High-Throughput Processing to Preserve Viable Cells: A Precision Medicine Initiative® Cohort Program Workshop

August 22, 2016
6011 Executive Blvd., Bethesda, MD

Agenda

8:00–8:30 a.m. Introduction/Overview
- *Introduction of PMI Cohort Program Vision and Structure*: Bill Riley, NIH, Acting Deputy Director of the PMI Cohort Program
- *Motivation for Workshop: Opportunities and Challenges Associated with Preserving Viable Cells*
  - Steve Thibodeau, Mayo Clinic, Co-chair
  - Allison Hubel, Univ. of Minn., Co-chair

8:30–10:00 a.m. Use Cases and Requirements (Moderator: Allison Hubel)
- James Eberwine (Univ. of Penn.): Single Cell Biology: Need for Viable and Nonviable Cell Data
- Paul Robson (JAX): Transcriptome Cytometry
- John Tsang (NIH/NIAID): Monitoring the Human Immune System and Beyond: Use Cases from Systems Immunology

10:00–10:15 a.m. Break

10:15–11:00 a.m. Best Practices, Standards for Pre-Analytical Handling of Liquid Biospecimens (Moderator: Steve Thibodeau)
- Helen Moore (NCI): Guiding Biospecimen Collection with Evidence-Based Best Practices
- Allison Hubel (Univ. of Minn.): The Influence of the Pre-Analytical Phase on Post Thaw Viability of Cells

11:00 a.m.–12:30 p.m. Non-Automated Methods and Protocols (Moderator: Allison Hubel)
- David McKenna (Univ. of Minn.): Cryopreservation of Cells for Clinical Use
- Sudakshina Ghosh (ATCC): EBV Immortalization of Whole Blood and Blood Products
- Rohit Gupta (Stanford): Improving Methodology to Standardize the Isolation and Cryopreservation of Viable PBMCs from Whole Blood
12:30–1:30 p.m.   Working Lunch: Strategies for Maximizing the Impact of the PMI Cohort Program Biobank

1:30–3:00 p.m.   Automated Methods and Protocols for Processing Whole Blood (Moderator: Steve Thibodeau)
- Heiko Zimmermann (Fraunhofer-Institut für Biomedizinische Technik): *Automated Liquid Nitrogen-Based Biobanking for Improved Sample and Storage Stability*
- Wim Ammerlaan (Integrated BioBank of Luxembourg): *Automated PBMC Isolation: The IBBL Experience*
- Robin Felder (University of Virginia): *Automated 3D Cell Culture for High-Throughput Screening, Cell Based Assays, and Tissue Engineering*

- **Panel Discussion**
  - Kathi Shea (BioStorage Technologies)
  - Krystyna Hohenauer (PerkinElmer)
  - Simon Fogarty (Tecan Group)
  - Kristina Klette (Hamilton Company)
  - Heiko Zimmerman (Fraunhofer-Institut für Biomedizinische Technik)
  - Wim Ammerlaan (Integrated BioBank of Luxembourg)
  - Robin Felder (University of Virginia)

3:00–3:15 p.m.   Break

3:15–4:00 p.m.   Continued Discussion of Automated Methods

4:00–4:30 p.m.   Lessons Learned and Future Steps