

Neurobiology News



**Boston
Children's
Hospital**

Until every child is well™

**FM Kirby
Neurobiology
Center**

February 2018

Announcements

Congratulations to **Scott Pomeroy**, MD, PhD, who was elected to the [National Academy of Medicine](#): "Election to the Academy is considered one of the highest honors in the fields of health and medicine and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service."



Genetic Counselor **Kira Dies**, ScM, CGC (Translational Neuroscience Center), received the [Code Talker Award](#), sponsored by [Genome](#) magazine and the National Society of Genetic Counselors (NSGC). This award honors genetic counselors who have had positive and lasting impact on the lives of their clients. Congratulations, Kira!

Takao Hensch, PhD, was named Director of the International Research Center for Neurointelligence, an initiative created to investigate the origins of human intelligence. On December 17, 2017, the [IRCN First International Symposium](#) was held at the University of Tokyo's Hongo Campus. Congratulations, Takao!

Research News

Medical News Today article [Nerve fibers regenerated with molecular mix](#) presents the work of **Zhigang He**, PhD, whose manuscript on axon regeneration was recently published in *Neuron*. This story is also covered in [Vector](#).

In [Autism may disrupt the body's circadian clock](#), *Spectrum* reports the relationship between autism and sleep in the work of **Jonathan Lipton**, MD. (image credit, [Spectrum](#))



David Roberson, PhD (Woolf lab), discusses his PalmReader technology in an interview with *STAT*: [Mouse footprints could help scientists develop new pain drugs. Here's how](#). This story is also covered in [Vector](#).

Mustafa Sahin, MD, PhD, uses stem cell technology to investigate the molecular-level development of Autism Spectrum Disorder, as reported by *EurekAlert!* in [Lab-grown human cerebellar cells yield clues to autism](#).

In *Nature's* [Pruning hypothesis comes of age](#), **Beth Stevens**, PhD, shows how her work supports an early hypothesis regarding the origins of Schizophrenia.

Clifford Woolf, MB, BCh, PhD, discusses his collaborative study of an epilepsy therapy in ALS treatment in the *The Daily Beast* article [An Epilepsy Drug Could Illuminate Our Understanding of](#)

[ALS](#).

Vector article [Deconstructing neuropathic pain: Could it give clues to better drugs?](#) presents the research of **Mike Costigan**, PhD, into the symptoms and treatment potential of neuropathic pain.

Vector's [How do we sense moonlight? Daylight? There's a cell for that](#) describes the work of **Mike Do**, PhD, who investigates the circadian clock on a cellular level.

In *Vector* article [Sensing light without sight: The visual system's 'third eye'](#), **Mike Do**, PhD, discusses his work with intrinsically photosensitive retinal ganglion cells (ipRGCs).

In [Bad to the bone: New light on the brain's venous system... and on craniosynostosis](#), *Vector* details work in the laboratory of **Elizabeth Engle**, MD, on the role of cerebral veins in the brain's drainage system.

Takao Hensch, PhD, and his recent work with protein Lynx1 are discussed in *Vector's* [Opening up brain critical periods: Lynx1 and where sensory information meets context](#).

Vector reports the participation of **Clifford Woolf**, MB, BCh, PhD, on a neurological drug development panel in [What's trending in neurological drug development?](#)

Kirby in the Community

Blue Sky Day: On Saturday, October 21, Boston Children's Hospital's Rett Syndrome Research Program (RSRP) hosted the [7th Annual Blue Sky Day](#) for Rett Syndrome Awareness Month. Local advocates joined the lab of **Michela Fagiolini**, PhD, to raise awareness about the postnatal neurological disorder. The RSRP showcased their successful adaptive swim program and presented fundraising results. (image credit, [Rett](#))



Devon Nicole House: The Kirby Center administrative team enjoys volunteering at the [Devon Nicole House](#), which provides housing for some families who have children at Boston Children's Hospital. At the close of 2017, the admin team helped decorate the public areas of the DNH for the holidays, and this month, the admin team provided a special Valentine's Day breakfast for the current residents.

