Translational Technologies Resources (TTR)

TTR at CWRU

- **Bioinformatics and Biostatistics Core**
  This core can provide services on typical data which are focused on large scale information datasets (a.k.a. *omics* data) such as generated by high-throughput technologies from the broad area of genome sequencing, polymorphism genotyping (e.g. Single Nucleotide (SNP) and Copy Number (CNP) variations, LOH, ...) gene regulation (e.g. mRNA and miRNA microarray expression data, mass spectrometry-based spectra, LCMS, DIGE, etc...), and metabolomics.
  URL: [http://proteomics.case.edu/bioinformatics.html](http://proteomics.case.edu/bioinformatics.html)
  Contacts: Jean-Eudes Dazard, PhD; jean-eudes.dazard@case.edu

- **Center for Proteomics and Bioinformatics**
  Services include analysis of protein and gene expression, protein and gene modifications, and protein interactions, analysis of DNA and protein sequences, protein interaction networks, linkage and association studies for simple and complex traits, and gene and protein expression profiles, structure determination, the combination of computational and experimental structural biology approaches, and developing and maintaining infrastructure for macromolecular structure determination.
  URL: [http://proteomics.case.edu/](http://proteomics.case.edu/)
  Contact: Janna Kiselar, PhD; janna.kiselar@case.edu

- **DNA Sequencing Core**
  This core provides DNA sequencing and genotyping capabilities. "Next-generation" Illumina sequencing projects are performed for analysis of transcriptomes and genomes. Both whole-genome and custom-designed SNP genotyping projects can also be handled by the Core. Sanger DNA sequencing service is also provided.
  Contact: Simone Edelheit; simone.wilson@case.edu

- **Genome and Transcriptome Sequencing Core**
  Services include "Next Generation Sequencing" on the Roche 454 (GS FLX) and the Illumina platform (GAIIx and HiScan), study design support, bioinformatics analysis, library construction for both Illumina and 454 sequencing projects, RNA and DNA purification, poly A+ selection, Targeted Capture, Exome sequencing, rRNA depletion, and bioanalyzer analysis of RNA or DNA. Also offered are Illumina gene expression and genotyping services and DNA Sanger sequencing. For custom services or services not listed, please inquire.
  URL: [http://www.rnadvaseq.org](http://www.rnadvaseq.org)
  Contact: Tim Nilsen, PhD; twn@case.edu

- **Pluripotent Stem Cell Facility**
  Services include derivation of human induced pluripotent stem cell lines, derivation of mouse embryonic stem cell lines, training in pluripotent stem cell culture, and access to validated pluripotent stem cell reagents including MEFs.
  URL: [http://pscf.case.edu](http://pscf.case.edu)
  Contact: Paul Tesar, PhD; paul.tesar@case.edu
• **Transgenic and Targeting Core**  
Services include the creation of transgenic mice, knockout mice (null mutations, knock-ins, targeted point mutations, humanized genes, conditional knockouts) and chimeric mice, providing re-derivation, cryopreservation services and the establishment of embryonic stem cell lines.  
**URL:** [http://ko.cwru.edu](http://ko.cwru.edu)  
**Contacts:**  
- Ronald Conlon, PhD; rac14@case.edu  
- Rachel Mann, PhD; Rachel.mann@case.edu

**TTR at the Cleveland Clinic**  
**Cell Services**  
Services for clinical/translational research include mycoplasma testing, custom media and solution preparation, endotoxin testing and EBV transformation of human peripheral blood cells.  
**URL:** [http://www.lerner.ccf.org/services/cell](http://www.lerner.ccf.org/services/cell)  
**Contact:** Carmel Burns; burnsc@ccf.org

• **Flow Cytometry**  
The Flow Cytometry Core offers FACS acquisition and analysis, staining for apoptosis and DNA cell cycle, cell sorting, and consultation for experimental design, interpretation and troubleshooting. The core’s Ariall cell sorter is contained within a biological safety cabinet to allow sorting and collection of live cells from patient samples.  
**URL:** [http://www.lerner.ccf.org/services/flow](http://www.lerner.ccf.org/services/flow)  
**Contact:** Catherine Shemo; shemoc@ccf.org

