



**Boston
Children's
Hospital**

**F.M. Kirby
Neurobiology
Center**

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Kirby Center News & Updates

We welcome Emily Osterweil, PhD to the Rosamund Stone Zander Translational Neuroscience Center!

We are so excited to welcome the newest Kirby affiliate faculty member, Emily Osterweil, PhD to Boston Children's from the Department of Molecular Neuroscience at the University of Edinburgh. Dr. Osterweil is an Associate Professor of Neurology at Harvard Medical School, a faculty member of the [Rosamund Stone Zander Translational Neuroscience Center \(RSZ-TNC\)](#), and a Wellcome Trust Senior Research Fellow. Emily received her PhD in Neuroscience from Yale University, and performed her postdoctoral research in the lab of Mark Bear at the Picower Institute at MIT. Her research seeks to understand how protein synthesis is used by neurons to support long-term changes in brain function. Learn about Dr. Osterweil's ongoing research on [her website](#).



On June 14th & 15th, 2023, [Michela Fagiolini, PhD](#) participated in two panels at the United Nations in New York. She presented "Embracing neurodiversity to improve quality of life" which featured her outreach work, [including her Rett Syndrome swim program](#), on embracing neurodiversity and fostering inclusion and the well-being of individuals with neurodevelopmental disabilities.





This summer the [FM Kirby Neurobiology Center](#) welcomed its 4th cohort of interns from [Bunker Hill Community College](#) (BHCC). Students participating in BHCC's [Learn & Earn](#) program conduct research in our labs and are given a customized curriculum in scientific and professional skills. Internships are paid through the generous support of the [F. M. Kirby Foundation](#), the [International Brain Research Organization](#), Boston Children's Hospital, and BHCC. At the end of the program, interns presented their work at a poster session in the Center for Life Sciences. Many BHCC interns have done subsequent internships at BCH or taken full time positions in our labs.

Our Summer 2023 cohort included:

*Abrielleliah Caze, Behavior Core
Cesar Orellana Aguilar, Rotenberg lab
Courtney Chimamaka Obiajulu, Lehtinen lab
Dagmawi Haile, Engle Lab
Jenna Russo, Poduri lab
Jessica Schneider, Woolf lab
Nicee Roger Zoyem, Sahin lab*



Congratulations to **Zhigang He**, PhD, BM for being selected to give a Presidential Special Lecture at the Society for Neuroscience Meeting on November 13th. Dr. He is giving a plenary talk titled "Regenerating Axons and Re-Establishing Connections for Neural Repair". This talk will be livestreamed so be sure to register if you are unable to attend in person. [Society of Neuroscience 2023 Meeting](#) will be in Washington DC November 11-15, 2023.



Through most of May and June, the Kirby Center hosted a food and utensil drive to benefit Family Food Connections. This BCH-run food pantry located in Jamaica Plain helps many patient families as well as the surrounding community. Thanks to your generosity, we were able to donate six boxes of items to the food pantry! Here are Amy Weinberg, CJ Johnson, Jordan Bessette, and Mustafa Yassine delivering our donation.

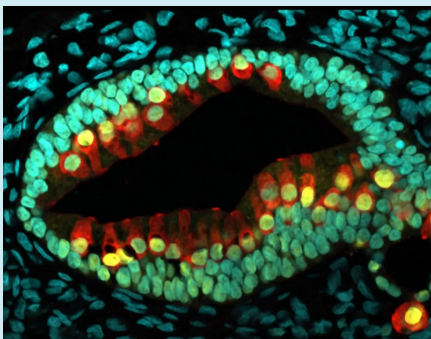
Research in News & Media

Boston Children's "Research Rising Stars" series recently featured **Dosh Whye**, Assistant Director of the Human Neuron Core. Dosh helps lead a team that creates and cares for stem cells used for a variety of projects. Dosh is a major source of support for many labs and recently aided in the creation of a neural tube organoid for use in studies related to spina bifida. Check out the full article [here](#).



Judith Steen, PhD and **Hanno Steen, PhD** and their research teams drew on 10 different study cohorts and performed a meta-analysis of proteomics data from patients' cerebrospinal fluid. Their results, featured in [Another angle on Alzheimer's: CSF, proteomics, and metabolic enzymes](#) and published in *Cell Reports Medicine*, could inform an unbiased test and perhaps new treatment approaches.

The lab of **Elizabeth Engle, MD** has uncovered the genetic causes of many disorders of eye, eyelid and facial movement. Now, Engle's lab has led the discovery of the cause of a type of facial weakness called hereditary congenital facial palsy type 1. This discovery published in *Nature Genetics* was also featured in an [Answers blog, Facial weakness: A dark matter detective story](#), where Nancy Fliesler interviewed Dr. Engle about the discovery and implications for HCFP1 patients.



