Drosophila Research Conference

March 23 – April 1 2021

GSA GENETICS G3 Genes | Genomes | Genetics

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Meeting Organizers and Sponsors

Conference Organizers

Nasser Rusan, Co-Chair

Amy Kiger, Co-Chair

Michelle Arbeitman

Karen G. Hales

Nadia Singh

Guy Tanentzapf

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Join Michael Eisen and editors from other journals at the Publishing Q&A on Friday, March 19, 3:00–4:30 p.m. EDT.

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Learn how to advance your teaching skills through the Promoting Active Learning and Mentoring (PALM) Network. We will examine why to use active learning, key features of PALM, examples of PALM Fellow projects, how to get matched with a mentor, and the fellowship application form. The workshop will be held on Monday, March 29, 1:30–2:30 p.m. EDT

Exhibitors

GEP

gep.wustl.edu

kmsandlin@ua.edu

Genomics Education Partnership

The Genomics Education Partnership (GEP) is a nationwide collaboration of 100+ institutions that integrates active learning into the undergraduate curriculum through Course-based Undergraduate Research Experiences (CUREs) centered in bioinformatics and genomics. Come see how to join the GEP community! Stop by and visit us in the Poster Sessions.

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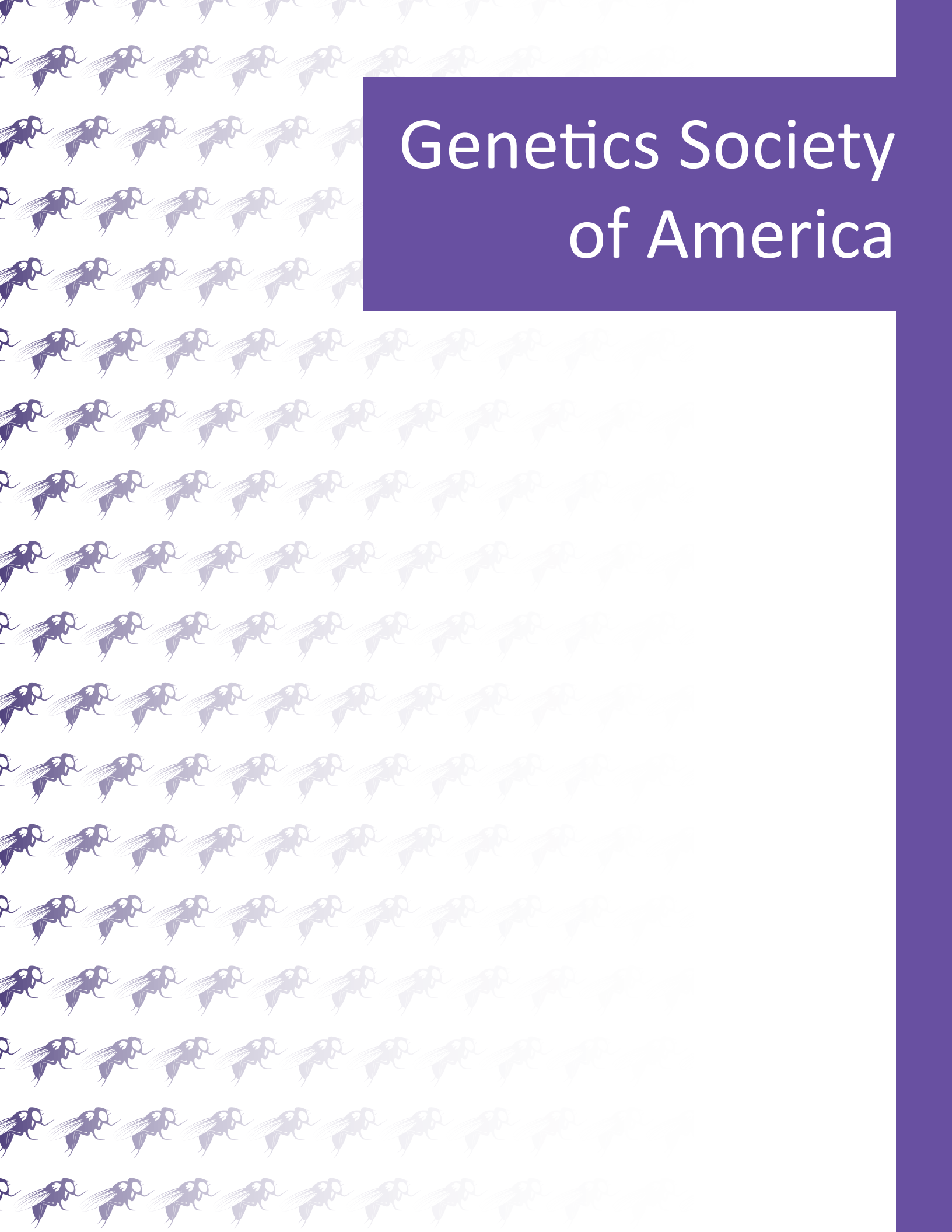

Genetics Society of America

GSA is an international scientific society representing more than 5,000 researchers and educators around the world. As well as connecting researchers through conferences and career programs, we publish two peer-edited scholarly journals, GENETICS and G3: Genes|Genomes|Genetics. We encourage you to join GSA so you can make use of exclusive member benefits and get involved in the Society's many programs, including professional development training, awards, advocacy, and more. Join us as we work to advance the field and serve our community. Visit genetics-gsa.org for more information.

GENETICS has been innovating since 1916, publishing high quality original research across the breadth of the field.

G3: Genes|Genomes|Genetics is an open access journal that publishes high quality, useful results regardless of perceived impact.

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General Information

Conference App

To attend the conference presentations, you will need to sign into the Conference App using your registration badge ID number and last name. The App will be available in two different formats: Desktop App (for desktop and laptop computers), or Mobile App (for Apple iOS and Android mobile devices).

You can find your registration badge number in your conference registration confirmation email, which was sent from the address NoReply@Convention-Mail.com.

Access the app at:

genetics-gsa.org/drosophila-2021/conference-app/

Oral Presenters

Please log into your session ten minutes before the start of your session (not your talk) using the special link you received in an email from Dros21 Zoom. A final video/audio/screen share check will be conducted.

View the oral presenter instructions here:

genetics-gsa.org/drosophila-2021/for-presenters/oral-presenter-guidelines/

Poster Presenters

Poster presenters should enter Remo using the “Live Poster Hall” link on the App home screen (also available from the “More” tab). You should log in to Remo using the same email address as you used to register for the conference.

When you enter the Remo session, you will be assigned to a random table and floor in the appropriate “building”. You must now navigate to your correct floor and table. Move to your poster table by double-clicking it. Once you are at your table, click “More” at the bottom of the screen and then “Whiteboard” to upload a pdf of your poster. There are two poster sessions each day, be sure you are in the correct session.

View the poster presenter instructions here:

genetics-gsa.org/drosophila-2021/for-presenters/virtual-poster-presentations/

Viewing Oral Sessions

Registrants will access all live sessions through the App. Five minutes before an oral session starts, log in using your registration badge number and last name. Tap the "Join Webinar" button on your chosen session. The Join Webinar button will be visible ten minutes before the start of the session.

A recording of each session will be available, in the session listings on the App, around 24 hours after the session ends. The recordings will be available until April 22.

View full instructions for joining oral sessions here:

genetics-gsa.org/drosophila-2021/viewing-talks/

Attending Live Poster Sessions

Access the live poster sessions on Remo using the "Live Poster Hall" link on the App home screen (also available from the "More" tab). You will need to log in to Remo with the email address you used to register for the conference. The first time you join Remo you will also be asked to create a password. Once you enter the site, you will be assigned to a random table and floor. You can move between posters by double clicking on any table. Please share your video and microphone so poster presenters can see everyone who is attending.

In addition to the live poster sessions, poster files will be available via the App for the duration of the conference. Remember to visit the posters in both sessions occurring each day.

Note that you cannot participate in the live poster sessions using an iPad or tablet device.

View full instructions for live poster sessions here:

genetics-gsa.org/drosophila-2021/poster-attendee-guidelines/#live

Viewing Virtual Posters on the App

Poster files (with 2-minute audio overviews) will be available to view via the App between March 19 and April 1. Look for the "Virtual Poster" link near the bottom of each poster's entry in the App.

View full instructions for viewing virtual posters here:

genetics-gsa.org/drosophila-2021/poster-attendee-guidelines/#virtual-posters

Live Poster Session Schedule

All live poster sessions will be held in the Remo platform, which can be accessed using the "Live Poster Hall" link in the App. There are three buildings for each session so be sure to visit all buildings and all six floors. Within Remo, the grid on the left will allow you to move between floors. On the upper left-hand corner of the floorplan is a link that will allow you to switch to the next building. Posters in the Remo platform will be removed at the end of each session.

If you are unable to attend the Live Poster Sessions, you can also leave questions for presenters on the app in the "Discussion" field at the bottom of the poster entry.

Poster Presentations (Group A)					
Tuesday, March 30, 10:00 a.m. - 12:00 p.m.					
Wednesday, March 31, 12:30 p.m. - 2:30 p.m.					
Building 1		Building 2		Building 3	
Floor 1	166A-193A	Floor 1	376A-406A	Floor 1	586A-616A
Floor 2	196A-226A	Floor 2	409A-442A	Floor 2	619A-652A
Floor 3	229A-262A	Floor 3	445A-475A	Floor 3	655A-682A
Floor 4	265A-298A	Floor 4	478A-511A	Floor 4	685A-715A
Floor 5	301A-334A	Floor 5	514A-547A	Floor 5	718A-745A
Floor 6	337A-370A	Floor 6	550A-583A	Floor 6	748A-785A

Poster Presentations (Group B)					
Tuesday, March 30, 12:30 p.m. - 2:30 p.m.					
Thursday, April 1, 10:00 a.m. - 12:00 p.m.					
Building 1		Building 2		Building 3	
Floor 1	167B-194B	Floor 1	374B-404B	Floor 1	584B-608B
Floor 2	197B-227B	Floor 2	407B-440B	Floor 2	611B-644B
Floor 3	230B-263B	Floor 3	443B-476B	Floor 3	647B-680B
Floor 4	266B-299B	Floor 4	479B-512B	Floor 4	683B-716B
Floor 5	302B-335B	Floor 5	515B-548B	Floor 5	719B-746B
Floor 6	338B-371B	Floor 6	551B-581B	Floor 6	749B-786B

Poster Presentations (Group C)					
Wednesday, March 31, 10:00 a.m. - 12:00 p.m.					
Thursday, April 1, 12:30 p.m. - 2:30 p.m.					
Building 1		Building 2		Building 3	
Floor 1	168C-198C	Floor 1	375C-405C	Floor 1	576C-609C
Floor 2	201C-234C	Floor 2	408C-441C	Floor 2	612C-639C
Floor 3	237C-270C	Floor 3	444C-474C	Floor 3	642C-672C
Floor 4	273C-306C	Floor 4	477C-507C	Floor 4	675C-705C
Floor 5	309C-336C	Floor 5	510C-543C	Floor 5	708C-741C
Floor 6	339C-372C	Floor 6	546C-573C	Floor 6	744C-784C

Slack Chat Channels

The Dros21 Slack workspace is the place to meet other attendees during the conference. You can join and create chat channels based on your interests. There are channels for getting technical help, discussing new papers and preprints, sharing job ads, and connecting with other attendees around shared interests.

Learn more about Dros 21 Slack at: genetics-gsa.org/drosophila-2021/dros21-slack/

FlyBase

FlyBase invites all attendees to come to their virtual workshop to learn how to make the best use of FlyBase tools and features for your research and teaching. The 1-hour session will begin at 1:30 p.m. with a 20-minute presentation, "What's New at FlyBase", followed by questions and answers.

Tuesday, March 23, 1:30-2:30 p.m.

Thursday, March 25, 1:30-2:30 p.m.

Job Postings

Employers are welcome to add PDFs of job opportunities on the "Job Posting" table's whiteboard in the Poster Sessions and in the #jobs channel in the Dros21 Slack workspace.

Conference Policies

Code of Conduct

The Genetics Society of America Conferences foster an international community of geneticists and provide an opportunity to discuss scientific advances and form new collaborations.

GSA values your attendance and wants to make your experience productive and inspiring by fostering an open exchange of ideas in a professional setting. Our Code of Conduct was established to communicate a transparent set of standards and guidelines for acceptable behavior at GSA Conferences and to provide a positive, safe, and welcoming environment for all attendees, vendors, volunteers, and staff.

All conference participants (regardless of their role) are expected to follow the Code of Conduct while attending any portion of the conference, including but not limited to keynote presentations, concurrent sessions, live poster Q&A sessions, workshops, and all conference Slack channels. Because of the virtual nature of the conference, our Code of Conduct extends to communications related to the meeting and its attendees, presenters, exhibitors, sponsors, staff, and vendors. These types of communications include Zoom chat, Zoom Q&A window, live poster Q&A, Slack, email, social media, and texts.

Unacceptable Behaviors

Unacceptable behaviors include, but are not limited to:

- Intimidating, harassing, abusive, discriminatory, derogatory, or demeaning speech or actions by any participant and at all related events
- Harmful or prejudicial verbal or written comments or visual images related to gender, gender expression, gender identity, marital status, sexual orientation, race, religion, political orientation, socioeconomic, disability or ability status, or other personal characteristics, including those protected by law
- Inappropriate use of nudity and/or sexual images (including presentation slides, posters, Slack channels, or Zoom chat)
- Deliberate intimidation or stalking
- Violating the rules and regulations of the online provider, Zoom
- Sustained disruption of scientific sessions or other events
- Unwelcome and uninvited attention or contact
- Real or implied threat of physical harm
- Real or implied threat of professional or financial damage or harm
- Photographing or reproducing slides of oral presentations and posters without permission
- Recording of scientific and other sessions without permission

Taking action or making a report

Need to file a complaint? For instructions on how to confidentially report a Code of Conduct violation, please visit genetics-gsa.ethicspoint.com. In addition, GSA staff is available to assist participants in contacting our Ethics Committee to make a report. Please email Tracey DePellegrin, GSA Executive Director, at tracey.depellegrin@thegsajournals.org.

Consequences of non-compliance

Anyone asked by GSA staff, a Session Chair, Workshop Leader, Moderator, Presenter, or Zoom representative to stop unacceptable behavior is expected to comply immediately. Retaliation toward GSA or toward someone reporting an incident or after experiencing any of the following consequences will not be tolerated and may result in additional sanctions.

- The consequences of non-compliance with GSA's Code of Conduct may include:
- Immediate removal from accessing the online meeting and Slack channels without warning
- Restrictions from future GSA meeting attendance
- Termination of GSA membership or positions on GSA Boards or Committees
- Incidents may be reported to the proper authorities

Diversity and Inclusion

GSA is committed to promoting equality, diversity, and inclusion to create greater opportunity for any individual to fulfil their scientific potential, irrespective of their background, gender, or circumstances. This diversity leads to innovation by attracting the widest possible talent to the community and fostering a greater diversity of ideas, approaches, and perspectives. The Organizing Committee aims to select speakers and session chairs that represent the breadth and diversity of the discipline and conference participants. GSA especially encourages the Committee to select excellent speakers from groups traditionally underrepresented in science.

Social Media/Photo/Video Policy

Live tweeting of presentations is allowed unless the speaker explicitly opts out by stating so at the start of his or her talk. Taking or sharing photos, videos, or reproductions of posters is not permitted unless you have the presenter's consent. By attending a GSA conference, you grant GSA the right to use your name and likeness for use in GSA educational, news, or promotional materials.

Posters

When you view poster materials at the conference, remember that posters are typically works in progress. We expect poster attendees to treat virtual posters exactly as they would in-person posters and not to cite or reproduce any part of them without permission of the presenter.

