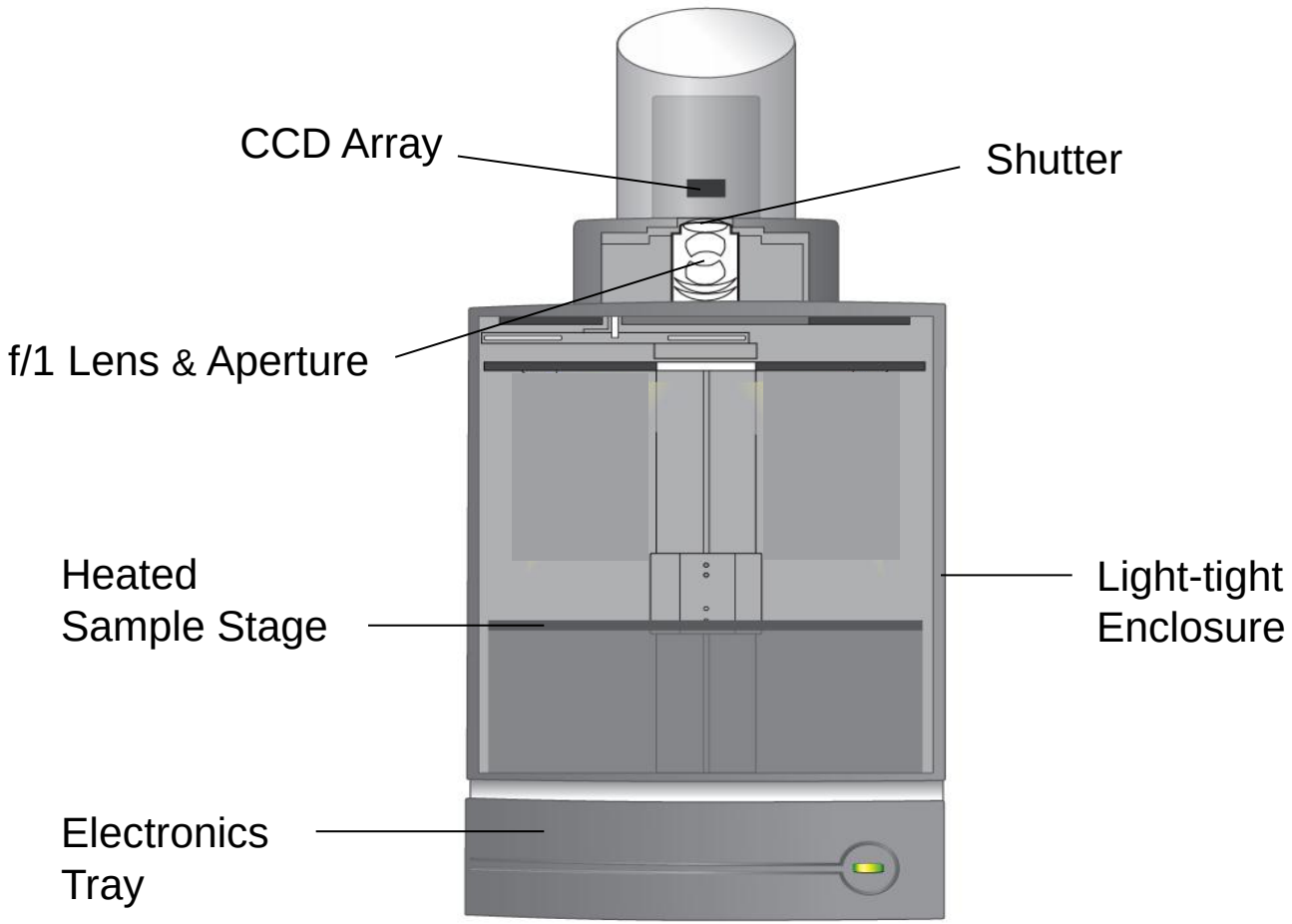
IVIS® Lumina II In Vivo Imaging System

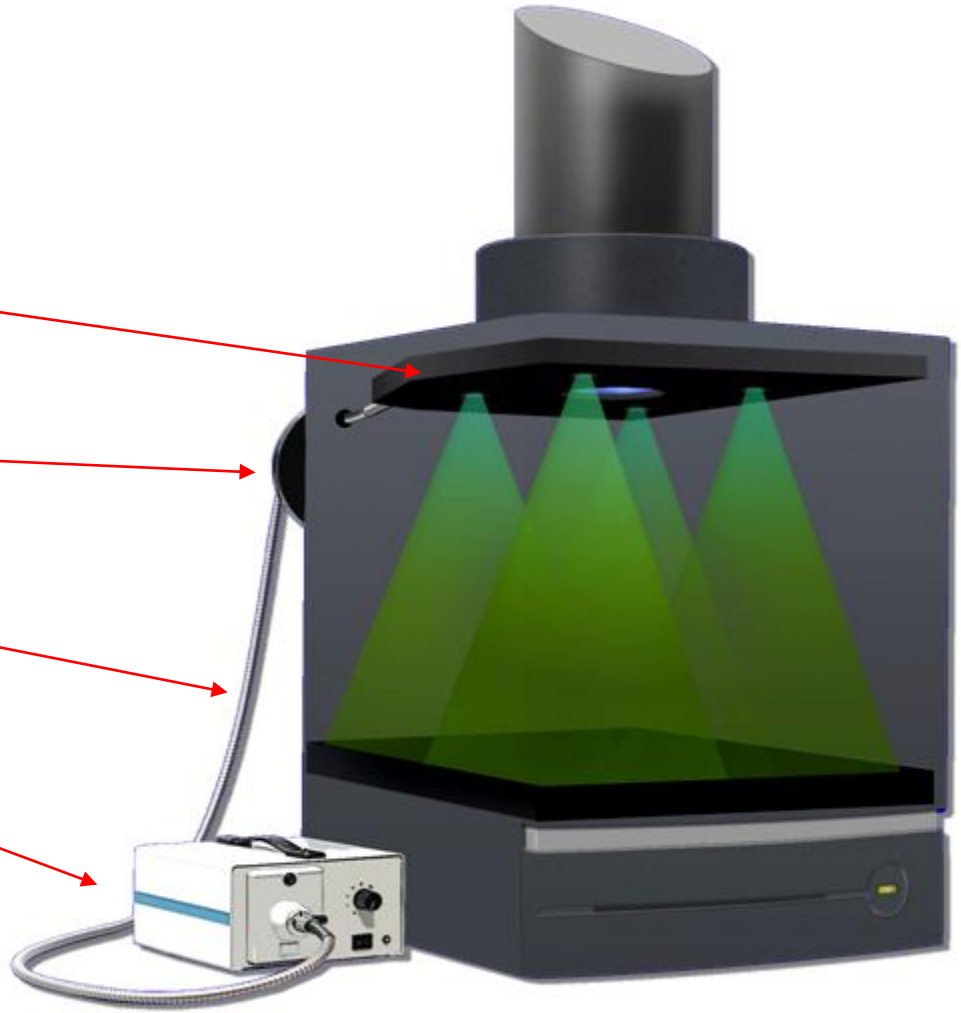
- Customized for *in-vivo* imaging
- Bioluminescence and fluorescence
- High sensitivity from 300-900 nm
- Large dynamic range

