Technical Seminar Sponsored by: Cell Analysis Facility
Flow and Imaging
Cytometry Core Lab

Anna C. Belkina MD., Ph.D.

Associate Director of the Flow Cytometry Core Facility and Assistant Professor in the Department of Pathology at Boston University School of Medicine.

"Revealing disease phenotypes with computational analysis of high-dimensional flow cytometry data"

When: **Thursday July 12th**, 2018
11:00 AM- 1:00 PM talk and Q&A
Where: 850 Republican St. @ UW SLU – Orin Smith Auditorium

Abstract:
Advances in both cytometer capabilities and breadth of reagent availability have led to the expansion of individual flow cytometry panels; however, despite this newer ease in generation of high-parameter flow datasets, the proper extraction of results from larger panels is currently bottlenecked due the limitations of available analysis tools that cannot properly analyze such large datasets. Computational analysis is imperative for the proper investigation of high-dimensional flow and mass cytometry datasets. In this seminar, I will discuss several recent developments from the BUSM Flow Core and other sites that enable more efficient and comprehensive computational analysis of large flow cytometry datasets. Specifically, I will present flow and mass cytometry human immunophenotyping data analyzed using our own adaptation of a popular t-SNE algorithm that can accommodate large datasets typical for flow cytometry but beyond reach for the traditional t-SNE implementations. To demonstrate the potency of various newer and adapted computational approaches, I will show an assembly of methods we used to characterize the inhibitory receptor (IR) landscape of various immune subsets in HIV individuals and to propose specific IR phenotypes to be investigated as potential biomarker readouts in HIV and aging.

Anna received her M.D. from Russian State Medical University in Moscow and her Ph.D. degree from Boston University School of Medicine investigating the epigenetic regulation of inflammatory responses driven by bromodomain proteins. Anna's research is focused on the intersection of immunology and computational biology, for her current research efforts include investigating the immune landscape of chronic inflammatory diseases and developing computational techniques to assess high-parameter single cell cytometry data. Anna is an active member of ISAC (International Society for the Advancement of Cytometry) and has been named 2015-2019 ISAC SRL Emerging Leader.

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Questions? Please contact:
Michele Black, Director Cell Analysis Facility
mblack2@uw.edu
206-685-3014