Schedule of Events

All times are listed in Eastern Daylight Time (EDT)

TUESDAY, March 16	
10:00 am - 11:00 am	**Conference Success Tips and Welcome from the Early Career Leadership Program**
11:00 am - 12:00 pm	**How to get involved in GSA's Early Career Leadership Program**
1:00 pm - 3:00 pm	**Career Exploration Panel** *Session Chair:* Molly Matty
WEDNESDAY, March 17	
12:30 pm - 2:00 pm	**Careers in Academia** *Session Chair:* Karen Hales
3:00 pm - 5:00 pm	**Reproducibility for Everyone** *Session Chairs:* Nele Haelterman; and Nafisa Jadavji
THURSDAY, March 18	
10:00 am - 12:00 pm	**Research, Teaching, and Careers at Primarily Undergraduate Institutions (PUIs)** *Session Chair:* Judy Leatherman
FRIDAY, March 19	
1:00 pm - 2:00 pm	**Multilingual Networking**
3:00 pm - 4:30 pm	**Publishing Q&A**
TUESDAY, March 23	
11:00 am - 1:15 pm	**Opening Keynote and Larry Sandler Award Talk** *Session Chairs:* Nasser Rusan; and Amy Kiger
1:30 pm - 2:30 pm	**FlyBase Workshop** *Session Chair:* Susan Russo Gelbart
	Cellular and Tissue Dynamics in Development *Session Chairs:* Dorothy Lerit; Steve Jean; and Kimberley Gauthier
2:30 pm - 4:30 pm	**Gene Regulation and Epigenetics: From the MZT to Differentiation** *Session Chair:* Rhea Datta; Amanda Amodeo; and Jessica Sidisky
2:30 pm - 4:30 pm	**Mechanisms of Tissue Repair and Homeostasis** *Session Chairs:* Vicki Losick; Mariano Loza-Coll; and Rodrigo Dutra Nunes
2:30 pm - 4:30 pm	**Molecular Adaptations and Conflicts in *Drosophila* Reproduction** *Session Chairs:* Daniel Matute; Christopher Ellison; and Ching-Ho Chang

All times are listed in Eastern Daylight Time (EDT)

WEDNESDAY, March 24

11:00 am - 1:05 pm	**Image Award/Plenary Session 1** *Session Chairs:* Nasser Rusan; and Michelle Arbeitman
1:30 pm - 2:30 pm	**Networking Break 1**
2:30 pm - 4:30 pm	**Genome Structure, Function, and Evolution** *Session Chairs:* Laurie Stevison; Colin Meiklejohn; and Brooke Peckenpaugh
2:30 pm - 4:30 pm	**New Paradigms of Organelle Regulation and Runction** *Session Chairs:* Daria Siekhaus; Jeremy Smyth; Priya Dutta; and George Aranjuez
2:30 pm - 4:30 pm	**Regulatory and Mechanical Processes Driving Morphogenesis and Pattern Formation** *Session Chairs:* Shaad Ahmad; Ginger Hunter; Alexis Stutzman; and Haley Brown
2:30 pm - 4:30 pm	**RNA Biology: Granules, Small RNAs, and Translational Regulation** *Session Chairs:* Zhao (ZZ) Zhang; Vassie Ware; and Kasun Buddika
5:00 pm - 6:30 pm	**Education Platform Session** *Session Chairs:* Justin DiAngelo; and Hemlata Mistry

THURSDAY, March 25

11:00 am - 1:00 pm	**Plenary Session 2 - Equity and Inclusion Plenary Session** *Session Chairs:* Nadia Singh; and Michelle Arbeitman
1:15 pm - 2:15 pm	**The Effect of the COVID Pandemic on the Fly Community** *Organizers:* T. Su, M. Wolfner *Session Chairs:* Mariana Wolfner; and Tin Tin Wu
1:30 pm - 2:30 pm	**FlyBase Workshop** *Session Chair:* Susan Russo Gelbart
2:30 pm - 4:30 pm	**Functional and Computational Genomics** *Session Chairs:* Yasir Ahmed-Braimah; Justin Crocker; Li Zhao; and Alex Majane
2:30 pm - 4:30 pm	**Life and Death: Regulation of Stress, Cell Cycle, Cell Growth, and Cell Death** *Session Chairs:* Cathie Pfleger; Erika Geisbrecht; Junnan Fang; and Sudershana Nair
2:30 pm - 4:30 pm	**Neurodegeneration** *Session Chairs:* John Tuthill; Brad Dickerson; and Leire Abalde-Atristain
2:30 pm - 4:30 pm	**Practicing Innovative Inclusion: Tools to Advance Research Excellence** *Session Chairs:* Jennifer Alexander; and Andrew M Arsham
5:00 pm - 6:00 pm	**Undergrad Platform Session** *Session Chair:* Afshan Ismat and Nicole Salazar

All times are listed in Eastern Daylight Time (EDT)

FRIDAY, March 26	
11:00 am - 1:00 pm	**Plenary Session 3** *Session Chairs:* Guy Tanentzapf; and Karen Hales
1:30 pm - 2:30 pm	**Networking Break 2**
2:30 pm - 4:30 pm	**Germline Regulation and Behavior** *Session Chairs:* Lindsay Lewellyn; Josefa Steinhauer; and Rafael Demarco
2:30 pm - 4:30 pm	**Metabolic Control of Diverse Physiological Processes from Oocytes to Hemocytes** *Session Chairs:* Alissa Armstrong; Michelle Bland; and Andrea Darby
2:30 pm - 4:30 pm	**Models of Human Disease I** *Session Chairs:* Chiswili Chabu; Margaret Pearce; and Aashika Sekar
2:30 pm - 4:30 pm	**Neurodevelopment** *Session Chairs:* Robert Carrillo; Divya Sitaraman; and Sarah Ackerman
SATURDAY, March 27	
11:00 am - 1:00 pm	**Plenary Session 4** *Session Chairs:* Amy Kiger; and Karen Hales
1:30 pm - 3:30 pm	**Concurrent Platforms V**
	Host-Microbiome Interactions and Immunity *Session Chairs:* Robert Unckless; Moria Chambers; and Mark Hanson
	Models of Human Disease II *Session Chairs:* Clement Chow; Erdem Bangi; and Tanzeen Yusuff
	Neural Circuits and Behavior *Session Chairs:* Brad Dickerson; John Tuthill; Meet Zandawala; and Colleen Palmateer
	Regulation of Organ Physiology Across Scales from RNA Splicing to Cell-Cell Contacts *Session Chairs:* Michelle Bland; Eric Folker; and Lydia Grmai

Schedule of Events

All times are listed in Eastern Daylight Time (EDT)

MONDAY, March 29

11:00 am - 1:30 pm	**Techniques and Technology** *Session Chairs:* Stephanie Mohr; Karen Kasza; Pavel Tomancak; and Justin Bosch
1:30 pm - 2:30 pm	**Mentored Fellowships in Active Learning for Faculty and Postdocs: the PALM Network** *Presenter*: Sue Wick
3:00 pm - 5:00 pm	**Experimental and Computational Approaches in Systems Developmental Biology** *Organizers*: G. Reeves, J. Zartman
3:00 pm - 5:00 pm	**Lysosomal Degradation Pathways in Development and Disease** *Organizers*: A. Jenny, T. Rusten, G. Juhasz
3:00 pm - 4:30 pm	**microPublication Biology and the *Drosophila* Community** *Organizers*: K. Yook, D. Raciti

TUESDAY, March 30

10:00 am - 12:00 pm	**Poster Presentations (Group A)**
12:30 pm - 2:30 pm	**Poster Presentations (Group B)**
3:00 pm - 6:00 pm	**A Community-based Approach to Understanding *Drosophila* Evolution through Space and Time (DEST)** *Organizers*: J. González, A. Bergland, M. Kapun
3:00 pm - 5:00 pm	**Innate Immunity at the Crossroads of Development, Aging and Chronic Non-Infectious Diseases** *Organizers*: S. Chtarbanova, P. Jumbo, G. Boekhoff-Falk
	Single-cell Research in *Drosophila*: The Fly Cell Atlas and Beyond *Organizers*: L. O'Brien, H. Li, N. Perrimon, B. Oliver

WEDNESDAY, March 31	
10:00 am - 12:00 pm	**Poster Presentations (Group C)**
12:30 pm - 2:30 pm	**Poster Presentations (Group A)**
3:00 pm - 5:00 pm	**Concurrent Workshops**
	Community Engagement in Research: An Authentic Science Experience in Labs@Home *Organizers*: D. Ruiz-Whalen; and A. O'Reilly
	Dissecting Interorganelle Communication Networks that Fuel Cellular and Systemic Signaling *Organizers*: F. DiCara, M Bülow, A. Simmonds

THURSDAY, April 01	
10:00 am - 12:00 pm	**Poster Presentations (Group B)**
12:30 pm - 2:30 pm	**Poster Presentations (Group C)**
3:00 pm - 5:00 pm	**Concurrent Workshops**
	Developmental Mechanics *Organizers*: R. Fernandez-Gonzalez, G. Tanentzapf, A. Martin
	Everything You Ever Wanted to Know About Sex *Organizers*: A. Kopp, R. Graze, M. Arbeitman
	Trends, Issues and Challenges in Scientific Publication *Organizers*: H. Jacobs, K. Ross

Oral Presentation and Workshop Session Listings

Tuesday, March 16
10:00 am - 11:00 am

Conference Success Tips and Welcome from the Early Career Leadership Program

Session Chair:
Jessica Velez, GSA

The purpose of this event is to help conference attendees make the most of the conference. Topics covered may include: introduction to organizers of the meeting, advice on having meaningful interactions in a virtual space, a chance to meet other attendees in an informal setting, and an introduction to events in the scientific and other programming.

Tuesday, March 16
11:00 am - 12:00 pm

How to get involved in GSA's Early Career Leadership Program

Session Chair:
Jessica Velez, GSA

GSA Early Career Leadership Program members will join us in sharing how to get involved in the ECLP focusing on how the program has advanced their scientific skill sets and careers. GSA will walk through how and when to apply and showcase programming Early Career Scientists can participate in throughout the year.

For undergrads, grads and postdocs.

Tuesday, March 16
1:00 pm - 3:00 pm

Career Exploration Panel

Session Chair:
Molly Matty, Salk Institute for Biological Sciences

This event for graduate students and postdocs will show the broad options available to those with a PhD by hosting a panel of individuals from multiple career paths. The career sectors highlighted will be: academic research, government research, science communication and writing, science policy, non-profit, business, outreach, and academic administration.

Wednesday, March 17
12:30 pm - 2:00 pm

Careers in Academia

Session Chair:
Karen Hales , Davidson College

This ninety-minute discussion panel will feature department heads and academic faculty who will discuss applying and hiring in academia from both sides of the process, as well as provide insight into an academic career.

Wednesday, March 17
3:00 pm - 5:00 pm

Reproducibility for Everyone

Session Chairs:
Nele Haelterman, Baylor College of Medicine
Nafisa Jadavji, Midwestern University

Organizers: N. Haelterman, N. Jadavji

Rigor and reproducibility are at the core of modern science and set apart scientific inquiry from pseudoscience. Several new initiatives and tools have been established to address barriers to reproducibility. While very welcome, these projects have led to a proliferation of online tools and resources which can be hard to sift through. This workshop will introduce you to reproducible workflows and a range of tools for the organization, documentation, analysis, and dissemination of scientific data. After a brief introduction on the topic of reproducibility, the workshop will provide specific tips and tools useful in improving your daily research workflows. This will include the 101 of all data handling, wet lab protocol sharing platforms, documentation of code using notebooks, workflow systems, and version control, best practices for plotting of small data sets and reagent sharing platforms. This will help you to share your work with your future self, your immediate colleagues and the wider scientific community.

Thursday, March 18
10:00 am - 12:00 pm

Research, Teaching, and Careers at Primarily Undergraduate Institutions (PUIs)

Session Chair:
Judy Leatherman, University of Northern Colorado

Organizers: J. Leatherman, T. Dohn, J. Merkle

This workshop focuses on equipping the faculty at PUIs with information to support undergraduate research, grant writing, integrating research and teaching, and supporting prospective PUI faculty in their career development. Our goals are: 1) Provide a forum in which those interested in a PUI career path can learn and interact with current PUI faculty, 2) Build community and connections between PUI faculty to provide support in issues specific to PUIs, 3) Share grant writing, mentoring, and teaching tips & techniques to encourage Drosophila research and integration in the classroom.

Friday, March 19
1:00 pm - 2:00 pm

Multilingual Networking

Session Chair:
Jessica Velez, GSA

Join us for this exciting event to network in the language of your choice! At this multilingual networking event, Dros 21 participants who speak languages other than English have a chance to network and talk about science in their native language or language of choice with other participants. Advanced registration required.

Friday, March 19
3:00 pm - 4:30 pm

Publishing Q & A

Session Chair:
Ruth Isaacson, GSA

Students and postdocs are invited to join journal editors—including editors and editorial staff from the GSA journals, GENETICS and G3: Genes|Genomes|Genetics—to discuss the ins and outs of getting an article published.

Brenda Andrews (G3: Genes|Genomes|Genetics)

Howard Lipshitz (GENETICS)

Michael Eisen (eLife)

Ondine Cleaver (EIC, Developmental Biology)

Swarthi Arur (Development)

Tuesday, March 23
11:00 am - 1:15 pm

Opening Keynote and Larry Sandler Award Talk

Session Chairs:
Nasser Rusan, National Institutes of Health
Amy Kiger, University of California, San Diego

Welcome from FlyBoard President Mariana Wolfner.
Mariana Wolfner, Cornell University

Opening Remarks. **Nasser Rusan**

GSA Welcome and Awards Presentations. **Hugo Bellen**

Larry Sandler Award Introduction. **Guy Tanentzapf**

Larry Sandler Award Lecture. **Ching-Ho Chang**

Keynote Introduction. **Mia Levine**

On the trail of the Red queen: tales of genetic conflicts. **Harmit Malik**, Fred Hutchinson CA Res Ctr

Tuesday, March 23
1:30 pm - 2:30 pm

FlyBase Workshop

Session Chair:
Susan Russo Gelbart, FlyBase

FlyBase invites all ADRC attendees to come to our virtual booth to learn how to make the best use of FlyBase tools and features for your research and teaching. The 1-hour session will begin at 1:30pm with a 20-minute presentation “What’s New at FlyBase,” followed by questions and answers.

