

4DN OMICS working group call on April 27, 2020

Attendees:

- Bing Ren
- Feng Yue
- Ian Fingerman
- Minji Kim
- Riccardo Calandrelli
- Sean Hanlon
- Xiaotao Wang
- Yijun Ruan
- Andrea Cosolo
- Miao Yu
- Andy Schroeder
- Sheng Zhong
- Xiaochen Fan
- Sarah Reiff
- Soo Lee

Agenda:

1. Review last month's [minutes and action plan](#).

- Reach out to Yijun's lab to discuss this on the next Omics WG call.
Result: done. A presentation is scheduled today.
- Erez and Sheng will discuss the potential revision to iMARGI write up, for discussion in the next session.

Result: Sheng sent a note to Erez, specifying the scope of [iMARGI](#).

This [iMARGI protocol](#) (see also Wu *et al.*, 2019) is approved by 4DN to analyze the cumulative characteristics of RNA-chromatin interactions. This approval does not include the application of iMARGI to the identification of a specific RNA to a specific genomic sequence, which remains in the investigative research domain of each individual lab.

- Erez and Bing will discuss Methyl-HiC/HiCultite protocols.
No progress
- Update correct combinatorial HiC protocol
Who will do this?
- **DCIC has the updated protocol link.**
Plan to circulate this updated protocol to OMICS
Publication link: <https://www.ncbi.nlm.nih.gov/pubmed/31536770>

2. Presentation on comparison of ChIA-PET/HiCHIP/PLAC-seq (Dr. Xiaotao Wang from Dr. Feng Yue's group)

Summary:

- Hi-C and pulldown-based methods are similar in detecting compartments and TADs
 - pulldown-based methods show stronger TAD corner signals
 - Architectural stripes can be observed in all platforms
 - However, the performance of pulldown methods are dependent on the enriched factor and antibodies used
 - Compared the abilities of these platforms to recover Micro-C and Trac-loops
- Open question: Is there a gold standard to evaluate different platforms?

Action item

1. Miao and Xiaotao will work together to compute QC metric for the ChIA-PET and HiChIP datasets.

References

Wu, W. *et al.* Mapping RNA-chromatin interactions by sequencing with iMARGI. *Nat Protoc* **14**, 3243-3272, doi:10.1038/s41596-019-0229-4 (2019).