

# Seminar Speaker Series

in the framework of Interreg V-A project CAPSID

presents

## Prof. Ohad Medalia

University of Zurich

### How can thin filaments protect a nucleus?

The structure and function of lamins.

**25.6.2020 at 14:00**

Online virtual talk via Zoom

[\*\*Join this talk here\*\*](#)



Zoom meeting details will be e-mailed to you.

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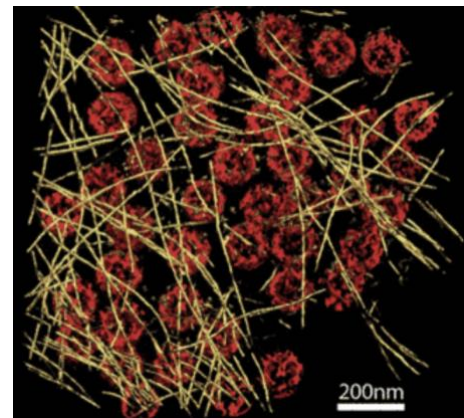
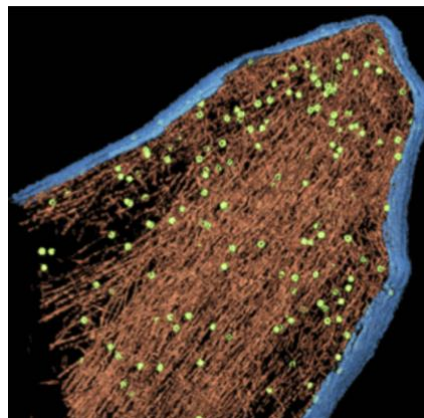
## TALK TITLE

**The structure and function of lamins: How can thin filaments protect a nucleus?**

## RESEARCH GROUP FOCUS

### Structural Studies of Eukaryotic Cells and Organelles

The overall aim of our work is to understand the cellular remodeling of bio-macromolecules and structure-function relations of large protein machines during cellular processes, using three-dimensional (3D) microscopy approaches. Projects range from the development of molecular markers design to direct imaging of individual protein complexes and cytoskeleton organization to the retrieval of structures of large macromolecular complexes *in situ*, using 3D averaging of sub-tomograms from eukaryotic cells. Visualization of the 3D organization of a eukaryotic cell, with its dynamic organelles, cytoskeletal structures, and distinct protein complexes in their native context, requires a non-invasive imaging technique of high resolution, combined with a method for arresting cellular elements in their momentary functional states. Electron tomography (ET) offers unique potential for 3-D visualization of large pleiomorphic structures. By this technique the 3-D structure of an object is retrieved from a set of 2-D electron micrographs taken at different directions. More precisely, a tilt series is back-projected to generate a virtual structure within the original volume of the specimen. Though we employ a variety of microscopy techniques and biophysical approaches in our research, our major expertise is the applications of cryo-ET to study mammalian cells and organelles.



## REFERENCES

Qi, C., Sorrentino, S., **Medalia, O.** & Korkhov, VM. The structure of a membrane adenylyl cyclase bound to an activated stimulatory G protein. *Science* 364, 389-394 (2019).

Weber, MS., Wojtynek, M. & **Medalia, O.** Cellular and Structural Studies of Eukaryotic Cells by Cryo-Electron Tomography. *Cells* 8, (2019)

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