Final Schedule of Events

This meeting was brought to you by our Executive Council Members

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Tetsuya Nakamura, Social Media Officer

And Local Organizing Committee

Athula Wikramanayake
Chris Amemiya

Meeting at a Glance

TIME	Monday 7/21	Tuesday 7/22 Registration Auditorium	Wednesday 7/23 Registration Expo Center	Thursday 7/24 Registration Expo Center	Friday 7/25 Registration Expo Center
8:00 AM	Arrive, check in dorms	Breakfast 7-8:30	Breakfast 7-8:30	Breakfast 7-8:30	Breakfast 7-8:30
8:30 AM	**Lobby A 8am-10pm**		Plenary Session I*	Selected Abstracts	PostDoctoral Syposium
9:00 AM		Selected Abstracts	*Sponsored by JEZB		
9:30 AM	**(Registration: Auditorium Tuesday)**	Selected Abstracts	Expo Center	Expo Center	Expo Center
10:00 AM	**(Registration: Expo Center W-F)**	Coffee Break, LV1094		Coffee Break, LV1094	Coffee Break 0950, LV1094
10:30 AM		Selected Abstracts	Coffee Break, LV1094	Selected Abstracts	Selected Abstracts
11:00 AM		Selected Abstracts	Selected Abstracts		
11:30 AM		Selected Abstracts			Lunch 11:15-1:00
12:00 PM		Lunch 12-1:30	Lunch 12-1:30	Lunch 12:20-1:30	Selected Abstracts 1pm
1:30 PM		Selected Abstracts	Selected Abstracts	Selected Abstracts	
2:00 PM		Selected Abstracts			
2:30 PM		Selected Abstracts			PASEDB Business Mtg
3:00 PM		Coffee Break, LV1094	Coffee Break, LV1094	Coffee Break, LV1094	Open to all members
3:30 PM		Satellite Wrap up	Poster Session I, odd	Poster Session II,	Best Postdoc and student presentation Awards
4:00 PM		General Discussion	with exhibitor tables	with exhibitor tables	Rudy Raff Pioneer Award**
4:30 PM			Expo Center	Expo Center	Service Award
5:00 PM		Break 5:00-5:30	Dinner 5:00-7:00	Dinner 5:00-7:00	Closing Reception
5:30 PM		Welcome and Introductions			Science Slam
6:00 PM		Posdoctoral Excellence Award			Pavilion
6:30 PM		Young Investigator Award			
7:00 PM		Opening Reception	Workshop:	Workshop: Education and	
7:30 PM		Pavilion	Community Engagement	Professional Development	
8:00 PM					**Sponsored by
8:30 PM					Evolution and Development
9:00 PM					
9:30 PM					AV help =786-881-3069

PAN-AMERICAN SOCIETY
FOR EVOLUTIONARY
DEVELOPMENTAL BIOLOGY

2025 Biennial Meeting July 22 - 25
Univesity of Miami, Coral Gables Campus

Satellite symposia (July 22)

PASEDB - 2025 Biennial Meeting
July 22 – 25, 2025

<u>Monday, July 21</u>

8 AM-10 PM Arrive, Dorm check in: Lakeside Village (LV) Lobby A
7:30 AM Conference Registration in Auditorium (Tuesday)
7:30 AM Conference Registration in Expo Center (Wednesday-Friday)

<u>Tuesday, July 22</u> **8:30 AM-4:30 PM Satellite Symposia**

<u>Satellite Symposium on Arthropod EvoDevo</u>, LV Auditorium

8:30 AM **Welcome**

8:35 AM **Anyi Mazo-Vargas,** Duke University
"*Gene Network Logic Underlying Butterfly Wing Patterning.*"

9:05 AM **Mandy Game,** University of Connecticut
"*An Sp6-9 ortholog is expressed in developing legs in the tardigrade Hypsibius exemplaris*"

