

Invitation to Contribute to the Special Issue on Machine learning for single cell data in *Cytometry, Part A*

On behalf of Editor-in-Chief, Dr. Attila Tárnok, we would like to invite you to submit a manuscript for the Special Issue of *Cytometry, Part A* focused on **Machine learning for single cell data**.

During the past decades, the number of novel technologies to interrogate biological systems at the single-cell level has skyrocketed. Numerous approaches for measuring the proteome, genome, transcriptome and epigenome at the single-cell level have been pioneered, as well as a variety of imaging methods that in addition also resolve spatial resolution. All these methods have one thing in common: they generate large and high-dimensional datasets that require advanced computational modeling tools to highlight and interpret interesting patterns in these data, potentially leading to novel biological insights and hypotheses. Machine learning methods represent a very versatile class of such modeling tools, and current state-of-the-art research in the life sciences increasingly depends on such methods, as they are better able to scale with the current size and dimensionality of data. Machine learning methods are able to learn descriptive or predictive models in a data-driven way, and thus also provide an alternative to look in a more unbiased way at biological data. For this special issue of *Cytometry Part A* we invite scientists to submit their work in one of the following areas:

- Development of machine learning methods for single cell data, including but not limited to flow/mass cytometry, imaging, single cell omics data
- Comparative benchmarking of machine learning techniques for single cell data
- Applications of machine learning to single cell data, such as:
 - Novel dimensionality reduction or visualization techniques
 - Automated cell type identification
 - Computational panel design
 - Methods for data preprocessing, quality control, tools to improve reproducible science
 - Specific biological model systems
 - Clinical applications of machine learning for single cell data

The target submission date is **April 15th, 2019** with a publication date **in February 2020**. All manuscripts will be peer-reviewed, following standard practices of *Cytometry, Part A*.

For more information on *Cytometry, Part A* with regard to author guidelines and publication charges, please, refer to the journal website at <https://onlinelibrary.wiley.com/journal/15524930>. When ready, please submit your manuscript directly at the *Cytometry, Part A* manuscript submission site. Please state in your cover letter that the submission is intended for this Special Issue.

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