



**CSDB**  
Collaborative Specialization in  
Developmental Biology

Volume 15, Issue 2

March 2022

Hi everyone,

Greetings as we move onto spring 2022, and hopefully more of a re-opening to in-person events as the dynamics of the pandemic change for the better (? - fingers crossed!). Please encourage new students to join CSDB! I am also aiming to incorporate postdoctoral researchers into our program – please encourage postdocs in your lab to contact Cindy and join our e-mail list. I would like to develop events where postdocs take leadership roles AND get to bolster their “teaching” portfolio at the same time.

Our winter mini-retreat was held online February 4<sup>th</sup>, and featured fantastic, conference-ready talks from students Evelyn Popiel, Swathi Jeedigunta and Mallory Wiggans. A special congratulations to Swathi for winning the best talk award! The day was rounded out by great faculty talks from Yun Li and Brian Kalish, our newest faculty member. I am currently weighing options for our May/June retreat, which I hope will either be entirely in person or have online talks followed by an in-person social event. Our external (student-invited) seminar series restarts **April 14<sup>th</sup> (10AM)**, with a talk from **Margot Williams** (Baylor College of Medicine). More details to follow soon!

In the past few months Dr. **Yunyun Huang** (PhD, Winklbauer lab) has graduated. Congratulations Yunyun, and all the best on your next endeavours!

A warm welcome to new members of CSDB: **Catherine Zhang** (MSc, Brill lab) and **Bianca Rusu** (MSc, Kalish lab).

Best,

Ian

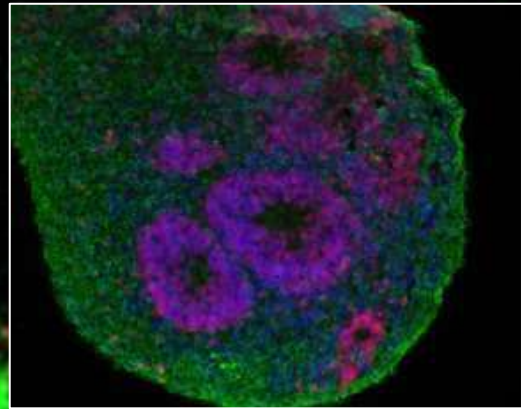
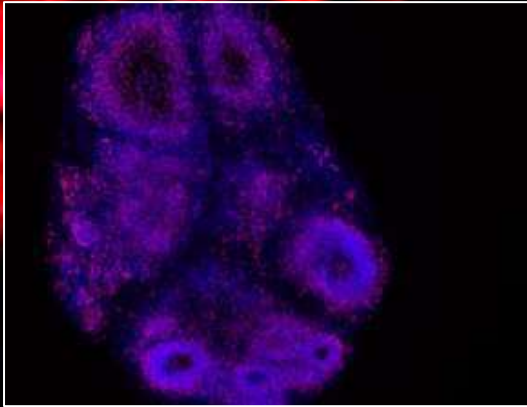
PS – a special thanks to Nicole Lindsay-Mosher for putting together this month’s featured images. **PLEASE** forward images you have generated for our website and newsletters to Cindy. I KNOW that you all generate beautiful images all the time!

Follow us on Twitter: @DevBio\_UofT

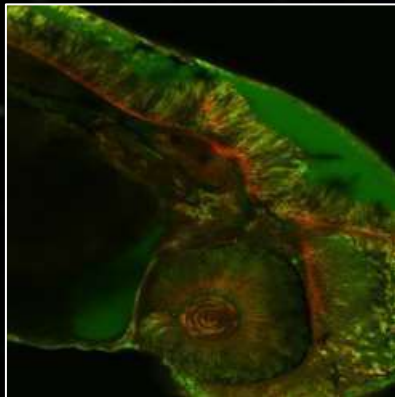
## Visualizing Development

Imaging techniques have always played a central role in the study of developmental biology, and CSDB students have been producing some amazing images. This month, we're very excited to feature some pictures from the Li and Ciruna labs!

A brain organoid from Haruka Nishimura, showing DAPI in blue and neural precursors in red.

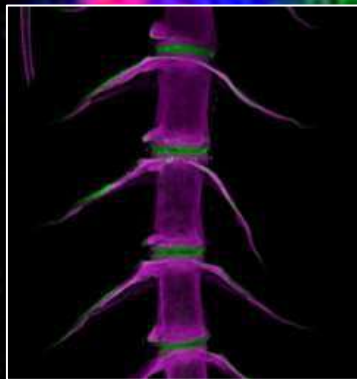


A brain organoid from Aditi Aggarwal, showing DAPI in blue, neural precursors in red, and immature neurons in green.



A zebrafish embryo from Vida Erfani, with membrane RFP and GFP- tagged secreted protein.

A juvenile zebrafish spine from Denise Rebello, showing bone and collagen.



Bonus: cute and quizzical zebrafish embryos from Vida Erfani and Patrick Pumputis.

A huge thank-you to everyone who submitted an image for this newsletter! If you have a picture you would like to see in a future newsletter, please let your student reps know.

