

1st Workshop on Advances in Systems Immunology (ASI)

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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The immune system is one of the most complex biological systems in mammals, comprising dozens of cell types that dynamically modulate their internal molecular states and engage in complex intercellular interactions via hundreds of immune receptors and signaling molecules across multiple anatomic locations. Recent advances in high-throughput profiling technologies are driving a shift towards context driven integrative computational models and algorithms to study immune system responses in both health and disease. The goal of the ASI workshop is to bring together a diverse group of researchers - including bioinformaticians, biotechnologists, clinicians, computer and data scientists, immunologists, and statisticians - to discuss the latest computational advances in systems immunology and foster the development of novel multidisciplinary approaches in this field.

Workshop topics of interest include but are not limited to:

- Analysis of high-dimensional flow and mass cytometry data
- Analysis of pooled CRISPR genetic screens of immune cells
- BCR and TCR repertoire analysis
- Computer-aided antibody design
- Design and optimization of molecular and cellular immunotherapies
- Evolutionary immunology
- Immune cell atlases
- Immune cell type/state inference from single-cell -omics data
- Immune cells differentiation and lineage inference
- Inference of intra- and inter-cellular immune regulatory networks
- Integration of multi-omics single cell data
- Modeling of antigen processing, presentation, and recognition
- Modeling and simulation of tumor-immune system interactions
- Modeling microbiome-immune systems interaction
- Vaccine design
- Viral immunology
- **Special session devoted to immune responses to SARS-CoV-2 and COVID-19 vaccines**

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