

## Services and Operation

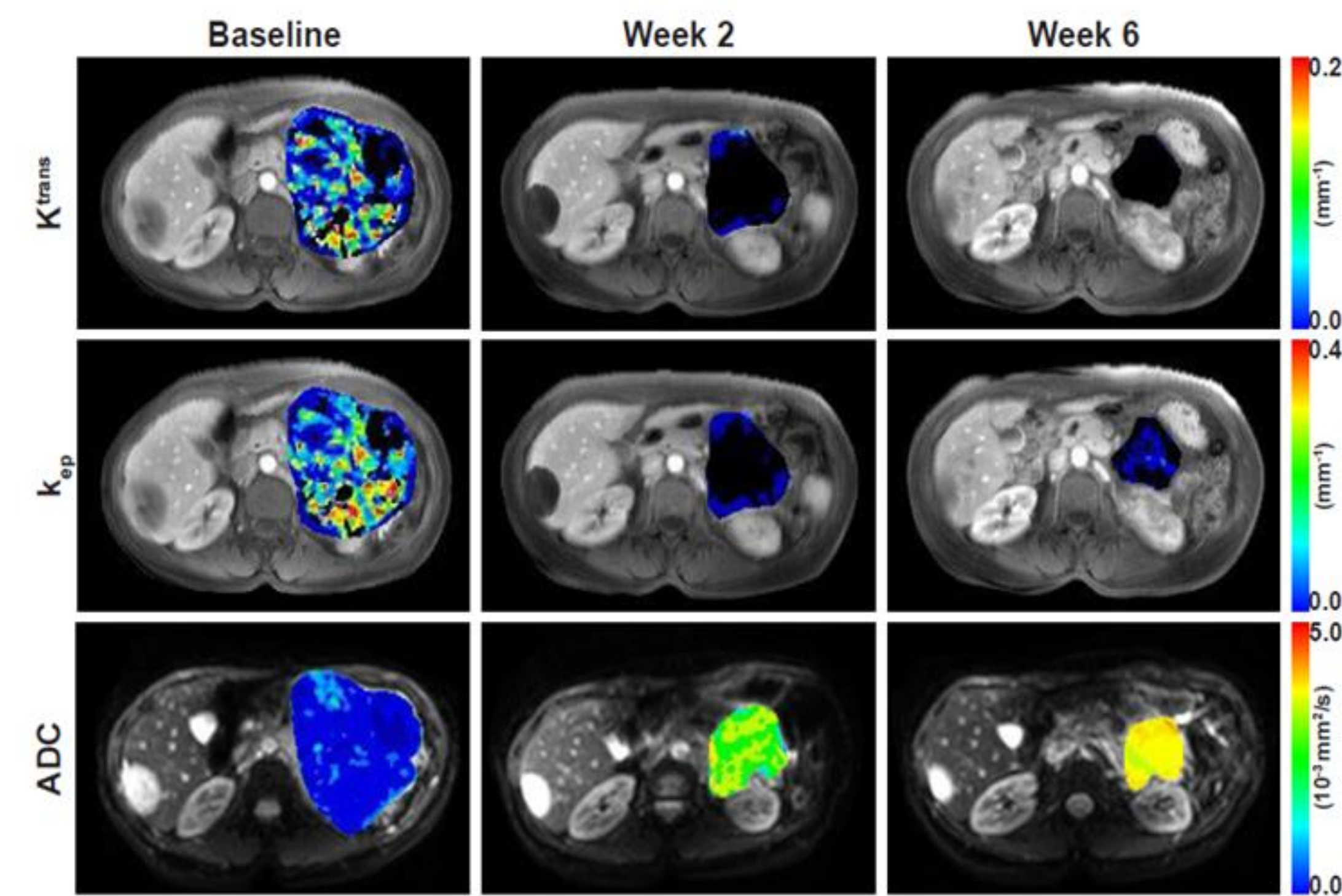
### GOALS:

- Perform standardized protocol review
- Provide state-of-the-art image acquisition
- Perform standardized tumor metrics quantification and response assessment
- Develop and implement new analysis tools and techniques