Collaboration and teamwork were on display in the article, [How to grow an ear and why, in Drug Discovery News](#). **Karl Koehler, PhD**, **Jeffrey Holt, PhD**, and **Gwenaelle Géléoc, PhD** shared with article author, Dan Samorodnitsky, PhD, the ways their labs collaborate to create and study inner ear organoids. More recently, Dr. Koehler has focused on taking these organoids to the next level by crafting them from patient-derived cells. Drs. Holt and Géléoc are in turn able to study ear organoids and develop gene therapies to treat hearing defects, such as Usher Syndrome.

Clifford Woolf, MB, BCh, PhD was interviewed and featured in The Boston Globe article titled, [What are the roots of chronic pain? New research looks within cells for answers](#). In the article, Dr. Woolf discusses the need for research and overall better understanding of the mechanisms behind pain. The article details his partnership with other local researchers and physicians as they work to understand and better treat chronic pain at

Events & Resources



On June 21, 2023, the Kirby Center celebrated the Summer Solstice with a party on the BCH Rooftop Garden. We all enjoyed some amazing food, beautiful weather, and great time spent together. Special thanks to **SJ Cunningham** for coordinating an incredible event.



In June, as a part of Pride Month, the Kirby Center hosted a SafeZone training with the help of the LGBTQ+ office. These training sessions, sponsored by **Boston Children's Rainbow Alliance**, offer an opportunity for learning about sexual and gender diversity, with the goal of supporting our LGBTQ+ patients, families, and colleagues at Boston Children's.

The Kirby Center welcomed **Jordan Bessette**, PhD as a Program Coordinator at the start of June. Jordan recently completed his PhD in French Literature with his dissertation focusing on queer spaces and representations of masculinity in late-nineteenth century French novels. Jordan will perform a wide range of tasks in his new role, but his main focus will be on EDI (Equity, Diversity, and Inclusion) programming and other culture-building events for the Kirby Center. Feel free to email him any of your ideas at jordan.bessette@childrens.harvard.edu



Power of Partnering: Rosamund Stone Zander Translational Research Neuroscience Center

September 20 | 3:00 - 3:45 pm PT

SPEAKERS:



#RareAdvocacySummit
#WeekInRare

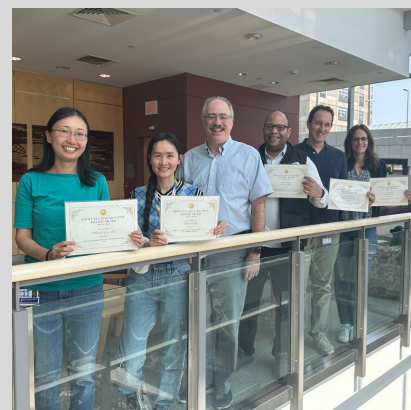
GLOBALGENES.ORG/EVENT/RARE-ADVOCACY-SUMMIT

Trainee & Lab News



At the Max Planck Society annual meeting in June, postdoc **Constanze Depp**, PhD, (Stevens Lab) was honored with the Otto Hahn Medal and Peter Hans Hofschneider Prize for her thesis. In that doctoral thesis, Constanze researched whether the loss of myelin – the insulating layer around nerve cells in the brain – could be a risk factor for Alzheimer's. With age, myelin changes its structure and degenerates. Depp was able to show that defective myelin increases A β deposits in the brain. The findings can be used as a basis for new therapeutic approaches to treat Alzheimer's disease. Congratulations Constanze!

On May 9th, the **Stem Cell Program** hosted Stem Cell Research Day, featuring multiple talks and presentations. The day concluded with a poster session where **Mengxu Ge, PhD** (X. He Lab) was one of three people to win an award for their poster.



Congratulations to **Dr. Carla Winter**! Carla successfully defended her thesis, "The road from

thought to action: a brain-wide atlas of spinal projecting neurons“ in June. Carla has been working in the lab of Zhigang He, PhD, and will continue her research as she moves forward in her MD-PhD program.

Brenda Barry, Genetic Counselor in Engle lab, received an award from the Moebius Syndrome Foundation at the annual meeting in July, where she was recognized for outstanding service to the Foundation.

Eunice To, PhD (X. He Lab) was awarded the best oral presentation at M. Judah Folkman Research Day for her Research Grand Rounds talk titled "Unifying Immunological and Microbiota-Dependent Mechanisms in the Skin-Gut Axis Underlying the Atopic March".

Support for Fellows Entering the Job Market

If you are entering the market and would like assistance preparing to do so, please email [SJ Cunningham](#) and [Mike Do](#) well in advance of your first deadline. If you communicate your particular needs/research interests (e.g., "I am a biophysicist with neuroethological leanings for whom English is a second language"), we will convene a Practice Committee of Kirby faculty members who are appropriate for your research. This Committee will:

1. Review a draft of your application.
2. Provide coaching on preliminary interviews.
3. Offer feedback on your job talk.
4. Take you through a mock chalk talk.
5. Provide advice on closing the deal.