Tuesday, March 23
2:30 pm - 4:30 pm

Cellular and tissue dynamics in development

Session Chairs:
Dorothy Lerit, Emory University School of Medicine
Steve Jean, Université de Sherbrooke
Kimberley Gauthier, University of Toronto

6 2:30 pm The physics of cephalic furrow formation: From cellular forces to tissue flow. **Marina Cuenca**, Max Planck Institute for Molecular and Cellular Biology

13 2:45 pm Emergence of a smooth interface from growth of a dendritic network against a mechanosensitive contractile material. **MEDHA SHARMA**, University of Toronto

14 3:00 pm Shaping the extracellular matrix through kinesin-3 and kinesin-1 driven polarized secretion. **Allison Zajac**, University of Chicago

21 3:15 pm Defining the Mechanisms by which Canoe/Afadin Links Adherens Junction with the Actin Cytoskeleton during Morphogenesis. **Kia Perez-Vale**, University of North Carolina at Chapel Hill

22 3:30 pm Cell migration and alternating myosin polarity during *Drosophila* heart development. **Negar Balaghi**, University of Toronto

29 3:45 pm Epithelial cell division opens the door for macrophage tissue invasion in the *Drosophila* embryo. **Maria Akhmanova**, IST Austria

30 4:00 pm Non-canonical Hh signaling directs germ cell migration through regulating PI(4,5)P_2 and actin dynamics. **Ji Hoon Kim**, Johns Hopkins University

217A 4:15 pm Phosphorylation of a conserved amino acid in WASH has a critical function in tumor suppressive cell competition. **Dan Liu**, Stockholm University

567C 4:17 pm **Degenerating *Drosophila* larval epidermal cell layer drives epithelial tissue closure during thorax development**. **Saurabh Singh Parihar**, INDIAN INSTITUTE OF TECHNOLOGY KANPUR

283A 4:19 pm *Drosophila* Wash and the Wash regulatory complex function in nuclear envelope budding. **Kerri Davidson**, Fred Hutchinson Cancer Research Center

281B 4:21 pm Flies as a cell biology platform to study T3SS-secreted early effectors of the intracellular pathogen *Chlamydia trachomatis*. **George Aranjuez**, University of Central Florida

Tuesday, March 23
2:30 pm - 4:30 pm

Gene Regulation and Epigenetics: From the MZT to Differentiation

Session Chairs:
Rhea Datta, Hamilton College
Amanda Amodeo, Dartmouth College
Jessica Sidisky, Lehigh University

7 2:30 pm CLAMP and Zelda function together as pioneer transcription factors to promote *Drosophila* zygotic genome activation. **Jingyue Duan**, Brown University

12 2:45 pm The nuclear to cytoplasmic ratio directly regulates zygotic transcription in *Drosophila* through multiple modalities. **Sahla Syed**, University of Pennsylvania

15 3:00 pm Relative contributions of Bicoid and Zelda binding sites to enhancer activity in the developing *Drosophila melanogaster* embryo. **Rhea Datta**, Hamilton College

19 3:15 pm Dnmt1a is required for the maternal-zygotic transition in the wasp *Nasonia*. **Jeremy Lynch**, University of Illinois at Chicago

23 3:30 pm Profiling chromatin dynamics behind the replication fork. **Matthew Wooten**, Fred Hutchinson Cancer Research Center

28 3:45 pm The *Drosophila* hnRNP M homolog Rumpelstiltskin promotes barrier activity of the Homie chromatin insulator. **Catherine McManus**, National Institute of Diabetes and Digestive and Kidney Diseases

31 4:00 pm Host chromatin environment shapes the evolutionary dynamics of transposable elements. **Yuheng Huang**, UC-Irvine

392B 4:15 pm Epigenetic and transcriptional changes in *Drosophila* mushroom bodies neurons due to restrictive nutrition during development on neuroblast stage. **Jorge Zuñiga-Hernández**, University of Chile

418A 4:17 pm Epigenetic conflict on a degenerating Y chromosome increases mutational burden in Drosophila males. **Kevin Wei**, University of California Berkeley

452B 4:19 pm DNA replication promotes zygotic transcription through Zelda-dependent RNA polymerase II clustering. **Chun-Yi Cho**, University of California, San Francisco

Tuesday, March 23
2:30 pm - 4:30 pm

Molecular adaptations and conflicts in Drosophila reproduction

Session Chairs:
Daniel Matute, University of North Carolina at Chapel Hill
Christopher Ellison, Rutgers
Ching-Ho Chang, The Fred Hutchinson Cancer Research Center

8 2:30 pm A valine to leucine mutation in hypomorphic *Wolbachia* CidB yields reduced deubiquitylation and cytoplasmic incompatibility. **Kelley Van Vaerenberghe**, University of Montana

11 2:45 pm The hybrid sterility gene *Overdrive* is a necessary component of the *Segregation Distorter* system in *D. melanogaster*. **Thomas King**, University of Utah

16 3:00 pm Genetic analysis of hybrid male sterility between *Drosophila simulans* and *D. mauritiana*. **Colin Meiklejohn**, University of Nebraska-Lincoln

20 3:15 pm Evolution of a testis-specific centrosome gene duplication in *Drosophila willistoni*. **Afeez Sodeinde**, National Heart, Lung, and Blood Institute, NIH

25 3:30 pm A conserved *trans* regulatory loop involving an odorant binding protein controls male mating behavior in flies. **Pablo Delclos**, University of Houston

27 3:45 pm A rapidly evolving actin mediates fertility and developmental tradeoffs in *Drosophila*. **Courtney Schroeder**, Fred Hutchinson Cancer Research Center

33 4:00 pm Genetic variation in female control of mating plug ejection in *D. melanogaster*. **Mikaela Matera-Vatnick**, Cornell University

406A 4:15 pm Honeybee queen pheromone induces a potentially conserved starvation response in *Drosophila melanogaster*. **Mackenzie Lovegrove**, University of Tasmania

454A 4:17 pm Repression precedes the stepwise evolution of a highly specific gene expression pattern. **Jian Pu**, Michigan State University

414C 4:19 pm Evolving a novel trait through co-option of the *shavenbaby* gene regulatory network. **Gavin Rice**, University of Pittsburgh

400A 4:21 pm Multiple sex chromosome-autosome fusions associated with high satellite DNA content in *Drosophila virilis*. **Jullien Flynn**, Cornell University

Tuesday, March 23
2:30 pm - 4:30 pm

Mechanisms of tissue repair and homeostasis

Session Chairs:
Vicki Losick, Boston College
Mariano Loza-Coll, California State University, Northridge
Rodrigo Dutra Nunes, Johns Hopkins University

9 2:30 pm Remodeling of oxygen-transporting tracheoles drives intestinal regeneration and tumorigenesis. **Vasilia Tamamouna**, University of Cyprus

10 2:45 pm Obesity and Oogenesis in *Drosophila*: Increased fat storage alone does not impair fertility. **Rodrigo Dutra Nunes**, Johns Hopkins Bloomberg School of Public Health

17 3:00 pm Functional recovery of central nervous system in *Drosophila* adult. **Maria Losada-Perez**, Cajal Institute

18 3:15 pm A protease-initiated model of epithelial wound detection. **James O'Connor**, Vanderbilt University

24 3:30 pm A gap junction-mediated calcium signaling network controls stem cell fate decisions in hematopoiesis. **Kevin Ho**, University of British Columbia

26 3:45 pm Intracellular hydrogen peroxide in hemocytes modulate JAK/STAT signaling during a systemic wound response. **Sveta Chakrabarti**, Indian Institute of Science

32 4:00 pm Intestinal progenitor P-bodies maintain stem cell identity by suppressing pro-differentiation factors. **Kasun Buddika Jayawardhana Koomangodage**, Indiana University, Bloomington

736A 4:15 pm Microbes affect gut epithelial composition through immune-dependent regulation of intestinal stem cell differentiation. **Peter Nagy**, Cornell University

661A 4:17 pm Two distinct sources of calcium are required for recruitment of Annexins and their subsequent spatiotemporal regulation of RhoGEFs during cell wound repair. **Mitsutoshi Nakamura**, Fred Hutchinson Cancer Res Ctr

740B 4:19 pm A spatiotemporally controlled establishment of asymmetric CENP-A at sister centromeres during cell cycle of stem cells . **Rajesh Ranjan**, Johns Hopkins University,

695B 4:21 pm Critical feed-forward loop involving JNK/AP1 signaling and Ets21C activates a regeneration-specific transcriptional program necessary for imaginal disc regeneration. **Melanie Worley**, University of California, Berkeley

Wednesday, March 24
11:00 am - 1:05 pm

Image Award/Plenary Session 1

Session Chairs:
Nasser Rusan, National Institutes of Health
Michelle Arbeitman, Florida State University

34 11:00 am Image Award Presentation

35 11:05 am Zooming in on gonadogenesis. **Brian Oliver**, National Institutes of Health

36 11:35 am The evolution of novelty by small steps and giant leaps: a tale of two toxins. **Noah Whiteman**, UC-Berkeley

37 12:05 pm The evolution of coloration and color vision in butterflies. **Adriana Briscoe**, University of California, Irvine

38 12:35 pm The Bloom syndrome helicase trilogy. **Jeff Sekelsky**, University of North Carolina

Wednesday, March 24
1:30 pm - 2:30 pm

Networking Break 1

Session Chair:
Erin Suderman, GSA

Topics include:

Evolution, Immunity, and the Microbiome

Applying to Graduate School and Postdoc Positions

Cell Biology and Growth

Cell Stress and Cell Death

Chromatin, Epigenetics, and Genomics

Disability in Science

Diversity, Equity, and Inclusion

Junctions and Epithelial Dynamics

Doing Science at a PUI

LGBTQ+ in Science

Models of Human Disease

Wednesday, March 24
2:30 pm - 4:30 pm

RNA Biology: Granules, Small RNAs, and Translational Regulation

Session Chairs:
Zhao (ZZ) Zhang, Duke School of Medicine
Vassie Ware, Lehigh University
Kasun Buddika, Indiana University Bloomington

39 2:30 pm Tdrd5l defines a novel germline granule that regulates distinct aspects of germline differentiation. **Caitlin Pozmanter**, Johns Hopkins University

46 2:45 pm Exploring the role of dynein in transporting *cen* mRNA to the centrosome. **Hala Zein-Sabatto**, Emory University

47 3:00 pm Aubergine and piRNAs are key regulators of energy metabolism in germline stem cells. **Patricia Rojas Rios**, Institute of Human Genetics

54 3:15 pm Y chromosome encodes evolutionarily young piRNAs to regulate a SUMO protease gene during spermatogenesis. **Peiwei Chen**, California Institute of Technology

55 3:30 pm Tissue-specific stop codon readthrough in *Drosophila*. **Andrew Hudson**, Yale Univ Sch Medicine

62 3:45 pm A neural m6A/YTHDF pathway is required for learning and memory in *Drosophila*. **Lijuan Kan**, Sloan-Kettering Institute

63 4:00 pm Neuronal ribosomal protein function regulates *Drosophila* growth and development. **Lisa Deliu**, University of Calgary

269B 4:15 pm New insights into the mechanism of transcriptional silencing by piRNAs. **Maria Ninova**, California Institute of Technology

586A 4:17 pm Temporal regulation of neuronal maturation by a chromatin anti-looping factor. **Dahong Chen**, National Institutes of Health

304A 4:19 pm *fs(1)K741* is a female sterile allele of the gene *Sxl* and disrupts *Sxl* splicing. **Jillian Gomez**, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

649A 4:21 pm Employing TurboID and Ribosomal Profiling to examine the molecular defects caused by Intellectual Disability-associated mutations in KDM5. **Matanel Yheskel**, Albert Einstein College of Medicine

Wednesday, March 24
2:30 pm - 4:30 pm

New paradigms of organelle regulation and function

Session Chairs:
Daria Siekhaus, Institute of Science and Technology Austria
Jeremy Smyth, Uniformed Services University of the Health Sciences
Priya Dutta, Tata Institute of fundamental Research, Mumbai
George Aranjuez, University of Central Florida

40 2:30 pm A coordinated cellular program to boost mitochondrial energy production powers pioneer immune cell tissue invasion. **Shamsi Emtenani**, IST Austria

45 2:45 pm Regulating the fusion pore of giant exocrine vesicles. **Tom Biton**, Weizmann Institute of Science

48 3:00 pm Role for class II PI3-Kinase in T-tubule Remodeling. **Shravan Girada**, University of California San Diego

53 3:15 pm *Dystrophin* and *ensconsin* have opposing roles in regulating nuclear positioning. **Alexandra Burgess**, Boston College

56 3:30 pm Importin-α2 regulates cytoplasmic histone dynamics in Drosophila. **asmita dutta**, University of Rochester

61 3:45 pm The RNA-binding protein Orb2 regulates the activity of interphase centrosomes in neural stem cells to promote neurodevelopment. **Dorothy Lerit**, Emory University School of Medicine

64 4:00 pm An unexpected contribution of Rab21 in mitochondrial dynamics. **Sonya Nassari**, Université de Sherbrooke

519C 4:15 pm Dynamics of clathrin-mediated endocytosis and actin in the native tissue context. **Markus Mund**, University of Geneva

520A 4:17 pm The Adaptor Protein Complex 1 controls E-cadherin dynamics during epithelial morphogenesis. **Miguel Ramírez Moreno**, University of Sheffield

259A 4:19 pm Investigating functions of axonemal dynein assembly factors in *Drosophila* motile ciliated cells. **Jennifer Lennon**, The University of Edinburgh

721A 4:21 pm Negative feedback couples Hippo pathway activation with Kibra degradation independently from Yorkie transcription. **Sherzod Tokamov**, University of Chicago

Wednesday, March 24
2:30 pm - 4:30 pm

Genome structure, function, and evolution

Session Chairs:
Laurie Stevison, Auburn Univeristy
Colin Meiklejohn, University of Nebraska
Brooke Peckenpaugh, Indiana University Bloomington

41 2:30 pm Specific mutation patterns shape Y chromosome evolution in the *Drosophila simulans* clade. **Ching-Ho Chang**, U of Rochester

44 2:45 pm Maternal transcripts and their regulation are highly conserved across *Drosophila*.. **Susan Lott**, University of California, Davis

49 3:00 pm Mode of epistatic interactions between deleterious transposable elements. **Grace Lee**, University of California, Irvine

52 3:15 pm Evolutionary conservation and divergence of 3D genome organization in Drosophila. **Nicole Torosin**, Rutgers University

57 3:30 pm Neo-sex chromosome shapes introgression in a hybrid swarm. **Silu Wang**, University of California, Berkeley

60 3:45 pm Defective satellite DNA clustering into chromocenters underlies hybrid incompatibility in *Drosophila*. **Madhav Jagannathan**, ETH Zürich

65 4:00 pm Evolutionary changes in a fatty acyl-*CoA* elongase gene underlie high levels of desiccation resistance in a desert *Drosophila* species. **Zinan Wang**, Michigan State University

317B 4:15 pm *Suboptimal intermediates underlie evolution of the Bicoid homeodomain* . **Pinar Onal**, New York University

397A 4:17 pm Timing and Pattern of Early Diversification in Drosophilidae (Diptera): A Phylogenomic Approach. **Guilherme Dias**, Universidade Federal do Rio de Janeiro

401B 4:19 pm Copper Tolerance in Natural Populations of European *Drosophila melanogaster* is Shaped By a Complex Interplay of Regulatory and Environmental Variables. **Llewellyn Green**, Institut de Biologia Evolutiva - CSIC UPF

507C 4:21 pm Natural Genetic Variation in *Drosophila melanogaster* Reveals Genes Associated with *Coxiella burnetii* Infection. **Rosa Guzman**, Washington State University

Wednesday, March 24
2:30 pm - 4:30 pm

Regulatory and mechanical processes driving morphogenesis and pattern formation

Session Chairs:
Shaad Ahmad, Indiana State University
Ginger Hunter, Clarkson University
Alexis Stutzman, University of North Carolina at Chapel Hill
Haley Brown, Indiana University Bloomington

42 2:30 pm Positioning a stem cell niche during organogenesis. **Lauren Anllo**, University of Pennsylvania

43 2:45 pm Dissecting cell mechanisms of tissue fluidity using optogenetic manipulation of Rho activity. **R. Marisol Herrera-Perez**, Columbia University

50 3:00 pm Caspase regulate the onset of extrusion through downregulation of an apical microtubule mesh. **Alexis Villars**, Institut Pasteur

51 3:15 pm 3D scaling during *Drosophila* retinal morphogenesis. **XIAO Sun**, University of Chicago

58 3:30 pm JAK/STAT signaling regulates Defective proventriculus (Dve) to determine dorso-ventral patterning in *Drosophila* eye. **Anuradha Chimata**, University of Dayton

59 3:45 pm Hippo pathway and Bonus control eye vs. epidermis cell fate decisions. **Heya Zhao**, University of Massachusetts Boston

66 4:00 pm Depletion of trans-acting factors reveals mechanisms of multi-enhancer competition at the *short gastrulation* locus. **Peter Whitney**, New York University

282C 4:15 pm Dunk regulates cortical localization of myosin II during *Drosophila* cellularization through interaction with the scaffolding protein anillin. **Jiayang Chen**, Dartmouth College

498C 4:17 pm The Forkhead/Fox transcription factor Jumeau mediates specific cardiac progenitor cell divisions by regulating the expression of the kinesin Nebbish. **Andrew Kump**, Indiana State University

560B 4:19 pm Investigating the role of two conserved morphogens, Hh and Dpp, in the regulation of synchronized epithelial growth. **Sophia Friesen**, University of California, Berkeley

319A 4:21 pm Ventral tissue fate in *Drosophila* leg is controlled in part by three distinct actions of the selector gene *midline* . **Lindsay Phillips**, University of Calgary

Wednesday, March 24
5:00 pm - 6:30 pm

Education Platform Session

Session Chairs:
Justin DiAngelo, Penn State Berks
Hemlata Mistry, Widener University

67 5:00 pm Making the impossible possible through objective-driven, long-term initiatives. **Andreas Prokop**, The University of Manchester

769 5:15 pm Teaching Critical Thinking and Information Literacy in Introductory STEM Courses. **Mays Imad**, Pima Community College

68 5:30 pm Remote research: A bioinformatics adventure for undergraduates. **Casey Schmidt**, Emory University

69 5:45 pm Characterizing *Drosophila* mutagen sensitive alleles through a collaborative Course-based Undergraduate Research Experience (CURE). **Elyse Bolterstein**, Northeastern Illinois University

70 6:00 pm The Genomics Education Partnership (GEP; thegep.org) is a nationwide collaboration of faculty from 100+ institutions which aims to integrate Course-based Undergraduate Research Experiences (CUREs) centered in genomics and bioinformatics into the curriculum. **Vida Mingo**, Columbia College

Thursday, March 25
11:00 am - 1:00 pm

Plenary Session 2 - Equity and Inclusion Plenary Session

Session Chairs:
Nadia Singh, University of Oregon
Michelle Arbeitman, Florida State University

71 11:00 am Kids Conquering Cancer: Celebrating culture to reduce health disparities. **Alana O'Reilly**, Fox Chase Cancer Center

72 11:30 am Managerial Engagement to Promote DEI in STEM. **Mala Htun**, University New Mexico

73 12:00 pm Two Decades of Diversity Recruiting: Lessons Learned. **Nancy Street**, UT Southwestern

74 12:30 pm NIH Efforts to Cultivate and Support a Diverse Research Workforce. **Kenneth Gibbs**, National Institute of General Medical Sciences

Thursday, March 25
1:15 pm - 2:15 pm

The effect of the COVID pandemic on the fly community

Session Chairs:
Mariana Wolfner, Cornell University
Tin Tin Wu, University of Colorado

The global pandemic is taking a toll on us all. In our profession, sustained productivity in terms of grants and publications is essential for continued competitiveness with funding and for successful job, promotion, and tenure applications. Yet, many recent studies show that the need to work remotely while fulfilling familial and other obligations during the pandemic is taking a toll on our productivity. Solving the pandemic problem is beyond our capabilities, but there are things each of us can do within our own sphere of influence. This event is to sit down and brainstorm to come up with such activities.

