

## Single Cell Genomics RFA

The GRCF is excited to announce the award of \$25,000 in Core Coins as a funding mechanism to help accelerate investigation and discovery in the area of single cell genomics. Core Coins is a pilot program designed to encourage investigators to access core services and facilities that help to address small but critical gaps in basic, clinical and translational research currently not funded by other sources. Applications for the competitive funds are **due to the GRCF Biorepository & Cell Center no later than June 15, 2016.**

In 2015 the GRCF introduced a single cell genomics service, including RNA-seq, gene expression profiling by qPCR and DNA amplification for whole-genome or targeted (exome or PCR-based analysis). Currently, the GRCF is utilizing Fluidigm's C1 single-cell system (<https://www.fluidigm.com>) to isolate and process up to 96 cells, produce pre-amplified cDNA or amplified genomic DNA for downstream analysis, including sequencing on Illumina platforms. This year the GRCF acquired a 10x Genomics Single-Cell Platform (<http://www.10xgenomics.com>). This system is a high throughput molecular barcoding and analysis suite that delivers cell-by-cell 3' end counting of mRNA transcripts for many tens of thousands of cells per run at a significantly lower fee/cell than the Fluidigm C1. The platform supports a broad range of applications, including cancer-cell transcriptomics and cell-type identification and discovery. Because the platform works with short read sequencers, it integrates easily into the existing GRCF RNAseq workflow. Aside from numbers of cells that can be assayed, the chief distinction between the platforms is that 10X currently only provides sequence at the 3' end of mRNAs while the C1 produces random-primed cDNAs anywhere in the RNA. Further, the well-characterized pipeline and unique software, allows the GRCF to offer analysis for 10X Genomics data.

As part of this RFA, the GRCF will offer the Cores Coins award to a project using either the 10x Genomics Single Cell Platform for the isolation of cells from 4 study groups (~3000 cells per group) along with 3' end RNAseq (~100,000 reads per cell) and genomic analysis **or** the utilization of the Fluidigm C1 for 4 study groups (~300 cells) and RNAseq (~100,000 reads per cell).

The recipient of the Core Coins award will be selected based on project, need, time to completion, agreement to recognize the Core Coins program and the GRCF in any publications generated as a result of the funding and, depending on the stage of research, presentation of results at the annual GRCF research symposium.

**In order to apply**, a one-page statement of research and how awarding of the coins would help bridge gaps currently not funded by other sources, would be required. Preferences will be made for junior faculty lacking full support, data needed to strengthen a grant application, new faculty with specific needs or supporting data needed for publication. Applicants will be reviewed by a GRCF panel and promptly notified of an award and timetable for utilization. [The application should identify the cell type and species.] Please email all applications to Melissa V. Olson, Ph.D. at [mvolson@jhu.edu](mailto:mvolson@jhu.edu).