When reaching out to us, please copy your advisor and ask them to give the green light for this process. We are most effective when your application, talk, and chalk talk are each at the fine-tuning stage.

Note that BCH offers a related service. Please choose one to avoid overburdening our faculty.

Kirby Center Awards & Publications

Recent Awards

Clifford Woolf, MB, BCh, PhD received funding from Spinal Muscular Atrophy Foundation for a project titled, Promoting recovery of motor function in SMA.

Brielle Ferguson, PhD was awarded an NIH R00 grant for her project titled Identifying mechanisms of successful and dysfunctional attention.

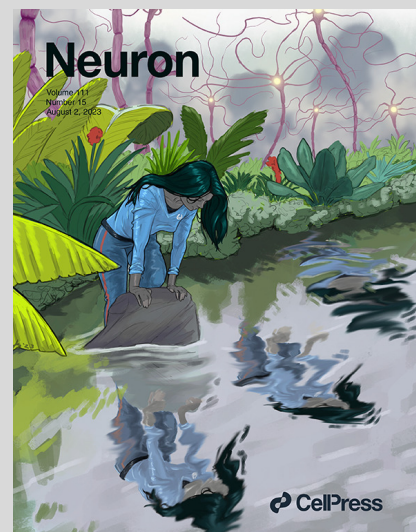
Chinfei Chen, MD, PhD and **Hisashi Umemori**, MD, PhD were awarded a Multiple-PI Harvard Brain Institute Collaborative Seed Grant.

Judith Steen, PhD was awarded an NIH BRAIN Initiative U24 grant for her project titled Single Cell Proteomics to Map the Developing Thymus.

Alexander Rotenberg, MD, PhD received funding from Encoded Therapeutics, Inc. for his protocol entitled "Measures of cortical excitability by transcranial magnet stimulation (TMS) and EEG in patients with Dravet Syndrome."

Clifford Woolf, MB, BCh, PhD received a Diversity Supplement from NIH for the project, Unravelling mechanisms and novel therapeutic targets for peripheral neuropathy and neuropathic pain.

Recent Featured Publications



Woolf lab. A Preliminary Study of Mild Heat Stress on Inflammasome Activation in Murine Macrophages. Cells. April 2023.

Stevens lab. Convergent

Darius Ebrahimi-Fakhari, MD, PhD received funding from Cure AP-4 Foundation for the project titled, Investigating the effect of chronic farnesyl-transferase inhibition on biochemical, morphological and behavioral phenotypes in Ap4b1 knockout mice.

Mandana Arbab, PhD received a grant from the NIH for her project titled, Preclinical genome editing for rare neurological diseases.

Gabriela Carrillo, PhD (Engle Lab) was selected for the Burroughs Wellcome Fund Postdoctoral Diversity Enrichment Program. Her project is Development of facial motor neuron subtypes in health and congenital facial weakness.

Xuan Song, PhD (Z. He Lab) was selected for the HMS Goldenson Fellowship for her project titled, Dissect the protective effect of Mkk7 inhibition in optical nerve injury and glaucoma.

Sophia Wienbar, PhD (Do Lab) received a slot on an NIH T32 award to support her project, SBA: Spike generation in intrinsically photosensitive retinal ganglion cells.

Sindhuja Gowrisankaran, PhD (Schwarz Lab) was selected for an HMS Lefler Fellowship for the project titled Role of mRNA trafficking by Synaptotagmin1 in neuronal function and health.

Maximilian Pitsch, MD (Crickmore Lab) was awarded an HMS Hearst Fellowship for his project Developing a non-invasive strategy of reprogramming injured neurons.

Charles Phillippe Morquette, PhD (Do Lab) was named a Warren Alpert Distinguished Scholar and received funding for his project, Engaging the melanopsin visual system with engineered light to improve health.

mechanisms of microglia-mediated synaptic dysfunction contribute to diverse neuropathological conditions. *Ann N Y Acad Sci.* June 2023.

Engle Lab. Noncoding variants alter GATA2 expression in rhombomere 4 motor neurons and cause dominant hereditary congenital facial paresis. *Nature Genetics.* June 2023.

Rotenberg Lab. Depressed glutamate transporter 1 expression in a mouse model of Dravet syndrome. *Annals Clinical Translational.* July 2023.

Ebrahimi-Fakhari Lab. Plasma Neurofilament Light Chain Is Elevated in Adaptor Protein Complex 4-Related Hereditary Spastic Paraplegia. *Mov Disord.* July 2023.

Sahin Lab. Increased degradation of FMRP contributes to neuronal hyperexcitability in tuberous sclerosis complex. *Cell Rep.* July 2023

Holt Lab. TMEM63 proteins function as monomeric high-threshold mechanosensitive ion channels. *Neuron.* July 2023.

For a listing of additional recent Kirby Center publications, please visit PubMed:

- last name [A-K](#)
- last name [L-Z](#)



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