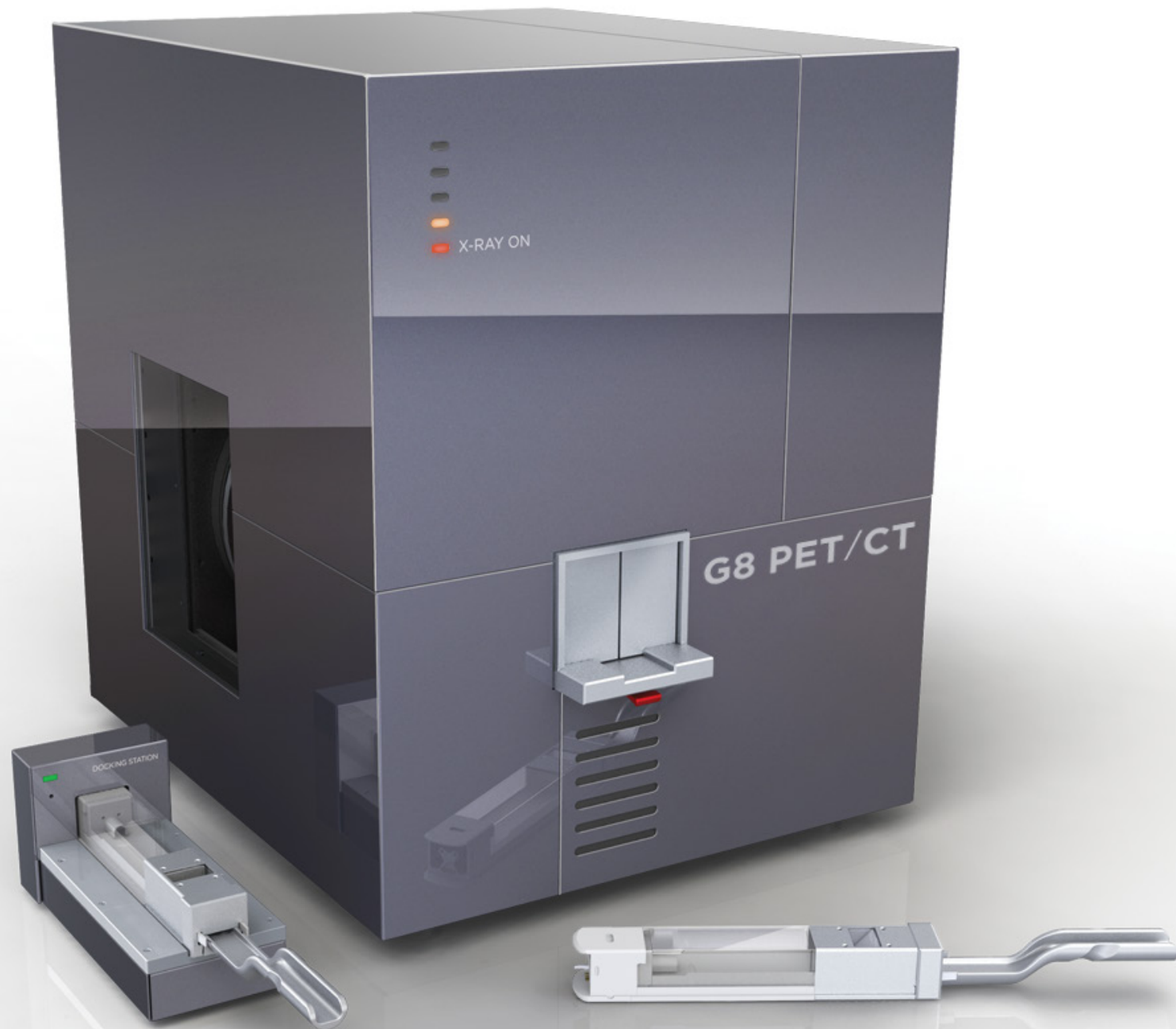




# G8

# SOFIE

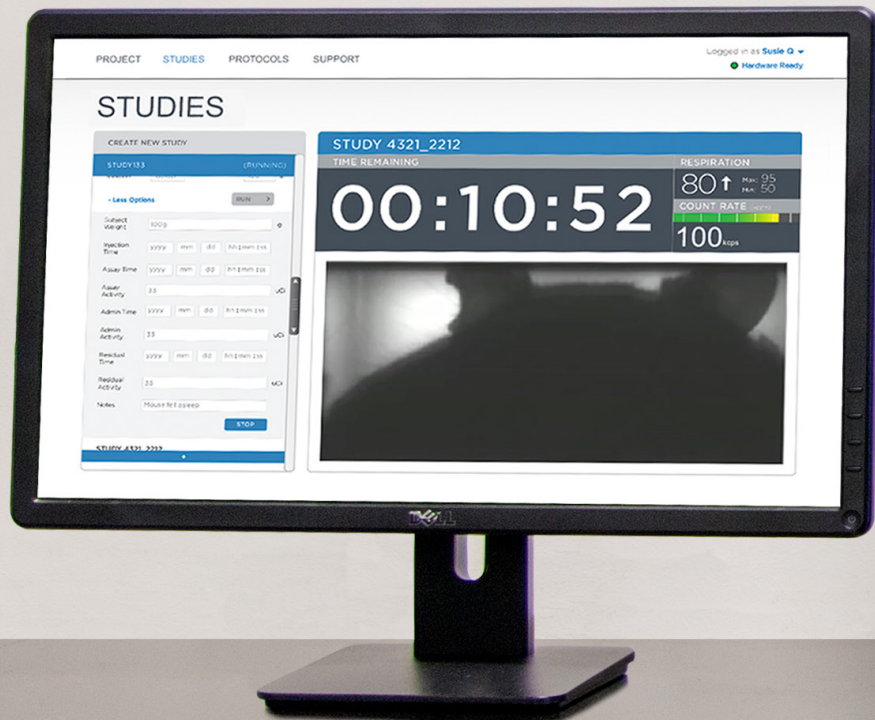
From start to clinic



## THE WORLD'S FIRST BENCHTOP PET/CT SYSTEM

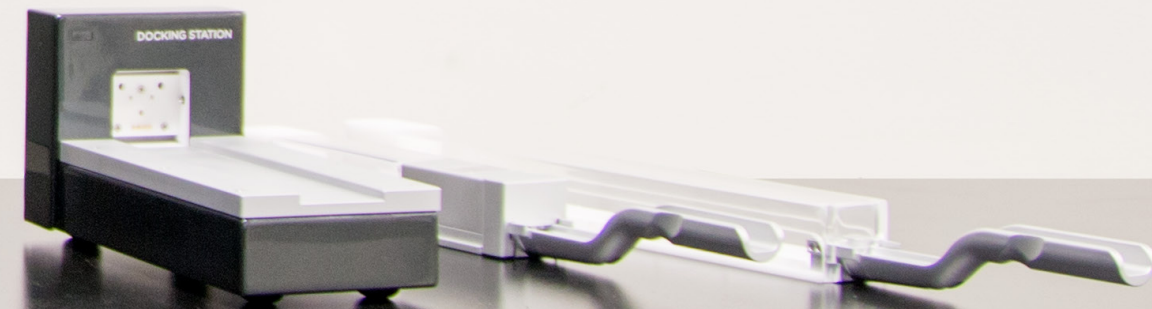
G8 PET/CT delivers high resolution, high sensitivity PET integrated with a sub-minute, low dose microCT. The G8 provides fully quantitative data, while maintaining workflow advantages including docking stations with imaging chambers, integrated anesthesia, and intuitive imaging protocol creation software. Highly versatile, the G8 is designed to rapidly integrate into your current preclinical research workflow in a broad-range of applications including neurology, oncology, cardiology, biodistribution, and drug discovery.





