

Sorting Neuronal Survival Signals

For many years, it has been known that growth factors secreted by muscles control neuron-muscle connections and the survival of neurons. Dr. Mugdha Deshpande, the Blazeman Foundation Postdoctoral Fellow for ALS Research in Avital Rodal's lab at Brandeis University, has been working to understand how these processes may go awry in ALS. Using fruit flies as a model system, she is focusing on how these survival signals are transported along a travel itinerary within the neuron and how gene mutations causing ALS alter this process. In parallel, Dr. Deshpande is working with Dr. Suzanne Paradis at Brandeis to develop a system to study these signals in mammalian neurons that are affected by human ALS genes, to test if defects are similar to those she saw in the fly model. She has found that growth of these neurons is severely compromised when they carry ALS genes, and is now testing to see how this relates to problems with specific growth signals. By understanding how growth and survival signals are being diverted from their

normal travel itinerary in diseased neurons, it will be possible to develop new therapies to return these signals to the appropriate destination, providing a new avenue for future treatment of ALS.



Dr. Mugdha Deshpande, the Blazeman Foundation Postdoctoral Fellow for ALS Research at Brandeis University.