THE ALS RESEARCH FORUM
Discovering a Common Goal, Discovering a Cure
PRIZE4LIFE ALS ASSOCIATION

ALS Research Forum e-Newsletter Vol. 192 **March 14, 2018**

Visit the ALS Research Forum to read the complete stories featured in this e-newsletter. Friends and colleagues can sign up for the newsletter here. Follow us on Facebook and Twitter for the latest updates.

Looking for stem cell lines to study ALS? We updated our biorepositories page. Please tell us if you know of other research resources available so we can share them! Thank you!

Research News

Targeting FUS: DNA Damage Control in ALS

Emerging cancer strategies, targeting poly (ADP-ribose) polymerase (PARP), may help chemotherapy destroy cancer cells. However, a growing number of studies suggest that these same strategies may help protect motor neurons in ALS. In this feature, experts weigh in on the emerging role of DNA damage in ALS, and the potential of emerging cancer medicines targeting these processes to treat the most common forms of the disease.

To learn more about the emerging role of DNA damage in ALS, check out *C9ORF72 Throws a Wrench into DNA Repair Machinery*.

FUS Helps miRNA Silence Genes. For ALS, What Does It Mean?

The ALS-linked protein FUS may play another key role in neurons according to a new March 1 report in *Molecular Cell*. The study, led by Johns Hopkins University's **Jiou Wang** in Maryland, found that FUS binds to micro RNAs and their mRNA targets, helping to silence the expression of genes. The results build on previous studies which suggest that FUS helps regulate the synthesis and localization of proteins, including at the synapse, by playing roles in RNA metabolism, RNA transport, and the production of micro RNAs (see October 2012, September 2013, October 2017 news). Together, the findings raise the question of which functions, when disrupted, leads to ALS and therefore which mechanisms to target in the disease.

To learn more about how the loss of gene silencing could contribute to ALS, check out *Retrotransposons Jump Into The Mix In ALS*.

In TDP-43 Mouse, Hesitant Microglia Eventually Swoop to the Rescue

Inflammation may not be all bad in ALS according to a new report in the March 2018 issue of *Nature Neuroscience*. The study, led by University of Pennsylvania's **Virginia Lee** and **John Trojanowski** in Philadelphia, found that reactive microglia help neurons heal, in part by clearing out TDP-43 aggregates - at least in inducible

hTDP-43 model mice. The findings suggest that modulating microglia, not eliminating them, may be of benefit in the disease.

#ICYMI Citrullination, Anyone? New Gene Implicated in ALS

A lack of a key enzyme may increase the risk of developing ALS according to a study in the February 6 issue of *Cell Reports*. The study, led by University of Tokyo's **Koichi Matsuda** in Japan, found that reduced levels of the protein arginine deiminase PAD4 may make motor neurons more susceptible to ALS by making FET proteins including FUS and TAF15 more likely to aggregate. The results suggest that increasing activation of this enzyme may be a potential strategy to reduce motor neuron toxicity in the disease.

To learn more about emerging approaches aimed at tackling proteostasis, check out *Breaking Up TDP-43 Aggregates May Be Doable, Scientists Say*.

Clinical Trial News

Antisense Therapy Cuts Huntingtin Protein in CSF by Half

An antisense oligonucleotide lowers levels of a key disease-linked toxic protein in the central nervous system in people by up to 60% based on a phase 1/2a analysis according to its developer Ionis. The approach, known as IONIS-HTTRx, which targets Huntington's disease, is one of a growing number of potential antisense therapies for neurological disorders being evaluated in the clinic including ALS (see August 2017 news). Key questions remain. For example, does this drop in the level of huntingtin protein slow progression of the disease? A phase 3 clinical trial is planned.

Check out our website to read more of the latest research advances including the discovery of a new potential target in ALS, the ER resident mitochondrial-associated membrane (MAM) protein TMX2.

