

Editorial

Intracellular Trafficking and the Cytoskeleton

Barely more than a year ago, Trina Schroer, one of the Senior Editors of *Traffic*, persuaded me to serve as Guest Editor for a series of reviews about a relatively under-represented topic for the journal – roles for the cytoskeleton in intracellular trafficking. Thanks to the efforts of four sets of contributors, Peter Baas and Vidaya Nadar, José Sotelo-Silveira, Phil Leopold and Kevin Pfister, and Gideon Lansbergen and Anna Akhmanova, Trina's idea has come to fruition in the present issue of *Traffic*. The principal theme of the contributors' papers is microtubules, which serve as highways for the rapid, motor protein-dependent transport of a rich variety of intracellular cargo. Baas and Nadar focus on the axon, most of whose proteins and lipids are synthesized in the neuronal cell body and must be delivered quickly and efficiently along microtubules to the distal reaches of the axon. In a large animal like human beings, axons can be more than a meter long, a mere pittance compared to axons in leviathans like giraffes and great blue whales. Intriguingly, the Baas and Nadar review deals primarily with the transport mechanisms that supply

the axon with microtubules. As a counterpoint, Sotelo-Silveira discusses protein synthesis that does occur in axons, and how the pertinent synthetic machinery may reach the axon interior. Leopold and Pfister take a different tack by reviewing how microtubules and their attendant dynein motors are critical for viral infectivity. Finally, Lansbergen and Akhmanova explore yet another critical aspect of microtubules for intracellular transport – how their dynamics are controlled by proteins that cap and stabilize their distal ends, and thereby prevent the transport tracks from disappearing. The whimsical cover figure of this issue captures the spirit of these reviews by emphasizing mechanisms for transport of microtubules into axons, and of viruses to the perinuclear region. On behalf of the contributors, and the Editorial Board and production staff of *Traffic*, I hope you enjoy these timely and inciteful reviews.

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