Schedule of Activities

1. 2 min- Introduction by Tin Tin Su
2. 25 min- Q&A with the panel, moderated by Tin Tin Su and Mariana Wolfner
3. 25 min- free discussion in breakout rooms, brainstorm what we can do
4. 8 min- Summing up by Mariana Wolfner

Panelists

Denise Montell, Duggan Professor and Distinguished Professor, University of California Santa Barbara

Tania Reis, Associate Professor, University of Colorado Anschutz Medical Campus

Jason Tennessen, Associate Professor, Indiana University

Tanya Hoodbhoy, Program Director, National Institute of General Medical Sciences, NIH

Panel Questions

1. Many states imposed restrictions, such as school closures, and asked non-essential workers to stay home. Can you tell us about your experience during these shutdowns?
2. If your institute shut down, were you able to preserve reagents and stocks?
3. What has been the biggest challenge thus far in running your research program?
4. Have you been able to get support from/provide support to researchers at your institute or in the community?

Any advice for Drosophila biologists at a similar stage of their career?

Thursday, March 25
1:30 pm - 2:30 pm

FlyBase Workshop

Session Chair:
Susan Russo Gelbart, FlyBase

FlyBase invites all ADRC attendees to come to our virtual booth to learn how to make the best use of FlyBase tools and features for your research and teaching. The 1-hour session will begin at 1:30pm with a 20-minute presentation "What's New at FlyBase," followed by questions and answers.

Thursday, March 25
2:30 pm - 4:30 pm

Neurodegeneration

Session Chairs:
John Tuthill, University of Washington
Brad Dickerson, University of North Carolina at Chapel Hill
Leire Abalde-Atristain, Oregon Health & Science University

75 2:30 pm Age-related neuroprotection by dietary restriction requires *OXR1*-mediated retromer function. **Kenneth Wilson**, Buck Institute for Research on Aging

80 2:45 pm The Drosophila Amyloid Precursor Protein homologue mediates neuronal survival and neuro-glial interactions. **Irini Kessissoglou**, Paris Brain Institute

81 3:00 pm Tip60 HAT mediated histone acetylation restoration as a common therapeutic strategy for multiple neurodegenerative diseases. **Akanksha Bhatnagar**, Drexel University

86 3:15 pm Defining the role of Nuclear-pore complex (NPC) components in fly models of ALS. **Deepak Chhangani**, University of Florida

87 3:30 pm Analysis of a transmembrane protein that stabilizes damaged photoreceptors. **Alexis Perry**, University of Massachusetts Boston

92 3:45 pm Evading Death in the *D. Melanogaster* Nervous System. **Morgan Mutch**, University of California, Santa Barbara

93 4:00 pm iPLA2-VIA acts in distinct neuronal subtypes and in muscle to maintain locomotor ability with age, in a partially catalytic-independent manner. **Josefa Steinhauer**, Yeshiva College

183C 4:15 pm Genome-wide analysis reveals novel regulators of synaptic maintenance. **Jessica Sidisky**, Lehigh

189C 4:17 pm Reduction of Glutamate Dehydrogenase Increases Autophagy in Neurons and Ameliorate Motility and Survival in a Drosophila Model for Huntington's Disease. **Chiara Londero**, University of Trento

208A 4:19 pm Traumatic brain injury coupled with tau expression promote *Drosophila* inter-male aggression. **Christine Smoyer**, University of California, Davis

617B 4:21 pm Asymmetric loss of apical domains during light induced retinal degeneration in *Drosophila* photoreceptor cells. **Sarita Hebbar**, Max Planck Institute of Molecular Cell Biology and Genetics

Thursday, March 25
2:30 pm - 4:30 pm

Life and death: Regulation of stress, cell cycle, cell growth, and cell death

Session Chairs:
Cathie Pfleger, Icahn School of Medicine at Mount Sinai
Erika Geisbrecht, Kansas State University
Junnan Fang, Emory University School of Medicine
Sudershana Nair, Albert Einstein College of Medicine

76 2:30 pm Genetic determinants of cell fate plasticity during regeneration after radiation damage in *Drosophila*. **Caitlin Clark**, University of Colorado, Boulder

79 2:45 pm Dynamics of histone H3 availability coordinate the cell cycle and developmental progression in the early *Drosophila* embryo. **Yuki Shindo**, Dartmouth College

82 3:00 pm Delineating the pathway that leads to aneuploidy-induced-cell senescence . **Jery Joy**, IRB Barcelona

85 3:15 pm Multiple defects in ribosome assembly or function affect translation and cell competition through Xrp1 and eIF2α. **Marianthi Kiparaki**, B.S.R.C. “Alexander Fleming”

88 3:30 pm Investigating neuro-consequences of spaceflight and altered gravity using *Drosophila melanogaster* . **Janani Iyer**, Universities Space Research Association

91 3:45 pm Dilp8 controls a time window for tissue size adjustment in *Drosophila*. **Dalmiro Blanco**, Institut Curie

94 4:00 pm Yorkie drives tumorigenesis by non-autonomous induction of autophagy-mediated cell death. **Rina Nagata**, Kyoto University

190A 4:15 pm Addressing the physiological role of endosomal Microautophagy. **Satya Surabhi**, Albert Einstein College of Medicine

213C 4:17 pm Modulation of V-ATPase subunits prevents tumor growth and restores autophagy in a *Drosophila* model of glioma. **Miriam Formica**, Oslo University

564C 4:19 pm Spatially patterned cell death affects wing local growth and morphogenesis. **Alexis Matamoro-Vidal**, Institut Pasteur

645C 4:21 pm Understanding How a Human Short Sleep Mutation offsets the Negative Effect of Sleep Deprivation. **Pritika Pandey**, Louisiana State University

Thursday, March 25
2:30 pm - 4:30 pm

Functional and computational genomics

Session Chairs:
Yasir Ahmed-Braimah, Syracuse University
Justin Crocker, EMBL
Li Zhao, Rockefeller University
Alex Majane, University of California, Davis

77 2:30 pm Up, down, and out: new developments in loss- and gain-of-function CRISPR screens in fly cells. **Raghuvir Viswanatha**, Harvard Medical School

78 2:45 pm Transcription factors drive opposite relationships between gene age and tissue specificity in male and female *Drosophila* gonads. **Evan Witt**, The Rockefeller University

83 3:00 pm Modeling gene expression evolution with EvoGeneX uncovers differences in evolution of species, organs and sexes. **Soumitra Pal**, National Institutes of Health

84 3:15 pm Rapid turn-over of centromere sequences in *D. melanogaster* and the *simulans* clade. **Cécile Courret**, University of Rochester

89 3:30 pm Using Natural Variation & Deep Learning to Construct Gene Regulatory Networks in *Drosophila*. **Prasad Bandodkar**, Texas A&M University

90 3:45 pm Analysis of cell-type-specific chromatin modifications and gene expression in *Drosophila* neurons that direct reproductive behavior. **Colleen Palmateer**, Florida State University

95 4:00 pm A transposon expression burst accompanies the activation of fertility genes in Drosophila spermatogenesis. **Matthew Lawlor**, Rutgers University

261C 4:15 pm Using natural genetic variation in *Drosophila* to characterize the underlying mechanisms of stress preconditioning. **Katie Owings**, University of Utah

433A 4:17 pm Natural tolerance to transposition is associated with increased expression of DNA repair machinery. **Jyoti Lama**, University of Houston

676A 4:19 pm Deciphering Mechanisms of *Egfr*-Mediated Cell Survival in the *Drosophila* Eye Using Single-Cell Omics. **Graeme Mardon**, Baylor College of Medicine

Thursday, March 25
2:30 pm - 4:30 pm

Practicing innovative inclusion: tools to advance research excellence

Session Chairs:
Jennifer Alexander, Fox Chase Cancer Center
Andrew M Arsham, Bemidji State University

770 2:30 pm **IndigiData**: empowering Indigenous genomic and data science education. **Krystal Tsosie**, Vanderbilt University

771 2:45 pm Use of an Inclusive Summative Assessment Increased Deep Learning and Reduced Test Anxiety in an Undergraduate Molecular Cell Biology Course. **Kimberly Mulligan**, California State University, Sacramento

772 3:00 pm Telling our story: Integrating Culturally Inclusive Practices into the STEM classroom to Cultivate a Sense of Belonging Among Underrepresented Groups. **Vida Mingo**, Columbia College

773 3:15 pm Initiating and sustaining early and sustained undergraduate research programs as a mechanism for access, inclusion and academic success. **Joyce Fernandes**, Miami Univ

774 3:30 pm Choose Development! A multi-level mentored summer undergraduate research program to diversify STEM. **Richard Behringer**, MD Anderson Cancer Center

775 3:45 pm Increased Diversity of Post-graduate STEM Training and Careers Requires Intervention and Support Early in Undergraduate Education. **Pamela Harvey**, University of Colorado Boulder

776 4:00 pm Expanding and Unclogging the Pipeline: Programs that Increase Faculty Diversity in STEM. **Fernando Vonhoff**, University of Maryland Baltimore County

777 4:15 pm Panel Discussion and Q&A

Thursday, March 25
5:00 pm - 6:00 pm

Spotlight on Undergraduate Research

Session Chairs:

Afshan Ismat and **Nicole Salazar**

Friday, March 26
11:00 am - 1:00 pm

Plenary Session 3

Session Chairs:
Guy Tanentzapf, University of British Columbia
Karen Hales, Davidson College

96 11:00 am Cell wound repair: Dealing with life's daily traumas. **Susan Parkhurst**, Fred Hutchinson Cancer Res Ctr

97 11:30 am Investigating the role of SPECC1L Drosophila homolog, Split Discs, in the regulation of non-muscle myosin II contractility. **Derek Applewhite**, Reed College

98 12:00 pm More than skin deep: Using transparent animals to probe neuronal polarity. **Melissa Rolls**, Penn State

99 12:30 pm How Flies get Fat: from Genes to Neurons. **Tania Reis**, Univ Colorado Anschutz Medical Campus

Friday, March 26
1:30 pm - 2:30 pm

Networking Break 2

Session Chair:
Erin Suderman, GSA

Topics include:

Neural Circuits and Behavior

Neural Development and Physiology

Parents in Science

Patterning, Morphogenesis, and Organogenesis

Physiology, Metabolism, and Aging

Professional Development and Careers in Science

Regulation of Gene Expression

Reproduction and Gametogenesis

Signal Transduction

Stem Cells, Regeneration, and Tissue Injury

Teaching at a PUI

Friday, March 26
2:30 pm - 4:30 pm

Metabolic control of diverse physiological processes from oocytes to hemocytes

Session Chairs:
Alissa Armstrong, University of South Carolina
Michelle Bland, The University of Virginia
Andrea Darby, Cornell University

100 2:30 pm Diet composition plastically resizes the Drosophila midgut by affecting cell gain and loss, stem cell-niche coupling and enterocyte size. **Alessandro Bonfini**, Cornell University

107 2:45 pm Embryos organize their glycogen and triglyceride reserves during development. **Marcus Kilwein**, University of Rochester

109 3:00 pm *Drosophila* adipokinetic hormone signaling pathway regulates the sex differences in triglyceride metabolism. **Lianna Wat**, The University of British Columbia

115 3:15 pm Coordinated shifts in redox metabolites during quiescence are heritable factors that drive the reprogramming of progeny metabolism. **Helin Hocaoglu**, UT SOUTHWESTERN MEDICAL CENTER

116 3:30 pm The role of intestinal TOR signaling in metabolic responses to bacterial infection. **Rujuta Deshpande**, University of Calgary

123 3:45 pm Defective peroxisomal import accelerates abnormal lipid accumulation in *Drosophila* oenocytes. **Pham Thuy Tien Vo**, Iowa State University

124 4:00 pm The Regulation of Lipid Breakdown and Transport by Heterogeneous Nuclear Ribonucleoproteins (hnRNPs) in *Drosophila*. **Justin DiAngelo**, Penn State Berks

356B 4:15 pm *Drosophila* as a model for defining diets to treat inborn errors of amino acid metabolism. **Felipe Martelli Soares da Silva**, Monash University

186C 4:17 pm Pleiotropic role of Drosophila *phosphoribosyl pyrophosphate synthetase* in autophagy and lysosome homeostasis. **Keemo Delos santos**, Mcgill University

709A 4:19 pm RNA-binding protein Alan shepard regulates whole organism adiposity via isoform-specific functions within the fat body of *Drosophila melanogaster*. **Claire Gillette**, University of Colorado Anschutz Medical Campus

531C 4:21 pm An enzyme catalog for *Drosophila melanogaster*. **Steven Marygold**, University of Cambridge

Friday, March 26
2:30 pm - 4:30 pm

Models of Human Disease I

Session Chairs:
Chiswili Chabu, University of Missouri, Columbia
Margaret Pearce, University of the Sciences
Aashika Sekar, University of Oxford

101 2:30 pm Transcriptional regulation of muscle metabolism using a *Drosophila* model of tumor-induced organ wasting. **Pedro Saavedra**, Harvard Medical School

106 2:45 pm The CHD8/CHD7/Kismet family links blood-brain barrier glia and serotonin to ASD-associated sleep defects. **Mireia Coll-Tané**, Radboudumc

108 3:00 pm Defining the role of Flamingo during tumor progression and cell competition. **Pablo Sanchez Bosch**, Stanford University

114 3:15 pm Expansion and interpretation of novel *ATAD3A* alleles using Drosophila models. **Wan Hee Yoon**, Oklahoma Medical Research Foundation

117 3:30 pm Fine mapping of crossover and noncrossover distributions around heterozygous inversion breakpoints. **Nicole Crown**, Case Western Reserve University

122 3:45 pm A novel role for MICOS complex *CHCHD6* in cardiac function and structure. **Katja Birker**, Sanford Burnham Prebys Medical Discovery Institute