### EXAMPLES OF TUMOR METRICS REPORTS:

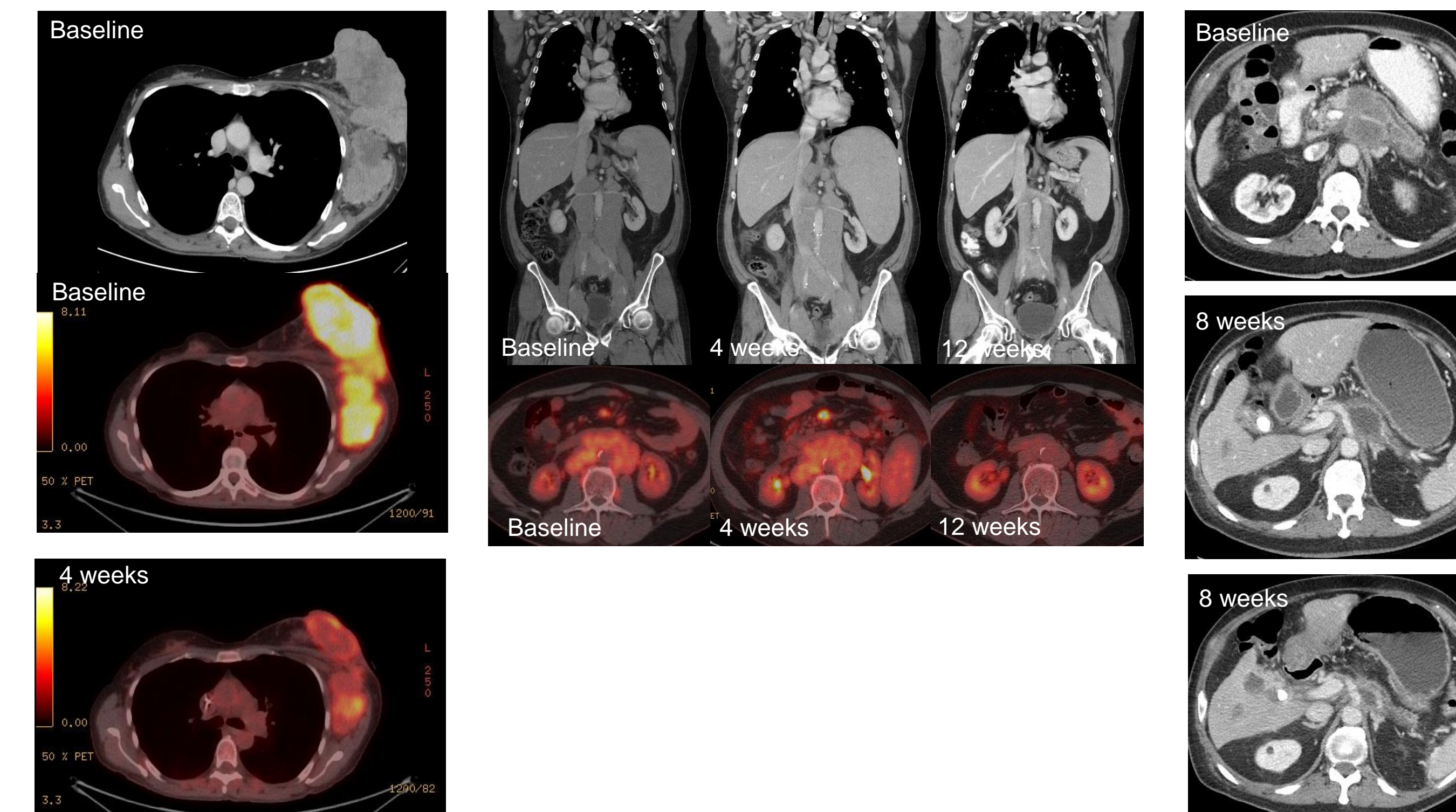


### EXAMPLE: Advanced Imaging Biomarkers



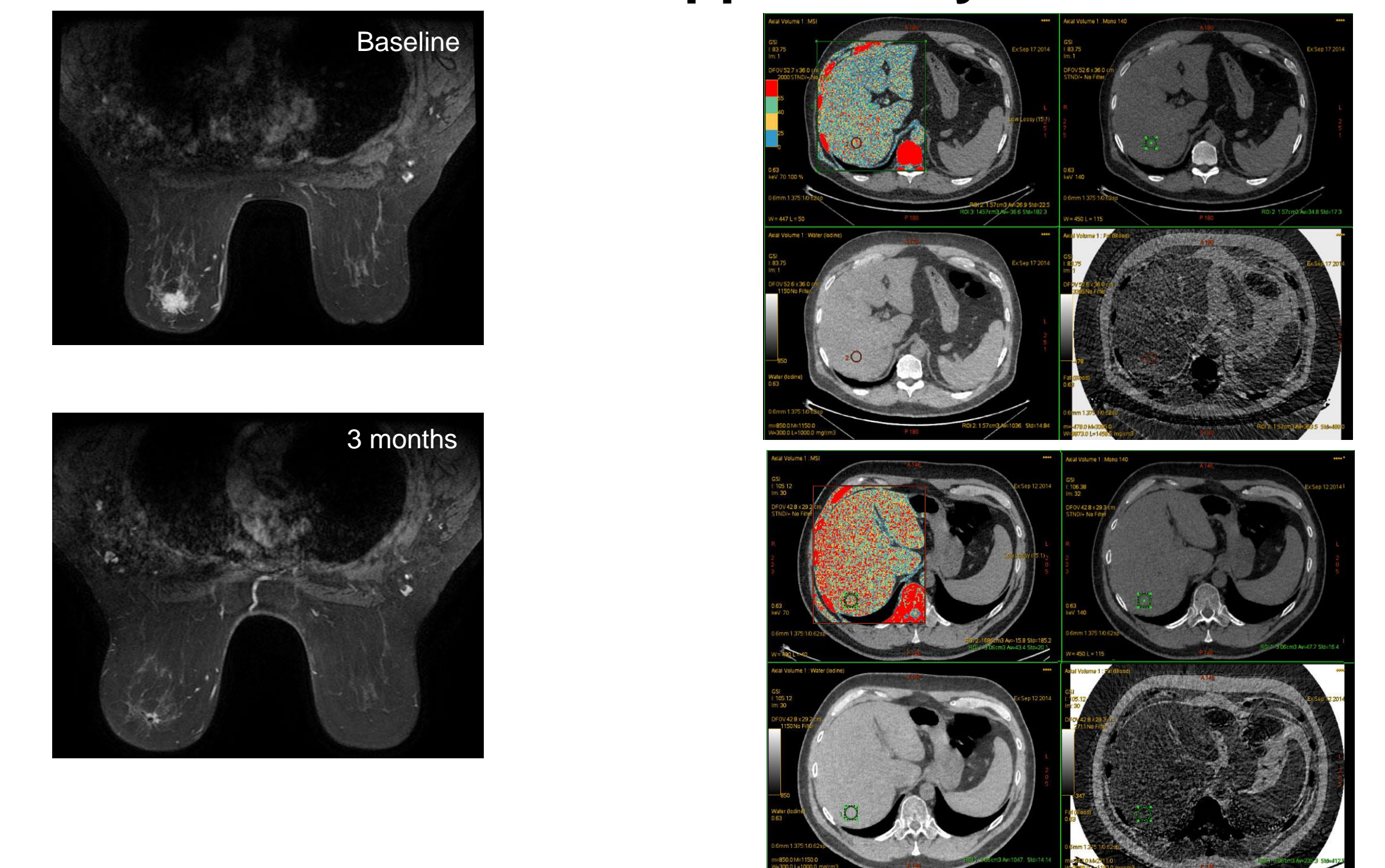
Patient with gastrointestinal stromal tumor being treated with sunitinib on an investigator initiated clinical trial (UAB 0855, J. Posey MD- ET). Color maps of  $k_{trans}$ ,  $k_{ep}$  and apparent diffusion coefficient (ADC) demonstrate whole tumor early therapeutic and six week response. Imaging Biomarker post processing performed by CCC member H. Kim PhD (ET).

### EXAMPLES: Standard Clinical Trials supported by HISF



Different patients with breast cancer (left) participating in UAB 1367 (C. Vakilav MD- ET), lymphoma (center) participating in UAB 1481 (A. Forero MD- ET) and pancreas ductal adenocarcinoma (right) participating in UAB 1480 (J. Posey MD- ET). All show favorable response on surveillance imaging, whether anatomic, physiologic, or both.

