"The stuff that dreams are made of: remodeling synapses during sleep"

Sleep is an essential and conserved process that supports cognitive functions such as learning and memory. A major target of sleep's restorative process are synapses. We are working to understand the basic signaling and metabolic pathways that underlie sleep-dependent remodeling of synapses. Chronic sleep disruption is associated with many diseases of the brain including autism spectrum disorder and Alzheimer's disease. We are applying our work on the basic mechanisms of sleep to understand the causes and consequences of sleep disruption in disease, with the goal of developing next-generation sleep medicines.