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BioSim Talk #5

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September 6th 2024 (Fri)
4.00 – 5.30 pm
Institute for Protein Research
Osaka U. (Suita Campus)
2nd floor conference room (#202)

Integrative Modelling for the Study of Genomic Structure and Function

Eukaryotic genomes are tightly packed into the nucleus in the form of chromatin: a complex of DNA and proteins hierarchically organized starting from the basic unit of the nucleosome, up to loops linking together gene promoters to distant enhancers. This 3d organization supports the regulation of genes, but we still lack a clear understanding of this process at the molecular level. Current computational and in vitro approaches are limited to simple model systems, while the interpretation of in vivo experiments remains a challenge. To move beyond such limitations, I will illustrate a Bayesian integrative approach to create a comprehensive near-atomic-level model of genes based on experimental data. The model can be a starting point for molecular dynamics simulations exploring the physical principles governing the structure and function of genes, from the organization of chromatin fibers to the communication of enhancers and promoters through transcription factor condensation.

Link for online participation via Zoom:
Meeting ID: 828 3416 4957
Passcode: 723870
Please inform us if you will be participating online or joining our slack
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