### EXAMPLES: Cooperative Group and Investigator Initiated Trials supported by HISF

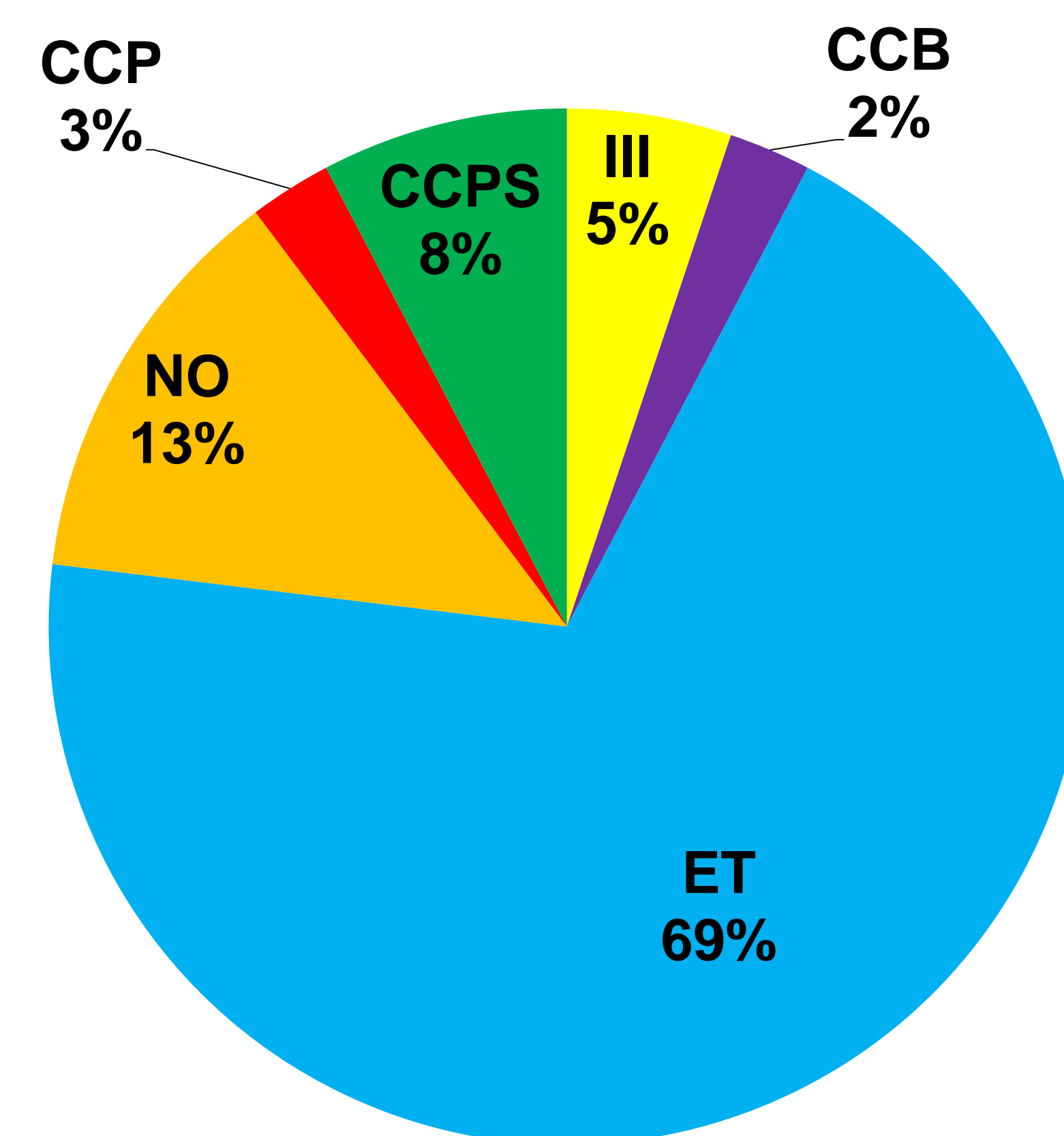


Left: 52 year old woman with breast cancer participating in I Spy II/ACRIN 6698 (A. Forero MD- ET and H. Umphrey MD- ET, Institutional PIs), with favorable response on 3 month surveillance MRI. Right: Two different men demonstrate different levels of intrahepatic fat on color maps (upper left corner each grid) and material density quantitative images produced with dual energy CT imaging in an investigator initiated study evaluating men at risk for esophageal disorders (J. Posey MD- ET).

## Rationale and Value-Added

- Effective, timely support of imaging services for clinical trials
- Development of novel approaches to response assessment
- Protocol reviews and FAP assistance
- Identify non-routine imaging techniques and ensure protocol specific requirements are met
- Tumor metrics reports generated by study-dedicated expert reader longitudinally throughout entire trial
- Web based tracking of protocols for Radiology personnel to provide service

