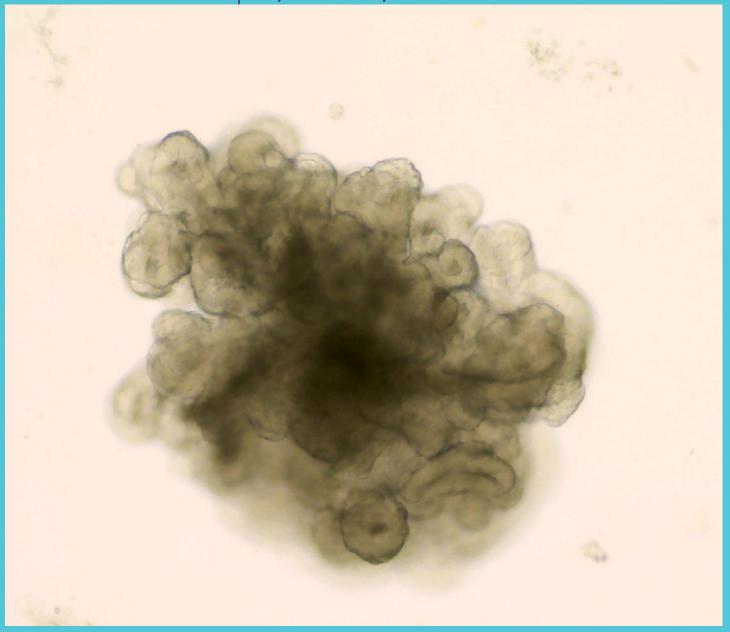


# EARLY DRUG DISCOVERY UNIT EDDU NEWSLETTER

May - June - July 2023



**Photo:** Image of an iPSC-derived gut organoid By Faiza Benaliouad

"Science, my lad, is made up of mistakes, but they are mistakes which it is useful to make, because they lead little by little to the truth."

Jules Verne (1828 – 1905) was a French novelist, poet, and playwright.

## **Outreach & Training Corner**

#### **Data portal:**

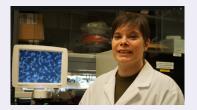
<u>Here</u> is the link for our data portal. There you can find information about our cell lines, our protocols, our latest updates, publications, and more.

#### **Videos:**

Microglia and Parkinson's disease:
 Click here to learn more about our work on iPSC-derived microglia and Parkinson's disease.



• Motor neurons and Amyotrophic Lateral Sclerosis (ALS): Click <u>here</u> to discover the work being done with iPSC-derived motor neurons and ALS.



A life dedicated to science: Watch Lenore's video to learn more about her scientific career and her time at the EDDU.

Click here to watch it on Linkedin.

Click here to watch it on Instagram.



## **Awards and Grants**



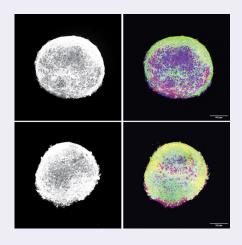
Our team was awarded funding from The New Frontiers in Research Fund to build a drug testing platform to identify promising therapeutics against neurodegenerative diseases such as Alzheimer's and Parkinson's disease at early stages, thus redirecting efforts and funding to the most promising therapeutics.

This work will be done in collaboration with Professor Ravi Menon, from Western University and Professor Richard Gold, from McGill.

You can read more about it here.

## **Publications**

• Castellanos-Montiel MJ, Chaineau M, Franco-Flores AK, Haghi G, Carrillo-Valenzuela D, Reintsch WE, Chen CX, Durcan TM.

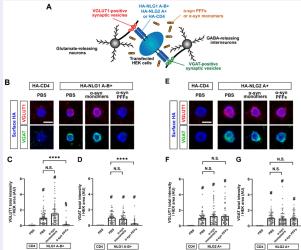


An optimized workflow to generate and characterize iPSC-derived motor neuron (MN) spheroids.

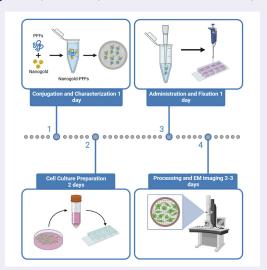
is now published in Cells!

Benjamin Feller, Aurélie Fallon, Wen Luo, Phuong Trang Nguyen, Irina Shlaifer, Alfred Kihoon Lee, Nicolas Chofflet, Nayoung Yi, Husam Khaled, Samer Karkout, Steve Bourgault, Thomas M. Durcan, and Hideto Takahashi.

Alpha-Synuclein Preformed Fibrils Bind to
beta-Neurexins and Impair beta-Neurexin-Mediated
Presynaptic Organization
is now published in Cells!

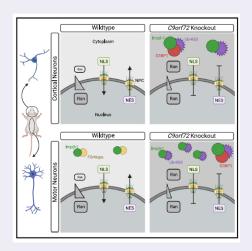


Bayati A, Luo W, Del Cid-Pellitero E, Fon EA, Durcan TM, McPherson PS.



Visualization of alpha-synuclein trafficking via nanogold labeling and electron microscopy is now published in Cells Report!

•McGoldrick P, Lau A, **You Z**, **Durcan TM**, Robertson J.



Loss of C9orf72 perturbs the Ran-GTPasegradientandnucleocytoplasmic transport, generating compositionally diverse Importin beta-1 granules

is now published in Cell Reports!

Here are two recent preprints in which team members participated.

- Sarah Lépine, Angela Nauleau-Javaudin, Eric Deneault, Carol X.-Q. Chen, Narges Abdian, Anna Krystina Franco-Flores, Ghazal Haghi, María José Castellanos-Montiel, Gilles Maussion, Mathilde Chaineau, Thomas M. Durcan. Homozygous ALS-linked mutations in TARDBP/TDP-43 lead to progressive synaptic dysfunction in human iPSC-derived motor neurons. bioRxiv 2023.03.22.533562; <a href="https://doi.org/10.1101/2023.03.22.533562">https://doi.org/10.1101/2023.03.22.533562</a>.
- Dorion MF, Senkevich K, Yaqubi M, Kieran NW, Chen C X.-Q., MacDonald A, Luo L, Wallis A, Shlaifer I, Hall JA, Dudley R, Glass IA, Birth Defects Research Laboratory, Stratton JA, Fon E, Bartels T, Antel JP, Gan-Or Z, Durcan TM, Healy LM. MerTK mediates the immunologically silent uptake of alpha-synuclein fibrils by human microglia. bioRxiv 2023.03.04.531108; doi: https://doi.org/10.1101/2023.03.04.531108

### **Events**

#### MAY

#### iPSC Seminar:

Thursday, May 25th at 11 am via zoom

Here is the link to learn more about the upcoming workshop.

If you have someone to suggest for our next iPSC seminar or if you would like to give a talk yourself, feel free to send an e-mail to luisa.pimentel@mcgill.ca.

#### **JUNE**

#### iPSC Workshop:

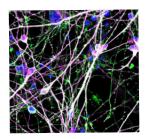
Wednesday, June 21st and Thursday, June 22nd

We are happy to announce our next virtual iPSC workshop. This is an excellent opportunity to learn about working with human induced pluripotent stem cells (hiPSCs) and how they can be differentiated into neuronal cell types. The application deadline is June 2nd.

Click here to learn more

### **Connect with us!**

Click <u>here</u> to discover all the ways to stay in touch with us.



# Happy Spring! Next issue will come in August!



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Institute-Hospital