Lumina II Bioluminescent Components



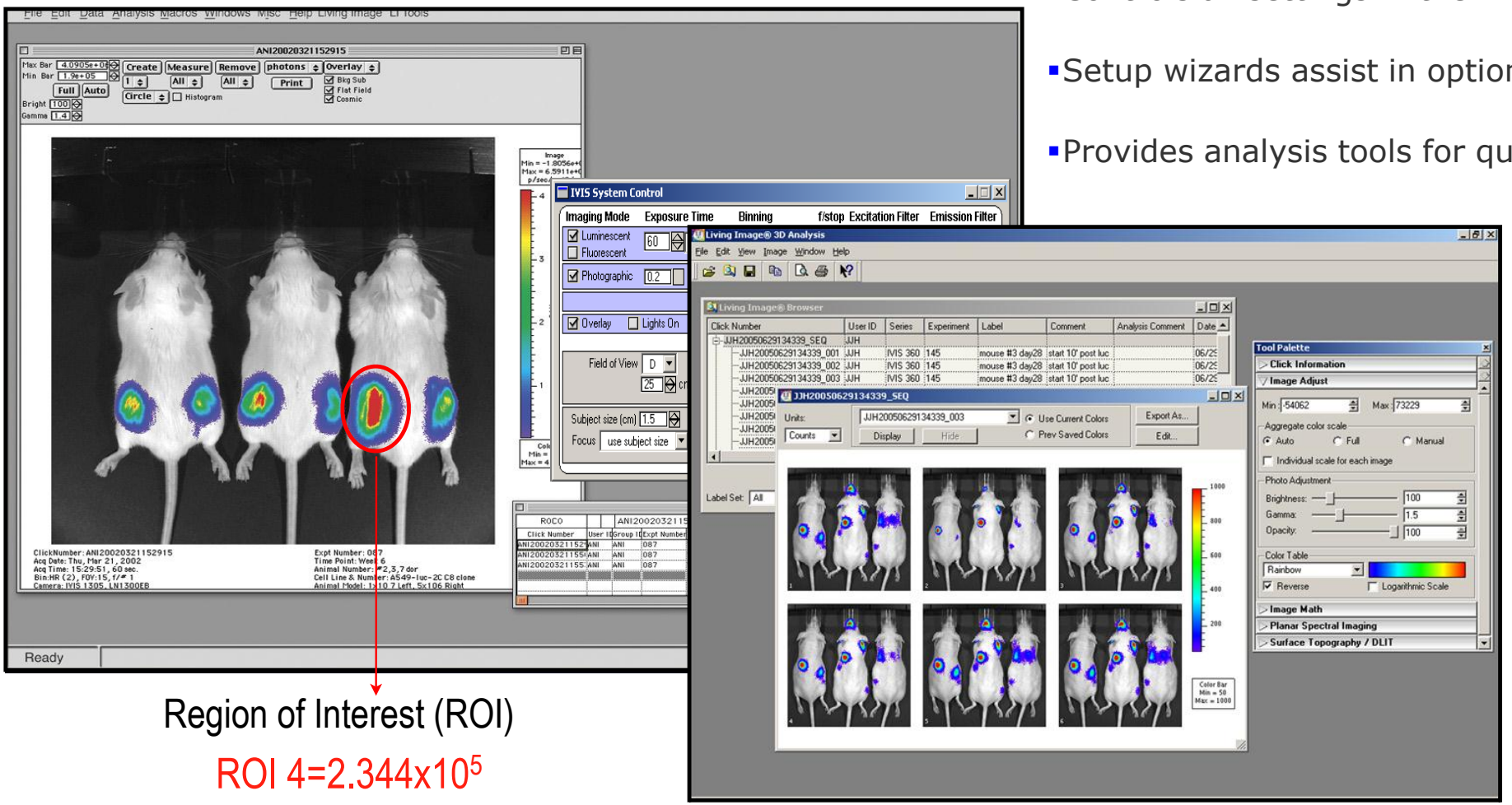
Lumina II Fluorescent Components

- Fully computer controlled
- Emission filter wheel (user changeable)
- Twelve position Excitation filter wheel
- Low Auto-Fluorescence optics and fibers
- 150 Watt Tungsten/Halogen lamp with computer controlled intensity



Living Image Software

- Controls all settings in the IVIS® system
- Setup wizards assist in option selections
- Provides analysis tools for quantification



Absolute Calibrated Data in: photons s^{-1} cm^{-2} sr^{-1}

Bioluminescent and Fluorescent Comparison

Bioluminescence

- High sensitivity and contrast
- Low signal requires sensitive CCDs
- Requires luciferin injection
- Useful for tumor labeling and studying gene expression in transgenic animals

Fluorescence

- Brighter signal but autofluorescence limits sensitivity
- Multiple wavelength reporters available
- Dyes and imaging agents extend into the NIR
- Potential uses include tracking antibody and drug distributions