125 4:00 pm An *in vivo* repurposing screen identifies novel therapeutic candidates for NGLY1 deficiency. **Kevin Hope**, University of Utah

514A 4:15 pm The limits of chronic infection induced protection during secondary infection in *Drosophila melanogaster*. **Abigail Wukitch**, Bucknell University

364A 4:17 pm The histone demethylase KDM5 is required for synaptic structure and function at the Drosophila neuromuscular junction. **Julie Secombe**, Albert Einstein College of Medicine

545B 4:19 pm *Drosophila* gut bacteria regulate the growth of invasive microbes both in culture and in the host gut environment. **Alexander Barron**, Johns Hopkins University

537C 4:21 pm The identification and characterization of lipogenic proteins contributing to cardiac lipotoxicity. **Christie Santoro**, Binghamton University

Friday, March 26
2:30 pm - 4:30 pm

Germline Regulation and Behavior

Session Chairs:
Lindsay Lewellyn, Butler University
Josefa Steinhauer, Yeshiva University
Rafael Demarco, UCLA

102 2:30 pm Mechanisms of Pericentrin degradation control its proximal centriolar localization and its reduction from basal bodies for sperm motility and male fertility. **Ramya Varadarajan**, National Institutes of Health

105 2:45 pm Ran and associated karyopherins, Cadmus and Tnpo-SR, maintain ovarian cyst connectivity. **Allison Beachum**, East Carolina University

110 3:00 pm Multiple stages of germ cell differentiation in *Drosophila* testes require gap junction-mediated soma-germline communication. **Yanina-Yasmin Pesch**, University of British Columbia

113 3:15 pm Sex Peptide-containing microcarrier secretion in the *Drosophila* accessory gland is regulated by the ceramide galactosyltransferase homologue UGT50B3. **Clive Wilson**, University of Oxford

118 3:30 pm Role of prostaglandins in germline stem cells of the *Drosophila* ovary. **Nicole Green**, University of Iowa

121 3:45 pm Constraints in protein biosynthesis of multi-functional fat body tissue lead to a trade-off between reproduction and immunity. **Vanika Gupta**, Cornell University

126 4:00 pm Regulation of *Drosophila* Synaptonemal Complex disassembly during prophase I. **Rui Gonçalo Martinho**, University of Aveiro

287B 4:15 pm Short stop is a gatekeeper at the ring canals of *Drosophila* ovary. **Wen Lu**, Northwestern University Feinberg School of Medicine

701B 4:17 pm Octopamine modulates sperm preference in female *Drosophila melanogaster*. **Dawn Chen**, Cornell University

313A 4:19 pm Spermatogenesis in *Drosophila pseudoobscura*, a sperm heteromorphic species. **Fiona Messer**, Cardiff University

438C 4:21 pm Domain specific deletions of Spargel/dPGC-1 highlight its importance on growth, fertility, and mitochondrial function during oogenesis. **Swagota Roy**, The Howard University

Friday, March 26
2:30 pm - 4:30 pm

Neurodevelopment

Session Chairs:
Robert Carrillo, University of Chicago
Divya Sitaraman, California State University
Sarah Ackerman, University of Oregon

103 2:30 pm High-throughput transcriptional profiling of multiple stages of neuronal development in a single experiment. **Yerbol Kurmangaliyev**, Howard Hughes Medical Institute, University of California Los Angeles

104 2:45 pm The central role of the R7 photoreceptor in insect eye development and evolution. **Michael Perry**, University of California, San Diego

111 3:00 pm Muscle innervation: From stem cell to connectivity. **Wenyue Guan**, Institut de génomique fonctionnelle de Lyon, ENS de Lyon

112 3:15 pm Tolloid-related proteases process Slit to generate novel axon guidance activities. **Riley Kellermeyer**, University of Nevada, Reno

119 3:30 pm Innexins are required for glia function and ensheathment of the peripheral nerve. **Vanessa Auld**, University of British Columbia

120 3:45 pm Characterization of *Drosophila* 3rd instar larval ventral cord motor interneurons using single-cell RNA-seq profiling. **Thomas Brody**, NICHD/NIH

127 4:00 pm R7 photoreceptor axon targeting requires matching levels of the novel protein Lost and found in R7 and its synaptic partners. **Ariel Hairston**, NYU School of Medicine

231C 4:15 pm Selective activation of a pro-death transcriptional program controls neuroblast apoptosis. **Katherine Harding**, Harvard University - Massachusetts General Hospital

600C 4:17 pm Terminal selector genes link neuronal fate with wiring specificity in the *Drosophila* visual system. **Mehmet Neset Ozel**, New York University

584B 4:19 pm Altering neural activity during pupal stages affects the bang-sensitivity of adult *Drosophila*. **Rajan Alagar**, Cornell University

635B 4:21 pm Steroid hormone signaling activates thermal nociception during *Drosophila* peripheral nervous system development. **Jacob Jaszczak**, University of California, San Francisco

Saturday, March 27
11:00 am - 1:00 pm

Plenary Session 4

Session Chairs:
Amy Kiger, University of California, San Diego
Karen Hales, Davidson College

128 11:00 am Genetic dissection of egg-laying decisions. **Rebecca Yang**, Duke University

129 11:30 am Drosophila and its parasitic wasps: Understanding the host-parasite interface. **Shubha Govind**, The City College & Graduate Center, CUNY

130 12:00 pm Metabolic regulation of growth and development in *Drosophila* larvae. **Savraj Grewal**, University of Calgary

131 12:30 pm Developmental genetics of regulated exocytosis. **Arash Bashirullah**, University of Wisconsin-Madison

Saturday, March 27
1:30 pm - 3:30 pm

Models of Human Disease II

Session Chairs:
Clement Chow, University of Utah
Erdem Bangi, Florida State University
Tanzeen Yusuff, Penn State University

132 1:30 pm Genome-wide screen uncovers genes involved in the loss of dopaminergic neurons. **Jacinta Davis**, Lehigh University

139 1:45 pm Neuronal lipid droplets promote a pathological conversion in alpha-synuclein via a feed-forward mechanism. **Victor Girard**, LBMC, ENS of Lyon

140 2:00 pm Partial double-strand break repair enables broken chromosome segregation during mitosis. **Delisa Clay**, Duke University

147 2:15 pm Methylation Pathways and Amino Acid Metabolism Intersect to Alter Behavioral Responses to Alcohol. **Daniel Lathen**, University of Utah

148 2:30 pm The Upd3 cytokine couples inflammation to maturation defects. **Daniela Romao**, IRB Barcelona

155 2:45 pm Cooperation between Oncogenic Ras and p53 Stimulates JAK/STAT Non-Cell Autonomously to Promote Ras Tumor Radioresistance. **Vakil Ahmad**, University of Missouri

156 3:00 pm Maintenance of Terminal Differentiation by Retinoblastoma and Hippo Tumor Suppressors. **Alexandra Rader**, University of Illinois at Chicago

338B 3:15 pm CRISPR-engineered Drosophila knock-in models to study VCP diseases. **Ankita Basu**, Louisiana State University

490A 3:17 pm The role of DmCtIP in homologous recombination during DNA double-strand break repair. **Ian Yannuzzi**, Georgetown University

613A 3:19 pm mir-277 targets *hid* to ameliorate Aβ42-mediated neurodegeneration in *Drosophila* eye model of Alzheimer's Disease. **Prajakta Deshpande**, University of Dayton

184A 3:21 pm Identification of p38 MAPK Binding Partners During Aging and Oxidative Stress. **Alysia Vrailas-Mortimer**, Illinois State University

Saturday, March 27
1:30 pm - 3:30 pm

Host-Microbiome Interactions and Immunity

Session Chairs:
Robert Unckless, University of Kansas
Moria Chambers, Bucknell University
Mark Hanson, Swiss Federal Institute of Technology Lausanne

134 1:30 pm Defining distinct phospholipid-dependent signaling that regulates plasmatocytes activation, migration and cytokine release during bacterial infection. **Francesca Di Cara**, Dalhousie University

137 1:45 pm Dual roles of nitric oxide in *Drosophila* blood progenitors. **Bumsik Cho**, Hanyang University

142 2:00 pm The Drosophila Baramicin polypeptide gene protects against fungal infection. **Mark Hanson**, EPFL

145 2:15 pm The *Serratia marcescens* outer membrane vesicles paralyze and kill the flies through complex interactions with the host. **BECHARA SINA RAHME**, IBMC, CNRS, UPR9022

150 2:30 pm The Sodium-dependent mutlivitamin transporter (SMVT) regulates tissue homeostasis by maintaining intestinal stem cell lineage and microbiota homeostasis. **Konstantina Neofytou**, University of Cyprus

153 2:45 pm The Role of Bacterial Genotype in Persistence of the Microbiota of *Drosophila melanogaster*. **Sarah Gottfredson**, Brigham Young University

158 3:00 pm Manipulating animal sex lives: unraveling variation in the strength of *Wolbachia*-induced cytoplasmic incompatibility. **Dylan Shropshire**, University of Montana

176B 3:15 pm Differential Regulation of non-coding RNA (ncRNA) in aged *Drosophila melanogaster* in response to Infection by RNA Virus. **Eli Hagedorn**, The University of Alabama

503B 3:17 pm Transcriptional Mechanisms Controlling Immune Priming in *Drosophila melanogaster*. **Kevin Cabrera**, University of California, Irvine

667A 3:19 pm Elucidating mechanisms of *Chromobacterium subtsugae* phenotypic switching during *Drosophila melanogaster* infection. **Madison Condon**, Johns Hopkins University

510C 3:21 pm 2’3’-cGAMP triggers a STING and NF-κB dependent broad antiviral response in Drosophila. **Nelson Martins**, Université de Strasbourg / CNRS UPR 9022

Saturday, March 27
1:30 pm - 3:30 pm

Neural Circuits and Behavior

Session Chairs:
Brad Dickerson, University of North Carolina at Chapel Hill
John Tuthill, University of Washington
Meet Zandawala, Brown University
Colleen Palmateer, Florida State University

133 1:30 pm Distinct neuromodulatory input pathways to mushroom body regulate sleep need and arousal in *Drosophila* . **Divya Sitaraman**, California State University-East Bay

138 1:45 pm A gut-secreted peptide controls arousability through modulation of dopaminergic neurons in the brain. **Iris Titos**, University of Utah

141 2:00 pm Clock proteins regulate spatiotemporal organization of clock genes to control circadian rhythms. **Swathi Yadlapalli**, University of Michigan

146 2:15 pm Local 5-HT dynamics in a high brain learning center that critically modulate time dependent synaptic integration revealed by a GRAB sensor. **Jianzhi Zeng**, Peking University

149 2:30 pm Female Drosophila respond to ejaculate with copulation song. **Anne von Philipsborn**, Aarhus University

154 2:45 pm A co-transmitting neuron regulates aggression through pre- and postsynaptic mechanisms. **Lewis Sherer**, University of Montana

157 3:00 pm Synaptic development depends on activity coordinated by a discrete neuronal population. **Orkun Akin**, UCLA

169A 3:15 pm Drift in Individual Preference as a Population-level Strategy for Environmental Adaptation. **Ryan Maloney**, Harvard University

205A 3:17 pm Sexual experience does not affect the strength of male mate choice for high quality females. **Alison Pischedda**, Barnard College, Columbia University

579C 3:19 pm Dopamine-based mechanism for transient forgetting. **John Martin Gabriel Sabandal**, Scripps Research Institute

195C 3:21 pm *Drosophila* clock cells use multiple mechanisms to transmit time-of-day signals in the brain. **Annika Barber**, Rutgers, the State University of New Jersey

Saturday, March 27
1:30 pm - 3:30 pm

Regulation of organ physiology across scales from RNA splicing to cell-cell contacts

Session Chairs:
Michelle Bland, The University of Virginia
Eric Folker, Boston College
Lydia Grmai, Johns Hopkins University

135 1:30 pm Splicing mediated by the U2-associated Scaf6/CHERP is necessary for myogenesis in Drosophila and vertebrates. **Maria Spletter**, Ludwig-Maximilians-University Munich

136 1:45 pm A single cell atlas of the proximal wing disc uncovers early transcriptional events driving fibre-type divergence in myoblasts. **Maria Paula Zappia**, University of Illinois at Chicago

143 2:00 pm Myofibril and mitochondria morphogenesis are coordinated by a mechanical feedback mechanism in muscle. **Jerome Avellaneda**, CNRS

144 2:15 pm Septins regulate heart contractility through modulation of cardiomyocyte store-operated Ca^{2+} entry. **Benjamin Tripoli**, Uniformed Services University of the Health Sciences

151 2:30 pm Parsing the functions of lipid droplets in a high-fat diet model of renal disease. **Andrew Bailey**, Francis Crick Institute

152 2:45 pm The septate junction protein Snakeskin is critical for epithelial barrier function and tissue homeostasis in the Malpighian tubules of adult *Drosophila*. **Anthony Dornan**, University of Glasgow

159 3:00 pm A Role for the *Drosophila* Blood-Brain Barrier in the Regulation of Sleep. **sofia axelrod**, Rockefeller University

342C 3:15 pm Identifying novel protein interactors of Abnormal Spindle, a key regulator of proper brain size. **Shalini Chakraborty**, University of Wyoming

497B 3:17 pm Identification of candidate Atrial Fibrillation gene interactions using a multi-model system approach. **James Kezos**, Sanford Burnham Prebys Medical Discovery Institute

363C 3:19 pm An Oatp transporter-mediated steroid sink promotes tumor-induced cachexia in Drosophila. **Paula Santa Bárbara Ruiz**, Institut Curie - Centre de Recherche

335B 3:21 pm A larval model of cachexia recapitulates key hallmarks of the human disease. **Mardelle Atkins**, Sam Houston State University

Monday, March 29
11:00 am - 1:30 pm

Techniques and Technology

Session Chairs:
Stephanie Mohr, Harvard Medical School
Karen Kasza, Columbia University
Pavel Tomancak, Max Planck Institute of Molecular Cell Biology and Genetics
Justin Bosch, Harvard Medical School

778 11:00 am High-speed 3D microscopy of neural activity in behaving larval and adult Drosophila. **Elizabeth Hillman**, Columbia University

779 11:15 am Large-scale image segmentation for light and electron microscopy. **Anna Kreshuk**, EMBL

160 11:30 am FlySection: A Database of Gene Expression Patterns in Embryonic *Drosophila*. **Lossie Rooney**, North Carolina State University

780 11:45 am Making an accessible connectome for biological discovery. **Stephen Plaza**, HHMI Janelia Research Campus

161 12:00 pm Shine-Gal4: A light-controlled Gal4/UAS system for fast spatiotemporal control of gene expression *in vivo*. **Florencia di Pietro**, Institut Curie

162 12:15 pm Iterative assay for transposase-accessible chromatin by sequencing allows to home in on specific neurons. **Collin Merrill**, University of Utah

781 12:30 pm Tools and strategies to identify new disease causing human genes and variants using Drosophila. **Shinya Yamamoto**, Baylor College of Medicine

163 12:45 pm Precise genome engineering in *Drosophila* using prime editing. **Justin Bosch**, Harvard Medical School

164 1:00 pm High-Throughput Absorbance-based Quantification of Consumption in *Drosophila* using a Microplate Feeder Assay. **Joshua Walters**, Clemson University: Center for Human Genetics

165 1:15 pm The Fly Cell Atlas: single-cell transcriptomes of the entire adult Drosophila. **Jasper Janssens**, KU Leuven

Monday, March 29
1:30 pm - 2:30 pm

Mentored Fellowships in active learning for faculty and postdocs: the PALM Network

Session Chair:
Sue Wick, The Palm Network

Presenter: Sue Wick, University of MN-Twin Cities, PI of PALM Network

Learn how to advance your teaching skills through the Promoting Active Learning and Mentoring (PALM) Network. We will examine why to use active learning, key features of PALM, examples of PALM Fellow projects, how to get matched with a mentor, and the fellowship application form.