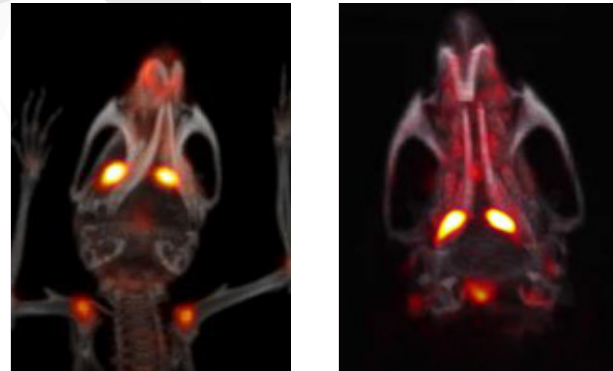
## A NEW GENERATION OF PET

Many barriers have prevented PET from being a widely adopted preclinical imaging modality. SOFIE breaks through with a clever geometry to maximize performance in a small form factor. This architecture results in a highly sensitive PET system with increased uniformity across the entire scan field of view, while still keeping a benchtop footprint and affordable price point.





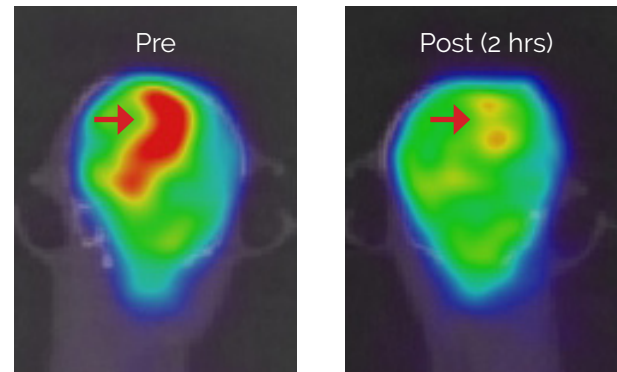
## APPLICATIONS



Fallypride imaging of the mouse brain (left) and rat brain (right)

### Neurology

[<sup>18</sup>F]Fallypride allows for non-invasive in vivo imaging of dopamine D2/3 receptors, in mice (left) and rats (right), providing invaluable mechanistic insights into neurodegenerative diseases.



Patient-derived GBM xenograft imaged with [<sup>18</sup>F]FDG prior to drug treatment on G8. The same mouse was imaged again with [<sup>18</sup>F]FDG the next day at 2 hours post treatment. Arrow: Tumor

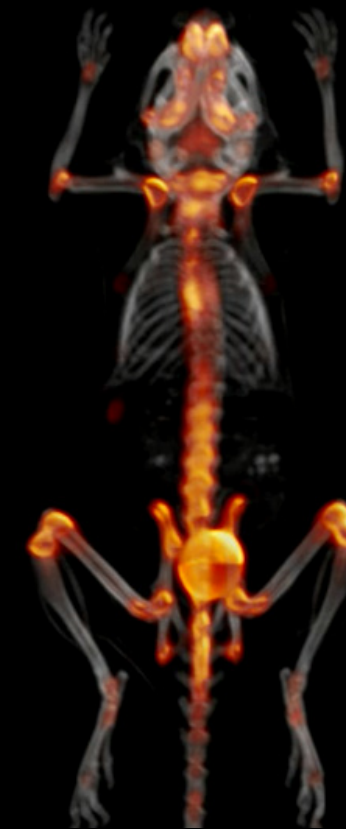
*Courtesy of Nathanson Lab, UCLA*

### Oncology

[<sup>18</sup>F]FDG-PET is a robust and reliable probe for investigating the glycolytic potential of tumors. FDG-PET-CT allows for rapid detection of changes in tumor glucose metabolism, an early indicator of treatment efficacy. This in vivo assay is an integral tool in the drug discovery researchers toolkit.

### Bone Metabolism

When administered in vivo, NaF incorporates rapidly into the apatite crystals of bones. Regions of bone metabolism can be quickly identified. PET readouts have applications in various skeletal disorders such as osteoporosis and tumor osteolysis, often a hallmark of metastatic disease.



Normal C57BL/6 mouse imaged with NaF showing uptake of the agent at sites of bone metabolism, including spine, knee and elbow joints.

### Immunology

Antibody imaging (with <sup>89</sup>Zr, <sup>124</sup>I, <sup>64</sup>Cu) is a sensitive, non-invasive means for molecular characterization to guide diagnosis, prognosis, therapy selection, and monitoring treatment in cancer.



