



# ASPEN CENTER FOR PHYSICS

2020 WINTER CONFERENCE

## NEW PHYSICAL MODELS FOR CELL GROWTH

January 5 through 10, 2020

Sunday evening welcome reception

Meetings Monday through Friday evening

In recent years, our quantitative understanding of cellular growth - across all domains of life - has seen a “renaissance”, with a large number of both theoretical and experimental studies coming together to unravel and elucidate a plethora of novel phenomenon. Technological advances in both genetic manipulations, microscopy techniques and data acquisition and analysis have allowed us to generate datasets of unprecedented accuracy and size, providing a fertile ground for mathematical modeling.

Studying specific genes in isolation, via genetic and other types of perturbations, appears to be ill suited for understanding many growth-related problems, likely due to the strong interactions between the large number of cellular components, and interdisciplinary approaches are called for. In such an approach the theory would guide experiments in identifying the key variables, thus bridging the gap between the molecular details and the emergent behavior. Indeed, in many cases simple and universal “growth laws” are discovered, which appear to be robust and often shared across evolutionary divergent organisms.

This conference will bring together scientists pursuing the state-of-the-art in mathematical modeling of cellular growth, aspiring to find broadly applicable mechanisms and answer fundamental questions in biology through the lens of physics and mathematics, developing new and exciting models.

**Application deadline is October 31, 2019**

Please complete your application at:

<http://www.aspenphys.org/physicists/winter/winterapps.html>

Conference Website: <https://amir.seas.harvard.edu/aspen>

### ORGANIZERS:

\*Ariel Amir, Harvard University

Meriem El Karoui, University of Edinburgh

*\*Denotes physicist in charge of diversity*

Proposals for the 2021 Winter Conferences are invited and must be submitted by January 15, 2020

The Aspen Center for Physics is committed to a significant participation of women and under-represented groups in all of its programs.

Aspen Center for Physics  
700 West Gillespie Street  
Aspen, CO 81611

phone: 970.925.2585    email: [acp@aspenphys.org](mailto:acp@aspenphys.org)