• **Genomics**  
The Cleveland Clinic Genomics Core provides access to State-of-the-Art genomics capabilities: Deep Sequencing, Capillary Sequencing, Genotyping and Micro-arrays (Whole Genome Gene Expression, Genotyping and Methylation).  
**URL:** [http://www.lerner.ccf.org/services/gc](http://www.lerner.ccf.org/services/gc)  
**Contact:** E. Janet Hager, PhD; hagerj@ccf.org

• **Hybridoma**  
Services include development of monoclonal cell lines, polyclonal antibodies in rabbits, and production of high-concentration, serum-free monoclonals from existing cell lines, hybridoma cell line maintenance, and antibody purification.  
**URL:** [http://www.lerner.ccf.org/services/hybridoma](http://www.lerner.ccf.org/services/hybridoma)  
**Contact:** Earl Poptic; poptice@ccf.org

• **Imaging**  
The Imaging Core provides a wide range of consultation and advanced microscopic resources to assist investigators in preparing specimens and producing high-resolution images. Core personnel work with investigators from the conception of a research idea to the post-acquisition image processing and analysis. Services include histology (paraffin or frozen sections, IHC, conventional stains); electron microscopy (SEM & TEM); fluorescence microscopy and digital image analysis; and laser capture micro-dissection.  
**URL:** [http://www.lerner.ccf.org/services/imaging](http://www.lerner.ccf.org/services/imaging)  
**Contact:** Judith A. Drazba, PhD; drazbaj@ccf.org
• **Laboratory Diagnostics**
The Laboratory Diagnostics Core offers investigators a large menu of automated clinical chemistry assays, ELISA based testing, hematology and phlebotomy services. The LDC has maintained accreditation with the College of American Pathologists and CLIA for more than ten years. The Core has been a CDC Lipid Standardization Laboratory since 2001. The laboratory test menu includes assays for both human and animal samples.
**URL:** [http://www.lerner.ccf.org/services/ldc/](http://www.lerner.ccf.org/services/ldc/)
**Contact:** Alan Pratt; pratta@ccf.org

• **Mass Spectrometry**
The focus of this core is quantification of molecules in complex matrices and structural characterization of small compounds. The core provides guidance on development of analytical methods for detection and quantification of biomarkers in plasma, tissue and other biological materials, as well as fractionation strategies of biological fluids for marker analysis. Subsequent analysis of fractions is done by tandem mass spectrometry to detect and quantify specific biomarkers (typically < 5kDa MW)
**URL:** [http://www.lerner.ccf.org/services/ms2/](http://www.lerner.ccf.org/services/ms2/)
**Contact:** Stanley Hazen, MD, PhD; hazens@ccf.org

• **Molecular Biotechnology**
Services provided include peptide synthesis, peptide modification, purification and quality analysis, analysis of macromolecular interactions in real time using the Biacore 3000, N-terminal protein sequencing, and CD spectroscopy.
**URL:** [http://www.lerner.ccf.org/services/molecbiotech](http://www.lerner.ccf.org/services/molecbiotech)
**Contact:** Satya Yadav, PhD; yadavs@ccf.org

• **Proteomics**
The Proteomics Core uses tandem mass spectrometry methods for the sequencing and identification of proteins in electrophoretic gels. Services: 2D electrophoresis mapping and mass spectrometric protein and post-translational identification and quantitation.
**URL:** [http://www.lerner.ccf.org/services/mass_spec](http://www.lerner.ccf.org/services/mass_spec)
**Contact:** Belinda Willard, PhD; willarb@ccf.org

• **Small Molecule Screening**
The SMSC provides access to high throughput screening technology (HTS), as well as to the expertise and reagents necessary for screening libraries of small molecules to identify biologically active compounds. The SMSC can provide help with the adjustment of readout systems for both cell-based and biochemical assays and establishment of screening conditions based on a pilot small-scale screening. If successful, the established system is used for a full-scale library screening in 96 well format followed by generation of the database with the results. The core also provides access to a growing collection of shRNA constructs in lentiviral vectors.
**URL:** [http://www.lerner.ccf.org/services/smsc](http://www.lerner.ccf.org/services/smsc)
**Contact:** Earl Poptic; poptice@ccf.org
TTR at the Case Comprehensive Cancer Center

- **Center for Imaging Research**
  This core provides a range of imaging services including routine imaging services that are performed by facility staff; collaborative developmental imaging studies where more intense pilot studies are performed with the guidance of imaging faculty to obtain preliminary data; and necessary training for researchers to perform imaging experiments independently.
  
