

## Gulf Coast Center for Precision Environmental Health (GC-CPEH) Facility Cores

GC-CPEH Facility Cores (PIPELINE and IHSFC) provide members priority access to world-class expertise and cutting-edge technologies supporting precision environmental health research. The resources include in-house services, consultation with our navigators, or placing "3<sup>rd</sup> party fee-for-service" orders that could not be processed in-house due to temporary lab-shutdown. **When you use the services via GC-CPEH Facility core**, the GC-CPEH will subsidize your costs up to 25% (Associate Professor and above) to 50 % (Assistant Professor or below).

**PIPELINE Facility Core:** The PIPELINE Facility Core, directed by Drs. Chris Amos and Cristian Coarfa, aims to advance precision EHS research by providing access to "omics" expertise and technologies.

PIPELINE Resource	Example Services/Capabilities
CellOmics: <a href="#">Integrated Microscopy Core</a> Navigator: Dr. Michael Mancini	<ul style="list-style-type: none"> <li>- Light Microscopy</li> <li>- Super-resolution Microscopy (SIM and STORM)</li> <li>- Live Imaging (ultrafast and long-term)</li> <li>- Multi-dimensional Spatial Analysis</li> <li>- High Throughput Microscopy</li> <li>- Image Analytics</li> </ul>
Genomics, Epigenomics, and Transcriptomics <a href="#">Genomic and RNA Profiling:</a> Navigator: Dr. Daniel Kraushaar	<ul style="list-style-type: none"> <li>- Sample Quality Control</li> <li>- NGS: RNA-Seq, ChIP-Seq, Whole Genome Sequencing, Whole Genome Bisulfite Sequencing, Targeted Sequencing, Sequencing only</li> <li>- NanoString Gene Expression Assays</li> </ul>
Genomics, Epigenomics, and Transcriptomics <a href="#">UTHealth Human Genetics Center</a> Navigator: Dr. Alanna Morrison	<ul style="list-style-type: none"> <li>- Illumina Whole Genome and Consortium Arrays</li> <li>- Custom Mid to High-Plex Genotyping</li> <li>- Custom Low to Mid-Plex Genotyping</li> <li>- Epigenetics: Methylation Analysis</li> <li>- Illumina Laboratory Best Practices and Quality Control</li> <li>- Genomic Data Analysis and Quality Control</li> <li>- Sample Handling and Storage</li> </ul>
Genomics, Epigenomics, and Transcriptomics <a href="#">Next Generation Sequencing, UTMB</a> Navigator: Dr. Steve Widen	<ul style="list-style-type: none"> <li>- ChIP-Seq</li> <li>- De Novo Assembly</li> <li>- Variant Identification</li> <li>- SNPs</li> <li>- Transcriptome (reference-guided or de novo)</li> <li>- miRNA and small ncRNA Sequencing</li> <li>- Quantitative - RNA-Seq Expression Analysis</li> <li>- Exome Sequencing (Cancer or Custom Panels)</li> </ul>
<a href="#">Inhalation UTMB Toxicology Core (ITC), UTMB</a>  Navigator: Dr. Bill Ameredes	<ul style="list-style-type: none"> <li>- Inhalation/Exposure Laboratories including gaseous and aerosol toxicants; allergens; topical dermal and ocular exposures; intravitreal and systemic exposures</li> <li>- Tobacco and e-Cigarette Smoking/Vaping Inhalation</li> <li>- Hazardous Chemical-approved Exposure Facility</li> <li>- Airway/Lung Physiology Function Assessment</li> <li>- Ocular and Skin Response Assessment</li> <li>- Cell Culture Exposure Facilities</li> <li>- Integration with UTMB Imaging Network for lung and eye toxic responses; fixed and live-cell imaging; microCT-PET-SPEC, molecular optical imaging (IVIS) and Optical Coherence Tomography (OCT)</li> </ul>
<a href="#">Mass Spectrometry Proteomics</a>  Navigator: Dr. Anna Malovannaya	<ul style="list-style-type: none"> <li>- Consultation and Project design</li> <li>- 365 Proteome Profiling</li> <li>- Protein Complex Identification by IP/MS</li> <li>- Post-Translational Modification (PTM) Analysis</li> <li>- "Per-Band" Sequencing</li> <li>- Data Analysis</li> </ul>

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<p><a href="#">Metabolomics</a></p> <p>Navigator: Dr. Nagireddy Putluri</p>	<ul style="list-style-type: none"> <li>- Sample Preparation and Quality Control</li> <li>- Targeted Steady-State Analysis</li> <li>- Unbiased Steady-State Metabolomics</li> <li>- Lipidomics</li> <li>- Metabolomic Flux Analysis</li> </ul>
<p><a href="#">Microbiome and Metagenomics</a></p> <p>Navigator: Dr. Kristi Hoffman</p>	<ul style="list-style-type: none"> <li>- DNA and RNA Extraction</li> <li>- Targeted Amplicon Sequencing</li> <li>- Untargeted Virome Amplicon Sequencing Metagenome and Complete Genome Sequencing</li> <li>- Qualitative PCR</li> <li>- Data Analysis</li> </ul>
<p><a href="#">Mouse Metabolism and Phenotyping</a></p> <p>Navigator: Dr. Christopher Ward</p>	<ul style="list-style-type: none"> <li>- Imaging</li> <li>- Blood Serum/Plasma Analysis</li> <li>- Cardiopulmonary</li> <li>- Metabolism</li> <li>- Cellular Metabolism</li> <li>- Glucose Metabolism</li> <li>- Lipid Metabolism</li> <li>- Whole Body Metabolism</li> <li>- Other Tests</li> <li>- Challenges</li> <li>- Surgical and Anesthesia</li> <li>- Core Assistance</li> </ul>
<p><a href="#">MultiOmics Data Analysis</a></p> <p>Navigator: Dr. Cristian Coarfa</p>	<ul style="list-style-type: none"> <li>- Consultation</li> <li>- Primary Analysis of Data by Different Tech Platforms</li> <li>- Integrative MultiOmics Analysis</li> <li>- Data Deposition</li> </ul>
<p><a href="#">Mass Spectrometry Proteomics, UTMB</a></p> <p>Navigator: Dr. Bill Russell</p>	<ul style="list-style-type: none"> <li>- Intact molecular weight measurement</li> <li>- Protein identification from gel bands</li> <li>- Protein identification from complex mixtures</li> <li>- Identification of post-translational modifications</li> <li>- SILAC, iTRAQ, and label-free quantification of peptides and proteins</li> <li>- Small molecule quantification</li> <li>- Metabolomics</li> </ul>
<p><a href="#">Protein and Monoclonal Antibody Production</a></p> <p>Navigator: Kurt Christensen</p>	<ul style="list-style-type: none"> <li>- Consultation</li> <li>- Recombinant Protein Expression</li> <li>- Protein and MAb Purification</li> <li>- Hybridoma / Monoclonal Antibody Production</li> <li>- Peptide Synthesis (3<sup>rd</sup>-party fee-for-service)</li> <li>- Biochemical Assays (3<sup>rd</sup>-party fee-for-service)</li> </ul>
<p><a href="#">Single Cell Genomics</a></p> <p>Navigator: Dr. Rui Chen</p>	<ul style="list-style-type: none"> <li>- Single Cell RNA Profiling</li> <li>- Single Cell ATAC-seq</li> <li>- Smartseq RNA profiling</li> </ul>