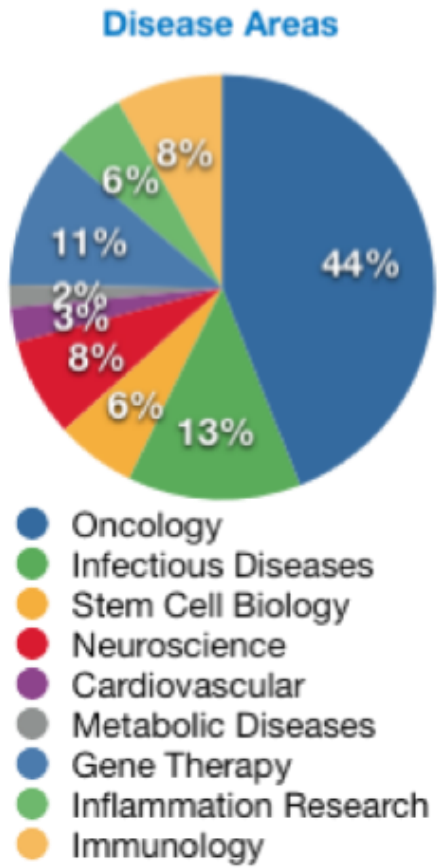
Optical Imaging Applications Using the IVIS

IVIS Preclinical Imaging

- All therapeutic areas
- Mode of action
- Efficacy studies
- PK/PD Readouts
- Dosing and treatment

IVIS imaging performance is measured by your results:

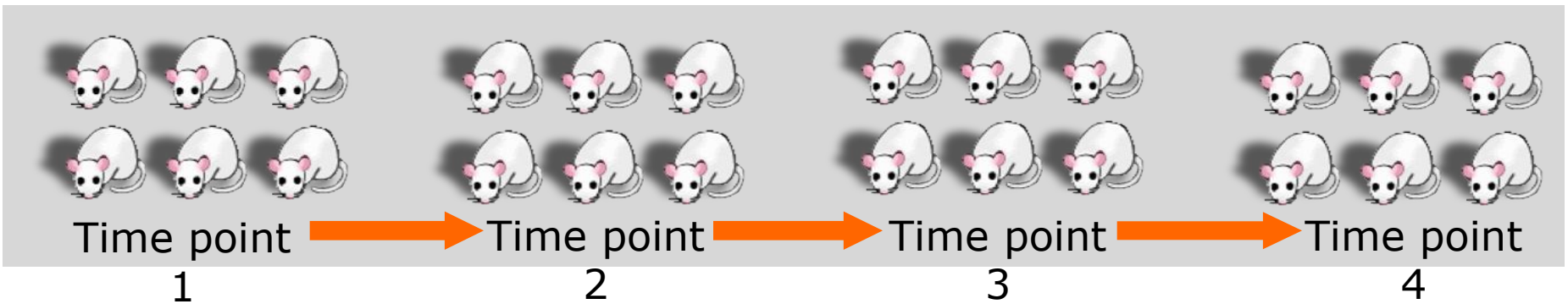
- 1000+ systems in laboratories worldwide
- Thousands of peer-reviewed publications
- 14 drugs in clinical trials (published)



Traditional Methodology versus IVIS Methodology

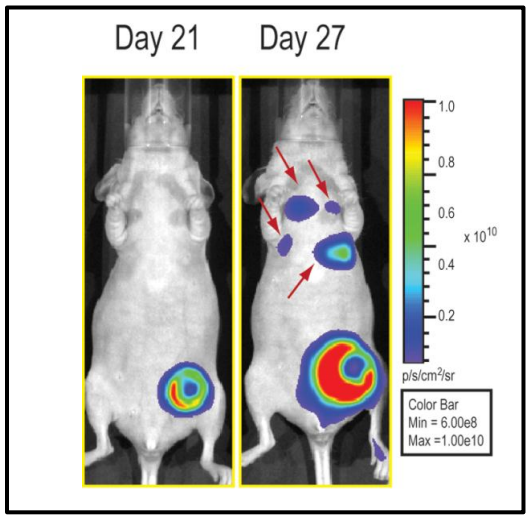
Traditional Methodology = **24 animals**
4 cohorts, 6 animals per cohort, 4 treatment points

IVIS Methodology = **6 animals**
1 cohort of the same 6 animals, 4 treatment points