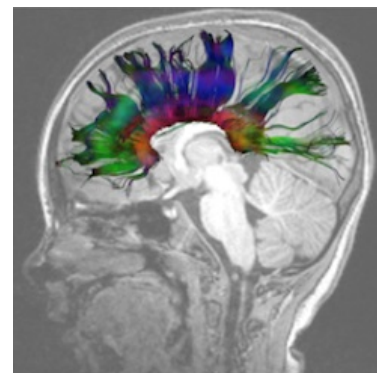
Adopted Families: Each year during the holiday season, The Kirby Center contributes money toward gift cards to brighten the holidays of one or more Adopted Families of children at Boston Children's Hospital. In 2017, the Kirby Center raised over \$770 for two families. Thank you for your generous contributions!

Recent Awards

Mike Do, PhD, is the recipient of an RFC Pilot Award from Boston Children's Hospital for his project titled, Defining a Neural Population Code for Environmental Illumination.

Elizabeth Engle, MD, received renewal of her HHMI Investigator term.

The Rett Syndrome Organization awarded **Michela Fagiolini**, PhD, a grant for her project titled, Two-photon imaging of excitatory/inhibitory cortical activity in mosaic Mecp2 female animal model.



Xi He, PhD, was awarded an R01 for his project, titled Novel regulators of Wnt/R-spondin signaling in early vertebrate embryogenesis.

The University of Tokyo, with funding provided by the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT) under the World Premier International Research Center Initiative, has awarded Boston Children's a 10-year grant to support an International Research Center on Neurointelligence (IRCN) under the leadership of **Takao Hensch**, PhD. This is only the second time the Japanese Ministry has funded worked in the US under the WPI program.

Ann Poduri, MD, PhD, received a U24 with Dr. Timothy Yu for their project titled, Expert Panel: Genetics of Malformations of the Central Nervous System.

Dr. Poduri was also awarded an R01 for her project titled, PCDH19-related Epilepsy-Human Genotype-Phenotype Studies Lead to Zebrafish Studies.

Dr. Poduri received an anonymous gift in the amount of \$25,000 for the Epilepsy Genetics Program.

Dr. Poduri is also the recipient of an RFC Pilot Award from Boston Children's Hospital for her project titled, Zebrafish Models of Epilepsy.

Alex Rotenberg, MD, PhD, received an RFC Pilot Award from Boston Children's Hospital for his project titled, Facilitation of Parvalbumin Interneuron Activity and Maturation in Epilepsy.

Additionally, a patent was issued to **Dr. Rotenberg** for transcranial magnetic stimulation (TMS) methods and apparatus, co-assigned to Beth Israel Deaconess Medical Center.

The National Ataxia Foundation awarded **Mustafa Sahin**, MD, PhD, a grant for his project titled, Characterization of the disease phenotypes of Ataxia Telangiectasia patient Purkinje cells in vitro.

Dr. Sahin was also awarded an RFC Pilot Award from Boston Children's Hospital for his project titled, Translational assessment of white matter integrity using 7T MRI in a mouse model of Tuberous Sclerosis Complex.

Beth Stevens, PhD, received an individual gift in the amount of \$7,500 to support her research.

Hisashi Umemori, MD, PhD, was awarded an R01 from NIDA for his project titled, Finding the projection-specific dopaminergic synaptic organizers.

Dr. Umemori also received an R01 for his project, How do neurons in the brain decide to refine their synaptic connections in vivo?

Clifford Woolf, MB, BCh, PhD, and **David Roberson**, PhD (Woolf lab), were selected for a 2017 Technology Development Fund award for their project titled, Automated detection and quantification of injury, disease, drug effect and CNS drug side effect measures in rodents.

Dr. Woolf is also the recipient of an R35 grant for his project titled, Unravelling mechanisms and novel therapeutic targets for peripheral neuropathy and neuropathic pain.