Image of C57BL/6 mouse administered <sup>89</sup>Zr-labeled cys-diabody, targeted for CD8 T-cells (spleen and lymph nodes).

*Courtesy of Richard Tavare, Wu lab, UCLA.*





## GET MORE DONE WITH LESS

Make your studies successful day after day. Merging simplicity with flexibility, the G8 is a high performance PET system designed specifically for small animal imaging applications. The G8 maximizes workflow efficiency while keeping experimental accuracy in mind. Queue up an assembly line of multiple animals in Imaging Chambers and Docking Stations to increase your throughput and decrease your set-up time.

## YOUR IMAGING SYSTEMS SHOULD TAKE CARE OF YOUR ANIMAL

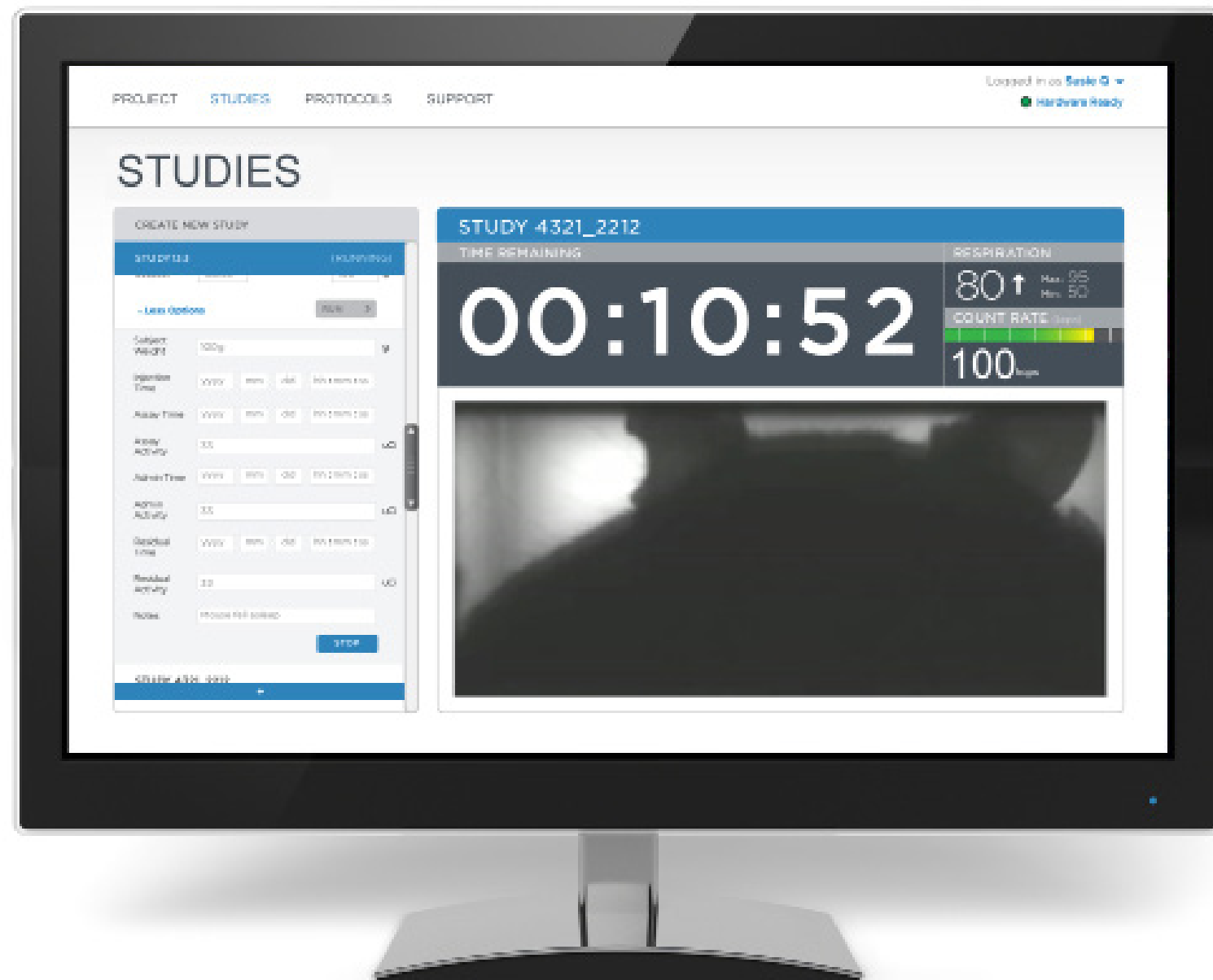
Successful imaging outcomes correlate heavily with subject well-being. Small changes in animal physiology can have profound impacts on imaging readouts and experimental outcomes. The

