

MTBI² Division Capabilities Snapshot

Biorepository Division

Email: MTBI2-biorepository@usuhs.edu

The **Biorepository Division** receives, processes, catalogs, stores, and ensures the integrity of biospecimens for MTBI² and collaborative studies. The Biorepository Division also provides samples to partners to support well-designed research protocols.

Biorepository Capabilities

- Blood collection and aliquot design consultation
- Specimen receipt, processing, inventory, and storage
- Maintenance of donated samples collected through both internal MTBI² studies and collaborative protocols
- Specimen retrieval for analysis
- Blood kit production
- Vial-level specimen inventory system

Bioanalysis Division

Email: MTBI2-bioanalysis@usuhs.edu

The **Bioanalysis Division** utilizes state-of-the-art, innovative technology to provide quantification of proteomics and transcriptomics biomarkers related to TBI and brain health research. The Bioanalysis Division also supports new methodology development for novel biomarker discovery.

Bioanalysis Capabilities

- Ultra-sensitive neurological and immunological protein detection and quantification: **Quanterix SIMOA HD-X Analyzer, Quanterix SP-X, Meso Scale Discovery**
- Statistical analysis for **SomaScan Proteomics** platform to support SomaScan data analyses (in collaboration with SomaLogic and the MTBI² Informatics Division)
- Transcriptome profiling: **NanoString nCounter Pro** (NanoString)
- Nanoparticle size, concentration, and colocalization analyses: **ZetaView QUATT** (Particle Matrix)
- Pathway, network, and hierarchical clustering analysis on omics data: **Ingenuity Pathway Analyses**
- Biomarker analyses on atypical sample types, such as extracellular vesicle and sweat
- Data reporting and visualization support

Clinical Operations Division

Email: MTBI2-cod@usuhs.edu

The **Clinical Operations Division** provides a full range of clinical trial support services to investigators and study teams from project proposal to study close-out, including oversight and guidance of clinical trials sponsored by and collaborating with MTBI².

Clinical Operations Capabilities

- Project management
- Clinical trial design/development, coordination, and feasibility assessment
- Site identification and qualification, site management, and trial start-up and close-out activities
- Recruitment/referral via the TBI Research Opportunities and Outreach for Participation in Studies (TROOPS) registry
- Regulatory affair management and operation
- Risk-based monitoring
- Quality and safety management and audit preparation

Informatics Division

Email: MTBI2-informatics@usuhs.edu

The **Informatics Division** offers a variety of resources and support services that accommodate all stages of a study's life cycle and a broad range of data types. The Informatics Division also ensures that each study aligns with current industry standards for data harmonization, curation, and sharing.

Informatics Capabilities

- Systematized data collection and management protocol creation and execution.
- Data capture, storage, and retrieval that meet DoD security requirements for PII and PHI
- Data analysis support, including statistical analysis, machine learning, modeling, and simulation
- Development of mobile apps, databases, and infrastructure
- Computational services, including big data related to proteomics and bioanalysis
- Electronic and offline data collection
- Management of data repository and FITBIR, including access and data sharing
- Specimen tracking and management
- Data auditing, randomization, blinding/unblinding, and reporting