Alessandro Di Gioia, PhD (Engle lab), was awarded the 2017 ASHG/Charles J. Epstein Trainee Award for Excellence in Human Genetics Research - Semifinalist.

Darius Ebrahimi Fakhari, MD (Sahin lab), received an early career award program grant from the Thrasher Research Fund for his project titled, Using iPSC-Derived Neurons In Unbiased Small Molecule Screens To Cure Hereditary Spastic Paraplegia.

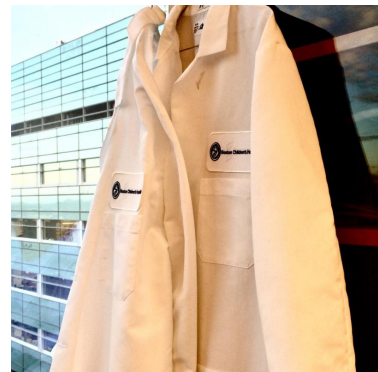
(image credit, [Vector](#))

Postdoc News

In Fall 2018, **Phil Williams**, PhD (Z. He lab), will begin his new position of Assistant Professor of Ophthalmology and Visual Services at Washington University. Congratulations, Phil!

Romain Cartoni, PhD (Z. He lab), has accepted the position of Assistant Professor, Tenure Track in Pharmacology and Cancer Biology, and Assistant Professor in Ophthalmology at Duke University School of Medicine and Duke Eye Center. Congratulations, Romain!

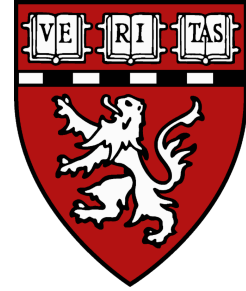
Congratulations to **Evgeny Shlevkov**, PhD (Schwarz lab), who has begun a new position as Scientist I at Biogen.



Graduate Student News

Recent Dissertation Defenses: Congratulations, PhDs!

Michael Norsworthy (Z. He lab): "Sox11 Promotes Neuronal Regeneration or Death: Complexities from Heterogeneity"



Recent Featured Publications

Z. He lab. A Sensitized IGF1 Treatment Restores Corticospinal Axon-Dependent Functions. *Neuron*. August, 2017.

Engle lab. Cerebral Vein Malformations Result from Loss of Twist1 Expression and BMP Signaling from Skull Progenitor Cells and Dura. *Developmental Cell*. September, 2017.

Schwarz and Z. He labs. A high mitochondrial transport rate characterizes CNS neurons with high axonal regeneration capacity. *PLoS One*. September, 2017.

Chen lab. Functional Convergence at the Retinogeniculate Synapse. *Neuron*. October, 2017.

Do lab. Biophysical Variation within the M1 Type of Ganglion Cell Photoreceptor. *Cell Reports*. October, 2017.

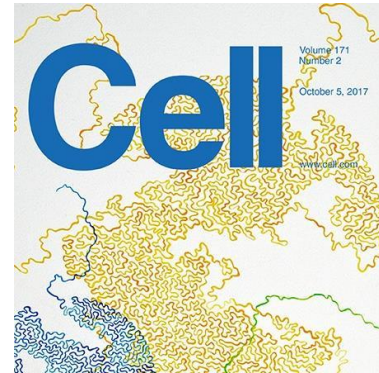
Z. He lab. Deconstruction of Corticospinal Circuits for Goal-Directed Motor Skills. *Cell*. October, 2017. (image credit, [Cell](#))

Rotenberg lab. Persistent uncrossed corticospinal connections in patients with intractable focal epilepsy. *Epilepsy & Behavior*. October, 2017.

Do lab. A Population Representation of Absolute Light Intensity in the Mammalian Retina. *Cell*. November, 2017.

Sahin lab. Presentation and Diagnosis of Tuberous Sclerosis Complex in Infants. *Pediatrics*. December, 2017.

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



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