  **URL:** [http://cancer.case.edu/sharedresources/imaging/](http://cancer.case.edu/sharedresources/imaging/)
  
  **Contact:** Christopher Flask PhD; chris.flask@case.edu

- **Comprehensive Cancer Center Cytometry Core**
  Services focus on flow and image cytometry and cell sorting instrumentation, expertise, training and consultation.
  
  **URL:** [http://cancer.case.edu/sharedresources/cytometry/](http://cancer.case.edu/sharedresources/cytometry/)
  
  **Contact:** James Jacobberger, PhD; james.jacobberger@case.edu

- **Gene Expression and Genotyping Core Facility**
  This core facilitates implementation of high throughput genetic technologies for translational research.
  
  **URL:** [http://cancer.case.edu/sharedresources/arrays/](http://cancer.case.edu/sharedresources/arrays/)
  
  **Contacts:**
  - Martina Veigl PhD; Martina.Veigl@case.edu
  - Debora Poruban; Debora.Poruban@case.edu

- **Hematopoietic Stem Cell Core**
  This core serves as a resource for procurement and processing of human hematopoietic cells derived from human blood, bone marrow, and umbilical cords.
  
  **URL:** [http://cancer.case.edu/sharedresources/stemcell](http://cancer.case.edu/sharedresources/stemcell)
  
  **Contact:** David N. Wald, MD, PhD; dnw@case.edu

- **High Throughput Sequencing**
  The core houses and operates a Solexa sequencer purchased through the Howard Hughes Medical Institute for the laboratory of Dr. Sandy Markowitz to support efforts in cancer genetics. Researchers can utilize this resource to examine many facets of genetic alterations.
  
  **URL:** [http://cancer.case.edu/sharedresources/sequencing/](http://cancer.case.edu/sharedresources/sequencing/)
  
  **Contact:** Simone Edelheit; Simone.Wilson@case.edu

- **Pharmacology**
  The core services include pharmacokinetic expertise for investigator-initiated early phase studies with planned PK analyses; sample procurement schedules for pharmacokinetic assays given anticipated or known PK profiles of investigational agents; design and development of analytical methods; adoption and validation of established analytical procedures; quantitative measurement of drugs, metabolites, and other small molecules; and pharmacokinetic data analysis.
  
  **URL:** [http://cancer.case.edu/sharedresources/cancerpharm](http://cancer.case.edu/sharedresources/cancerpharm)
  
  **Contact:** Yan Xu, PhD; yan.xu@case.edu
- **Tissue Procurement and Histology (TPH)**
  This core facility supports researchers by acquiring, preserving, and distributing high quality human tissues and providing priority histology, immunohistochemistry, and tissue microarray services for both human and animal tissues.
  **URL:** [http://cancer.case.edu/sharedresources/tissue](http://cancer.case.edu/sharedresources/tissue)
  **Contact:** Gregory T. MacLennan, MD; gregory.maclennan@UHhospitals.org

- **Translational Research Core (TRC)**
  This core enables and assists researchers whose studies use clinical samples from patients enrolled in clinical trials. The services include procuring, logging, processing, storing and shipping research samples as per instructions specific to a protocol; sample processing for multi-parametric flow cytometry and protein isolation, Western blotting, telomerase assays and ELISA assays; assisting in preparation of methods sections and budgets for LOIs and protocols, as well as submitting data and reimbursement forms, as per CTEP-sponsored Translational Research Initiative (TRI) stipulations; providing well-trained laboratory team to ensure proper handling, tracking, data management, delivery and analyses of the critical research samples.
  **URL:** [http://cancer.case.edu/sharedresources/translational](http://cancer.case.edu/sharedresources/translational)
  **Contact:** Paul Hartman, MS; phh@case.edu