- Nicole Lindsay-Mosher

## Selected Member Publications

**Bhattacharya A, Choi WWY, Muffat J, Li Y** (2022) *Modeling Developmental Brain Diseases Using Human Pluripotent Stem Cells-Derived Brain Organoids - Progress and Perspective* **J Mol Biol** Feb 15;434(3):167386.

**Brill JA, Wilde A** (2021) *A lipid primes the final cut in dividing cells* **Science** Dec 10;374(6573):1318-1319.

**Calarco JA** (2021) *Genetic Interaction Screening Approach in C. elegans* **Methods Mol Biol** ;2381:79-95.

**Cao WX, Karaiskakis A, Lin S, Angers S, Lipshitz HD** (2022) *The F-box protein Bard (CG14317) targets the Smaug RNA-binding protein for destruction during the Drosophila maternal-to-zygotic transition* **Genetics** Jan 4;220(1):iyab177.

**Charlesworth AG, Nitschko V, Renaud MS, Claycomb JM** (2022) *PIWI puts spermatogenesis in its place* **Dev Cell** Jan 24;57(2):149-151.

**Espinosa KG, Geissah S, Groom L, Volpatti J, Scott IC, Dirksen RT, Zhao M, Dowling JJ** (2022) *Characterization of a novel zebrafish model of SPEG-related centronuclear myopathy* **Dis Model Mech** Mar 16;dmm.049437.

**Fernandez-Gonzalez R, Balaghi N, Wang K, Hawkins R, Rothenberg K, McFaul C, Schimmer C, Ly M, do Carmo A, Scepanovic G, Erdemci-Tandogan G, Castle V** (2021) *PyJAMAS: open-source, multimodal segmentation and analysis of microscopy images* **Bioinformatics** Aug 13;38(2):594-6.

**Gu B, Bradshaw B, Zhu M, Sun Y, Hopyan S, Rossant J** (2022) *Live imaging YAP signalling in mouse embryo development* **Open Biol** Jan;12(1):210335.

**Harris TJC** (2022) *Axis specification: Breaking symmetry with a myosin patch in the egg* **Curr Biol** Jan 24;32(2):R89-R91.

**Khosraviani N, Wu R, Fish JE** (2022) *Angiopoietin-2: An Emerging Tie to Pathological Vessel Enlargement* **Arterioscler Thromb Vasc Biol** Jan;42(1):3-5.

**Mattocks M, Tropepe V** (2021) *Know thy neighbor: Modeling spatiotemporal cell-fate patterns in a neural stem cell niche* **Cell Stem Cell** Aug 5;28(8):1339-1340.

**Miles A, Blair C, Emili A, Tropepe V** (2021) *Usher syndrome type 1-associated gene, pcdh15b, is required for photoreceptor structural integrity in zebrafish* **Dis Model Mech** Dec 1;14(12):dmm048965.

**Misra P, Lee JB, Zhang L, Russell DW, Nostro MC** (2021) *209.4: Characterizing the Therapeutic Potential of Human Pluripotent Stem Cell-derived Islet-like Cells Lacking Cell-Surface HLA Expression* **Transplantation** Dec 1;105(12S1):S14-S15.

**Moyle LA, Davoudi S, Gilbert PM** (2022) *Innovation in culture systems to study muscle complexity* **Exp Cell Res** Feb 1;411(1):112966.

**Ortin-Martinez A, Yan NE, Tsai ELS, Comanita L, Gurdita A, Tachibana N, Liu ZC, Lu S, Dolati P, Pokrajac NT, El-Sehemy A, Nickerson PEB, Schuurmans C, Bremner R, Wallace VA** (2021) *Photoreceptor nanotubes mediate the in vivo exchange of intracellular material* **EMBO J** Nov 15;40(22):e107264.

**Rossant J, Tam PPL** (2022) *Early human embryonic development: Blastocyst formation to gastrulation* **Dev Cell** Jan 24;57(2):152-165. Review.

**Selvaratnam JS, In TSH, Anderson MK** (2022) *Fetal Thymic Organ Culture (FTOC) Optimized for Gamma-Delta T Cell Studies* **Methods Mol Biol** ;2421:243-265.

**Seroussi U, Li C, Sundby AE, Lee TL, Claycomb JM, Saltzman AL** (2021) *Mechanisms of epigenetic regulation by C. elegans nuclear RNA interference pathways* **Semin Cell Dev Biol** Dec 4:S1084-9521(21)00294-9.

**Song M, Yuan X, Racioppi C, Leslie M, Stutt N, Aleksandrova A, Christiaen L, Wilson MD, Scott IC** (2022) *GATA4/5/6 family transcription factors are conserved determinants of cardiac versus pharyngeal mesoderm fate* **Sci Adv** Mar 11;8(10):eabg0834.

**Stutt N, Song M, Wilson MD, Scott IC** (2021) *Cardiac specification during gastrulation - The Yellow Brick Road leading to Tinman* **Semin Cell Dev Biol** Dec 2:S1084-9521(21)00288- 3.