9:25 AM **Yu Shirai,** Harvard University
"Zelda regulates body length by coordinating embryonic cell division in hemimetabolous insects"

9:45 AM **Shen Tian**, Duke University
"A microRNA solves a classic evolutionary mystery"

10:05 AM Coffee break

10:30 AM **Patrick Rohner,** University of California San Diego
"Can development predict macroevolution? Insights from dung beetle horns and fly wings"

11:00 AM **Yongsoo Choi,** Indiana University
"The role of Fat-Hippo signaling in the origin and diversification of beetle horns"

11:20 AM **Erica Nadolski,** Indiana University
"Innovation and diversification of and through sexual dimorphism: insights from horned beetles"

11:40 AM **Rodrigo Nunes-da-Fonseca,** Instituto de Biodiversidade e Sustentabilidade, NUPEM, *"Conservation and Innovation in the Insect Small ORFome: Functional and Comparative Insights from Tribolium castaneum and Rhodnius prolixus"*

Lunch 12:10 – 1:30 PM Mahoney/Pearson Dining Hall or Food Court

1:30 PM **Jennifer Brisson,** University of Rochester
"follistatin paralogs connect environmental to genetic control of wing dimorphisms in pea aphids"

2:00 PM **Tunc Dabak,** The Pennsylvania State University
"Regulatory Variation in BarH2 Drives Yellow–White Color Polymorphism in Anatolian Bumble Bees"

2:20 PM **Frank Smith,** University of North Florida
"Gut patterning in the tardigrade *Hypsibius exemplaris*"

2:50 PM **Yui Suzuki,** Wellesley College
"The Evolution of Complete Metamorphosis in Insects: Insights from BTB domain transcription factors"

3:20 PM **Leslie Pick,** University of Maryland
"Biodiversity is more than meets the eye: Segmentation is conserved despite variation in the underlying gene network"

3:50 PM **General Discussion**
Arthropod models needed? Big questions? Tool development & sharing? Evo-devo outreach? What's not working?

Satellite Symposium on Fish EvoDevo, LV classroom 1090

8:30 AM Welcome

8:40 AM **Patricia Hernandez,** George Washington University
"Fish tongues and other oddities: Using zebrafish to examine the development and evolution of trophic novelties"

9:30 AM **Ingo Braasch,** Michigan State University
"A Blast from the Past: 'Living Fossil' Fishes Unravel the Developmental Evolution of Major Transitions in Vertebrates"

9:50 AM **Nicolas Cumplido,** Biology department Boston College
"Temporal control of muscle and skeletal development by thyroid hormone shapes the adult pectoral fin"

10:10 AM Coffee break

10:40 AM **Brent Hawkins**, Boston Children's Hospital Orthopedic Research, Harvard Medical School Department of Genetics
"Zebrafish models of key vertebrate innovations"

11:00 AM **Tetsuya Nakamura,** Rutgers University
"The cellular and genetic changes underlying the pectoral girdle transformation from water to land."

11:20 AM **Amy Herbert,** University of Chicago
"Sea robins as a model for evolutionary innovations"

11:40 AM **Lina Shi,** Louisiana State University

"Cis-regulatory control underlying retina patterning in the four-eyed fish Anableps anableps"

Lunch 12:00 – 1:30 PM Mahoney/Pearson Dining Hall or Food Court

1:00 PM **Andrew Thompson**, Western Michigan University
"Leveraging Killifish Biodiversity and Genomics to Explore Developmental Gene Regulation in Extreme Environments"

1:20 PM **M. Fernanda Palominos,** University of California, Berkeley

"Two novel craniofacial genes linked to extreme jaw evolution in pupfishes revealed by tissue-specific transcriptomics and speciation genomics"

1:40 PM **Ernesto Maldonado**, Universidad Nacional Autónoma de México
"Evolutionary morphospace of the Batomorphi pectoral fin: Swimming Innovations of Rays and Skates"

2:00 PM **Karen Crow,** San Francisco State University
"Are vertebrates constrained to two sets of paired appendages?

