

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 "3rd 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 Core: The PIPELINE 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 Navigator: Dr. Michael Mancini	<ul style="list-style-type: none"> - Light microscopy - Super-resolution microscopy (SIM and STORM) - Live imaging (ultrafast and long-term) - Multi-dimensional spatial analysis - High throughput microscopy - Image analytics
Genomics, Epigenomics, and Transcriptomics Genomic and RNA Profiling: Navigator: Dr. Daniel Kraushaar	<ul style="list-style-type: none"> - Sample Quality Control - NGS: RNA-Seq, ChIP-Seq, Whole genome sequencing, Whole genome bisulfite sequencing, Targeted Sequencing, Sequencing only - NanoString Gene Expression Assays
Genomics, Epigenomics, and Transcriptomics UTHealth Human Genetics Center Navigator: Dr. Alanna Morrison	<ul style="list-style-type: none"> - 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
Genomics, Epigenomics, and Transcriptomics Next Generation Sequencing Navigator: Dr. Steve Widen	<ul style="list-style-type: none"> - 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)
Metabolomics Navigator: Dr. Nagireddy Putluri	<ul style="list-style-type: none"> - Sample Preparation and Quality Control - Targeted Steady-State Analysis - Unbiased Steady-State Metabolomics - Lipidomics - Metabolomic Flux Analysis
Microbiome and Metagenomics Navigator: Dr. Kristi Hoffman	<ul style="list-style-type: none"> - DNA and RNA Extraction - Targeted Amplicon Sequencing - Untargeted Virome Amplicon Sequencing - Metagenome and Complete Genome Sequencing - Qualitative PCR - Data Analysis
MultiOmics Data Analysis Navigator: Dr. Cristian Coarfa	<ul style="list-style-type: none"> - Consultation - Primary Analysis of Data by Different Tech Platforms - Integrative MultiOmics Analysis - Data Deposition
Proteomics Navigator: Dr. Bill Russell	<ul style="list-style-type: none"> - Mass Spectrometry-Based Discovery - Label-free "365" Proteome Profiling - Affinity Proteomics - Antibody-Based Targeted Proteomics - MS-based Targeted Proteomics

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[Protein and Monoclonal Antibody Production](#)

Navigator: Kurt Christensen

- Consultation
- Recombinant Protein Expression
- Protein and MAb Purification
- Hybridoma / Monoclonal Antibody Production
- Peptide Synthesis (3rd-party fee-for-service)
- Biochemical Assays (3rd-party fee-for-service)

[Single Cell Genomics](#)

Navigator: Dr. Rui Chen

- Single Cell RNA Profiling
- Single Cell ATAC-seq

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Integrated Health Sciences Facility Core (IHSFC): The goal of the IHSFC, directed by Drs. Elaine Symanski and Philip Lupo, is to provide access to expertise and capabilities to foster translational studies (basic sciences into clinical and population studies) and “reverse translation,” back to the community.

IHSFC Component	Example Services/Capabilities
<p>Population Sciences</p> <p>Navigators: Drs. Philip Lupo and Michael Scheurer</p>	<ul style="list-style-type: none"> - IRB Protocol Development - Questionnaire and Database Development - Epidemiologic Data Collection, Management, and Analysis - Quality Control and Assurance for Population-Based Studies
<p>Clinical Sciences</p> <p>Navigators: Drs. George Delclos and Winnie Hamilton</p>	<ul style="list-style-type: none"> - Planning, Designing and Conducting Clinical Studies
<p>Exposure Assessment</p> <p>Navigators: Drs. Elaine Symanski and Inkyu Han</p>	<ul style="list-style-type: none"> - Environmental Sampling Strategies and field staff training - Measurement of Toxicants/Metabolites in Environmental, Personal, or Biological Samples - Technologies for Displaying and Analyzing Geospatial Exposure Data - Air Pollution monitoring using Samplers and Sensors - Disaster Research Response Environmental Health Study Design - Citizen Science
<p>Biomarkers</p> <p>Navigator: Dr. Lawrence Sowers</p>	<ul style="list-style-type: none"> - Analysis of Peptides and Small Molecules - Development of Biomarkers of Exposure
<p>Community Engagement</p> <p>Navigator: Dr. Abi Oluyomi</p>	<ul style="list-style-type: none"> - Community-based Participatory Research Approaches - GIS (geographic information system mapping)