Monday, March 29
3:00 pm - 5:00 pm

Lysosomal degradation pathways in development and disease

Session Chairs:

Andreas Jenny, Albert Einstein College of Medicine
Tor-Erik Rusten, Oslo University Hospital
Gabor Juhasz, Eötvös Loránd University

While endocytosis and phagocytosis degrade transmembrane proteins and extracellular material, autophagy encapsulates and digests cytosolic cargo, including protein aggregates and organelles. All these pathways converge in the degradative lysosome which acts as a hub controlling cellular growth signaling, metabolism and immune functions. In this workshop, an overview of recent progress in lysosomal degradation pathways is given by an renowned scientist in the field followed by talks selected from interested applicants. They will show novel data, point to emerging directions and discuss pressing open questions with the goal to foster discussions and interactions among scientists at various stages of their careers.

Monday, March 29
3:00 pm - 5:00 pm

Experimental and Computational Approaches in Systems Developmental Biology

Session Chairs:
Gregory Reeves, Texas A&M University
Jeremiah Zartman, Notre Dame University

Development is complex, with many highly interacting, dynamic parts working together to determine the fate map of the organism. Therefore, a systems approach is required, which includes omic approaches, optogenetics, live tissue imaging, predictive mathematical models, and machine learning. In this workshop, we will discuss cutting edge advances in these experimental and computational approaches, from the standpoint of Drosophila development. An emphasis will be placed on integration of modeling and experiments: models to summarize, predict, and propose experiments; experimental work to test and constrain models. The ultimate goal is to provide transferable skills/ knowledge to the community.

3:00 pm **Greg Reeves**, Texas A&M University, Opening Remarks on Systems Developmental Biology

3:10 pm **Tomer Stern**, Princeton University, Whole embryo single cell mapping of morphogenetic domains during Drosophila gastrulation

3:35 pm **Nilay Kumar**, University of Notre Dame, Data-driven image analysis and computational modeling approaches of epithelial morphogenesis

4:00 pm **David Umulis**, Purdue University, A rigorous comparison of BMP-mediated patterning through imaging and simulation reveals distinct mechanisms of gradient formation in zebrafish and Drosophila embryos

4:25 pm **Stefano De Renzis**, EMBL Heidelberg, Insights from optogenetics: Desensitisation of Notch signalling through dynamic adaptation in the nucleus

4:50 pm **Jeremiah Zartman**, University of Notre Dame, Concluding Remarks on the Workshop

Monday, March 29
3:00 pm - 4:30 pm

microPublication Biology and the Drosophila Community

Session Chairs:
Karen Yook, Caltech
Daniela Raciti, Caltech

microPublication Biology (microPublication.org) is about speed and brevity: fast, short, and easy to draft publications that are peer-reviewed and citable. Upon publication, research results are directly deposited in databases such as FlyBase. Accepted articles are published in our Open Access journal, microPublication Biology. microPublication opens opportunities for sharing data, and engages scientists into scholarly communication at earlier stages of their career. Come hear from our editors and other microPublished Drosophila researchers and reviewers about how easy the process is.

Brian Oliver, *NIDDK, microPublication Fly Science Officer*

Thom Kaufman, *Indiana University, microPublication Fly Science Officer*

Tim Schedl, *Washington University School of Medicine, St Louis, microPublication Worm Science Officer*

Steven Marygold, *Cambridge University/FlyBase*

Michael O'Connor, *University of Minnesota*

Jacob Kagey, *University of Detroit Mercy*

Laura Reed, *University of Alabama*

Kai Zinn, *California Institute of Technology*

Melissa Gilbert-Ross, *Emory University*

Joyce Stamm, *University of Evansville*

Kayla Bieser, *Nevada State College*

Jung-Wan Mok, *Korean Advanced Institute of Science and Technology*

Tuesday, March 30
3:00 pm - 6:00 pm

A community-based approach to understanding Drosophila Evolution through Space and Time (DEST)

Session Chairs:
Josefa González, IBE (CSIC-UPF)
Alan Bergland, University of Virginia
Martin Kapun, University of Zürich, Switzerland

This workshop will discuss ongoing efforts and recent advances from a community based effort to study the evolutionary dynamics and history of Drosophila melanogaster across its geographic range and sampled over seasonal, annual, and decadal time-scales. The primary goals of this workshop are to (1) highlight the development of this effort and work to grow this community based sampling and analysis effort, (2) discuss recent advances in our understanding of Drosophila evolution that utilize consortium-based efforts, and (3) enable access to existing genomic resources through hands-on training.

Session 1. Presentations (10 minutes + 2 min questions each)

3:00 pm **Thomas Flatt** (Univ. of Fribourg), **Josefa González** (Institute of Evolutionary Biology, CSIC-UPF), & **Paul Schmidt** (Univ. of Pennsylvania): The DrosEU and DrosRTEC consortia: an overview

3:12 pm **Alan Bergland** (Univ. of Virginia) & Martin Kapun (Univ. of Zurich): The DEST dataset: preliminary insights from sequencing >13,000 flies collected around the world

3:24pm **Esra Durmaz** (Univ. of Fribourg): The DrosEU phenotyping collaboration

3:36pm **Josefa González** (Institute of Evolutionary Biology, CSIC-UPF): aDaptNATION: a citizen science network in adaptation genomics

3:48pm **Daniel Matute** (Univ. of North Carolina, Chapel Hill): The dynamics of admixture in African populations of D. melanogaster.

4:00pm **Bernard Kim** (Stanford University): An open comparative genomic resource of 101 highly contiguous drosophilid genomes

4:12pm **Mara Lawniczak** (Wellcome Sanger Trust): Malaria transmitting mosquitoes over space and time

4:24pm **Megan Wallace** (University of Edinburgh): The prevalence and diversity of DNA viruses associated with Drosophila melanogaster in Europe

4:36 Break

Session 2. Forum discussion.

4:50 Future consortia efforts. Discussion led by Thomas Flatt, Josefa González, Martin Kapun, Alan Bergland, Paul Schmidt, and Dmitri Petrov.

5:20 Break

Session 3. Data workshop

5:30 Data workshop. Answer questions and follow up discussion about data accessibility, browser usage, etc., led by Martin Kapun, Alan Bergland, Jesús Murga, and Marta Coronado-Zamora.

Tuesday, March 30
3:00 pm - 5:00 pm

Innate immunity at the crossroads of development, aging and chronic non-infectious diseases

Session Chairs:
Stanislava Chtarbanova, University of Alabama
Patricia Jumbo, Samford University of Alabama
Grace Boekhoff-Falk, University of Wisconsin-Madison

This workshop is targeted towards researchers whose primary interests focus on development, aging, and the study of non-communicable diseases in Drosophila melanogaster models, who have interests in investigating the impact of innate immune and inflammatory reactions on these processes. The format of this workshop includes: 1) an introduction to innate immune reactions from experts in the field; 2) short talks highlighting the role of innate immunity in various non-communicable processes; and 3) a question/answer panel discussion.

Wednesday, March 31
3:00 pm - 5:00 pm

Single-cell research in Drosophila: The Fly Cell Atlas and beyond

Session Chairs:
Lucy O'Brien, Stanford University
Hongjie Li, Baylor School of Medicine
Norbert Perrimon, Harvard Medical School
Brian Oliver, NIH/NIDDK

3:00-3:10: Liqun Luo, HHMI and Department of Biology, Stanford University, Overview of the Fly Cell Atlas: vision, platform, and resources.

3:10-3:20: Vincent Gardeux, EPFL School of Life Sciences (Switzerland), Analyzing, annotating and interpreting Fly Cell Atlas datasets using the Automated Single Cell Analysis Platform: ASAP.

3:20-3:30: Zita Carvalho-Santos, Champalimaud Centre for the Unknown, Lisbon Portugal, Mapping Metabolic Programs in a Whole Animal at Single Cell Resolution.

3:30-3:40: Cameron Berry, Department of Developmental Biology, Stanford University, Differential expression analysis by ASAP of single nuclear sequencing data uncovers novel genes required in testis cyst cells for germ line differentiation.

3:40-3:50: Yifang Liu, Harvard Medical School, Data mining and data analysis of Drosophila scRNA-seq datasets at DRSC.

3:50-3:54: One-minute flash talks:

Julian Dow, University of Glasgow, Single-cell physiology of the Malpighian tubule.

Jessica Velten, Centre for organismal studies Heidelberg (COS), The molecular logic of synaptic wiring.

Nikos Konstantinides, Institut Jacques Monod, Paris, France, A comprehensive series of temporal transcriptions factors in the developing fly visual system.

Ana Veloso, The Berlin Institute for Medical Systems Biology (BIMSB) at Max Delbrück Center for Molecular Medicine in the Helmholtz Association, Neurogenic Lineage Decisions with Single Cell Resolution.

3:54-4:00 BREAK

4:00-4:10: Katja Rust, Philipps University Marburg, Germany, An atlas and signaling map of the adult Drosophila ovary.

4:10-4:20: Helen Tauc, Genentech Inc., Investigating changes in transcriptional states of aging Drosophila intestinal stem cell populations.

4:20-4:30: Sara Aibar, VIB-KU Leuven, Tracking chromatin accessibility and enhancer activity at single-cell resolution throughout Drosophila brain development.

4:30-4:40: M. Neset Ozel, New York University, Terminal selector genes link neuronal fate with wiring specificity in the visual system.

4:40-4:50: Anna Alessandra Monaco, BIMSB-MDC, Humboldt Universität zu Berlin, cis-regulatory evolution in Drosophila developmental patterning.

4:50-4:53 One-minute flash talks:

Swann Floc'hlay, Laboratory of Computational Biology, Department of Human Genetics, KU Leuven, Leuven, Belgium, Single-cell regulatory genomics of the wound response program.

Stefano Secchia, European Molecular Biology Laboratory (EMBL), Genome Biology Unit, Heidelberg, Germany, Putting some muscle into the dissection of single cell regulatory landscapes during embryogenesis.

Georg Vogler, Sanford Burnham Prebys Medical Discovery Institute, The Drosophila heart at single cell resolution.

4:53-5:00: Workshop wrap-up / post-workshop social at Gather.town (details provided at the workshop)

Wednesday, March 31
3:00 pm - 5:00 pm

Dissecting interorganelle communication networks that fuel cellular and systemic signaling

Session Chairs:
Francesca Di Cara, Dalhousie University
Margret Bülow, University of Bonn
Andrew Simmonds

Organelles need to interact through vesicles transport, signaling molecules, and membrane contact sites to maintain their biological functions. Impairment of an organelle's metabolic cascades may cause change in metabolic signaling that might lead to disease such as cancer or neurodegeneration. The specific mechanisms of how organelles communicate through signaling molecules and metabolites, how one organelle dysfunction affects another and the specific consequences in modifying defined interaction in health and disease are still missing and hard to untangle. Studies in Drosophila started to deconstruct complex signaling networks derived from organelle interactions that impact on aging, immunity, growth and stem cell behavior.

3:00 pm **Mike Henne**, UT Southwestern Medical Center Dallas TX US, Using Drosophila to study organelle crosstalk & the functional diversity of lipid droplets

3:15 pm **Raghu Padinjat**, National Centre for Biological Sciences-TIFR GKVK Campus, Bangalore India, Localizing biochemical activities to ER-PM contact sites

3:30 pm **Patrik Verstreken**, VIB Center for Brain & Disease Research KU Leuven Belgium, Sleep dysfunction in Parkinson's disease

3:45 pm **Tao Wang**, National Institute of Biological Sciences Beijing China, Mitochondria-ER Lipid Exchange Rebalances PE Homeostasis and maintains neuronal function

4:00 pm **Victoria Hewitt**, Whitworth Lab, MRC Mitochondrial Biology Unit, University of Cambridge UK, Decreasing pdzd8-mediated mitochondrial-ER contacts in neurons improves fitness by increasing mitophagy

4:15 pm **Kelvin Frank**, Ting lab, Stanford University Stanford CA US, Proteomic mapping of ER-mitochondria contact sites using split-TurboID

4:30 pm **Kai Sun**, Center for Metabolic and Degenerative Diseases Institute of Molecular Medicine University of Texas Houston TX US, Regulation of Dynamics of ER-Lipid Droplets by A Novel Factor in Living Cells

4:45 pm **Zulfeqhar Syed**, Ten Hagen lab, NIH NIDCR Bethesda MD US, Tango1 coordinates ER/Golgi docking sites to mediate the proper packaging of mucin cargo

Wednesday, March 31
3:00 pm - 5:00 pm

Community Engagement in Research: An Authentic Science Experience in Labs@Home

Session Chairs:
Dara Ruiz-Whalen, eCLOSE Institute/Temple University- CEHS
Alana O'Reilly, Fox Chase Cancer Center/eCLOSE Institute

eCLOSE will present a hands-on activity (FlyBox) for researchers, interested in collaborating with schools in their communities. The model discussed not only empowers students to seek out further research opportunities but harnesses the power of citizen science (scientists collaborating with their community) to collect large, preliminary data sets. This workshop will engage researchers and highlight ways to bring the lab into the home with safe, reproducible techniques perfect for collecting early data. Participants will discuss the implications of diet on disease (cancer) within a variety of cultures and overlay this on Drosophila developmental stages to empower more voices in research.

3:00 pm: **Dara Ruiz-Whalen**, eCLOSE Institute/Temple University, Community engagement in research: An authentic science experience in Labs@Home.

3:10 pm: **Amanda J. Browne***, PPD- Complementary worker of GSK, The importance of role models for student engagement in research.

3:20 pm: **Nicole Harrington***, University of Pennsylvania, From student to instructor: The school to science pipeline.

3:30 pm: **Christopher Aichele**, The Academy at Palumbo High School- School District of Philadelphia, Teaching AP Biology in an underfunded urban setting: Engagement with real data and analysis through eCLOSE Institute's classroom project.

3:40 pm: **Ebony Dyson**, Abraham Lincoln High School- School District of Philadelphia, A culturally relevant science approach for students and their families.

*Both Amanda and Nicole are awardees of the 2021 Presidential Membership

3:50 pm: Hands on Activity

5 Breakout rooms with 10 participants each. Facilitated by the speakers of this workshop.

4:45 pm: Closing- Dara Ruiz-Whalen

Thursday, April 01
3:00 pm - 5:00 pm

Everything you ever wanted to know about sex

Session Chairs:
Artyom Kopp, University of California, Davis
Rita Graze, Auburn University
Michelle Arbeitman, Florida State University

The workshop will cover the molecular genetics, development, neurobiology, genomics, evolution, and population genetics of sexual dimorphism, with an emphasis on cross-disciplinary interactions. Presentations by invited speakers and selected abstracts from each discipline will be followed by moderated discussions. The speakers are encouraged to summarize the key ideas behind their research for people working in other fields, outline the main unsolved questions, offer their opinions about future directions, and suggest connections that could be built with other disciplines.

3:00 PM Opening Remarks

3:05 PM – Stephen F. Goodwin, University of Oxford, A sex-specific switch between visual and olfactory inputs underlies adaptive sex differences in behavior

3:22 PM – Bryson Deanhardt, Duke University, Chromatin based regulation of *fru* and *dsx* in courtship circuits with social experience.

3:25 PM – Paula R Roy, University of Utah, It takes two: the behavioral and genetic basis of sexual signal coevolution.

3:35 PM – Lydia Grmai, Johns Hopkins University, Sex-specific ecdysone signaling is established by Dsx to control sexual differentiation in Drosophila gonads.

3:52 PM – Sharvani Mahadevaraju, NIDDK, Sexually dimorphic gonad development and sex-biased expression depends on *karyotype* (XX or XY), *tra* (presence or absence) and their interaction.

3:55 PM – Mukulika Ray, Brown University, A sex-specific role for the Drosophila Clamp protein in splicing during early embryonic development.

3:58 PM – Nitin Phadnis, University of Utah, Genomic conflicts and selfish sex chromosomes in Drosophila.

4:15 PM – Samuel Khodursky, The Rockefeller University, Evolution of sex-biased gene expression in the Drosophila brain.

4:18 PM – Peiwei Chen, California Institute of Technology, Adaptation of *Drosophila* piRNA program to sexually dimorphic TE landscape.

