

ABRF Research Agenda

Key Studies Planned for 2023

September 2022

The **Association of Biomolecular Resource Facilities (ABRF)** will address ongoing questions about research techniques and methods.

ABRF Research Groups bring together leaders in biomolecular sciences and techniques to attempt to answer questions or address challenges. Over the course of 12-18 months, these Groups conduct original research that often results in new findings, publications, and presentations at ABRF and elsewhere.

practices in processing samples and generating a strong scientific core. These new RG projects will produce impactful research that ABRF Research Groups can use to help scientists to make informed decisions that will benefit the field. Many thanks to ABRF corporate partners for their support of Research Groups.”

Kevin Knudtson
ABRF President

ABRF Research Groups benefit from generous support from corporate partners to contribute to these important projects, through in-kind donations of kits, reagents, and other research materials, or through direct financial support for shipping samples or select travel for Group members to collaborate in person. ABRF also provides modest funding to support shipping costs and other related study expenses.

For 2023, the ABRF research agenda includes:

Validation of New Materials on the Market for CRISPR-mediated Knock-ins

Genome Editing Research Group (GERG)

This study will compare the efficiency of ‘protein tag’ knock-ins. This will be accomplished by comparing the materials using client projects across multiple laboratories. Each participating lab will use materials generated as part of a project requested by a core facility client, for a custom edited cell line. For example, one of the participating laboratories in this study may use this method to test targeting a HALO tag fusion to the C-terminus of a gene of interest. On-target integration can be assessed by PCR analysis across the homology arm junctions.

Prepare total human leukocytes for long-term storage following protocols outlined by 10x Genomics (Fixed RNA Profiling), Parse Biosciences (Evercode WT) and Honeycomb Bio (HIVE)

Distribute frozen, preserved samples to sites for QC and NGS library preparation using assigned workflow

QC final libraries and ship to a single site for sequencing

Partner with ABRF's Genomics Bioinformatics Research Group (GBIRG) for downstream data analysis, interpretation, and manuscript preparation

“New methods and assay improvements for single cell preservation and storage are changing the way research is conducted and our thorough investigation into the performance of each will provide a valuable resource to assist scientists and core facility managers to determine the most appropriate single cell preservation workflow given their sample collection logistics and laboratory infrastructure constraints.”

Jessica Podnar

University of Texas

Chair, ABRF DNA Sequencing Research Group

*Testing the Accuracy of Drop Delay in Sorters
with Automated Drop Delay Calibration*

Flow Cytometry Research Group (FCRG)

This study seeks to:

develop a protocol to test beads of various diameters on sorters with automated drop delay calibration compared to sorters with manual drop delay calibration;

using beads of specific diameters, sort beads to test the accuracy of sorting and sort yield when using automated drop delay calibration compared to manual calibration;

determine the accuracy of sorting and sort yield as it relates to the

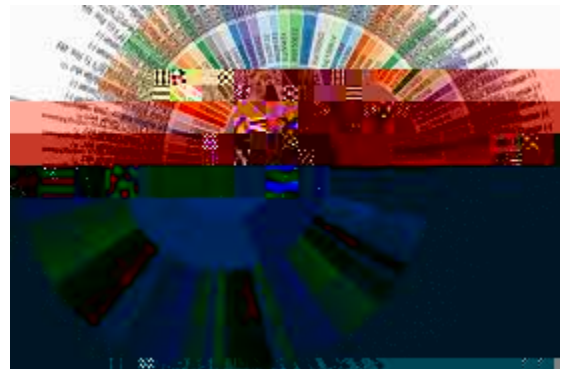
“Successful cell sorting is a fine balance between sample preparation and cytometer operation. As a critical part of the process, determining the purity of the sort by calibration of the time it takes for the cell of interest to get from detection by the laser to the drop, otherwise known as drop delay, is fundamental. The data collected in this study will help serve as a guide for sort operators to determine whether drop delay is set up accurately, and whether a sorter is set to the best conditions for sort accuracy, purity, and recovery.”

Christiane Hassel
Indiana University-Bloomington

Jane Srivastava
Gladstone Industries
Co- Chairs, Flow Cytometry Research Group

*Bioinformatics Assessment of Fixed/Frozen
Single-Cell RNA-Seq Data across Three
Platforms*

**Genomics Bioinformatics Research Group
(GBIRG/DSRG Collaboration)**



“This study will inform providers of single-cell RNA-Seq services about the performance of new fresh, frozen, and fixed cell partitioning approaches in the context of a well characterized biological material. As part of this study, our research group will also deploy a shared computational environment that will facilitate collaboration between members at different institutions. This project is a collaboration between DSRG and GBIRG and we are excited for the opportunity to foster interactions with our counterparts in the DSRG.”

Shaun Polson
University of Delaware
Chair, GBIRG

ABRF's 2023 Research Group Studies are made possible through the generous support of these ABRF Corporate Partners:



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ABRF welcomes additional Corporate partners to support this valuable work. With additional resources, each study has the potential to be expanded to include greater data collection and analysis.

Visit the [ABRF web site](#) for more information on ABRF Research Groups. To support this valuable work, contact ABRF Executive Director [Ken Schoppmann](#) to discuss how your group can be involved.