2:20 PM **Tyler Square,** University of Florida
"Unlocking tooth formation: functional genetic approaches alter cell fates and regeneration rates"

Satellite Symposium on Spiralia EvoDevo, LV training room 1084

10:00 AM **Coffee Break**

10:35 AM **Neva Meyer,** Clark University

"Assessing homology of the ventral midline in the bilaterian annelid Capitella teleta"

11:00 AM **Stephanie Neal,** Scripps Institution of Oceanography
"Crepidula atrasolea as a model to understand Spiralian dorsal ventral axis formation"

11:20 AM **Jose Aguilar,** North Carolina State University

"RNAi Gene knockdown in the marine annelid Streblospio benedicti by delivering dsRNA"

Lunch 11:40 – 1:30 PM Mahoney/Pearson Dining Hall or Food Court

1:30 PM **Deirdre Lyons,** Scripps Institution of Oceanography
"Spiralian Pathways to Diversity: Decoding Development, from RNA Localization to Shell Formation, in the slipper snail Crepidula"

2:30 PM **3 Minute Flash Talks**

Satellite Symposium on Non-Bilaterian Evo-Devo, Cox Science Center 217

9:00 **Welcome and opening remarks - Athula Wikramanayake**

9:05 **Keynote:** **Mark Q. Martindale** Whitney Laboratory, University of Florida. "*What can embryonic development tell us about early animal evolution?"*

Coffee Break: 9:55 – 10:20 AM

Session I: 10:20 AM – 12:00 PM **Moderator: Nat Clarke**

10:20 AM **Jacob Musser,** Yale University
"Biogenic amine signaling coordinates contractile cell behavior in freshwater sponge canal systems"

10:40 AM **Paulyn Cartwright,** University of Kansas
"The role of homeobox gene cluster reorganization in the evolution of medusozoan life cycles"

11:00 AM **Michael Connelly,** National Human Genome Research Institute
"*Cnidarian striated muscle cell evolution and development revealed through scRNAseq of polyps and medusae of the hydrozoan Podocoryna americana"*

11:20 AM **Bill Browne,** University of Miami
"Ctenophore innate immunity: a cell biology perspective"

11:40 AM **Julia Baranyk,** University of Arkansas
"Toward understanding function of the conserved ancient neuropeptide RFamide in Nematostella vectensis"

Lunch 12:10 – 1:30 PM Mahoney/Pearson Dining Hall or Food Court

Session II: 1:30 – 4:00 PM **Moderator: Bill Browne**

1:30 PM **Scott Nichols,** University of Denver
"Cellular mechanisms of bacterial recognition and response in sponges"

1:50 PM **Jasmine Mah,** UC Davis
"A Phylogenetic Analysis of Cnidarian Cell Types"

2:10 PM **Kejue Jia,** Yale University
"Reconstructing ancient synaptic architecture with single-cell RNA-seq and deep learning"

2:30 PM	**Arushi Gupta,** University of Miami *"Unveiling the role of maternal factors in regulating egg polarity and Wnt/β-catenin signaling during early embryogenesis in the cnidarian Nematostella"*
2:50 PM	**Matthew Travert,** University of Galway *"Distinct cellular dynamics suggest independent pathways to medusa development in Medusozoa"*
3:10 PM	**Nat Clarke,** University of Miami *"VitelloTag, a tool for high-throughput delivery into oocytes"*
3:30 PM	**General Discussion**

Afternoon Break Mahoney/Pearson Dining Hall or Food Court

5:30 PM <u>**PASEDB AWARDS-*Auditorium***</u>
PASEDB Welcome – Karen Crow, PASEDB President

6:00 PM **PASEDB Postdoctoral Excellence Award Presentation:** Jenn Brisson
Kevin Deem, University of Rochester
"Enhancer evolution underlying pea aphid wing dimorphisms"

