

# 2020 年度 生命科学技術国際卓越講義

*World-leading Innovative Lectures  
in Life Science & Technology  
The University of Tokyo*



## Cellular Organization Through Liquid-Liquid Phase Separation

### Michael Rosen

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**Date:** Saturday 20th, June, 2020

**Time:** 08:00AM ~ 09:00 AM

**Venue:** Zoom (meeting URL will be sent after registering)

**Participants:** Up to 500 participants



Please register by this QR code or clicking the following link

[Registration Form](#) 参加登録フォーム



**Abstract:** Biomolecular condensates are two- and three-dimensional compartments in eukaryotic cells that concentrate specific collections of proteins and nucleic acids without an encapsulating membrane. Many condensates behave as dynamic liquids, and are believed to form through liquid-liquid phase separation (LLPS) driven by interactions between multivalent constituents. While the physical mechanisms that promote and regulate LLPS in vitro and in cells are increasingly well understood, the biochemical functions that arise from organization of macromolecules into these meso-scale assemblies are still mysterious in most cases. In my talk I will discuss condensates that are formed by actin-regulatory signaling molecules. I will explain how the molecules assemble into condensates and how this assembly leads to new biochemical functions. I will also discuss a new direction in the lab focused on understanding how chromatin may be organized by LLPS, and dynamically regulated by various remodeling machineries. These behaviors may contribute to formation of functionally distinct compartments in the eukaryotic nucleus, which are important to processes including gene regulation and DNA repair.

**Organizer:** World-leading Innovative Graduate Study Program for Life Science and Technology

**Cooperation:** Graduate Program for Leaders in Life Innovation, The University of Tokyo

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