

# Neurobiology News



**Boston  
Children's  
Hospital**

Until every child is well™

**FM Kirby  
Neurobiology  
Center**

**May 2019**

## Announcements

In 2019, Boston Children's Hospital celebrates its [150th Anniversary!](#) On March 22, BCH hosted multifarious celebrations, including a rolling rally, which brought Chief Executive Officer Sandra Fenwick and Chief Scientific Officer David Williams to the Kirby Center for a cupcake celebration. More celebratory events are planned for the anniversary year. Research Assistant **Fortunate Chifamba** (Lipton lab) is featured in this [video](#) on the anniversary website.



**HKUST Partners with Harvard Medical School, Stanford University School of Medicine, and University College**

**London to establish Center for Neurodegenerative Diseases:** Clifford Woolf, MB, BCh, PhD, traveled to Hong Kong to sign a memorandum of understanding with Hong Kong University of Science and Technology and collaborating universities for the proposed establishment of a Center for Neurodegenerative Diseases to be based in Hong Kong, with BCH as a founding member.

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## Research News

**Clifford Woolf** addresses the need for effective non-addictive pain treatments in *Harvard Magazine's* [The Opioids Emergency](#)

**Clifford Woolf** is a founding member of new biotech company Nocion, announced in *Stat's* [How one company thinks unraveling cough can provide a new way to treat pain](#).

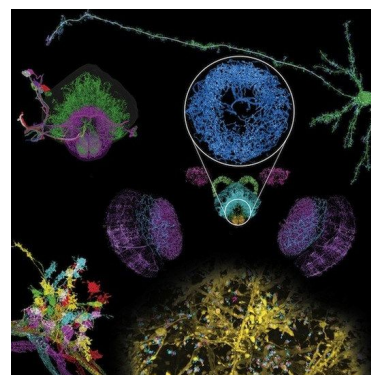
**Recent *Vector* articles featuring the work of Kirby Faculty:**

**Chinfei Chen, MD, PhD:** [New technique images whole brains with incredible resolution](#)

**Michela Fagiolini, PhD, and Takao Hensch, PhD:** [How the antidepressant ketamine rapidly awakens the brain, and why its effects vary more in women](#)

**Tom Schwarz, PhD:** [Biological explorers find new player in the formation of the nervous system](#)

*Thriving* blog post [SPG47 research brings hope to families](#) highlights the work of **Darius Ebrahimi-Fakhari, MD**, (Sahin lab) with Cure SPG47.



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## In Memoriam, Jeremy Ullmann

Family, friends, and colleagues mourn the tragic passing of **Jeremy Ullmann**, PhD, postdoc in the laboratory of Ann Poduri. Funeral services for Jeremy were held on February 15 at Beth David Synagogue in Binghamton, New York. Jeremy's life and work were also honored at a memorial service on February 25 at Boston Children's Hospital. [Jeremy Ullmann's obituary.](#)



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## Recent Awards

**Todd Anthony**, PhD, was awarded an NIH/NIMH R01 for his project entitled Genetic dissection of lateral septal circuitry that controls stress-induced persistent anxiety states.

**Larry Benowitz**, PhD, and **Zhigang He**, PhD, BM, received an award from the Gilbert Family Foundation for their project entitled Novel strategies of protecting RGCs and promoting optic nerve regeneration.

Drs. Benowitz and He also received funding from the Medical Enterprise Technology Consortium (MTEC) for their project entitled Enterprise Consortium with Stanford University Optimization of optic nerve regeneration using a medium-throughput mouse model.

Dr. Benowitz received additional funding from the National Eye Institute "Audacious Goals" program to continue his research on molecular drivers of axon regeneration.



**Chinfei Chen** and Dr. Mark Andermann were awarded a multi-PI NIH/NEI R21 grant for their project entitled Behavioral-dependent neuromodulation of retinogeniculate axonal boutons.

Dr. Chen also received funding from the Chan-Zuckerberg Initiative for her projected entitled Cellular Imaging Core at Boston Children's Hospital (CZI Imaging Specialist).

**Michael Crickmore**, PhD, was awarded an NIH/NINDS R01 for his project entitled Circuit principles of demotivation in the decision to switch behaviors.

