



ALS Research Forum e-Newsletter Vol. 182

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Research News

[A New CRISPR Technique Fries C9orf72 RNAs](#)

RNA-targeted Cas9 may help reduce motor neurons in C9orf72 ALS by destroying expanded repeat RNAs according to recent results from University of California's **Gene Yeo** in San Diego. But how does this approach stack up to others in the pipeline? In this feature, experts weigh in on emerging therapeutic approaches for C9orf72 ALS, including strategies being developed by Biogen/Ionis Pharmaceuticals, CRISPR Therapeutics, Neurimmune and Wave Life Sciences.

[Out of Chaos, Order: Reversible Amyloid Structure Seen in Phase Separation](#)

RNA-binding proteins including FUS clump up in motor neurons in ALS and may contribute to toxicity. But how the low-complexity domain of these proteins triggers this liquid-liquid phase transition remains unclear. Now, a new molecular snapshot of FUS fibrils, captured by University of Texas Southwestern Medical Center's **Steve McKnight** and colleagues, may provide insight into how these clumps form. The findings build on previous studies, led by Brown University's **Nicolas Fawzi** in Rhode Island, which found that DNA-PK mediated phosphorylation blocked the liquid-liquid phase transition of FUS *in vitro* (see [August 2017](#) news). The study appeared on September 21 in *Cell*.

[As ALS Worsens, Immune Cells Multiply in the Blood](#)

Changes in the immune system occur in people with ALS and track with disease progression according to a nearly 2 year longitudinal study led by University of Michigan's **Eva Feldman** published on September 25 in *JAMA Neurology*. But do these increases in neutrophils and monocytes, and decreases in CD4 T cells, detected in the peripheral blood, contribute or help fight off the disease? Experts weigh in.

[ApoE and Trem2 Flip a Microglial Switch in Neurodegenerative Disease](#)

Microglia are increasingly implicated in ALS. But how these immune cells turn against motor neurons and when, remains unclear. Now, a new study suggests that the flip

of a phenotypic switch, regulated by ApoE and TREM2, results in key transcriptional changes in microglia, which may lead to neuroinflammation. The study, led by Brigham and Women's Hospital's **Oleg Butovsky** in Boston, Massachusetts, found in part, that this switch, triggered by degenerating neurons, may reduce the ability of microglia to promote T cell tolerance. The findings suggest, according to some experts, that ApoE may be a potential target in the disease. The study is published on September 19 in *Immunity*.

[Lysosomes Take Center Stage in Parkinson's and Frontotemporal Dementia](#)

Lysosome dysfunction is emerging as a key culprit in ALS/FTD and FTD. But why these intracellular recycling centers malfunction remains unclear. Now, a new study, led by University of Texas Southwestern Medical Center's **Joachim Herz**, suggests that progranulin may regulate lipid metabolism in lysosomes and that buildup of these lipids may result in lysosome dysfunction, leading to the disease. The findings add to growing evidence that defects in the lysosome may play a key role in FTD, including C9orf72 ALS/FTD (see [March 2016](#) news). The study appeared on September 12 in *Cell Reports*.

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

Funding Opportunities:

The Weston Brain Institute will begin accepting applications for funding for [high-risk, high-reward research](#) in the UK, Ireland and the Netherlands, including FTD, in October 2017.

October 2017

[Research Grants](#). Frick Foundation for ALS Research. Application due by **October 6, 2017**.

[CReATe Clinical Research Scholarship Program](#). Application due by **October 16, 2017**.

November 2017

[Biomedical Research Project Grants](#). MND Association. Applications due by November 3, 2017.

December 2017

NEW! [MDA Venture Philanthropy Program](#). LOI due by December 1, 2017.

[NeuroNEXT Clinical Trials](#). NINDS. Applications due by December 6, 2017.

NEW! [Transformational Research: Canada 2018](#). FTD. Weston Brain Institute. LOI due by December 7, 2017.

Check out our [updated list](#) of grants and awards.

Job Opportunities:

[Faculty, Neurodegeneration & Neurotherapeutics](#). Duke University Medical Center. Durham, NC.

[Assistant Professor, Neurobiology and Behavior](#). University of California. Irvine, CA.

[Assistant Professor, Neurosciences](#). Colorado State University. Ft Collins, CO.

[Postdoctoral Fellow, University of Luxembourg](#). Esch-sur-Alzette, Luxembourg.

[Postdoctoral Fellow, Ward Lab](#). NINDS. Bethesda, MD.

[Research Specialist, Grossman Lab](#). University of Pennsylvania. Philadelphia, PA.

[Research Associate, Svendsen Lab](#). Cedars Sinai Medical Center. Los Angeles, CA.

[Research Assistant, MND](#). University of Oxford. Oxford, England.
[Research Technician, Maniatis Lab](#). Columbia University. New York, NY.

[Director or Senior Director, Gene Transfer Technologies](#). REGENXBIO. Rockville, MD.
[Director, Neuroscience Electrophysiology](#). GSK. Collegeville, PA.
[Senior Scientist, Neuroscience](#). Merck. West Point, PA.

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

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

Upcoming Meetings:

November 2017

November 10, 2017. Sydney, Australia. [13th MND Australia Research Conference](#). **Abstracts due: October 6, 2017.**

November 11-15, 2017. Washington, D.C. [Society for Neuroscience Annual Meeting](#).

December 2017

December 2, 2017. Philadelphia, PA. [Cell Biology of Neurodegeneration and Repair in the Nervous System](#). **Abstracts due: October 11, 2017.**

December 7, 2017. Boston, MA. [ALS/MND Allied Professionals Forum](#).

December 8-10, 2017. Boston, MA. [International Symposium on ALS/MND](#).

March 2018

March 18-21, 2018. EMBL. Heidelberg, Germany. [Microglia 2018](#). Abstracts due: February 15, 2018.

March 22-24, 2018. Melbourne, Australia. [Australasian Motor Neurone Disease Symposium](#). Abstracts due: December 18, 2017.

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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