



University of Cyprus
Department of Biological
Sciences

Postgraduate Seminars

Seminar Series 2018 - 2019

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“Proteins that control the geometry of ciliary ends”

**Wednesday, 13 February 2019, at 17:00
Building CTF 01, Room 110, Panepistimioupoli Campus**

This seminar is open to the public

Cilia, essential motile and sensory organelles, have several compartments: the basal body, transition zone, and the middle and distal axoneme segments. The distal segment accommodates key functions, including cilium assembly and sensory activities. While the middle segment contains doublet microtubules (incomplete B-tubules fused to complete A-tubules), the distal segment contains only A-tubule extensions, and its existence requires coordination of microtubule length at the nanometer scale. We show that three conserved proteins, two of which are mutated in the ciliopathy Joubert syndrome, determine the geometry of the distal segment, by controlling the positions of specific microtubule ends. FAP256/CEP104 promotes A-tubule elongation. CHE-12/Crescerin and ARMC9 act as positive and negative regulators of B-tubule length, respectively. We show that defects in the distal segment dimensions are associated with motile and sensory deficiencies of cilia. Our observations suggest that abnormalities in distal segment organization cause a subset of Joubert syndrome cases.