

The Single-Cell Analysis Center (SCAC) at UCSF will provide state-of-the-art instrumentation and expertise for the UCSF community to advance the analysis of gene and protein expression at the single-cell level for both basic and translational research. Fluidigm has developed state-of-the-art technology for single-cell transcriptomics and has recently acquired DVS, the developer of the CyTOF Mass



The new CyTOF 2 Mass Cytometer allows analysis of over 40 parameters simultaneously from individual cells.

Cytometer, a powerful tool for the detection of protein expression. Both these technologies allow simultaneous detection of multiple genes or proteins from single cells. UCSF is committed to investing in these technologies and will partner with Fluidigm in finding ways to lower the barriers to use at UCSF. Flow cytometry cell sorters can now perform index sorting, allowing scientists to obtain single-cell phenotypic profiles. They then can take their freshly sorted samples, and immediately begin processing them for genomic analysis as all the equipment



The Aria cell sorter provides an index sorting option allowing single-cell phenotypic profiles to be tied to other downstream single cell applications.



The C1 provides an easy and highly reproducible workflow to process 96 single cells for DNA or RNA analysis.

and expertise are in one centralized location. This provides an opportunity to combine phenotypic and genomic data allowing more in depth analysis of specific cell populations. With the addition of a CyTOF, it complements the flow cytometer analyzers currently available, but significantly increases the number of parameters able to be



The Biomark offers unparalleled throughput for real-time PCR and digital PCR, integrating thermal cycling and fluorescence detection on integrated fluidic circuits.

investigated on limited, hard to obtain samples. UCSF has already invested in Fluidigm technology for single-cell analysis such as the Biomark, and plans to acquire additional technology over the next 6 months, including an additional Fluidigm C1 and UCSF's first CyTOF. We will also be examining other technologies that might benefit researchers in the single cell realm. The Single-Cell Analysis Center will contain cytometry, genomics equipment and the expertise to facilitate research into cell biology at the individual cell level. By bringing together existing Parnassus Flow Cytometry Core equipment, with planned new equipment, a center of excellence will provide all the necessary components for detailed cytometric and genomic analysis of individual cells incorporated into one facility.

For more information, please contact Michael Lee. (Michael.Lee@ucsf.edu)