

The DF/HCC Core Facilities are central or “shared” laboratories that provide members critical services to advance their research. Each of the cores is capable of performing a specific set of experimental functions that enable DF/HCC investigators to perform experiments faster and more accurately. The core facilities are a cornerstone of the DF/HCC, and promote cross-institutional collaboration and the effective translation of discoveries into novel approaches to cancer research.

Core Facilities

Jerome Ritz, MD

Associate Director, Core Facilities

Edward Giovannucci, MD, MPH, ScD

Deputy Director, Core Facilities

Biostatistics

Director: Paul Catalano, ScD,

Assistant Director: Rebecca Gelman, PhD

For more information: (617) 632-2441

The Biostatistics Core provides statistical expertise for the planning, conduct, analysis, and reporting of clinical trials, epidemiologic and population based studies, experiments in the biology of cancer, including genomic experiments and laboratory and animal studies, and translational research studies with combined measurements on clinical and biological parameters. This includes consultation on all clinical protocols, and education in the areas of study design, electronic data capture, case report form design, and statistical methods.

Cancer Pharmacology

Director: Jeffrey Supko, PhD

For more information: (617) 724-1970

The Cancer Pharmacology Core provides the necessary expertise and resources to design and undertake pharmacokinetic studies in phase I and II clinical trials, and preclinical investigations. Services include the implementation and validation of previously developed analytical methods to quantify drugs and their metabolites in biological fluids, and modification or development of new assays. The core also offers comprehensive analysis of pharmacokinetic data, including the estimation of pharmacokinetic parameters and identifying their relationship to pathophysiological variables and pharmacodynamic effects.

Cancer Proteomics

Director: Towia Libermann, PhD

Assistant Director: John Asara, PhD

For more information: (617) 735-5200

The Cancer Proteomics Core provides high sensitivity, resolution, and throughput proteomics methods with a focus on proteomic approaches to translational research based on the analysis of patient materials such as blood, urine, and tumor tissue extracts. Services include biomarker discovery, protein identification, protein-protein interactions, post-translational modifications, and isotope labeling based protein quantification.

Cell Manipulation

Executive Director: Jerome Ritz, MD

Director: Linda Kelley, PhD

Assistant Medical Director: Grace Kao, MD

For more information: (617) 632-2251

The Cell Manipulation Core assists members in developing new cell-based therapies for cancer, and supports clinical research studies designed to evaluate the safety and efficacy of these novel treatments. All cell manufacturing procedures are performed in environmentally controlled conditions according to current Good Manufacturing Practices for cell and tissue processing. Services include the processing of hematopoietic stem cells for autologous or allogeneic transplantation, generation of tumor vaccines using genetic or culture mediated modification of tumor cells, and preparation of immune cell populations for adoptive cellular therapy.

Collaborative RNAi

Director: Stephanie Mohr, PhD

For more information: (617) 432-5626

The Collaborative RNAi Core brings together a number of local experts, resources, and centers working in the field of RNAi to help researchers design, perform, and analyze the results of RNAi screens relevant to cancer study. Services include advice on cell-based screen assays and appropriate screening approaches; access to several assay read-out instruments (including for high-throughput imaging); and access to RNAi reagent sets for knockdown in mouse, human, or *Drosophila* cells.

Community Practice

Director: Larissa Nekhlyudov, MD, MPH

For more information: (617) 509-9983

The Community Practice Core (CPC) offers DF/HCC investigators access to a clinical laboratory of over ten million patients within Harvard Vanguard Medical Associates, Harvard Pilgrim Health Care, and the HMO Cancer Research Network. These large, diverse populations are ideal for studies in basic, clinical and population sciences; addressing topics in cancer screening, prevention, treatment and quality of care; as well as dissemination. The CPC provides DF/HCC investigators access to comprehensive computerized patient and provider data including medical records, pathology and radiology reports, tumor registry data, and offers support to members developing research proposals within these community practice settings.

Cytogenetics

Director: Charles Lee, PhD

Associate Director: Cynthia Morton, PhD

For more information: (617) 278-0082

The Cytogenetics Core provides insight into regions of the genome that are pathogenic in various neoplasms, leading to an understanding of the molecular pathways that play a role in the biology of cancer. Services provided for human and other model organisms include conventional chromosome banded karyotyping and a comprehensive menu of molecular cytogenetic methods such as fluorescence in situ hybridization (FISH) and microarray-based comparative genomic hybridization (aCGH).

DNA Resource

Director: Wade Harper, PhD

For more information: (617) 432-6590

The DNA Resource Core meets the growing need for DNA-related services, such as small- and large-scale DNA sequencing projects, including preparation of DNA from glycerol stocks in advance of sequencing, a plasmid repository and distribution service, fully automated low-temperature plasmid storage, and plasma annotation and informatics support to optimize utilization of the core.

Health Communication

Director: Vish Viswanath, PhD

Assistant Director: Catherine Coleman

For more information: (617) 632-5078

The Health Communication Core provides evidence-based communication expertise in the areas of intervention research, recruitment, and retention of patients for research studies, and cancer prevention, control, and treatment. Services include focus group development, design, writing, editing, web site development and design, consultation on materials, marketing plans, project naming, tailoring of materials, and facilitation of cancer prevention seminars and workshops. The core also offers state-of-the-art technology—such as software, printers, and a digital press—for producing professional-quality materials.

