## Division of Medical Sciences

## Astrocytic Ensheathment of Glutamate Synapses in the Accumbens is Highly Variable

The concept of the tripartite synapse poses that pre- and postsynaptic structures in excitatory axospinous contacts are dosely apposed by a third astrocytic element participating in communication and plasticity with both sides of the junction. Since the pioneering reconstructions of the hippocampus by Kristen Harris, it has been known that over 40% of excitatory synapses on spines in that region are without astrocytic contacts, and those that are contacted are covered on only 40% of the available synaptic surface. Given that astrocytes clear extracellular glutamate, these observations have profound implications for understanding how excitatory synapses are regulated and therefore how they may operate as independent computational elements. Despite such importance, these parameters have not 1 0 nO inorta 31 Tm(40%)(0)5(46)2(a)4(1)4(cted 3)4(1)4(b)(x)(e)