



Boston Children's Hospital

F.M. Kirby Neurobiology Center

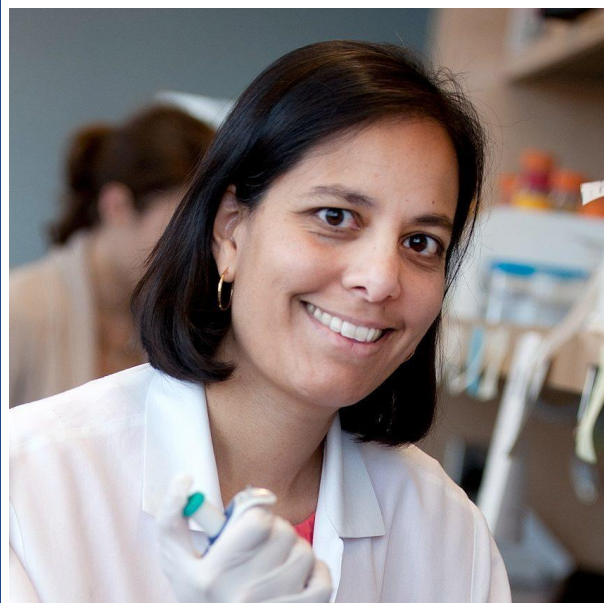
Kirby Center News & Updates

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Announcements

Establishment of Two Boston Children's Hospital Chairs

Through a generous donation from the John Gamble Trust, two Boston Children's Hospital chairs were established for the purpose of advancing neuroscience research.



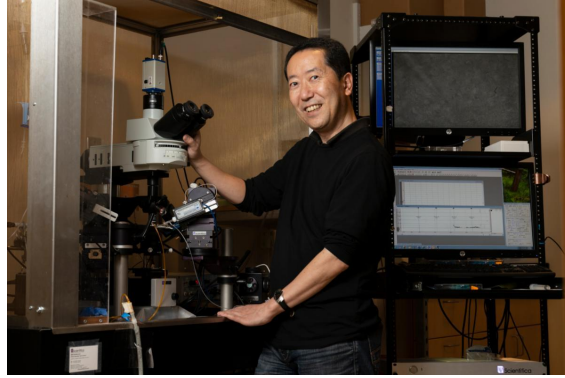
Annapurna Poduri, MD, MPH, Director of the Epilepsy Genetics Program at Boston Children's Hospital and Professor of Neurology at Harvard Medical School, was appointed as the inaugural incumbent of the Diamond Blackfan Chair in Neuroscience Research at Boston Children's Hospital.

Clifford Woolf, MB, BCh, PhD, Director of the F.M. Kirby Neurobiology Center at Boston Children's Hospital, and Professor of Neurology and Neurobiology at Harvard Medical School was appointed as the inaugural incumbent of the Blackfan Diamond Chair.

A reception to celebrate their appointments and the establishment of the Diamond Blackfan and Blackfan Diamond Chairs was held on September 7, 2022. Congratulations to Ann and Clifford for this honor. (Photos: [Charles H. Hood Foundation](#) & [Quralis](#))



Maria Lehtinen, PhD, an affiliate faculty member of the Kirby Center, has been promoted to Professor of Pathology at Harvard Medical School. Congratulations on this well-deserved promotion, Maria! (Photo: [HBI](#))



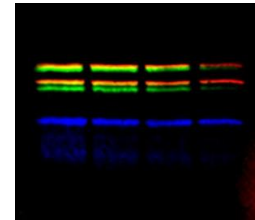
Hisashi Umemori, MD, PhD, a member of Kirby faculty, has been promoted to Professor of Neurology at Harvard Medical School. Congratulations on this wonderful accomplishment, Hisashi! (Photo: [HBI](#))

Other News



The Kirby Center was eager to host their third cohort of Bunker Hill Community College (BHCC) interns this summer: **Arianna Bethea** (Lehtinen lab), **Tiffany Gosheff** (Rotenberg lab), **Nevalée Hawkins** (Mouse Neurobehavioral Core), **Drew Nelson** (Woolf lab), **Isabel Rodriguez** (Umemori lab), **Melissa Roe** (Lipton lab), and **Zahraa Salloum** (X. He lab). Thank you, Arianna, Tiffany, Nevalée, Irving, Drew, Isabel, Melissa, and Zahraa!