G8 prioritizes animal wellbeing and incorporates novel approaches to small animal prep and management. The end result is a physiologically stable and comfortable test subject. Simply plug-in an imaging chamber to the docking station for:

- Automated anesthesia delivery
- Temperature regulation
- Reproducible positioning between PET/CT
- Pathogen barrier for environmental protection
- Easy setup for animal injection
- Video feed of subject during the scan
- Breathing rate throughout the study
- Multi-modality connectivity for PerkinElmer's optical imaging systems
- Compatibility exists for MRI and SPECT scanners







## SOFTWARE

### EXPERIENCE THE G8 PET/CT ACQUISITION ENGINE

Quickly generate complex protocols with just a few clicks, or use preset protocols provided with the software. Export data in DICOM format for analysis and seamless fusion to downstream platforms. By offering multiple modes of operation, you get ultimate system flexibility.

- *General* mode relies on preloaded protocols and optimized imaging parameters for a simple, convenient acquisition workflow for users of all experience levels.
- *Physicist* mode emphasizes operational flexibility and gives experienced PET users the ability to modulate key acquisition and reconstruction parameters across all user profiles.
- *Administrator* mode allows easy exporting of usage data by project or users for grant or billing reconciliation.

### IMAGE ANALYSIS

All PET data is collected in list mode format and images are stored in DICOM format, allowing for exportation and analysis in a variety of software platforms, including Living Image© and VivoQuant™.

### LIVE LINK TO ANIMAL

You spend a lot of time validating and preparing your animal model – why leave its well-being to chance?

The built-in video camera allows you to monitor the physiologic condition of your mice and rats in real time, taking the guess-work out of anesthesia management for an optimal, safe, and stable imaging environment.





### Engineering Specifications

**Unit width:** 56 cm (22")

**Unit depth:** 66 cm (26")

**Unit height:** 71 cm (28")

**Unit weight:** 90 kg (200 lbs)

**Operating room temperature:** 65 - 75 °F (18 - 24 °C)

**Operating humidity:** 30 - 70% non-condensing

**Power requirements:** 4 A @ 110 V (2 A @ 220 V)

### PET Performance Specifications

**Axial FOV:** 9.5 cm

**Transaxial FOV:** 4.7 cm

**Detector element size:** 1.8 mm x 1.8 mm x 7 mm

**Peak absolute system sensitivity\*:** >14%

**Reconstructed resolution at center of FOV\*:** 1.4 mm

**Average energy resolution:** 18%

**Energy window range:** 150 - 650 keV

**Total number of detector elements:** 5,408

**Reconstruction algorithm:** 3D ML-EM

### CT Specifications

**X-ray Source:** 50 kVp, 200uA

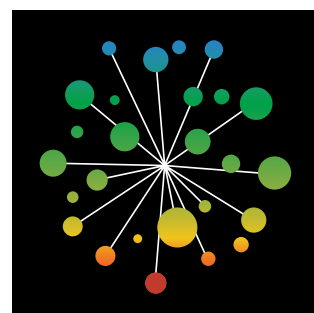
**X-ray Camera:** 75 micron pixels, 14bits, CMOS+CsI flat panel

**Camera Speed:** 24 fps

**Field of View:** 100mm axial by 50mm transaxial

**Standard Scan Time:** <60 seconds





# SOFIE

From start to clinic

## FROM START TO CLINIC

SOFIE is creating an ever-expanding playing field for molecular imaging. We develop innovative PET technologies that are fun, flexible, compact, and high performance. We're dedicated to bringing you premium instruments within your budget.

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