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Publications


Presentations


Cytoskeletal and membrane flows for cell motility and polarization (D. Vavylonis), Talk at Mathematics of the Cell: Integrating Signaling, Transport and Mechanics, Banff International Research Station October 2021

Discrete mechanical model of lamellipodial actin networks (David Rutkowski, Dimitrios Vavylonis). Talk at American Physical Society March Meeting March 2021

Model of dendritic actin network with distributed turnover and structural remodeling (Danielle Holz, Aaron Hall, Dimitrios Vavylonis). Talk at American Physical Society March Meeting March 2021

Coarse-grained simulations of actin polymerization (Aaron Hall, Brandon Horan, Dimitrios Vavylonis). Talk at American Physical Society March Meeting March 2021


Discrete mechanical model of lamellipodial actin networks (David Rutkowski, Dimitrios Vavylonis). Talk at American Physical Society March Meeting March 2021

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Students Graduated

1. Peter Schwarzenberg, Development and Validation of Virtual Mechanical Testing of Bone Fracture Healing, Ph.D. Dissertation (2021)
12. Baiou Shi, Molecular Dynamics Studies on dynamic wetting, droplet rapid contact line advancement and nanosuspension drop self-pinning phenomenon, Ph. D. Dissertation (2017)

**Grants Submitted/Awarded**

- Hannah Dailey (PI), CAREER: Multiscale Mechanical Characterization of Bone Fracture Callus, National Science Foundation (CMMI-1943287)
- Vavylonis Dimitrios (PI) NIH R35GM136372: Modeling mechanisms in cytokinesis, cell polarization and motility (4/1/20-3/31/25)
- Vavylonis Dimitrios (PI) NIH R01GM114201: Theoretical and experimental studies of distributed actin turnover (6/1/16-5/3/21)
- Yue Yu (PI), A Framework for Multiscale/Multiphysics Mathematical Modeling of Cerebral Aneurysm Rupture, National Science Foundation (08/01 /2016-07/31/2020)
- Yue Yu (PI), A Multiphysics Mathematical Framework on Modeling Cerebral Aneurysms, Simons Foundation Collaboration Grant(09/01/2015-08 /31/2017)
- Yue Yu (PI), CAREER: A Local–Nonlocal Coupling Framework for Tissue Damage in Fluid–Structure Interaction, National Science Foundation (09 /01/2018-08/31/2023)