6:30 PM **Young Investigator's Award Presentation:** Chris Amemiya
Igor Schneider, Louisiana State University*, "From Fins to Limbs: Decoding Conserved and Derived Mechanisms of Vertebrate Regeneration"*

7:10-10 PM **Opening Reception** *(with karaoke)-**Pavilion***

<u>**Wednesday, July 23**</u>
All talks and sessions take place in the **Expo Center, unless otherwise indicated*

Breakfast 7 - 8:30 AM Mahoney/Pearson Dining Hall or Food Court

8:30 - 10:00 AM: Plenary Session I, Sponsored by The *Journal of Experimental Zoology* (JEZ-B). Session chair, Chris Amemiya

8:30 AM **Alexandra Bely,** University of Maryland
"Exploring regeneration physiology: evidence for anaerobic fueling of regeneration in water nymph annelids"

9:00 AM **Martin Q. Martindale,** Whitney Lab for Marine Bioscience
"EcoEvoDevo: the environmentally induced cell type in the upside down jellyfish, Cassiopea"

9:30 AM **Frederico Brown, University of Sao Paolo- Zoom talk**
"Evolution of sensory systems in the dark: Lessons from cave planarians"

10:00 AM **Alfredo Cruz Ramirez,** Advanced Genomics Unit (LANGEBIO), CINVESTAV, Irapuato, Guanajuato, Mexico, **Zoom talk**
"*Insights into the AINTEGUMENTA–Auxin Feedback in Stem Cell Niches"*

Coffee Break 10:30 – 11:00 AM, LV-1094

<u>11:00 – 12:10: Session II</u>, Evolution of Signaling Pathways and Axis Formation
Session Chair, Leslie Pick

11:00 AM **Athula Wikramanayake**, University of Miami
"Functional analysis of the Nematostella Wnt/β-catenin destruction complex provides insight into the evolution of a critical regulatory module in a major metazoan signal transduction pathway "

11:30 AM **Stephanie Neal,** Scripps Institution of Oceanography
"*RTK signaling, but not transcription, is necessary for dpERK induction, D quadrant organizer specification, and dorsal ventral axis patterning in the marine gastropod, Crepidula atrasolea"*

11:50 AM **Lucas Guttieres,** Whitney Lab for Marine Bioscience - University of Florida
"The evolution of the Cadherin-Catenin-Complex in the ctenophore species Mnemiopsis leidyi"

Lunch 12:10 – 1:30 PM Mahoney/Pearson Dining Hall or Food Court

<u>1:30 – 3:00: Session III</u>, Morphological Evolution and Regulatory Mechanisms
Session Chair, Jennifer Brisson

1:30 PM **Christina Zakas,** North Carolina State University
"*Finding the genes that underly life-history and evolutionary developmental differences in the marine polychaete Streblospio benedicti"*

2:00 PM **Jacob Scott**, University of Florida
"Identification of non-coding elements associated with the evolutionary loss of digit 1"

2:20 PM **Heather Hines,** Pennsylvania State University
"Mimetic bumble bees repeatedly employ a Hox hotspot to promote modular color pattern diversity"

2:40 PM **Roberto Marquez,** Virginia Tech

"The role of ontogenetic integration in correlated evolution: Aposematism in poison-dart frogs"

3:00 – 3:30 Coffee Break

4:00 – 5:30 Poster Session I: Odd Number Presenters at Posters (Expo Center)
* poster authors and titles are appended to this schedule

Dinner 5:00 – 7:00 Mahoney/Pearson Dining Hall

7:00 - 8:30 PM **Community Engagement Workshops** (organized by Yui Suzuki)
Topics will be determined by participant suggestions at registration. We will organize several informal group discussions on issues that matter most to our members. No pre-registration necessary.