NEW EQUIPMENT: A brand new Western imager system is here thanks to funding from the [Boston Children's Hospital Equipment and Core Resources Allocation Committee \(ECRAC\)](#) and the Kirby Center. The new instrument, the ChemiDoc MP Imaging System from BioRad, has everything needed to perform chemiluminescent and fluorescent western blot imaging. The system is in CLS12044 within the X. He lab. Please bring your samples and try the new system. (Image: [Bio-Rad](#))

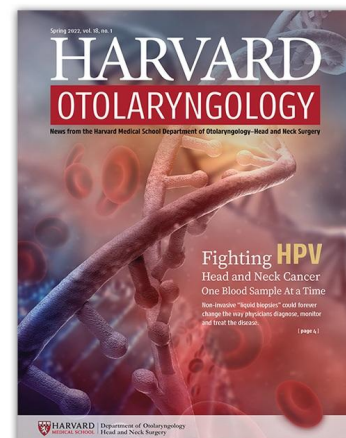


[Family Food Connections \(FFC\)](#), Boston Children's Hospital's food pantry in Jamaica Plain, is now open to patient families from Boston Children's at Martha Eliot, Children's Hospital Primary Care Center, and the Adolescent/Young Adult Medicine clinic. The pantry is located within the [Mildred C. Hailey Apartments](#) at 30 Bickford Street in Jamaica Plain. For more information about the food pantry, please reach out to FFC directly at FamilyFoodConnections@childrens.harvard.edu, or visit their [website](#), where you can find many additional resources.

Research in News & Media

Jeffrey Holt, PhD, and **Olga Shubina-Aleinik**, PhD had their story on stereocilin gene therapy [published in Harvard Otolaryngology Spring 2022](#). The novel dual-vector, protein recombination strategy was developed by Shubina-Aleinik at Boston Children's Hospital within the Holt/Geleoc lab. The therapy works by deploying two AAV vectors to deliver healthy *STRC* genes into mice and using a protein recombination strategy to ensure the successful creation of full-length stereocilin proteins. Humans rely on the *STRC* gene to produce stereocilin proteins, which enables our ears to amplify and distinguish sounds. This technique is not only promising for DFNB16 patients who experience hearing loss because of mutations to the *STRC* gene, but it also carries immense potential for other human genetic disorders.

Clifford Woolf, MB, BCh, PhD, and **Bruce Bean**, PhD (Professor, Harvard Medical School) were interviewed by Catherine Caruso for a Harvard Medical School article that features their research on



cannabinoid, or CBD. The article, titled [Building a Better Painkiller](#), questions the recent surge in the use and availability of CBD products and their pain-suppressing qualities. With their combined research, Woolf and Bean discovered that CBD works to regulate two sodium channels and a particular potassium channel located within the membranes of nociceptors. Although sodium and potassium channels work together to modulate the activity of these pain sensing neurons, there has yet to be a treatment option found that can target both. This finding opens a promising pathway to developing a drug based on CBD that is both safe and effective in managing pain.

Babies!

Yvanka De Soysa and Samuel Marsh - both researchers in the Stevens lab – welcomed their son, Charles de Soysa Marsh, on Mother's Day. Congratulations Yvanka and Sam, and welcome Charles!



Ceren Üncü Brandimarte [Steen lab] and partner Kevin Brandimarte welcomed their newest member, son Luca Taylan Brandimarte, on May 14, 2022. Welcome little Luca, and congrats Ceren and Kevin!



Karl Koehler, PI, and wife Beth Koehler welcomed the arrival of their son, Arthur Koehler, on June 8, 2022. Congratulations Beth and Karl, and a warm welcome to baby Arthur.



