INTRODUCTION TO CHROMATIN ORGANIZATION

Glossary reading:

<https://www.genome.gov/genetics-glossary/Chromatin>

Watch these videos:

# Chromatin:

<https://www.youtube.com/watch?v=bwVjYxcDQ5I>

# A 3D Map of the Human Genome:

<https://www.youtube.com/watch?v=dES-ozV65u4>

Read the specified sections of following article:

Beagrie RA, Scialdone A, Schueler M, Kraemer DC, Chotalia M, Xie SQ, Barbieri

M, de Santiago I, Lavitas LM, Branco MR, Fraser J, Dostie J, Game L, Dillon N, Edwards PA, Nicodemi M, Pombo A.

Complex multi-enhancer contacts captured by genome architecture mapping.

*Nature*. 2017 Mar 23;**543(7646)**:519-524.

### Estimation of chromosome radial position from GAM data

### Estimation of locus volume from GAM data

### Extended Data Figure 9

The article is available here:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5366070/#!po=5.27638>

Concepts to learn from the videos and the glossary reading:

* What is chromatin and what is its function?
* What is the functional reason for a DNA loop?
* What is the name of the protein that often helps to form DNA loops?
* What are the functions of DNA ‘marks’?
* What is a nuclear subcompartment?
* What is the purpose of genome folding?

Concepts to learn from the article:

* What is “the radial position of a nuclear profile (NP)”? How can it be estimated by using GAM data?
* How can the degree of compaction of a genomic region (a locus) be estimated by using GAM data?

In the next class we will have a blackboard quiz about these concepts. The quiz may include multiple choice, true-false, fill-in-the-blank, and/or matching questions.