases using Drosophila*

30 Sofia Gaibor, Harvard Medical School

*Assessing enhancer necessity during the early development of Drosophila melanogaster*

31 Cailleigh Pierce, Harvard Medical School

*Different Bicoid domains are required at different target genes to regulate gene expression*

32 Stephanie Mohr, Harvard Medical School

*New technologies and resources from the Drosophila Research & Screening Center-Biomedical Technology Research Resource (DRSC-BTRR)*

33 Yu Yang, Boston University

*Illuminating the non-genetic factors of immune activation*

34 Jessica Sidisky, MIT

*Characterizing Synapse Formation, Maturation and Turnover at Drosophila Adult Neuromuscular Junctions*

35 Chhavi Sood, MIT

*Disruption in Calcium Conductance of Cacophony Channels Alters VGCC Abundance and Retention at Active Zones*

36 Alok Tiwary, RNA Therapeutics Institute and Howard Hughes Medical Institute, UMass Chan

*Gametocyte Specific Factor 1 (GTSF1) in PIWI Protein Functions*

37 Xihuimin Dai, Brandeis University

*Four SpsP neurons are an integrating sleep regulation hub in Drosophila*

38 Suraj R. Math, Center for Genomic Medicine, Massachusetts General Hospital

*A Drosophila Model of a Rare Congenital Disorder of Glycosylation associated with ALG10*

39 Yongjin Lee, RNA Therapeutics Institute and Howard Hughes Medical Institute, UMass Chan

*Inhibition of Integrator and Nuclear Exosome Targeting Complexes causes emergence of atypical transcripts and disrupts oogenesis in Drosophila melanogaster*

40 Julia Apiki, Whitehead Institute

*Role of Protamine mRNA Localization During Spermatocyte Development in Drosophila melanogaster*

41 Adriano Biasini, RNA Therapeutics Institute, UMass Chan

*The Integrator and Nuclear Exosome Targeting Complexes are Essential for Drosophila Oogenesis.*

42 Nicolas Arriaga Otorola, Brown University

*Investigating the Role of PDZD8-Mediated Membrane Contact Sites in Promoting Synapse Maintenance*

43 Georgette-Vanelle Wandji, Boston University

*Subcellular Mechanism of Programmed Cell Death in Drosophila Ovarian Nurse Cells*

44 Teng Long, University of Connecticut

*Odorant Receptor Co-receptors affect expression of tuning receptors in Drosophila*

45 Jonathan Zirin, Harvard Medical School

*New from the TRiP: large scale resources for gene perturbation, gene expression, and protein detection*

46 Julia Birnbaum and Eric Gomez, Brandeis University

*Investigating the Role of Nervous Wreck in Circadian Circuitry*

47 Shania Kalladanthylil, University of Connecticut

*New Insights into the Structure and Formation of the D. melanogaster B Chromosome*

48 William McKenna, Harvard Medical School

*From Fly to Tick: Establishing Pooled CRISPR Genetic Screens in Cultured Tick Cells*

49 Ryan Gossart, Brandeis University

*Cell-Type-Specific Isoform Usage in the Drosophila Visual System*

50 Abhi Bhattarai, Wesleyan University

*Organization of apical-cortical F-actin in the primary pigment cells of the Drosophila pupal eye*

51 Rory Golden, UMass Boston

*The Effect of Microbiome on Injury Response in Drosophila Melanogaster*

52 Anna Shlimak, Brown University

*Imaginal disc growth factors identified as candidate suppressors for Drosophila models of TDP43, FUS, C9orf72, and Sod1 ALS*

53 Ryan M. Gado, University of Connecticut

*Investigating the Influence of the TM3, Sb Ser Balancer Chromosome on the Female Meiotic Drive of B Chromosomes in D. melanogaster*

54 Mengjia Lin, University of Connecticut

*Investigating the dynamics of biased B chromosome segregation during female meiosis in Drosophila melanogaster*

55 Meredith Becher and Geoffrey Tanner, University of Connecticut

*Ketone body supplementation in a standard high-carbohydrate diet induces autophagy-mediated developmental delay in feeding third instar Drosophila larvae*

56 Dionna DeFazio, College of the Holy Cross

*Neuropile Ensheathing Glia Modulate Seizure Susceptibility of Drosophila melanogaster*

57 Sydney Bailey, UMass Boston

*Understanding the expression profile of Hmx in Drosophila melanogaster*

58 Catherine R. Carmona, Brandies University

*The Molecular Mechanisms of the Development of Polarized Dendrites in the Drosophila Visual System*

59 Julianna Faillace, Springfield College

*Sequence Analysis of CG15365 as a Potential LZTS1 Ortholog*

60 Christopher Abdullah, Springfield College

*Predicted GBA2 Ortholog CG33090 Mutants Display Viability and Neuromuscular Phenotypes in Drosophila*

61 Arthur Langford, Emmanuel College

*Investigating the Spreading Mechanism of the Dosage Compensation Complex on the X Chromosome*

62 William Kemball-Cook, Brown University

*Role of a putative tRNA methyltransferase in the central nervous system*

63 Cynthia Brito, Emmanuel College

*Analyzing the role of RSF1 in variant Polycomb Repressive Complex 1.1 in Drosophila*

64 Lindsay Carlson, Clark University

*Modeling the transcriptional regulation of the twin of eyeless gene in Drosophila melanogaster*



65 Anthony D. McDougal, MIT

*Bitesize Drives Actin Remodeling and Bundling in the Syncytial Drosophila Embryo*

66 Jacob Malin, Tufts University School of Medicine

*The Arf-GEF Steppke Controls Actin Dynamics in Cell Intercalation in the Drosophila Retina*

67 Emily Brown, UMass Boston

*The Drosophila eye as a model for targeted nanoparticle-based drug delivery.*

68 Molly Murphy, UMass Chan Medical School

*Plasma Membrane Rupture Protein Ninjurin A Controls Susceptibility of Drosophila melanogaster to Invertebrate Iridescent Virus 6 (IIV6) Infection in a Turandot-Independent Manner.*

69 Mathangi Selliah, UMass Boston

*The Role of IMD and Toll Immune Signaling Pathways on Crystal Cell Differentiation in Drosophila Melanogaster*

70 Rafael Faria, UMass Boston

*How Wnt5 and Wnt signaling affect the differentiation of blood cells in Drosophila Melanogaster*

71 Angele Louis-Jean, Brandeis University

*Cell-type specificity of the glial clock*

72 Samaneh Poursaeid, University of Connecticut Health Center

*Potential roles of stem cell competition in dedifferentiation of Drosophila male germline*

73 Ava Towle, Brandeis University

*Investigating the Role of G-Protein Coupled Receptors in Drosophila Thermosensation*

74 Md Fakhru Azad, Boston University School of Medicine

*Re-examining how Transposable Elements (TEs) in gene introns are detected by RNAseq inputs and whether they impact RNA splicing and gene expression in Drosophila brain transcriptomes*