Xin Tang, PI, and wife Zaoli Tang welcomed the arrival of their son, Lifeng Tang, on June 8, 2022 – the same day and in the same hospital as Karl's son Arthur! Welcome to the family Lifeng, and congratulations to Xin and Zaoli.



Yu Zhang, lab manager of Zhigang He's lab, and partner Huanhuan Zhang welcomed their son Chi (Leo) Zhang on July 21, 2022. Congratulations to Yu and Huanhuan, and welcome Leo!



Elyza Kelly, a postdoc in the Hensch/Fagiolini labs welcomed her daughter, Molly Kelly, on August 19, 2022. Congratulations Elyza, and welcome little Molly!



Catherine Salussolia, an Instructor in the Sahin lab, welcomed her daughter, Elizabeth Lourdes Salussolia, on August 25, 2022. Congratulations Catherine and welcome Elizabeth!



Jaehoon Shim, a postdoc in the Woolf lab, and wife Clara welcomed their first daughter, Alina Shim, on September 12, 2022. Welcome little Alina and congratulations Jaehoon and Clara!



Postdoc News

Support for Fellows Entering the Job Market

If you are entering the market and would like assistance, please email [SJ Cunningham](#) and [Mike Do](#) well in advance of your first deadline. We will convene a committee of Kirby faculty members

Lab News

Matthew Steinhart, MD, PhD (Koehler lab) successfully defended his thesis at the Indiana University School of Medicine in April. Congratulations, Matt!

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. I recommend ours because it is a fine way to strengthen ties within Kirby.

This assistance is meant to be highly individualized. If you communicate your particular needs (e.g., "I am a biophysicist with neuroethological leanings for whom English is a second language"), that will help us arrange the appropriate committee.

Alissa D’Gama, MD, PhD, a researcher within the Poduri lab, received the 2022 Marshall Klaus Neonatal-Perinatal Research Award for her project titled, Advancing Molecular Genetic Diagnosis in Early Onset Epilepsy. This award comes from the American Academy of Pediatrics, [Section on Neonatal-Perinatal Medicine \(SoNPM\)](#).

Hers was one of 44 highly competitive applications that were reviewed by the seven senior academic neonatologists that make up the SoNPM Research Committee. Congratulations, Alissa!

Kirby Center Awards & Publications

Recent Awards

Todd Anthony, PhD, was awarded an NIH diversity supplement for his project titled, Genetic dissection of lateral septal circuitry that controls stress-induced persistent anxiety states.

Michael Do, PhD, received an NIH R01 for his project titled, Downstream Actions of Biophysical Mechanisms in the Visual System, and a Harvard Brain Science Initiative Bipolar Disorder Seed Grant for his project titled, A circadian system control system for counterbalancing bipolar disorder in early life.

Jonathan Lipton, MD, PhD, was awarded an NIH R01 for his project titled, Mechanisms of Circadian and Synaptic Dysfunction After Repetitive Mild TBI.

Annapura Poduri, MD, MPH, received an award from the One8 Foundation for her International Precision Child Health Partnership’s GeneSTEPS (Shortening the Time of Evaluation in Pediatric Epilepsy Services) Project.

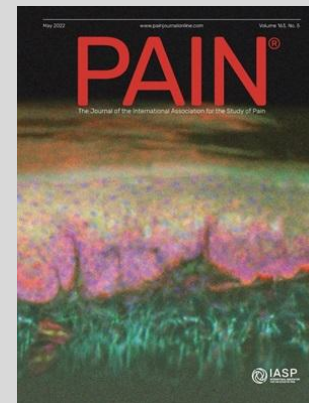
Paul Rosenberg, MD, PhD, was awarded an NIH R03 for his project titled, Mechanisms underlying glutamate dyshomeostasis in Alzheimer’s disease.