Learn More

For general information about the DF/HCC Core Facilities, visit the web site:

www.dfhcc.harvard.edu/cores

High-Throughput Polymorphism Detection

Directors: Immaculata De Vivo, MPH PhD, David Kwiatkowski, MD
For more information: (617) 355-9005

The High-Throughput Polymorphism Detection Core provides services to members conducting molecular analyses of germline and somatic DNA collected as part of a wide range of cancer-focused investigations. This core provides high-throughput assays of specific gene mutations and single nucleotide polymorphisms (SNPs) in the many situations where previously defined specific nucleotide alterations are of interest. Specific services offered by this core include: DNA extraction, DNA sample plating, whole genome amplification, and genotyping using the Taqman, Sequenom, Illumina, and Affymetrix technologies.

Monoclonal Antibody

Director: James DeCaprio, MD
Technical Director: Ed Greenfield, PhD
For more information: (617) 632-2209

The Monoclonal Antibody Core (MAC) produces novel monoclonal antibodies for use in basic research, drug discovery, and clinical applications including diagnosis, surrogate markers for disease status, response to therapy, and drug toxicity. Services include cloning and scale-up of immunization antigens to purification of the resulting antibodies. Researchers can choose to have all phases of antibody production conducted by the core or perform particular steps in their own lab.

Pathology Specimen Locator

Director: Frank Kuo, MD, PhD
For more information: (617) 732-5792

The Pathology Specimen Locator Core provides a web-based network of distributed, searchable databases, which contain de-identified, coded, pathologic information on post-diagnostic, excess human materials (including frozen or paraffin-embedded tissues). Members may quickly retrieve aggregated tissue availability information to determine the feasibility of a proposed study and following IRB approval, discover, review, and request materials from suitable, de-identified, and coded cases. The standardized specimen core dataset includes age, gender, anatomic location, tissue type, and diagnoses.

Rodent Histopathology

Director: Peter Howley, MD, MMS
For more information: (617) 432-2409

The Rodent Histopathology Core provides technical, professional, and educational services on rodent pathology. The core offers high quality mouse dissection, tissue processing, histological slide preparation from paraffin embedded and frozen tissues, and expert interpretation of paraffin-embedded, hematoxylin, and eosin stained slides.

Specialized Histopathology Services

Directors: Jon Aster, MD, PhD, Anat Stemmer-Rachamimov, MD
For more information:
(617) 278-0080 (Longood Area)
(617) 726-5510 (MGH)

The Specialized Histopathology Core provides professional and technical research pathology services to members working in diverse organisms, including man, non-human primates, rodents, and zebrafish. The core performs routine histology and special histochemical stains and also assists in experimental design and the development, application, and interpretation of biomarker tests and their results. Specific services include immunohistochemistry, in situ hybridization, and laser capture microdissection.

Tissue Microarray and Imaging

Director: Sabina Signoretti, MD
For more information: (617) 525-7437

The Tissue Microarray and Imaging Core is dedicated to the construction and evaluation of high quality tissue microarrays for cancer research. Core services include construction of standard and custom tissue microarrays, preparation of slides, image acquisition and analysis as well as consultation, and high throughput isolation of DNA and RNA from formalin-fixed paraffin-embedded tissue cores.

Tumor Imaging Metrics

Directors: Gordon Harris, PhD, Annick Van den Abbeele, MD
For more information: (617) 643-0295

The Tumor Imaging Metrics Core provides standardized, consistent, longitudinal radiological measurements to evaluate therapeutic response for clinical trials. Services include accurate, consistent, and timely analysis of imaging studies. Mea-

surements available include linear, volumetric measures for CT or MR scans, and Standardized Uptake Value (SUV) for PET scans. Results of analyses are offered on a password-protected secure web-based report. This core also provides an independent service with verifiable measurement of treatment response for patients enrolled in trials, and serves as a centralized, computerized resource to facilitate efficient internal or external auditing.

Vector

Director: Richard Mulligan, PhD
For more information: (617) 432-6465

The Vector Core provides a centralized service for the production and characterization of gene transfer reagents. Core services include the rapid case construction and characterization of plasmid DNA constructs and the production of both research and clinical (GMP) grade viral vectors useful for the genetic modification of mammalian cells, and expertise in the design and construction of vectors useful for obtaining the tissue-specific expression of inserted genes, and vectors in which expression can be regulated by exogenous means.

Developing Cores

Preclinical Murine Pharmacogenetics

Director: Caterina Nardella, PhD
For more information: (617) 735-2147

The goal of the Preclinical Murine Pharmacogenetics facility is to provide expertise in the design and implementation of preclinical trials to test new drugs, drug combinations, and novel therapeutic modalities in mouse models of human diseases.

Recombinant Protein Expression and Purification

Director: David Sachs, MD
Assistant Director: Christene Huang, PhD
Technical Director: Zhirui Wang, PhD
For more information: (617) 643-1957

The Recombinant Protein Expression and Purification Core provides a cost-effective resource for expression and purification of recombinant proteins necessary for pre-clinical studies as well as for basic mechanistic studies by immunologists and cancer biologists. Recombinant proteins may be manufactured for various applications based on investigator needs.

About DF/HCC

Dana-Farber/Harvard Cancer Center is the largest National Cancer Institute-designated Comprehensive Cancer Center in the nation. Founded in 1998, DF/HCC is an inter-institutional research enterprise that unites all of the cancer research efforts of the Harvard-affiliated community. The primary goal of the Cancer Center is to encourage and promote collaborative interactions and translational research that will lead to new approaches to cancer prevention, diagnosis, and treatment.