**Michela Fagiolini** received funding from Associazione Italiana Rett for her project entitled Validation of pupillometry as a biomarker for Rett syndrome and related disorders: longitudinal assessment and relationship with disease severity.

**Zhigang He** received an R01 grant from the NIH/NINDS for his project entitled KCC2 and spinal cord injury.

Dr. He also received the following funding:

NIH/NEI; project: (R01) CRSIPR screening for novel regulators of retinal ganglion cell survival and axonal regeneration.

Boston Children's Hospital Equipment and Core Resource Allocations Committee (ECRAC); equipment: Bio-Rad CFX Connect Real Time PCR Detection System RFA.

**Paul Rosenberg**, MD, PhD, and **Larry Benowitz** were awarded an NIH/NEI R01 Diversity Supplement for their project entitled An interneuronal signaling network governs the fate of retinal ganglion cells after optic nerve injury.

**Alexander Rotenberg**, MD, PhD, received funding from Hoffmann-LaRoche for his project entitled Developing biomarkers of cortical plasticity for clinical trials in neurodevelopmental disorders.

**Mustafa Sahin**, MD, PhD, received funding from an anonymous foundation to support his project entitled Human Neuron Core: A New Pipeline for Treatment of Neurodevelopmental Disorders.

Dr. Sahin also received the following funding:

PTEN Research; project: A Randomized Double-Blind Placebo-Controlled Trial of Everolimus in Children and Adolescents with PTEN Mutations (Rare Disease Clinical Research Consortium-Developmental Synaptopathies Consortium).

Anonymous Foundation; project: TNC Staff Support

Boston Children's Hospital Research Faculty Counsel Pilot Award; project: Role of m6A mRNA methylation in Tuberous Sclerosis Complex.

**Thomas Schwarz** was awarded a grant from the Michael J. Fox Foundation for his project entitled Mitochondrial Transport Defects as a Potential Biomarker in Patient-derived Cells.

Dr. Schwarz also received an award from the Michael J. Fox Foundation for his project entitled Supplement to continue study of Small Molecules to Promote Mitochondrial Transport in Dopaminergic Neurons for Parkinson's Therapy.

**Judith Steen**, PhD, was awarded, together with the Mayo Clinic, an NIH UG3/UH3 for their project entitled Whole Genome Sequencing Consortium on Frontotemporal Dementia with Underlying TDP-43 Pathology.

**Beth Stevens**, PhD, received funding from an anonymous foundation for her project entitled Immune Mechanisms of AD.

**Mantu Bhaumik**, PhD, and the Gene Manipulation Core received funding from the Boston Children's Hospital Equipment and Core Resource Allocations Committee (ECRAC) for Leica M80 Dissecting Scopes.

**Bo Chen**, PhD, (Z. He lab) received a Hearst Fund award for his project entitled Strategies to promote functional recovery following SCI.

**Silvio Alessandro Di Gioia**, PhD, (Engle lab) received a Hearst Fund award for his project entitled Understanding the functional effect of non-coding variants in a conserved cis-regulatory element causing Hereditary Congenital Facial Palsy.

**Joe Gervasi** (Admin Team) received a 2019 National FRA/PRA Travel Award to attend NCURA's 20th Annual Financial Research Administration Conference.

**Julie Jurgens**, PhD, (Engle lab) was selected to participate in NIH Gabriella Miller Kids First Pediatric Research Program's (Kids First) and the Knockout Mouse Phenotyping Program's (KOMP2) Precision Modeling of Pediatric Conditions Collaborative Pilot (2019).

**Arthur Lee**, MD, PhD, (Engle lab) was selected to participate in NIH Gabriella Miller Kids First Pediatric Research Program's (Kids First) and the Knockout Mouse Phenotyping Program's (KOMP2) Precision Modeling of Pediatric Conditions Collaborative Pilot (2018).

**Kevin Mastro**, PhD, (Stevens lab) received a Hearst Fund award for his project entitled Neural-immune interactions: How do immune molecules shape the developing brain?

**Paola Matos-Ruiz**, BS, (Engle lab) was awarded an NIH/NEI Research Supplement to Promote Diversity in Health-Related Research.

