CALL FOR PAPERS

Immunology has embraced data-driven computational and mathematical approaches to understand the immune system and its disorders and infections. Computational immunology covers mathematical and/or computational methods to study the dynamics of cellular and molecular entities of the immune system. Immunological bioinformatics or immunoinformatics is dedicated to method and tool developments for the analyses of omic-type data in immunology and knowledge inference using statistical inference and machine learning algorithms. Both fields are complementary key drivers of data-driven basic and translational immunology research for the benefit of human and animal health.

This special issue intends to collect contributions from mathematicians, bioinformaticians, computational scientists, and engineers together with experimental immunologists to present and discuss the latest developments in different subareas ranging from modeling and simulation to machine learning predictions and their application to basic and clinical immunology.

Potential topics include, but are not limited to:

- Mathematical/computational modeling integrated with biological and clinical approaches of the following:
  - Immunological ageing
  - Innate immune response
  - Immune response to infectious diseases and vaccine delivery
  - Intracellular signaling
  - Intracellular signalling in context of immune cell differentiation
  - Immune responses including autoimmunity
  - Metabolome of immune response
  - Cellular trafficking in the lymphatic system
  - Immune regulatory gene networks
  - Immune memory and tolerance
  - Microbiota metagenomics and nutrition in immunity
  - Transplantation and alloimmunity
  - Immunopharmacogenomics
  - Immune cell imaging
  - Gene regulatory networks
- Epitope/peptide immunogenicity prediction tools (B cell, T cell, allergies, and immunotherapy)
- Multiscale modeling of the immune system
- Computer-assisted vaccine design
- Data analysis in immunobioinformatics

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