Mustafa Sahin, MD, PhD, was awarded an NIH R01 for his project titled, Disrupted ciliary signaling in the brain pathology of Tuberous Sclerosis Complex, and also received funds from the LouLou Foundation through the University of Pennsylvania for a project titled, Utilizing patient iPSC-derived neurons to determine the functional consequences of longer cilia in CDKL5 Deficiency Disorder (CDD).

Judith Steen, PhD, received an award from the Rainwater Charitable Foundation for her project titled, Single-Cell Proteomics of Tauopathies.

Hisashi Umemori, MD, PhD, received an award from the American Parkinson Disease Association for his project titled, The nigrostriatal-specific dopaminergic

Recent Featured Publications



Kreiman lab. Face neurons encode nonsemantic features. Proceedings of the National Academy of Science. April 2022.

Sahin lab. Novel CAPN1 missense variants in complex hereditary spastic paraplegia with early-onset psychosis. Annals of Clinical and Translational Neurology. April 2022.

Umemori lab. ASD/OCD-Linked Protocadherin-10 Regulates Synapse, But Not Axon, Development in the Amygdala and Contributes to Fear- and Anxiety-Related Behaviors. Journal of Neuroscience. May 2022.

Rosamund Stone Zander Translation Neuroscience Center (RSZ TNC). A randomized controlled trial of Everolimus for neurocognitive symptoms in PTEN hamartoma tumor syndrome. Human Molecular Genetics. May 2022.

Woolf lab. Automated preclinical detection of mechanical pain hypersensitivity and analgesia. Pain. May 2022.

synapse organizer and Parkinson's Disease, and was also awarded an NIH diversity supplement to support postbac student Han Le.

Héctor Acarón Ledesma, PhD (Chen lab), was awarded an NIH F32 for his project titled, Dendritic integration at the retinogeniculate synapse.

Franklin Caval-Holme, PhD (Do lab) received an NIH F32 for his project titled, Subcellular Origins of Extensive Spatial Integration by Ganglion Cell Photoreceptors.

Ryan Donahue, PhD (Z. He lab) received an NIH F32 for his project titled, Assessing the metabolic impact of Lkb1/Snrk signaling on RGC survival.

Anne Jacobi, PhD (Z. He lab) was awarded a grant from the Harvard Stem Cell Institute for her project titled, Neuropeptide-based strategy to promote optic nerve regeneration.

Nils Korte, PhD (Stevens lab) received an award from the University College London for his project titled, Cerebral immunosurveillance and waste clearance in health and disease.

Chris McGraw, MD, PhD (Poduri lab) was awarded an NIH R21 for his project titled, High-throughput in vivo discovery of novel countermeasures against organophosphate-induced seizure and status epilepticus using zebrafish.

Phillipe Morquette, PhD (Do lab) received a Fuss Center Fellowship Award from the Tommy Fuss Center for his application titled, Using New Knowledge of Reina-Brain Signaling to Rationally Design Light Therapy for Depression.

Z. He lab. Overlapping transcriptional programs promote survival and axonal regeneration of injured retinal ganglion cells. *Neuron*. June 2022.

Holt/Géléoc lab. Optimized AAV Vectors for TMC1 Gene Therapy in a Humanized Mouse Model of DFNB7/11. *Biomolecules*. June 2022.

Poduri and Rotenberg labs. Mosaic and non-mosaic protocadherin 19 mutation leads to neuronal hyperexcitability in zebrafish. *Neurobiology of Disease*. July 2022.

Chen lab. Functional convergence of on-off direction-selective ganglion cells in the visual thalamus. *Current Biology*. July 2022.

Benowitz lab. Transcription factor networks analysis identifies REST/NRSF as an intrinsic regulator of CNS regeneration in mice. *Nature Communications*. July 2022.

Engle lab. TWIST1, a gene associated with Saethre-Chotzen syndrome, regulates extraocular muscle organization in mouse. *Developmental Biology*. August 2022.

Z. He lab. Core transcription programs controlling injury-induced neurodegeneration of retinal ganglion cells. *Neuron*. August 2022.

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

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



Boston Children's Hospital

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**HARVARD MEDICAL SCHOOL
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