Cedars Sinai

Cancer Research Imaging Services

Accelerate your cancer research with state-of-the-art imaging techniques

Imaging Biomarkers

- Anatomy
  - Organ size and shape
  - Tumor morphology
  - Vasculature
- Tissue properties
  - Density
  - Elasticity
  - Diffusion
  - Magnetic (T1, T2, T2*, etc.)
- Tissue fat and iron content
- Function and physiology
  - Perfusion and flow
  - Inflammation
  - Fibrosis
- Cancer-specific biomarkers

Services

- Imaging of human, large animal and small animal
- Assisted use by experienced technical staff, including licensed imaging technologists and RN
- Advanced image acquisition, analysis and post-processing support
- Custom peptide synthesis and radiolabeling
- Advanced MR spectroscopy and analysis techniques
- Umbrella protocols and pilot funding for new studies
- Research PACS for online data access

Our goal is to make translational imaging technology available to the research community.

Instrumentation Highlights

Siemens MAGNETOM Vida 3TMRI
The MAGNETOM Vida is an all-new 3-Tesla whole-body, 70-cm wide bore imaging system equipped with one of strongest gradients (maximum gradient strength 60 mT/m, slew rate 200 mT/m/s) currently available. Advanced software packages and multimodality image fusion are available for neuro, cardiac and body applications.

Contact for more info: *Yibin Xie, PhD*
yibin.xie@cshs.org

Siemens Biograph mMR PET/MR
Biograph mMR is a hybrid PET and MRI system by Siemens and encompasses within it a 3T cardiovascular MRI scanner equipped with TIM (total imaging matrix) technology and high-performance gradient system, and LSO crystals (4 × 4 × 20-mm element) with high sensitivity (13.2 cps/kBq) for simultaneous acquisition.

Contact for more info: *Damini Dey, PhD*
damini.dey@cshs.org

Bruker BioSpec 9.4T Small Animal MRI
The Bruker BioSpec 9.4 T/20 cm actively shielded horizontal bore MR system is suitable for in vivo imaging and spectroscopy investigations of small animals.

Contact for more info: *Shawn Wagner, PhD*
shawn.wagner@cshs.org

Scanco vivaCT 40 Micro-CT
The vivaCT high-resolution computed tomography (micro-CT) is a nondestructive method to image complex 3D structures (i.e., nanoparticle imaging of tumors).

Contact for more info: *Wafa Tawackoli, PhD*
wafa.tawackoli@csmc.edu

Custom Peptide Synthesis and Labeling
This system is custom designed and built in-house to allow flexible peptide synthesis and labeling with fluorescence tags and/or radioisotopes.

Contact for more info: *Yi Zhang, PhD*
yi.zhang@cshs.org

Unified Shim-RF Coils (UNIC)
UNIC are new-generation MRI coils developed in-house that combine shimming and RF receiving functions. It allows local shimming to drastically improve image quality and diagnostic accuracy of brain, breast and abdomen MRI. It effectively reduces suboptimal fat suppression, distortion, signal loss, and other B0-related artifacts in diffusion-weighted imaging (DWI) and MR spectroscopic imaging (MRSI) at 3T.

Contact for more info: *Hui Han, PhD*
hui.han@cshs.org

^{13}C HyperE Hyperpolarization Device
Emerging technique for greatly enhancing the magnetic resonance signal used for acquiring MRIs. Allows for the injection of a prepared probe for monitoring molecular and metabolic processes. This equipment is available for research collaborations.

Contact for more info: *Shawn Wagner, PhD*
shawn.wagner@cshs.org

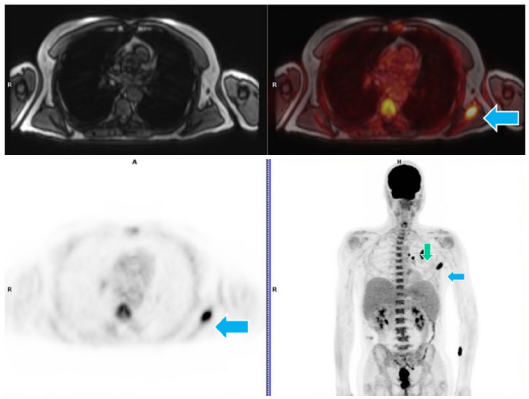
Cryofluorescent Tomography (CFT)
The Emit Imaging Xerra provides a method for 3D fluorescent imaging of whole rodents or tissues. Multi-fluorescent imaging probes from the UV to near-infrared can be imaged after OCT embedding through serial slicing and reconstructed into 3D volumes for molecular analysis. This is recently acquired core equipment.

Contact for more info: *Shawn Wagner, PhD*
shawn.wagner@cshs.org

Technique Showcases

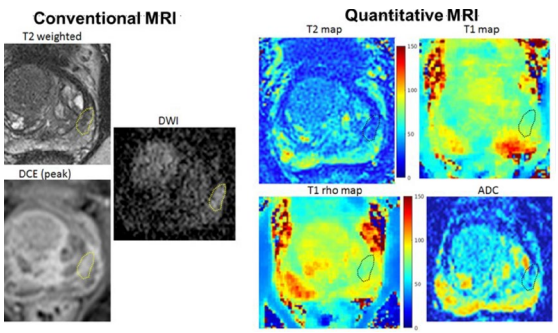
^{18}F-FDG PET/MR for cancer imaging

Detecting lung cancer and metastasis with PET/MR



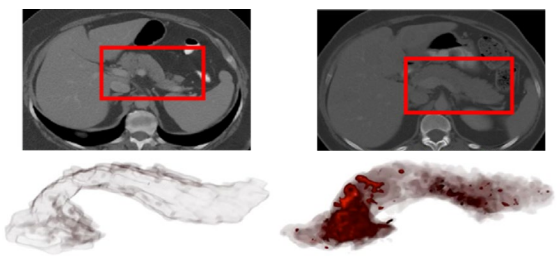
Multiparametric quantitative MRI for tissue characterization

Mapping prostate cancer with T1, T2, T1rho, and ADC maps



Radiomics and AI for image analysis

Predicting early pancreatic cancer with radiomics



Funding Opportunities

BIRI Seed Grant

We offer limited seed grants for Cedars-Sinai researchers needing assistance collecting pilot data for the purpose of grant applications. Approved projects are given free imaging time (including technical assistance).

More info: imagingcore@csmc.edu

CTSI Core Vouchers

Cedars-Sinai is a partner in the UCLA Clinical and Translational Sciences Institute (CTSI), an academic clinical-community partnership designed to accelerate scientific discoveries and clinical breakthroughs. CTSI awards vouchers worth up to $10,000.

More info:
ctsi.ucla.edu/researcher-resources/pages/cores

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