Thursday, July 24

Breakfast 7 - 8:30 AM Mahoney/Pearson Dining Hall or Food Court

8:30 - 10:00 AM Session IV, Molecular Mechanisms of Evo-Devo Innovation
Session Chair, Christina Zakas

8:30 AM **Rodrigo Nunes da Fonseca**, Universidade Federal do Rio de Janeiro
"*Species-Specific O-GlcNAcylation Profiles in Arthropod Support Different Mechanisms for Reproductive Success*"

9:00 AM **Keyla Pruett,** Louisiana State University
"Investigating cis-regulatory elements near and within the dorsally restricted nr2f2 gene in the retina of the Four-eyed Fish, Anableps anableps"

9:20 AM **Neva Meyer,** Clark University
"Function of Wnt/beta-Catenin signaling during neurogenesis in the annelid Capitella teleta"

9:40 AM **Johnny Davila-Sandoval,** Clark University
"Opening a can of 'worms' – Molecular mechanism underlying the specification of the central nervous system in the annelid Capitella teleta"

Coffee Break 10 - 10:30 AM, LV-1094

10:30 – 12:20 Session V, Developmental Plasticity and Polyphenism
Session Chair, Patricia Schneider

10:30 AM **Erik Ragsdale,** Indiana University
"Genomic parallelism defines repeated evolution of an inducible offense"

11:00 AM **Jessica Goodheart,** American Museum of Natural History
"*The hypothesized roles of phagocytosis genes in kleptocnidy in the gastropod nudibranch Berghia stephanieae*"

11:20 AM **Justin Bryant,** Indiana University
"Manipulation of a polyphenism-switch network reveals the molecular canalization of a threshold trait"

11:40 AM **Sirui Chen,** Boston University
"The Role of Transcription Factor FOXO in the Regulation of Developmental Plasticity in Horned Beetles"

12:00 PM **Xiaomi Liu**, University of Rochester
"Epigenetic changes underlying the pea aphid wing plasticity"

Lunch 12:20 – 1:30 PM Mahoney/Pearson Dining Hall or Food Court

1:30 – 3:00 Session VI, Regeneration and Cell Identity Transitions
Session Chair, Frank Smith

1:30 PM **Gavin Woodruff,** University of Oklahoma
"Amplification of collagen gene copy number in the elongated and slow-growing nematode, Caenorhabditis inopinata"

2:00 PM **James Nowotny,** University of Maryland
"Early events in annelid regeneration suggest lineage-specific cell dedifferentiation"

2:20 PM **Gabriela Lima,** Louisiana State University
"*Comparative Analysis of Gene Regulatory Programs in Vertebrate Appendage Regeneration."*

2:40 PM **Jacob Musser,** Yale University
"*Profiling cellular diversity in sponges informs the evolutionary origin of neurons and coordinated behavior in animals*"

Coffee Break 3:00 - 3:30 PM, LV-1094

3:30 – 5:00 **Poster Session II: Even Number Presenters at Posters (Expo Center)**

Dinner 5:00 – 7:00 Mahoney/Pearson Dining Hall

7:00 - 8:30 PM **Education and Professional Development Workshops**
(organized by Patricia Schneider)
Topics will be determined by participant suggestions at registration. We will organize several informal group discussions on issues that

matter most to our members. No pre-registration necessary.

Friday, July 25

Breakfast 7 - 8:30 AM Mahoney/Pearson Dining Hall or Food Court

8:30 – 11:10 Session VII Postdoctoral Symposium
Session Chair, Yui Suzuki

8:30 AM **Phillip Davidson,** Indiana University
"Cis-regulatory dimensions of inter- and intraspecific variation in beetle horn development"

8:50 AM **Jennifer Fenner**, Auburn University
"Conserved canonical and non-canonical Wnt signaling mechanisms govern anterior-posterior axis formation in Ambulacrarian embryos"

9:10 AM **Vikram Chandra,** Harvard University
"Distributed neural computation and the evolution of the first brains"

