



ALS Research Forum e-Newsletter Vol. 166

February 14, 2017

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## Conference News

### [ALS Researchers Tackle C9orf72 Genetics and the Entire Genome](#)

How do epigenetic marks affect ALS risk, onset, or progression? Do disease models replicate these covalent changes to histones and the genome? And, could altering epigenetic markers be therapeutic? These questions in the young field of ALS epigenomics were the focus of a group of talks at the 27th International Symposium on ALS/MND, held in Dublin in December 2016. [Read more>>](#)

## Research News

### [Microglia May Turn Astrocytes to the Dark Side in ALS](#)

Microglia may turn some astrocytes against motor neurons and oligodendrocytes in ALS according to a study published on January 18 in *Nature*. The study, led by **Ben Barres** of Stanford University School of Medicine, found that these cells, known as A1 astrocytes, appeared to proliferate upon injury and in co-culture destroyed at least 80% of spinal motor neurons and mature oligodendrocytes. What's more, these cells could be detected in post mortem tissue from patients with five neurodegenerative diseases including ALS. The results suggest that this microglial-based attack strategy could be a key general underlying mechanism of neurodegenerative disease.

Read more: [Microglia Give Astrocytes the License to Kill](#)

[Read more](#) about these cells and their potential role in ALS.

### [Zinc Finger Protein in Every Pie? Protective Protein Partners with Many ALS Culprits](#)

A drop in levels of zinc finger protein zfp106 might contribute to the potential RNA-based toxicity in C9orf72 ALS according to a study published on January 10 in *Elife*. The study, led by **Brian Black** of the University of California in San Francisco, found that zfp106 bound G4C2 repeats *in vitro*. In addition, the protein appears to associate with key ALS-linked proteins TDP-43 and FUS- at least in cultured cells. What's more, mice lacking zfp106 exhibit key aspects of ALS including progressive muscle weakness, motor deficits and motor neuron loss. The results suggest that

zfp106 may be a key protein sequestered by C9orf72 repeat RNAs and therefore might explain at least in part, the potential underlying toxicity of these RNAs in the disease.

### [Targeting Emerging ALS Target RIPK1 May Increase Granularity in FTD](#)

One out of 5 cases of familial frontotemporal dementia (FTD) is thought to occur due to reduced levels of progranulin (PGRN). Researchers hope to develop therapies for PGRN-linked FTD that boost PGRN levels. But how the levels of this secreted growth factor are controlled remains unclear. Now, **Steve Finkbeiner** and colleagues at the Gladstone Institutes in San Francisco identify Receptor Interacting Serine/Threonine Kinase 1 (RIPK1) as a potential regulator of progranulin. But how to target RIPK1 in FTD may be tricky. The study is published on January 9 in the *Journal of Biological Chemistry*.

[Read more](#) about the emerging role of RIPK1 in ALS.

### [At the Heart of Every ALS RNA Aggregate, a Single Transcript](#)

People with C9orf72 ALS may harbor fewer C9orf72 expanded repeat RNAs than previously thought according to a January 18 report in *Cell Chemical Biology*. The study, led by University of Texas Southwestern Medical Center's **David Corey**, found that RNA foci contain only one expanded C9orf72 repeat RNA- at least in ALS patient-derived skin cells. The findings suggest that emerging RNA-reducing antisense oligonucleotide-based strategies may be helpful in people with C9orf72 ALS because of how few RNAs were observed.

### [New Models of ALS Fly In](#)

New fruit fly models of SOD1 ALS may help scientists discover potential treatment strategies for the disease. The knock-in models, developed by **Robert Reenan** and colleagues at Brown University in Rhode Island, exhibit key signs of ALS including progressive motor deficits due to muscle atrophy and denervation according to a report published online on December 14 in *Genetics*. The fruit flies, which harbor ALS-linked SOD1 mutations G85R or H71Y, are the first *Drosophila* models to recapitulate key aspects of ALS without overexpression of the disease-linked gene.

### [Early Inflammation May Play a Role in FTD](#)

Inflammation is a hallmark of neurodegenerative diseases including ALS and FTD. However, whether this process contributes to the onset of these diseases remains unclear. Now, **Adrian Isaacs** of the University College London in England and colleagues report that CHMP2B FTD mice exhibit early microglial activation in key regions of the brain more than 12 months *before* the first signs of the disease. The results add to growing evidence that inflammation may increase the risk of developing neurodegenerative diseases including ALS and FTD. The study is published on January 17 in *Human Molecular Genetics*.

