



BiophysTO Lunchtime Seminar Series

Date

Thursday, Nov 5 2020
12:00 – 1:00 pm

Dr. Anton Zilman

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Biophysics of the Nuclear Pore Complex

Transport between the nucleus and the cytoplasm in eukaryotic cells is maintained and regulated by biomolecular “nanomachines” known as the Nuclear Pore Complexes (NPCs). NPC is a very large macromolecular assembly that contains several hundreds of copies of proteins of ~30 different types. Despite significant differences in the molecular details between different species, the biophysical transport mechanism appears to be universal which makes it amenable to understanding from basic biophysical principles. Novel experimental techniques have started to provide insights into the internal morphology and the dynamics of NPCs, both in vivo and in vitro. Theoretical and computational modeling has been instrumental in interpreting the experimental data. In this talk, I will present the current understanding of the principles of the structural organization and function of the Nuclear Pore Complex and related man-made nano-devices, based on the analysis of in vitro and in vivo experimental data in light of minimal complexity models relying on the statistical physics of molecular assemblies on the nanoscale.

Host: Wilson Zeng

Zoom Link:

<https://us02web.zoom.us/j/89407663380?pwd=OFBMc2lhWVZKbUswQzk3VXNkLzhGdz09>



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