Funding Opportunities:

April 2018

Research Grants. Potential ALS Therapies: Preclinical to Phase 1. Fight MND. Application due by **April 1, 2018**.

Personalized Medicine. ERA PerMed. Eligibility: AT, BE, CA, DE, EE, ES, FI, FR, HR, HU, IE, IL, IT, LU, LV, NL, NO, PL, RO, SI, SE and TR. Pre-Proposals due by April 10, 2018.

NEW! Research Grants (Basic Neuroscience). Whitehall Foundation. The focus: neural mechanisms involved in complex behaviors including motor systems. LOIs due by April 15, 2018.

Early Career Grants. Brain Canada & Azrieli Foundation. Application due by April 17, 2018.

Ben Barres Early Career Acceleration Awards. Chan-Zuckerberg Initiative Neurodegeneration Challenge Network. Applications due by April 17, 2018.

Collaborative Science Awards. Chan-Zuckerberg Initiative Neurodegeneration Challenge Network. Applications due by April 17, 2018.

Rapid Response: Canada. FTD. Weston Brain Institute. LOIs due by April 19, 2018.

Rapid Response: Ireland, Netherlands, UK 2018. Biomarkers, including FTD. Weston Brain Institute. LOIs due by April 23, 2018.

Graduate Student Fellowship. AFM-Téléthon. Application due by April 24, 2018.

NEW! Teva CNS Target Identification Crowdsourcing Challenge. TEVA and the ALS Association. Proposals due by April 29, 2018.

NEW! Identify, Analyze and Evaluate Potential Risk Factors for ALS . CDC. Application due by April 30, 2018.

Breakthrough Prize. Nominate a scientist by April 30, 2018!

May 2018

Graduate Studentships. MND Association. Applications due by May 4, 2018.

Non-Clinical Fellowships. MND Association. Applications due by May 4, 2018.

June 2018

NEW! ALS Canada Project Grant Program. ALS Canada. June 8, 2018.

Check out our updated list of grants and awards.

Job Opportunities:

Faculty, Department of Biopharmaceutical Sciences. University of Illinois. Chicago, IL.
Assistant Professor, Neural Biology. Augusta University. Augusta, GA.
Assistant Professor, Pharmacology and Chemical Biology. Emory University. Atlanta, GA.
Bioinformatician, Single Cell Bioinformatics. VIB. Ghent, Belgium.
Postdoctoral Fellow, Da Cruz Lab. Ludwig Institute for Cancer Research. San Diego, CA.
Research Assistant, Engle Lab. Boston Children's Hospital. Boston, MA.

Biologics Group Leader. Lilly. Indianopolis, IN.
Research Lead, CNS. Spark Therapeutics. Philadelphia, PA.
Senior Scientist, ALS. Sanofi. Framingham, MA.
Scientist, Medicinal Chemistry . Yumanity Therapeutics. Cambridge, MA.
Associate Scientist. Yumanity Therapeutics. Cambridge, MA.

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:

Last chance to get your abstract in for the upcoming Keystone Conference, Advances in Neurodegenerative Disease Research and Therapy. Abstracts due: March 15, 2018.

March 2018

March 18-21, 2018. EMBL. Heidelberg, Germany. Microglia 2018.

March 22-24, 2018. Melbourne, Australia. Australasian Motor Neurone Disease Symposium. Final program.

April 2018

April 17-21, 2018. Cold Spring Harbor Laboratory. Cold Spring Harbor, NY. Protein Homeostasis in Health and Disease .

April 21-27, 2018. Los Angeles, CA. Annual Meeting of the American Academy of Neurology.

April 30-May 4, 2018. Jackson Laboratory. Bar Harbor, ME. Workshop: Using Mouse Models to Study Neurodegenerative Disease.

May 2018

May 14-17, 2018. EMBL. Heidelberg, Germany. Cellular Mechanisms Driven by Liquid Phase Separation.

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

STAY CONNECTED: