

SUMMER SEMESTER 2023

RTG 2756 CYTAC SEMINAR SERIES

TUESDAY, JUNE 20,
17:15 IN HS5

CYTAC

RTG 2756

PROF. DR. STEFAN DIEZ

Technische Universität Dresden
Center for Molecular and Cellular Bioengineering

EMERGENCE OF DIRECTIONAL REVERSALS AND TORSIONAL FORCES IN CYTOSKELETAL MOTOR SYSTEMS

Our laboratory focuses on studying the dynamics arising from the collective activity of cytoskeletal motors. We reconstitute subcellular mechano-systems in vitro to investigate their behavior under controlled conditions. I will discuss recent findings regarding (i) vesicular transport driven by kinesin-3 and dynein motors along microtubules, revealing directional reversals without external regulators, and (ii) helical motion of microtubules driven by kinesin-5 and kinesin-14 motors, generating torque. These phenomena likely contribute to robust intracellular transport, flexible filament organization, road-block circumvention, and twisting of the mitotic spindle.

