

# Come Fly with Me—What *Drosophila* Can Tell Us About Neurodegenerative Disease

**April 16**

**Tuesday, 12:30 pm**

**Billings Building—Rosedale Room**

**SPEAKER:**



**Daniela Zarnescu Ph.D.**

Associate Dean of Graduate Education and Postdoctoral Training

Professor, Cellular and Molecular Physiology

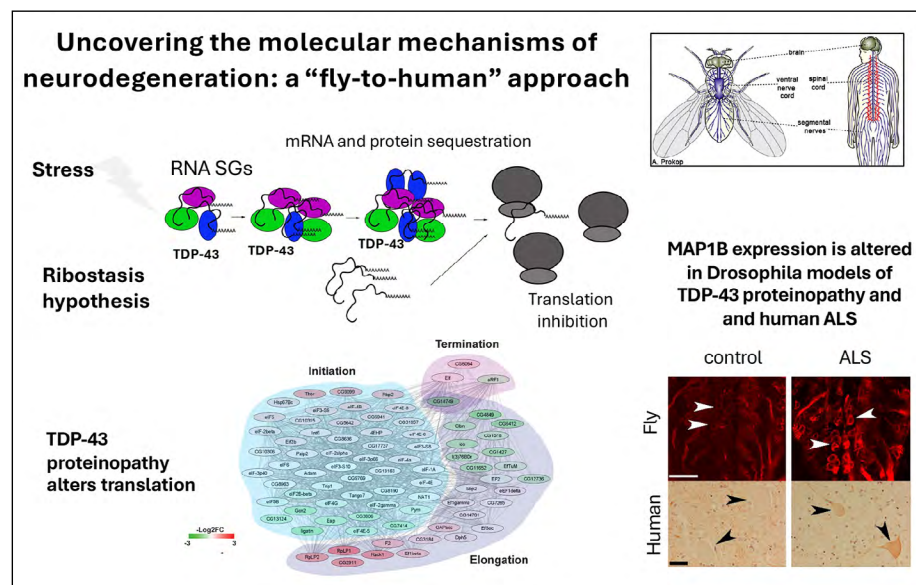
Penn State College of Medicine  
Hershey, PA

**Host: Dianna E. Willis, Ph.D.**

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## Abstract

Research abstract: We study the molecular mechanisms of aging and neurodegenerative diseases with a focus on RNA processing and cellular metabolism. We use a combination of molecular, genetic, bioinformatic and pharmacological tools, and a diverse array of experimental models, including fruit flies, cultured cells and patient tissues. We also seek to develop therapeutics for neurodegenerative disorders. I will present our recent findings on modelling TDP-43 proteinopathies in ALS and FTD relevant circuits with a focus on metabolic, synaptic and signaling targets.



## Publications

1. Manzo, E\*, Lorenzini I, Barrameda D#, O’Conner AG#, Barrows JM#, Starr A, Kovalik T, Lehmkühl E.M.\*, Shreiner DD, Joardar A, Liévans J-C, Bowser R, Sattler R, Zarnescu D.C. (2019) *Glycolysis upregulation is neuroprotective as a compensatory mechanism in ALS*. eLife 2019 Jun 10;8. pii: e45114. doi: 10.7554/eLife.45114. PMID: 31180318
2. Lehmkühl, E.M.\*, Loganathan, S.\*, Alsop, E., Blythe, A.D., Kovalik, T., Mortimore, N.P. #, Barrameda, D. #, Kueth, C., Eck, R.J. #, Siddegowda, B.B.o., et al. (2021). *TDP-43 proteinopathy alters the ribosome association of multiple mRNAs including the glypican Dally-like protein (Dlp)/GPC6*. Acta Neuropathol Commun 9, 52. doi: 10.1186/s40478-021-01148-z.
3. R Keating Godfreyo, Eric Alsop, Reed T Bjork\*, Brjesh S Chauhano, Hillary C Ruvalcaba#, Jerry Antone, Lauren M Gittings, Allison F Michael\*, Christi Williams\*, Grace Hala’ufia#, Alexander D Blythe\*, Megan Hall, Rita Sattler, Kendall Van Keuren-Jensen, Daniela C Zarnescu, *Modelling dementia in Drosophila uncovers shared and specific targets of TDP-43 proteinopathy across ALS and FTD relevant circuits*, Acta Neuropathologica Communications 11, 168 (2023). <https://doi.org/10.1186/s40478-023-01656-0>