9:30 AM **Yuichi Fukutomi,** UC Davis
"*Evolution of dominance in color dimorphism in the Drosophila montium species subgroup is directly linked to evolution of phenotypic plasticity*"

Coffee Break 9:50 - 10:30 AM, LV-1094

10:30 AM **Jasmin Camacho**, Stowers Institute for Medical Research
"The Insatiable Sweet Tooth: How Evolution Rewired Insulin Signaling for Metabolic Resilience in Nectar-Feeding Bats"

10:50 AM **Brent Hawkins,** Boston Children's Hospital, Harvard Medical School Department of Genetics
"Separation of church and state: dynamic developmental changes of the cloaca and the formation of an anus"

Lunch 11:10 AM – 1 PM Mahoney/Pearson Dining Hall or Food Court

1:00 – 2:30 PM Session VIII, Molecular Mechanisms of Evo-Devo Innovation
Session Chair, Tetsuya Nakamura

1:00 **Dave Angelini,** Colby College
"Developmental and genomic insights on the evolution of dispersal-fecundity polyphenism in soapberry bugs"

1:30 **Scott Rifkin,** UC, San Diego
"*Hybrid incompatibility emerges at the one-cell stage in interspecies Caenorhabditis embryos*"

1:50 **Linjian Wang,** UC Merced
"*Towards rapid generation and ready access of monoclonal antibody reagents*"

2:10 **Brian Walters,** University of Miami
"*β-catenin localization in the ctenophore Mnemiopsis leidyi suggests an ancestral role in cell adhesion and nuclear function*"

2:30 – 3:30 PASEDB Business Meeting, open to all participants *Expo Center*

PASEDB AWARDS, Session Chair Karen Crow

3:30 PM **Best Student and Postdoctoral Presentation Awards:** Patricia Schneider
4:00 PM **Rudy Raff Pioneers Award Presentation:** Karen Crow
Gunter P. Wagner, Yale University, **Zoom talk**
" *Evolutionary Novelties: the agenda of EvoDevo/DevoEvo*"

4:30 PM **PASEDB Service Award Presentation:** Leslie Pick
Chris Amemiya – University of California Merced
"*Keeping the Evo-Devo flame going: How service and cool research have fueled my story and sparked discovery*"

5-8 PM **Closing Reception** *(and poetry slam)* -***Pavilion***

Saturday, July 26
Breakfast 7 - 8:30 AM Mahoney/Pearson Dining Hall or Food Court

Everyone in campus housing must check out and leave by 12:00 Noon

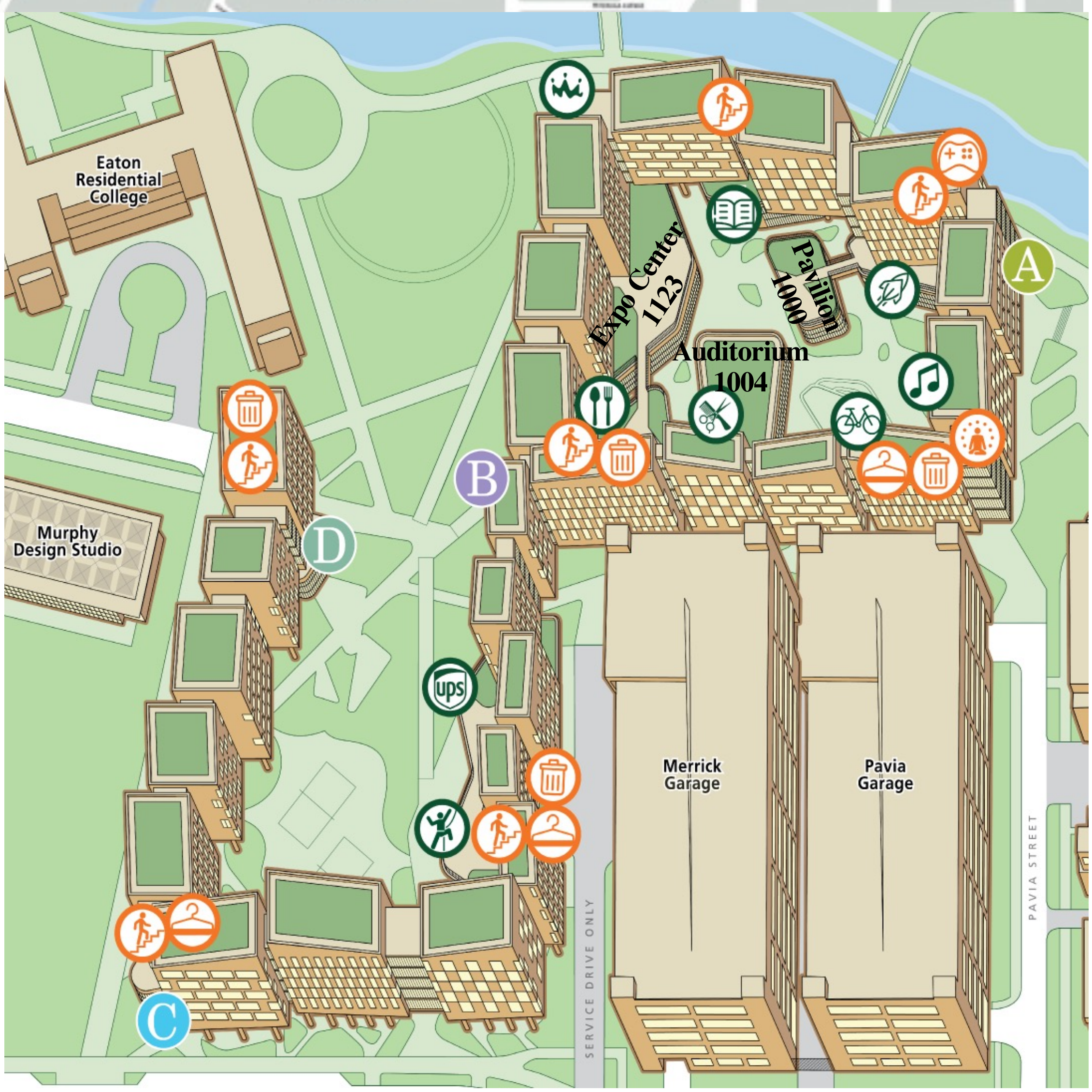
ABSTRACTS: Titles & Presenting Authors

Posters
P2: Sayoni Chatterjee, Genetic underpinnings of the proximo-distal elaboration of pectoral appendages during the fin-to-limb transition
P3: Mandy Game, Insights into the origin of vision: uncovering a conserved photoreceptor cell differentiation mechanism
P4: cancelled
P5: Francisco Gorrostieta Campos, tRNA Genes; Annotation of two Long-Read Chordate genomes
P6: Temiloluwa Afolayan, Glyco-EvoDevo: Chitin and the non-canonical uses and evolution of this highly abundant biopolymer

