

The 4th Workshop on Computational Advances for Single-Cell Omics Data Analysis (CASCODA)

in conjunction with

the 11th International Conference on Computational Advances in Bio and Medical Sciences (ICCABS)

Dec. 16-18, 2021, virtual conference

Workshop Co-Chairs:

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Recent technological advances have enabled high-throughput profiling of genomes, transcriptomes, epigenomes, and proteomes at a resolution of the single cell. These revolutionary single-cell -omics technologies promise to bring unprecedented insights into tissue heterogeneity and unveil subtle regulatory processes that are undetectable by bulk sample analysis. However, fully realizing the potential of single cell technologies requires the development of novel computational and statistical analysis methods capable of handling the massive data sizes and significant levels of technical and biological variability. The goal of the CASCODA workshop is to bring together bioinformaticians, biologists, computer/data scientists, and statisticians to discuss the latest developments in computing infrastructure, mathematical and statistical modeling, algorithms, and visualization methods for single-cell -omics data.

Workshop topics of interest include but are not limited to:

- Bioinformatics workflows for single-cell -omics data analysis
- Cell atlases
- Clustering and cell type inference
- Integration of multiple modalities of single-cell data
- Lineage inference
- Modeling of missing data and imputation
- Normalization and batch effect removal
- Quality control for single-cell sequencing data
- Single-cell phylogenetics
- Single-cell RNA-Seq quantification
- Single-cell spatial reconstruction
- Variant calling and haplotyping
- Visualization of single-cell -omics data

The meeting is by invitation only. If you would like to inquire about the possibility of being invited, please contact the workshop chairs as soon as possible, but no later than **November 30, 2021**. Following the workshop, speakers will be invited to submit extended abstracts for publication in the Springer LNBI post-proceedings volume devoted to ICCABS 2021 and/or full length articles to a special issue of the Journal of Computational Biology.

Workshop Registration Fees:

- Regular Registration (Early): \$200
- Regular Registration (Late): \$250
- Student Registration (Early): \$125
- Student Registration (Late): \$175