4:28PM – Ian Dworkin, McMaster University, Sex differences in size and shape, do they reflect the same biological processes? Insights from 350 generations of artificial selection on size, and on sexual size dimorphism in *Drosophila melanogaster*.

4:45 PM – Caitlin E. McDonough-Goldstein, Syracuse University, *Drosophila* female reproductive glands contribute to mating plug composition and the timing of sperm ejection.

4:55 PM Q and A

Thursday, April 01
3:00 pm - 5:00 pm

Developmental Mechanics

Session Chairs:
Rodrigo Fernandez-Gonzalez, University of Toronto
Guy Tanentzapf, University of British Columbia
Adam Martin, Massachusetts Institute of Technology

Developmental biology has undergone a revolution over the last two decades, largely as a result of work in Drosophila, that placed biomechanical, quantitative imaging, and mathematical modeling approaches at the forefront of the study of tissue morphogenesis. In particular, the establishment of tools to measure and manipulate mechanical forces in living organisms has demonstrated that mechanical forces profoundly shape animal development. In this workshop, we will review the most recent technical advances to visualize and quantify force generation in Drosophila, and we will discuss the latest results demonstrating the interplay between physical forces, molecular dynamics and tissue morphogenesis.

Thursday, April 01
3:00 pm - 5:00 pm

Trends, issues and challenges in scientific publication

Session Chairs:
Howy Jacobs, Tampere University
Kelly Ross, San Diego State

The workshop will explore major issues and upcoming changes in scientific publishing, in the form of panel presentations and an extended Q&A and free discussion.

Poster Session Listings

Adaptation and Natural Selection

166A Drosophila glue prevents from predation and evolves rapidly **Flora Borne**

167B Genetic variation among *w*Mel strains of *Wolbachia pipientis* differentially rescues a *bag of marbles* partial loss of function mutant in *Drosophila melanogaster* **Jaclyn Bubnell**

168C Experimental Evolution of an Adaptive Inversion Polymorphism **Durmaz Esra**

169A Drift in Individual Preference as a Population-level Strategy for Environmental Adaptation **Ryan Maloney**

170B Differing lifestyles and metabolisms of *Drosophila lutzii*, a Floridosa group of species, and sympatric *D. simulans*, a generalist. **Juan Murillo-Maldonado**

171C Mapping the loci contributing to wing form adaptation to high altitude **Katharine Pelletier**

172A The genetic basis of cardiac glycoside resistance in wild-caught Drosophila melanogaster **Arya Rao**

173B Genomics of recombination variation in temperature-evolved *Drosophila melanogaster* populations **Ari Winbush**

Aging

174C Identification of Mef2 and GGA as potential regulators of differential aging among closely related *Drosophila* species **Alexander Fang**

175A Taxi regulates life span of the *Drosophila melanogaster* through *Adar* **Upasana Gupta**

176B Differential Regulation of non-coding RNA (ncRNA) in aged *Drosophila melanogaster* in response to Infection by RNA Virus **Eli Hagedorn**

177C Diet-Dependent Fat Body Transcriptome Analysis Reveals the Proteasome as a Molecular Link Between Circadian Rhythms, Longevity, and Dietary Restriction **Dae-Sung Hwangbo**

178A Searching for genetic factors that aggravate aging-related muscle loss. **Kaveh Kiani**

179B The role of commensal microbes on the longevity effect of dietary restriction in *Drosophila melanogaster* **Ji-Hyeon Lee**

180C Partial inhibition of RNA Polymerase I promotes animal health and longevity **Guillermo Martinez Corrales**

181A Non-cell-autonomous Intestinal Occluding Junction Modulation in Aging and Disease **Anna Salazar**

182B Retrotransposon Insertion and Expression in Aging in *Drosophila melanogaster* **Blair Schneider**

183C Genome-wide analysis reveals novel regulators of synaptic maintenance **Jessica Sidisky**

184A Identification of p38 MAPK Binding Partners During Aging and Oxidative Stress **Alysia Vrailas-Mortimer**

Autophagy

185B Deciphering the role Class II PI3K variants in Autophagy **Ilva Cabrera**

186C Pleiotropic role of Drosophila *phosphoribosyl pyrophosphate synthetase* in autophagy and lysosome homeostasis **Keemo Delos santos**

187A How Myc influences glutamine metabolism to induce autophagy in tumor growth **Francesca Destefanis**

188B SVIP is a Molecular Determinant of Lysosomal Dynamic Stability, Neurodegeneration and Lifespan **Alyssa Johnson**

189C Reduction of Glutamate Dehydrogenase Increases Autophagy in Neurons and Ameliorate Motility and Survival in a Drosophila Model for Huntington's Disease **Chiara Londero**

190A Addressing the physiological role of endosomal Microautophagy **Satya Surabhi**

Basement Membrane/ECM

191B Mechano-chemical enforcement of tendon apical ECM into nano-filaments during *Drosophila* flight muscle development **Wei-Chen Chu**

192C Establishing a mechanism for *Drosophila* midgut basement membrane repair **Aubrie Stricker**

193A The ECM protein Fibulin plays important roles in trunk visceral mesoderm and somatic muscle development during embryogenesis **Bronwyn Tollefson**

194B Wg secreted by conventional Golgi transport diffuses and forms Wg gradient, but Wg tethered to extracellular vesicles do not diffuse **Jong Hoon Won**

Behavior

195C *Drosophila* clock cells use multiple mechanisms to transmit time-of-day signals in the brain **Annika Barber**

196A Plasticity in the circadian circuit mediated by the reproductive state in females of Drosophila melanogaster **Lorena Franco**

197B Sex differences in the effects of insulin signaling on food consumption in adult *Drosophila melanogaster* **Nafiul Huda**

198C Characterization of circadian Rhythms in a DNA repair mutant **Gina Ishu**

199A Role of *dTRPA1*$^{+}$ and PDF^{+} neurons in modulating rhythmic activity in flies experiencing constant warm temperature **Aishwariya Iyengar**

200B Differential expression of *miR-210* in bees as an agent of maternal care **Amy Kwan**

201C How the Fly Decides: a New Assay to Study Decision Making **Carla Ladd**

202A Developmental exposure to Bisphenol F impairs courtship behavior and causes developmental lethality **Heather Larson**

203B Behavioral modification in response to auditory stress in *Drosophila melanogaster* **Allison Michael**

204C The psychedelic drug psilocybin has long lasting antidepressant-like effects in male Drosophila **Charles Nichols**

205A Sexual experience does not affect the strength of male mate choice for high quality females **Alison Pischedda**

206B Monitoring circadian behavior in DNA repair-deficient Drosophila **Shahida Qazi**

207C Parasitoid-induced reproductive modifications in *Drosophila* **Madhumala Sadanandappa**

208A Traumatic brain injury coupled with tau expression promote *Drosophila* inter-male aggression **Christine Smoyer**

209B Altered gravity reveals female preference for symmetric mates in *Drosophila* **Roshan Kumar Vijendravarma**

Bioinformatics

210C Designing FISH Oligopaint probes for a highly repetitive Y chromosome **Isabela Almeida**

211A Progress towards functional understanding of the gene repertoire of *Drosophila*. **Helen Attrill**

212B Building bioinformatics resources at DRSC: 2021 update **Claire Hu**

Cancer Biology

213C Modulation of V-ATPase subunits prevents tumor growth and restores autophagy in a *Drosophila* model of glioma **Miriam Formica**

214A Tep1 regulates Yki activity in Neural Stem Cells in Drosophila Glioma Model **Karishma Gangwani**

215B Using early pupal stages as a system to study circulatory tumor cell movement *in vivo* **Levi Klassen**

216C Tumors Overcome the Action of the Wasting Factor ImpL2 by Locally Elevating Wnt/Wingless **Jiae Lee**

217A Phosphorylation of a conserved amino acid in WASH has a critical function in tumor suppressive cell competition **Dan Liu**

218B Methionine restriction breaks obligatory coupling of cell proliferation and death by an oncogene Src in Drosophila **Hiroshi Nishida**

219C Measuring the Response of WRNexo-Deficient Drosophila to Metabolic Stress **Rut Ortiz**

220A The model for selective elimination of epithelial tumor clones by AdoR mutation **Roman Sidorov**

221B *CG33993*, a new SH2 domain containing protein acting as a negative feedback loop regulator of EGFR/Ras-driven tissue hyperplasia **Jennifer Soler Beatty**

222C T-cell lymphoma: mimicking a commonly found PLC-γ activating mutation in Drosophila **Justin Thackeray**

Cell Adhesion

223A The cell junction protein Polychaetoid/ZO-1 ensures junction robustness during morphogenetic movements of *Drosophila* embryogenesis **Anja Schmidt**

224B α-Catenin mechanosensing cooperates with Ajuba, Vinculin, and Canoe to support embryonic morphogenesis **Luka Sheppard**

Cell Cycle

225C The Endocycle in Development and Cancer **Hunter Herriage**

226A Structured illumination microscopy reveals the replication initiation dynamics in *Drosophila* polytene chromosomes **Tatiana Kolesnikova**

227B The checkpoint gene Bub3 moonlights as a metabolic regulator **Sara Morais da Silva**

228C The Krüppel-like-factor Cabut has cell cycle regulatory properties similar to E2F1 **Peng Zhang**

Cell Death

229A Deciphering Mechanisms of *Egfr*-Mediated Cell Survival in the *Drosophila* Eye Using Single-Cell Omics **Komal Kumar Bollepogu Raja**

230B Identifying the Secretome and Transmembrane Proteins of Non-Professional Phagocytes **Alexandra Chasse**

231C Selective activation of a pro-death transcriptional program controls neuroblast apoptosis **Katherine Harding**

232A Molecular Regulation of Clearance by Nonprofessional Phagocytes in the *Drosophila* Ovary **Diane Lebo**

233B Characterization of the nucleolar protein Noc1 in apoptosis induced proliferation (AiP) **Valeria Manara**

234C Sequencing analysis of the E.3.2 and N.1.2 mutants identified in a Flp/FRT screen for regulators of cell growth in *Drosophila melanogaster* **Jamie Siders Sanford**

235A *Bfc*, a novel *Serpent* co-factor for the expression of *Croquemort*, regulates efferocytosis in *Drosophila melanogaster* **Qian Zheng**

Cell Division

236B What's size got to do with it? Understanding the role of sibling cell size asymmetry. **Melissa Delgado**

237C The post-transcriptional regulations of centrosomal *plp* mRNA in *Drosophila* **JUNNAN FANG**

238A Spindle Orientation: What role does Dlg play? **Kate Neville**

239B Identification of a non-LTR retrotransposon at *Drosophila* centromeres. **Bryce Santinello**

240C The nuclear envelope ESCRTs lagging chromosomes into daughter nuclei **Brandt Warecki**

Cell Growth

241A Function of the RhoGEF Cysts in imaginal disc morphogenesis and regulation of tissue growth **MING YU Cao**

242B Analysis of the Drosophila Tribbles pseudokinase reveals functional features of a divergent C-terminal tail that mediates target degradation via the cullin-RING E3 ubiquitin ligase (CRL) complex **Leonard Dobens**

243C Mapping of the O.2.2 mutation, a regulator of cell growth, in *Drosophila melanogaster*. **Jamie Siders Sanford**

244A Spatiotemporal expression of regulatory kinases directs the transition from mitotic growth to cellular morphogenesis **SHUO YANG**

Cell Migration

245B Regulation and Effects of Ferritin on ovarian cell migration in Drosophila Melanogaster **Susan Afolabi**

246C Influence of Ecdysone Receptor Signaling on Border Cell Migration Kinetics **Mallika Bhattacharya**

247A ArfGAP1 regulates collective cell migration *in vivo*. **Alison Boutet**

248B Analysis of the *Drosophila* border cell gene expresson profile reveals stage-specific changes during migration **Emily Burghardt**

249C A role for the conserved PP1 regulatory subunit PPP1R15 in collective cell migration in vivo **Yujun Chen**

250A Septins are Required for Collective Cell Migration in the *Drosophila* Ovary **Allison Gabbert**

251B The role of the Rho family of GTPases in germ cell migration **Mikayla Gilles**

252C A targeted RNAi screen identifies conserved cell junction genes required for collective cell migration and invasion **Nirupama Kotian**

253A RhoGEF2 regulation of amoeboid migration **Benjamin Lin**

254B Defining the role of individual prostaglandins in collective cell migration **Sam Mellentine**

255C The Role of Rap1 in Building the Migratory Border Cell Cluster **Luke Messer**

256A Cactin is required for collective border cell migration in *Drosophila* **Guangxia Miao**

257B Regulation of Misshapen during Border Cell Migration **Gabriela Molinari Roberto**

258C Investigating Targets of Jak-STAT and Ecdysone Signaling in Border Cell Migration by Binding Motif Analysis **David Waldron**

Cell Motility

259A Investigating functions of axonemal dynein assembly factors in *Drosophila* motile ciliated cells **Jennifer Lennon**

Cell Stress

260B Fat body HIF-1α promotes organismal hypoxia tolerance by restraining excess cytokine and immune signaling **Kate Ding**

261C Using natural genetic variation in *Drosophila* to characterize the underlying mechanisms of stress preconditioning **Katie Owings**

262A The Transcription Factor Xrp1 is required for PERK-mediated Unfolded Protein Response in *Drosophila* **Hyung Don Ryoo**

263B Defining the role of nuclear actin in the nucleolar stress response **Danielle Talbot**

Chromatin

264C The H3.3K27M oncohistone antagonizes reprogramming in Drosophila **Kami Ahmad**

265A Silencing and position-effect variegation in a dual-reporter transposition mutagenesis screen **Nathan Dupre**

266B Towards understanding the cytological and biochemical bases of symbiont-induced cytoplasmic incompatibility **Rupinder Kaur**

267C Dissecting the mechanism of X recognition in *Drosophila melanogaster* **Reem Makki**

268A Mapping R-loops during Drosophila development reveals new paradigms for R-loop formation and genome stability **Alexander Munden**

269B New insights into the mechanism of transcriptional silencing by piRNAs **Maria Ninova**

270C Repeat-binding proteins participate in *D. melanogaster* dosage compensation **Maggie Sneideman**

271A Replication in Context: Understanding replication through higher ordered chromatin **Reyhaneh Tirgar**

Comparative Genomics

272B The expanded *Drosophila ananassae* Muller F element: expanded genes, pseudogenes, a *mael* retrogene, and NUMTs **Ethan Cordes**

273C Genome annotation of Drosophila ananassae dot chromosome contig 33 **Kaila Gemenes**

274A Comprehensive phylogenomic of *Lactobacillus plantarum* reveals genome signals involved in host-bacteria interactions **Karina Gutierrez Garcia**

275B Annotation of Genes in the Insulin Signaling Pathway Across Drosophila Species **Karolina Senkow**

Computational Biology

276C Timeor: a web-based tool to uncover temporal regulatory mechanisms from multi-omics data **Ashley Conard**

277A Deciphering developmental robustness with machine learning **Prateek Kalakuntla**

278B Mapping of high-throughput datasets reveals Max and E93 cluster at the histone locus **Mellisa Xie**

Cytoskeleton

279C Type II Phosphatidylinositol 4-kinases as Regulators of the Actin Cytoskeleton **Joseph Albanesi**

280A Autocrine insulin pathway signaling regulates actin dynamics in cell wound repair **Tessa Allen**

281B Flies as a cell biology platform to study T3SS-secreted early effectors of the intracellular pathogen *Chlamydia trachomatis* **George Aranjuez**

282C Dunk regulates cortical localization of myosin II during *Drosophila* cellularization through interaction with the scaffolding protein anillin **Jiayang Chen**

283A *Drosophila* Wash and the Wash regulatory complex function in nuclear envelope budding **Kerri Davidson**

284B Actin bundles play a dofferent role in shaping scales compared to bristles in the mosquito *Aedes aegypti* **Sanja Djokic**

285C Pericentrin-like-protein and Kinesin-1 drive centriole motility for proper subcellular positioning in *Drosophila.* **Matthew Hannaford**

286A Recapitulating bristle-like actin module organization by the actin-binding proteins, Forked, Fascin, and Javelin in *Drosophila* oocyte **Ramesh kumar Krishnan**