P7: Ernesto Maldonado, How to make a Jellyfish. Transcriptomic profiling of the chemically induced strobilation in the jellyfish *Aurelia sp*.
P8: Ernesto Maldonado, Evolutionary morphospace of the *Batomorphi* pectoral fin: Swimming Innovations of Rays and Skates.
P9: Anastasiia Lozovska, Genetic mechanisms regulating sucker development in cephalopod limbs
P10: Raul Chavarria, Investigating the link between the wound response and initiation of regeneration in Ctenophora
P11: Jackson Roberts, Redefining the development of the freshwater sponge canal system using 3D optical coherence microscopy
P12: Brent Foster, Notch expression during ctenophore development gives insight into its ancestral function
P13: Ryan Range, TGF-Beta and non-canonical Wnt signaling interactions coordinate anterior-posterior and dorsal-ventral axis formation in sea urchin embryos
P14: Caroline Schwaner, Genetic Regulation of Fin Ray Formation
P15: Josane de Freitas Sousa, mTOR Signaling Inhibition Disrupts Macrophage Crosstalk with Epithelial and Connective Tissue Cells During Fin Regeneration
P16: Julia Baranyk, Investigating endogenous function of the conserved neuropeptide RFamide in cnidarian sea anemone *Nematostella vectensis*
P17: Robert Walsmith, Comparative embryogenesis and neuroanatomy of the sister spionids *Streblospio gynobranchiata* and *Streblospio benedicti*
P18: Alexander Liu, Unraveling the evolution of cis-regulatory landscapes that control limb skeletal proportion
P19: Ebony Argaez, Evolution and development of sex-specific trait exaggeration in dung beetles
P20: Greta Adams, Investigating neuropeptidergic regulation of life cycle transition in the sea anemone cnidarian *Nematostella vectensis*
P21: Gregory Davis, Induction of reproductive fate in the pea aphid
P22: cancelled
P23: Marina Stoilova, Inferring 'the sister to the stinger' using phylogenetic methods at the cell-type level
P24: Victoria Sharp, Maternally-derived toxin HsyPTx1 as a putative defense mechanism against predation in larval *Hydractinia symbiolongicarpus*
P25: Nicolas Cumplido, Temporal control of muscle and skeletal development by thyroid hormone shapes the adult pectoral fin
P26: Joye Zhou, *otk* is an accessory member in nymphalid wing color patterning
P27: Jeanne McDonald, A new transcription factor binding site near *pdm3* underlies the elaboration of butterfly eyespots
P28: Carter Dierlam, Searching for the Pieces: Finding the Pair-Rule Genes in *Oncopeltus fasciatus*
P29: Shin Sato, Uncovering the Genetic Basis of Snake Body Elongation
P30: Casey Guidry, Timing is Everything: Temporal Expansion of *Abd-B* Expression Underlies Evolved Pigmentation in *Drosophila*
P31: cancelled
P32: Louise Perez, Spatial resolution of gene expression in the duplicated cornea of the four-eyed fish *Anableps anableps*

P33: Lina Shi, Cis-Regulatory Control of Dorsal-Ventral Retina Patterning in the Four-Eyed Fish, *Anableps anableps*
P34: Lixin Xu, Unraveling the origins of complete metamorphosis: A comparative analysis of metamorphic regulatory gene interactions in hemimetabolous and holometabolous insects
P35: Yuke Zhang, The regulation of insect metamorphosis: Investigating the role of the leg-gap gene, *Distal-less*, in *Tribolium castaneum* and *Tenebrio molitor*
P36: Patricia Schneider, Seeing above and below: retina and cornea remodeling supports aerial vision in the four-eyed fish *Anableps anableps*
P37: Deema Abayawardena, Specification of the primary embryonic axis in metazoan embryos: Insights from sea star development
P38: Arushi Gupta, Unveiling the role of maternal factors in regulating egg polarity and Wnt/β-catenin signaling during early embryogenesis in the cnidarian *Nematostella*
P39: Omid Saleh Ziabari, Resolving the polygenic basis of regulatory polymorphisms in abdominal pigmentation between *D. yakuba* and *D. santomea*
P41: Jose Aguilar, RNAi Gene knockdown in the marine annelid *Streblospio benedicti* by delivering dsRNA
P42: Yongsoo Choi, Isabel G. Manley, Phillip L. Davidson and Armin P. Moczek, The role of Fat-Hippo signaling in the origin and diversification of beetle horns
P43: Erica M. Nadolski and Armin P. Moczek, Innovation and diversification of and through sexual dimorphism: insights from horned beetles

Lakeside Center
Dorms and Conference Center



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