## Programmatic Usage

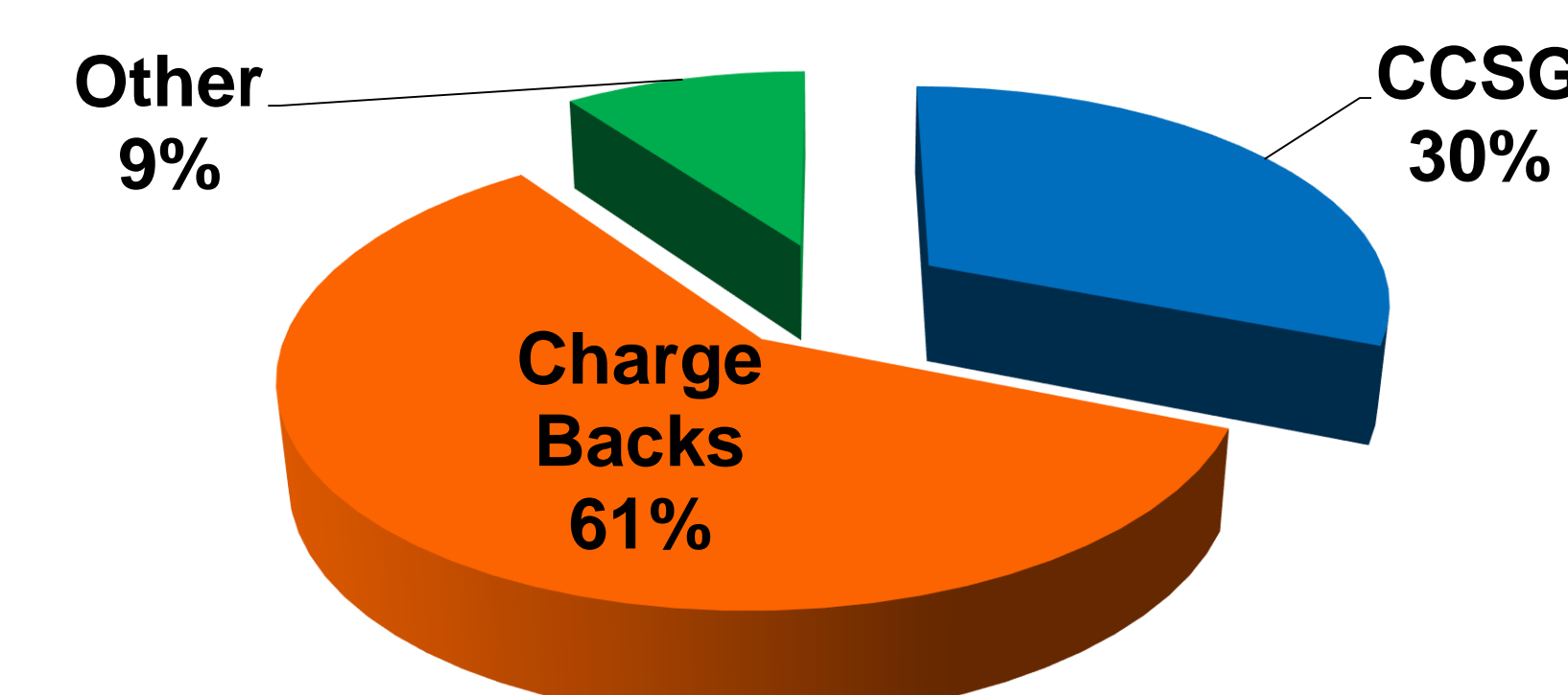


## Operating Costs and Budget

### Current CCSG Budget

Category	Amount
Personnel	\$150,122
Supplies	\$3,054
Other	\$6,824
<b>Total</b>	<b>\$160,000</b>

### Current Operating Costs



## Future Plans

### SHORT TERM:

- Pilot integrated metrics reports for phase 1 program and expand to all trials in future

### LONG TERM:

- Enhance biomarker and post-processing support
- Generate novel PET imaging and therapeutic agent response strategies (to complement cyclotron and AIF)

### CYLOTRON and AIF:

Facility Director: Janet F Eary, MD

Medical Imaging Research

Kurt Zinn, DVM, MS, Ph

Radiochemistry

Jinda Fan, PhD

Radiopharmacist

Charlotte Denise Jeffers BSP Pharm, RPh

Engineering Manager

Harvey Doane

Administration

Morgan Amos

Scientists

Robert Kessler, MD, neuroimaging

Janet Eary, MD, cancer imaging

Susi Lapi, PhD radiochemistry

Jonathan McConathy, MD, molecular imaging

Current Radioisotope production

[F-18]

[C-11]

[N-13]

Planned Radioisotope production

[O-15]

[Zr-89]

[Cu-64]

Radiopharmaceuticals

Cancer

Neurosciences

Cardiac

General use

[F-18] FLT, [F-18] FMISO

[F-18] FPFB [F-18] Fallpride

[NH3] Ammonia

[O-15] Water