

1117-92-467

Scott A McKinley* (scott.mckinley@tulane.edu) and **J Darby Smith**. *Intracellular transport: The paradox of codependence among antagonistic motors.*

Transport in neurons is intrinsically bidirectional, with each movement modality carried out by molecular motors in either the kinesin (anterograde) or the dynein (retrograde) families. Because all motors are present at a given time there must be competition and/or cooperation among motors that simultaneously bind a single vesicle to nearby microtubules. The prevailing tug-of-war model captures this dynamic, but fails to account for a recently recognized phenomenon: that in many situations, disabling one family of motors somehow inhibits the performance of motors that are working in the opposite direction. In this talk we will survey a few proposed mechanisms that may account for this behavior and will look at recent work that focuses on a potential role played by the helper protein dynactin. (Received January 19, 2016)