**Sarah Stankowicz**, PhD, (Anthony lab) received a Hearst Fund award for her project entitled Contribution of lateral septal and vasopressin circuit dynamics to the long-term consequences of early-life stress.

**Celeste-Elise Stephany**, PhD, (Chen lab) was awarded an NIH/NEI F32 for her project entitled The Role of Cortical Feedback in the Developmental Organization of the Thalamus.

**Mary Whitman**, MD, PhD, (Engle lab) received a 2019 ARVO/Alcon Early Career Clinician-Scientist Research Award.

**Stephen Zhang**, PhD, (graduate work in Crickmore/Rogulja labs, now a postdoc in Mark Andermann lab, BI) was one of 13 graduate students selected for the prestigious [Harold M. Weintraub Graduate Student Award](#)! This award recognizes outstanding achievement in graduate studies in the biological sciences.

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## Postdoc News

**Phil Williams**, PhD, (Z. He lab) has accepted a position as an Assistant Professor in the Dept of Ophthalmology and Visual Sciences at the Washington University School of Medicine in St. Louis. Congratulations, Phil!

### Support for Fellows Entering the Job Market

The postdoctoral community has requested assistance with the search for academic positions, and faculty of the Kirby Center will begin offering guidance tailored to each fellow and stage of



the process. If you are preparing to enter the job market, please email Lynn Bruning (lynn.bruning@childrens.harvard.edu) and Michael Do (michael.do@childrens.harvard.edu) well in advance of your first deadline. We will convene a committee of Kirby faculty that has expertise in your area as well as a divergent viewpoint or two. This committee will

1. Review a draft of your application.
2. Provide coaching on preliminary screenings (e.g., video interviews) if applicable.
3. Offer feedback on your job talk.
4. Take you through a mock chalk talk.
5. Provide advice on negotiations.

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 would help us arrange the appropriate committee.

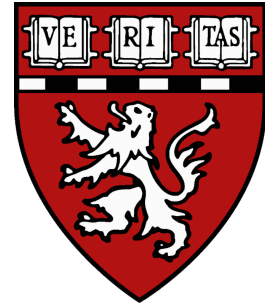
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## Graduate Student News

*Recent Dissertation Defenses: Congratulations, PhDs!*

**Gregory Steven Bryman** (Do lab): Cellular Biophysics Underlying the Initiation of High-Acuity Vision

**Christina Welsh** (Stevens lab): Immune genes and microglia in visual system development and plasticity



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## Recent Featured Publications

**Rotenberg and Sahin labs.** Electrographic spikes are common in wildtype mice. *Epilepsy Behav.* December, 2018.

**Kreiman lab.** Neural Interactions Underlying Visuomotor Associations in the Human Brain. *Cereb Cortex.* December, 2018.

**Hensch/Fagiolini lab.** NMDA 2A receptors in parvalbumin cells mediate sex-specific rapid ketamine response on cortical activity. *Mol Psychiatry.* January, 2019.

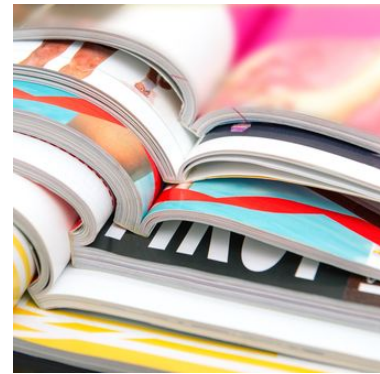
**Stevens lab.** Single-Cell RNA Sequencing of Microglia throughout the Mouse Lifespan and in the Injured Brain Reveals Complex Cell-State Changes. *Immunity.* January, 2019.

**Holt/Géléoc lab.** Improved TMC1 gene therapy restores hearing and balance in mice with genetic inner ear disorders. *Nat Commun.* January, 2019.

**Rosenberg lab.** Huntington's disease pattern of transcriptional dysregulation in the absence of mutant huntingtin is produced by knockout of neuronal GLT-1. *Neurochem Int.* February, 2019.

**Schwarz lab.** Kinetochores Have a Post-Mitotic Function in Neurodevelopment. *Dev Cell.* March, 2019.

For a listing of additional recent Kirby Center publications, please visit PubMed (last name [A-K](#), last name [L-Z](#)).



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