

SUMMER SEMESTER 2023

RTG 2756 CYTAC SEMINAR SERIES

TUESDAY, MAY 9,
17:15 IN HS5

CYTAC

RTG 2756

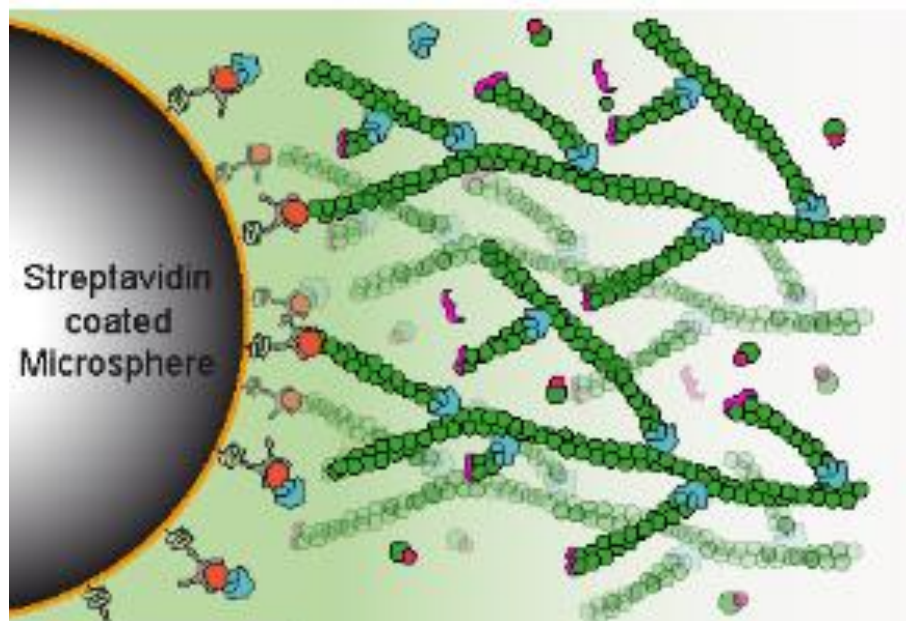
DR. PETER BIELING

Mechanismen zur Regulation der Zellmorphologie

Max-Planck-Institut für molekulare Physiologie

COLLECTIVE MOLECULAR MECHANISMS OF ACTIN NETWORK ASSEMBLY

Branched actin networks generate forces required for cell morphogenesis, motility and organization of sub-cellular structures. Despite the importance of polymerization-mediated force generation in many biological processes, surprisingly little is known about how dynamic actin networks with physiological architecture respond to forces at the



molecular level. Summarizing experiments that combine in vitro reconstitution with atomic force and TIRF microscopy, I will show that branched actin networks are highly load-sensitive, both at the level of their biochemical assembly as well as their material properties. Through detailed structural and biochemical analysis, we have uncovered the feedback mechanisms responsible for this force-adaptive response.