GC-CPEH PIPELINE (Promoting Impact on Precision EHS by Leveraging Instrumentation, NextGen and Emerging technologies) Facility Core: The PIPELINE Facility Core, directed by Drs. Chris Amos and Cristian Coarfa leverages well-established resources that exist across the parent organizations of the GC-CPEH to bring NextGen technologies to members. The PIPELINE Facility Core Navigators serves members with support at all stages of a project, including overall design, execution, data acquisition, and data integration and interpretation.

Table 1. PIPELINE Facility Core Resources

Capabilities	Resources / Navigators	Example Capabilities
Genomics, Epigenomics and Transcriptomics Resource	**Genomic and RNA Profiling** Navigator: Kraushaar	Sample Quality Control; Next-Generation Sequencing: RNA-Seq, ChIP-Seq, Whole-Genome Sequencing, Whole-Genome Bisulfite Sequencing, Targeted Sequencing, Sequencing Only; NanoString Gene Expression Assays
	Human Genetics Center Navigator: Morrison	Illumina Whole-Genome and Consortium Arrays; Custom Mid- to High-Plex Genotyping; Custom Low- to Mid-Plex Genotyping; Epigenetics: Methylation Analysis; Illumina Laboratory Best Practices and Quality Control; Genomic Data Analysis and Quality Control; Sample Handling and Storage
	Next-Generation Sequencing Navigator: Widen	ChIP-Seq; De Novo Assembly; Variant Identification; SNPs; Transcriptome (reference-guided or de novo); miRNA and small ncRNA Sequencing Quantitative - RNA-Seq Expression Analysis; Exome Sequencing (Cancer or Custom Panels)
	Single-Cell Genomics Navigator: Chen	Single-Cell RNA Profiling; Single-Cell ATAC-seq; Smartseq RNA profiling
	New in YR5 **UTMB Center for Single Cell Genomics** Navigator: McCaffrey	10X Genomics Chromium workflows: Single-cell gene expression on fixed and fresh tissues, Single-cell epigenomics (ATAC), Single-cell multi-omics (gene expression + ATAC); 10X Visum and Xenium workflows: Single-cell spatial transcriptomics (via 10X Visium), Single-cell in-Situ transcriptomics (via 10X Xenium)
Proteomics Resource	**Mass Spectrometry Proteomics** Navigator: Malovannaya	Consultation and Project design; 365 Proteome Profiling; Protein Complex Identification by IP/MS; Post-Translational Modification (PTM) Analysis; “Per-Band” Sequencing; Data Analysis
	Mass Spectrometry Proteomics Navigator: Russell	Intact Molecular Weight Measurement; Protein Identification from Gel Bands; Protein Identification from Complex Mixtures; Identification of Post-Translational Modifications; SILAC, iTRAQ, and Label-Free Quantification of Peptides and Proteins; Small-Molecule Quantification; Metabolomics
Metabolomics Resource	**Metabolomics Core** Navigator: Putluri	Sample Preparation and Quality Control; Targeted Steady-State Analysis; Unbiased Steady-State Metabolomics; Lipidomics; Metabolomic Flux Analysis
Microbiome and Metagenomics Resource	**Microbiome and Metagenomics** Navigator: Hoffman	DNA and RNA Extraction; Targeted Amplicon Sequencing; Untargeted Virome Amplicon Sequencing; Metagenome and Complete Genome Sequencing; Qualitative PCR; Data Analysis
MultiOmic Data Analysis Resource	**MultiOmics Data Analysis** Navigator: Coarfa	Consultation; Primary Analysis of Data by Different Tech Platforms; Integrative MultiOmics Analysis; Data Deposition

Cells-to-Tissues-to-Organisms Resource	**Integrated Microscopy** Navigator: Mancini	Light Microscopy; Super-Resolution Microscopy (SIM and STORM); Live Imaging (ultrafast and long-term); Multi-Dimensional Spatial Analysis; High Throughput Microscopy; Image Analytics
	Protein and Monoclonal Antibody Production Navigator: TBD	Recombinant Protein Expression; Protein and MAb Purification; Hybridoma/Monoclonal Antibody Production; Peptide Synthesis (third-party fee-for-service); Biochemical Assays (third-party fee-for-service)
	Mouse Metabolism and Phenotyping Navigator: Ward	Imaging; Blood Serum/Plasma Analysis; Cardiopulmonary; Metabolism; Cellular Metabolism; Glucose Metabolism; Lipid Metabolism; Whole-Body Metabolism; Other Tests; Challenges; Surgical and Anesthesia
	Inhalation Toxicology Core **Navigator: Ameredes**	Inhalation/Exposure Laboratories, including Gaseous and Aerosol Toxicants; Allergens; Topical Dermal and Ocular Exposures; Intravitreal and Systemic Exposures; Tobacco and e-Cigarette Smoking/Vaping Inhalation; Hazardous Chemical-Approved Exposure Facility; Airway/Lung Physiology Function Assessment; Ocular and Skin Response Assessment; Cell Culture Exposure Facilities;; Fixed and Live-Cell Imaging; microCT-PET-SPEC, Molecular Optical Imaging (IVIS) and Optical Coherence Tomography (OCT)