

CARNEGIE MELLON UNIVERSITY BME 2020 FALL SEMINAR SERIES

Single Cell Analysis....A Billion Cells at a Time



PRESENTED BY

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SCHEDULE

Thursday,
October 22, 2020
(10:00 AM-11:00AM)

The analysis of heterogeneous ensembles of rare cells requires single-cell resolution to allow phenotypic and genotypic information to be collected accurately. We developed a new approach for high-throughput cell sorting and profiling, Magnetic Ranking Cytometry, that uses the loading of individual cells with functionalized magnetic nanoparticles as a means to report on biomarker expression at the single cell level. This approach can be used to profile circulating tumor cells in blood and provides a high-information content liquid biopsy in a single measurement. It profiles both protein (Nature Nanotechnology, 2017) and nucleic acid (Nature Chemistry, 2018) analytes at the single cell level. Recently, we have used this approach to perform high-throughput, phenotypic CRISPR screens at the whole genome level (Nature Biomedical Engineering, 2019) and are now using this platform as a tool for therapeutic target discovery.