287B Short stop is a gatekeeper at the ring canals of *Drosophila* ovary **Wen Lu**

288C Rapid diversification of Arp2 specialized for roles in *Drosophila* sperm development **Courtney Schroeder**

289A Mechanisms of localized actin network assembly during actin cap formation in the Drosophila embryo **Rebecca Tam**

785A Molecular Regulation of Centrosome Stability **Tânia Perestrelo**

Developmental Genetics

290B Determining how the Misshapen kinase regulates the size of the germline ring canals in the developing egg chamber **Daniel Adan Jr**

291C Toxicological Study and Genetic Basis of BTEX Susceptibility in Drosophila melanogaster **Temitope Adebambo**

292A The septate junction protein Macroglobulin complement-related plays an essential role in *Drosophila melanogaster* oogenesis **Haifa Alhadyian**

293B The role of organismal physiology in the regulation of cell competition **Jeffrey Bellah**

294C PlexinA mediates medulla layer formation and photoreceptor targeting in *Drosophila* **Maria Bustillo**

295A Distinct spatial signalling requirements for patterning of the *Drosophila* embryo termini by Torso **Monica Caggiano**

296B The haplolethality paradox of the *wupA* gene in *Drosophila* **Sergio Casas-Tinto**

297C Investigating the sex-specific function of *Stonewall* in *Drosophila* female germline stem cells **Ankita Chavan**

298A Association of RanGAP to Nuclear Pore Complex Component, RanBP2/Nup358, is Required for Development in *Drosophila*. **Shane Chen**

299B Dissecting the regulation of the *vestigial* gene to explore a potential dual evolutionary origin of insect wings **Kevin Deem**

300C Prohibitin connects mitochondrial function to the delta-notch signaling pathway during drosophila oogenesis **Yipeng Du**

301A FGF- and Hh-mediated interactions between developing epithelium and muscle precursors revealed by single-cell analysis **Nicholas Everetts**

302B Regulation of *trn* during the development and evolution of *Drosophila* male genitalia **Javier Figueras Jimenez**

303C Evolutionary mechanisms adapting neural circuit structure and function to mosquito visual ecology **Zachary Goldberg**

304A *fs(1)K741* is a female sterile allele of the gene *Sxl* and disrupts *Sxl* splicing **Jillian Gomez**

305B The Tsh transcription factor and the transcriptional co-regulator CtBP interact in *Drosophila melanogaster* eye development **Kyle Helms**

306C The drosophila PAX6 Eyeless and Twin of Eyeless regulate *decapentaplegic* at the posterior margin of the eye disc for proper eye formation. **Claude Jean-Guillaume**

307A Two types of cells composing a campaniform sensillum express the patterning gene *wingless* in pupal wings of *Drosophila guttifera*. **Masato Koseki**

308B Microtubule- and Rab11-dependent apical trafficking of the Fog ligand and apical/junctional proteins regulates apical constriction during tissue invagination **Thao Le**

309C *In Vivo* Validation of Candidate Congenital Heart Disease Genes in Drosophila Identifies a Novel Role for the E3 Ubiquitin Ligase *Hyperplastic Discs (Hyd)* **Marshall Lukacs**

310A Sexually dimorphic gonad development and sex-biased expression depends on karyotype (XX or XY), *tra* (presence or absence) and their interaction **Sharvani Mahadevaraju**

311B Characterizing the role of *Myosuppressin receptor 2* in the growth of *Drosophila melanogaster*. **Sachini Mallika Arachchilage**

312C Investigating the role of Notch signalling in the development of the ventral mesoderm in *Drosophila melanogaster* **Marvel Megaly**

313A Spermatogenesis in *Drosophila pseudoobscura*, a sperm heteromorphic species **Fiona Messer**

314B Cofactor-dependent and -independent functions of Hox reveal two distinct evolutionary lineages of insect wing tissues **Madison Moe**

315C Chitinase 10 controls chitin organisation in the *Drosophila* wing **Bernard Moussian**

316A Adherens junctions, transcription factor Mitf and Protein Phosphatase 2A function within the peripodial epithelium of the eye imaginal disc to regulate Yki and prevent retinal displacement **Scott Neal**

317B *Suboptimal intermediates underlie evolution of the Bicoid homeodomain* **Pinar Onal**

318C Regulation of Glial Septate Junction proteins by microRNA-184 **sravya paluri**

319A Ventral tissue fate in *Drosophila* leg is controlled in part by three distinct actions of the selector gene *midline* **Lindsay Phillips**

320B Regulation of EGFR signaling outcome by localized JAK/STAT pathway activity in the posterior domain of the follicular epithelium **Baptiste Rafanel**

321C A novel transmembrane protein stabilizes damaged photoreceptors and preserves vision **Jens Rister**

322A (E)close but no cigar: how the histone modifier KDM5 is required to reach adulthood **Michael Rogers**

323B Knockdown of Mad expression during *Drosophila* wing development results in cell death and pouch duplication **Leronardo Romero-Barajas**

324C Negative feedback regulation in *Drosophila* dorsal-ventral patterning **Allison Schloop**

325A The detachment of the blastoderm-vitelline envelope interaction and blastoderm chirality **Giulia Serafini**

326B Biosensor mediated detection of physiological cell competition **Aditi Sharma Singh**

327C The walk through the notum: studying the order of macrochaetae pattern growth by the analysis of morphological mirror-like duplications of the adult Drosophila notum caused by the Pentathorax mutation **Roman Sidorov**

328A Investigating the Nature of Transdetermination during *Drosophila melanogaster* Development **Alison Smith**

329B Tissue specific responses to EcR are potentiated by differences in chromatin accessibility **Christopher Uyehara**

330C Matrix Metalloproteinase 2 cleaves and destabilizes cell-surface glypican Dally-like protein to attenuate long-range Wg distribution and function **Indrayani Waghmare**

331A Deciphering mechanisms of Egfr signaling during retinal cell fate determination with single-cell omics **Kelvin Yeung**

332B Defining the role of the Rap1 GTPase function in eye development **Philip Yost**

333C Morphometric and spatial distribution analysis uncovers unexpected progenitor patterns in the adult *Drosophila* midgut **Fionna Zhu**

Disease Models

334A Characterization of oxidative stress resistance in insulin-signaling impaired *Drosophila melanogaster* **Jessica Alvarez**

335B A larval model of cachexia recapitulates key hallmarks of the human disease **Mardelle Atkins**

336C Investigating the roles of human genes in *Drosophila melanogaster* **Ashley Avila**

337A A peripheral HD model reveals dual modes of polyglutamine pathogenicity **Taylor Barwell**

338B CRISPR-engineered Drosophila knock-in models to study VCP diseases **Ankita Basu**

339C Characterizing the Molecular Function of the Mutagen Sensitivity Gene, *mus109* **Vada Becker**

340A Development of a *Drosophila* model of LGMD1F and drug screening **Águeda Blázquez Bernal**

341B Neurofibromin regulates metabolic rate via neuronal mechanisms **Valentina Botero**

342C Identifying novel protein interactors of Abnormal Spindle, a key regulator of proper brain size. **Shalini Chakraborty**

343A A CRISPR screen for modifiers of the rare disease DPAGT1-CDG (CDG-Ij) **Hans Dalton**

344B Modeling age-induced polyploidy in *Drosophila* **Ari Dehn**

345C Progeroid Barrier-to-Autointegration Factor disrupts tissue homeostasis due to defects in mitosis **Tingting Duan**

346A High-volume functionalization of human *PTEN* variants in *Drosophila* **Payel Ganguly**

347B Spen modulates lipid droplet content in adult Drosophila glial cells and protects against paraquat toxicity **Victor Girard**

348C A *Drosophila* model of PIGA deficiency reveals gliopathic mechanisms of epilepsy and may identify potential therapeutic approaches **Madelyn Haller**

349A Altered expression of *foxo, Rbf, Buffy* and *Debcl* in novel Drp1-induced PD model in Drosophila **Azra Hasan**

350B Modeling muscular dystrophy in Drosophila*:* A study of lamins and interaction partners **Ben Hinz**

351C Conservation of a GAP independent function of the DLC3/Cv-c RhoGAP proteins required for male gonadogenesis **James C-G Hombria**

352A The oncoproteins H3 K27M and EZHIP inhibit PRC2 by conserved mechanisms in mammals and *Drosophila melanogaster* **Sam Krabbenhoft**

353B A small molecule ion channel screen to suppress gliopathic epilepsies **Walt Krueger**

354C Transmission of ethanol tolerance to progeny of repeatedly intoxicated parents in *Drosophila melanogaster* **Mariano Loza-Coll**

355A Genotoxicity of water from the La Estanzuela dam in Mexico in the *Drosophila* wing spot test. **Ana Cecilia Luis Castañeda**

356B *Drosophila* as a model for defining diets to treat inborn errors of amino acid metabolism **Felipe Martelli Soares da Silva**

357C Knock-down of the pre-mRNA splicing factor *SNRNP200* causes headless pupae and rough eyed adults **Sara Mayer**

358A Mistargeting of secretory cargo in retromer-deficient cells **Sarah Neuman**

359B *Traip* suppresses chromosome bridges via mitotic DNA repair to control brain size **Ryan O'Neill**

360C New alleles of *spastin*: a model for Hereditary Spastic Paraplegia and opportunity for undergraduate education **Emily Ozdowski**

361A A genetic and physiological model of renal dysfunction for Lowe syndrome in *Drosophila melanogaster* **NAVYASHREE RAMESH**

362B *Drosophila Dyb* Mutants show hearing and proprioception defects: a model for Meniere's disease **Teresa Requena**

363C An Oatp transporter-mediated steroid sink promotes tumor-induced cachexia in Drosophila **Paula Santa Bárbara Ruiz**

364A The histone demethylase KDM5 is required for synaptic structure and function at the Drosophila neuromuscular junction **Julie Secombe**

365B Understanding the effect of altering excitability in *Drosophila melanogaster* models of amyotrophic lateral sclerosis **Katherine Shaw**

366C Endurance exercise ameliorates disease progression in *Drosophila* models of Spinocerebellar Ataxias **Alyson Sujkowski**

367A Translational efforts towards a better understanding of frequent sleep deficits in Mendelian neurodevelopmental syndromes – from patients to *Drosophila* and back **Lara van Renssen**

368B The ER stress transcription factor XBP1s blocks CTG repeats-induced toxicity in a *Drosophila* model of myotonic dystrophy type 1 **Vanlalrinchhani Varte**

369C Identifying novel drugs to treat neurofibromatosis type 1 (NF1) tumors using genetic screens in *Drosophila* cells **James Walker**

370A Modeling laminopathies in Drosophila: Comparative analysis of *LMNA* mutations that cause muscle and adipose disorders **Sydney Walker**

371B Mechanisms of skeletal muscle and and cardiac disease caused by mutations in *TMEM43* **Lori Wallrath**

372C Mechanical competition promotes tumor growth via activation of innate immune signaling **Jun Zhou**

Diversity, Equity, and Inclusion

782A Establishing a Multicultural Inclusive Environment with the GEP-Translate Initiative **Stephen Klusza**

783B IUpcycle – Upcycling Laptops to Give Everyone Equal Access to Technology. **Alison Smith**

Ecological Genetics

374B Effects of saturation deficit on water balance Mechanism in Subtropical Drosophild-Zaprionus indianus: **BHAWNA KALRA**

Education

375C Adapting a Drosophila Microbial Pathogenesis CURE for Freshman **Moria Chambers**

376A Flying into research excellence: The *Drosophila* Neural Research Course-Based Undergraduate Research Experience **Annette Dean**

377B Identification of hematopoietic genes in *Drosophila* by undergraduates participating in a course-based research experience **Cory Evans**

378C Fly-CURE, a multi-institutional undergraduate CURE using *Drosophila*, investigates the relationship between research dosage and student impact on research attitudes **Jacob Kagey**

379A Annotation of D element contig3 and a F element contig59 of *Drosophila ananassae* **Norma Velazquez Ulloa**

Epigenetics

380B Subcellular localization of Tip60 HAT and HDAC2 in the *in vivo Drosophila* brain: implications for Alzheimer's disease **Ellen Armour**

381C Disentangling siRNA, epigenetic modifications, and X chromosome recognition **Sudeshna Biswas**

382A Investigating the role of Polycomb repression in *Drosophila* eye specification **Haley Brown**

383B Epigenetic regulation of reproductive arrest in *Drosophila* **Abigail DiVito**

384C Investigating the rate of paramutation in *Drosophila virilis* **Ana Dorador**

385A The COMPASS-like complex members Ptip and Trr regulate cardiac cell development in the *Drosophila melanogaster* embryo **AJ Farmer**

386B CBP maintains Polycomb chromatin occupancy and silencing competency **George Hunt**

387C Conservation of Modular Polycomb Group Complexes in Drosophila **Hyuck-Joon Kang**

388A Uncovering effects of epigenetic silencing of transposable elements on differential gene expression in Drosophila . **Lorissa Saiz**

389B Consequences of the Loss of Multiple HP1 Proteins in *Drosophila melanogaster* **Sarah Sims**

390C Testing models of centromere specification using genome editing **Prachi Tandale**

391A A novel Dbf4-Gcn5 HAT complex is necessary for histone H3 acetylation and viability in *Drosophila* **Eliana Torres-Zelada**

392B Epigenetic and transcriptional changes in *Drosophila* mushroom bodies neurons due to restrictive nutrition during development on neuroblast stage. **Jorge Zuñiga-Hernández**

Evolutionary Genetics

393C Somatic pairing loss in interspecies Drosophila hybrids reveals genome features driving pairing **James Baldwin-Brown**

394A Temperature, rainfall and wind variables underlie environmental adaptation in natural populations of *Drosophila melanogaster* **María Bogaerts Márquez**

395B Evolution of Y-linked genes through expression analysis of *Drosophila*'s spermatogenesis **Carolina de Athayde Mendonca**

396C Using fruit fly chaetotaxy to Infer Mechanisms of Morphological Evolution in Different Insect Clades **Naomi Derksen**

397A Timing and Pattern of Early Diversification in Drosophilidae (Diptera): A Phylogenomic Approach **Guilherme Dias**

398B Regulatory changes underlying chromatin accessibility divergence within and between *Drosophila* species. **Henry Ertl**

399C Evolution of mRNA Localization in Drosophila Oogenesis **Anna Feitzinger**

400A Multiple sex chromosome-autosome fusions associated with high satellite DNA content in *Drosophila virilis* **Jullien Flynn**

401B Copper Tolerance in Natural Populations of European *Drosophila melanogaster* is Shaped By a Complex Interplay of Regulatory and Environmental Variables **Llewellyn Green**

402C CRISPR mutants of Y chromosome genes in *Drosophila melanogaster* **Yassi Hafezi**

403A Environmental and genomic interactions determine *Wolbachia* maternal transmission and infection frequencies **Michael Hague**

404B The evolution of sex-biased gene expression in the *Drosophila* brain. **Samuel Khodursky**

405C Cryptic suppression reveals intragenomic conflict in the *Sex Ratio* system of *Drosophila pseudoobscura* **Spencer Koury**

406A Honeybee queen pheromone induces a potentially conserved starvation response in *Drosophila melanogaster* **Mackenzie Lovegrove**

407B Novel odorant receptors tuned to mustard oils facilitate evolution of herbivory in Drosophilidae **Teruyuki Matsunaga**

408C Nuclear transport genes experience high turnover in *Drosophila* but not in other insects **Ayda Mirsalehi**

409A *Cis*-regulatory variation and sex-biased gene expression in *Drosophila melanogaster* **Prashastha Mishra**

410B Diet-induced changes in titer support a threshold effect of Wolbachia-associated plastic recombination in *Drosophila melanogaster* **Sabrina Mostoufi**

411C Modeling satellite DNA organization **Sherif Negm**

412A Transcriptome responses to compensatory selection: study of *net* and *rho* suppression **Arnar Palsson**

413B Phylogenetic analysis of the Neotropical anthophilic species *Drosophila lutzii* **Carolina Prediger**

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