| Label | Value |
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| **Core Facility Name** | Genetics Research Core Facility (GRCF) |
| **Last Name** | Olson |
| **First Name** | Melissa |
| **Email** | mvolson@jhu.edu |
| **Phone** | 410-955-6327 |
| **Amount of Funding Requested** | $25,000 |
| **Briefly describe the core services you offer:** | The Genetic Resources Core Facility, GRCF, is a service center at the leading edge of technology that includes both a CAP accredited Biorepository & Cell Center and DNA/RNA Services. Our expertise and sophisticated equipment is available to aid Johns Hopkins researchers performing studies in clinical science, cell biology, molecular biology, genetics and translational medicine. The GRCF strives to streamline services by helping in project design, sample collection, blood isolation, cell line establishment, cell line authentication, cryogenic preservation and storage, DNA isolation, oligo and gene synthesis, methylation testing, custom array design and development, both Sanger and next-gen sequencing and, new this year, single cell genomics. Overall, we provide high quality, economical services to the Hopkins community. |
| **What specific services do you plan to offer as part of this RFA?** | In 2015 the GRCF introduced a new service to the center, genomics applications for single cells, 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 Fluidigms C1 single-cell system to isolate and process up to 96 cells, produce pre-amplified cDNA or amplified genomic DNA for downstream analysis, including sequencing on our Illumina platforms. In early spring of 2016, the GRCF will acquire a 10x Genomic Single-Cell Platform before its commercial release later this year. This system is a high throughput molecular barcoding and analysis suite that delivers cell-by-cell 3' counting of mRNA transcripts for many tens of thousands of cells per run at a significantly lower fee per 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.<br><br>As part of this RFA, the GRCF would offer the award on a project basis utilizing the novel 10x Genomic Single Cell Platform for the isolation of cells from 4 treatment groups (a maximal 24,000 cells) and downstream RNAseq (100,000 reads per cell) or the utilization of the new Fluidigm C1 for 4 treatment groups (a maximal 384 cells) and downstream RNAseq (100,000 reads per cell). |
| **How do these services address the goals of the pilot program?** | Awarding of these services to Hopkins investigators would connect investigators to our core facility for equipment and expertise typically unattainable to an individual laboratory, helping to accelerate research. Utilization of the single cell genomics systems offered by the GRCF would generate large amounts of data that can help in deciphering the heterogeneity of cellular populations, discovery of novel populations/ processes of cells or providing supporting material for defining cellular populations. Additionally, because this is a new service to the GRCF core facility, this award would help to familiarize investigators with both novel and our currently offered services. |
| **How would you select recipients to receive core** | A recipient of the Core Coins award would be selected based on project, need, time to completion, agreement to recognize the Core Coins program and the |

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| **services? Please describe the process and criteria you might use.** | 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. |
| **How do you plan to allocate the amounts available to individual investigators?** | The Core Coins award would be divided into projects based on treatment groups, awarded either as a set of 4 (example: control and 3 test groups at $25,000) or two sets of 2 treatment groups (example: control and test group at $12,500 each). Services required beyond the award amount would be considered the responsibility of the awardee. |