Check out [our website](#) to read more of the latest research advances in ALS.

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**Funding Opportunities:**

## February 2017

**NEW!** [Program to Accelerate Clinical Trials. Biomarkers. Preclinical Research.](#) FTD. Alzheimer's Drug Discovery Foundation. LOI: February 17, 2017.

[NYSCF Robertson Stem Cell Investigator Awards.](#) Application due: February 22, 2017.

[NYSCF Robertson Neuroscience Investigator Awards.](#) Application due: February 22, 2017.

## March 2017

[MDA Venture Philanthropy \(MVP\) Program.](#) LOI due: March 1, 2017.

[Target ALS Research Consortia.](#) Applications are due by March 6, 2017.

[Pathways 2017.](#) Multinational Research Consortia. EU Joint Programme - Neurodegenerative Disease Research (JPND). Applications are due by March 6, 2017.

**NEW!** [Transformational Research 2017.](#) FTD. Weston Brain Institute. LOI. March 31, 2017.

[Identify and Characterize Potential Environmental Risk Factors for ALS and Evaluate Their Impact on ALS Disease Incidence and Progression.](#) Applications are due by Mar 31, 2017.

## April 2017

**NEW!** [UK: Novel Biomarkers 2017.](#) FTD. Weston Brain Institute. LOI. April 19, 2017.

[Full List of Funding Opportunities >>](#)

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## Job Opportunities:

[Research Assistant Professor,](#) Beal Lab. Weill Cornell Medical College. New York, NY.

[Senior Research Fellow, Stem Cells and ALS.](#) Karolinska Institutet. Huddinge, Sweden.

[Postdoctoral Fellow,](#) Gao Lab. University of Massachusetts Medical School. Worcester, MA.

[Graduate Studentship,](#) ALS. Florey Institute of Neuroscience and Mental Health. Parkville, Australia

[Research Associate,](#) Foff Lab. University of Virginia. Charlottesville, VA

[Associate Director, Translational Pathology Laboratory.](#) Biogen. Cambridge, MA

[Sr. Scientist, Laboratory of Neuronal Cell Biology.](#) Biogen. Cambridge, MA

[Scientist I/II, Translational Sciences.](#) Biogen. Cambridge, MA.

[Postdoctoral Fellow,](#) Sheng Lab. Genentech. San Francisco, CA.

[Postdoctoral Fellow,](#) A\*Star. Singapore.

**Hiring someone onto your team? Contact us to add your listing to [our updated job board: \[ALSjobs@prize4life.org\]\(mailto:ALSjobs@prize4life.org\)](#).**

[Full List of Job Opportunities >>](#)

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## Upcoming Meetings:

### February 2017

February 16-17, 2017. Munich, Germany. [23rd Meeting of the German Society for Muscular Disease \(DGM\).](#)

### March 2017

March 2, 2017. London, England. [Motor Neurone Disease 2017.](#)

March 4-5, 2017. Ventura, CA, USA. Gordon Research Conference: [Glial Biology: Functional Interactions Among Glia & Neurons.](#)

March 23-26, 2017. Athens, Greece. [World Congress on Controversies in Neurology.](#)

March 26-30, 2017. Solden, Austria. [International Neuroscience Winter Conference](#).

#### April 2017

**NEW!** April 22-28, 2017. Boston, MA. [AAN 2017](#). Early registration: March 30, 2017. **Hotel deadline: March 8, 2017.**

#### May 2017

**NEW!** May 18-20, 2017. Ljubljana, Slovenia. [ENCALS 2017](#). Abstracts due: March 20, 2017.

May 22-24, 2017. Barcelona, Spain. [Annual World Congress on NeuroTalk](#). "New Technologies, New Ideas and New Future." Abstracts due: March 31, 2017.

#### June 2017

June 14-17, 2017. EMBL Heidelberg, Germany. EMBO-EMBL Symposium: [Mechanisms of Neurodegeneration](#). Abstracts Due: March 22, 2017.

June 19-23, 2017. [Keystone Symposium: Neuroinflammation: Concepts, Characteristics, Consequences](#). **Discounted Abstract Deadline: Feb 21, 2017.**

**NEW!** June 26-27, 2017. [Meeting the Challenges of Modelling Neurodegenerative Disease in Mice](#). Buckinghamshire, England.

**Organizing an ALS meeting? Contact us to add your conference to [our updated calendar: ALSmeetings@prize4life.org](#).**

[Full List of Upcoming Meetings>>](#)



[Download the Working with ALS Mice Manual Here](#)

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