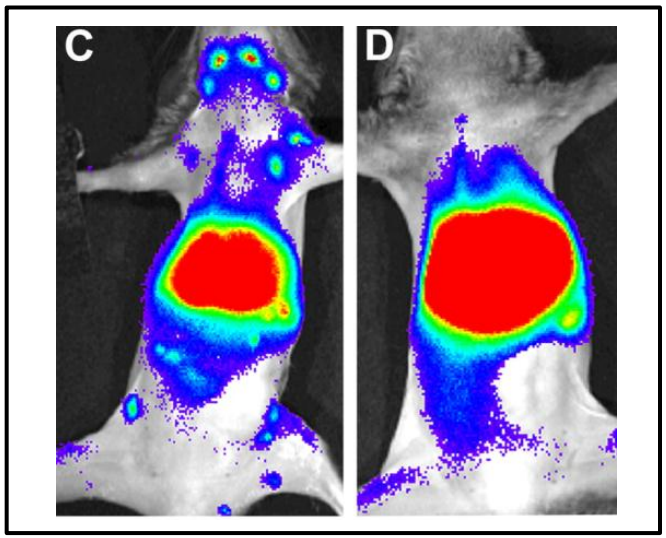


Better Data • Faster Data • Lower Cost

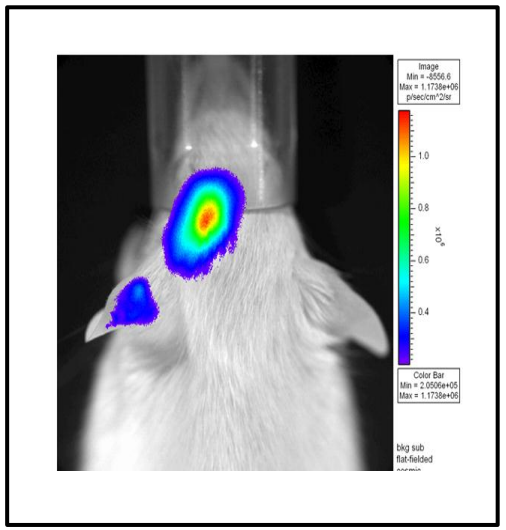
Sample Imaging Applications in Some Key Therapeutic Areas



Monitoring progression of primary tumors and metastases. Kim et al, pLoS One (2010)

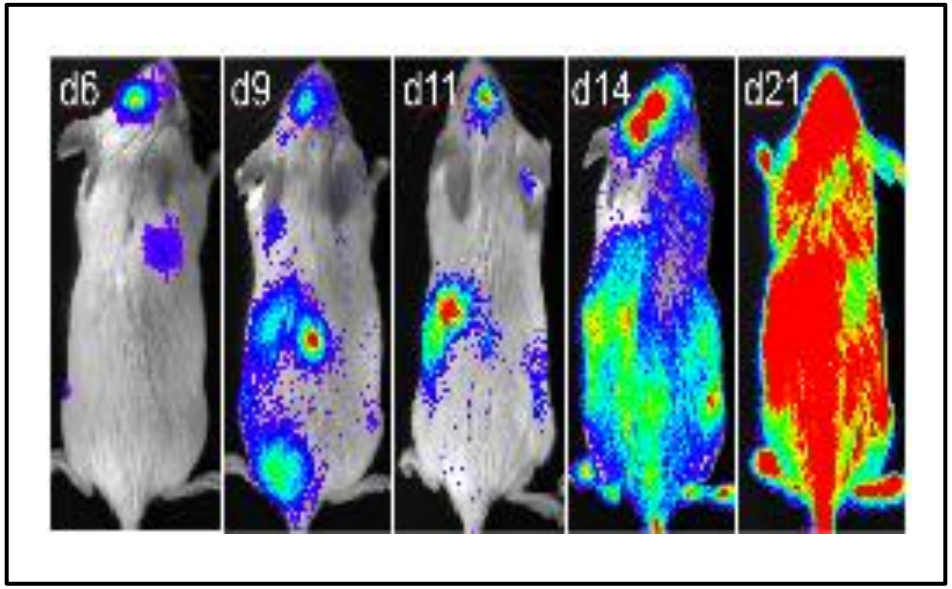


T-cell trafficking in bone marrow transplantation studies. Ophir et al, Blood (2010)

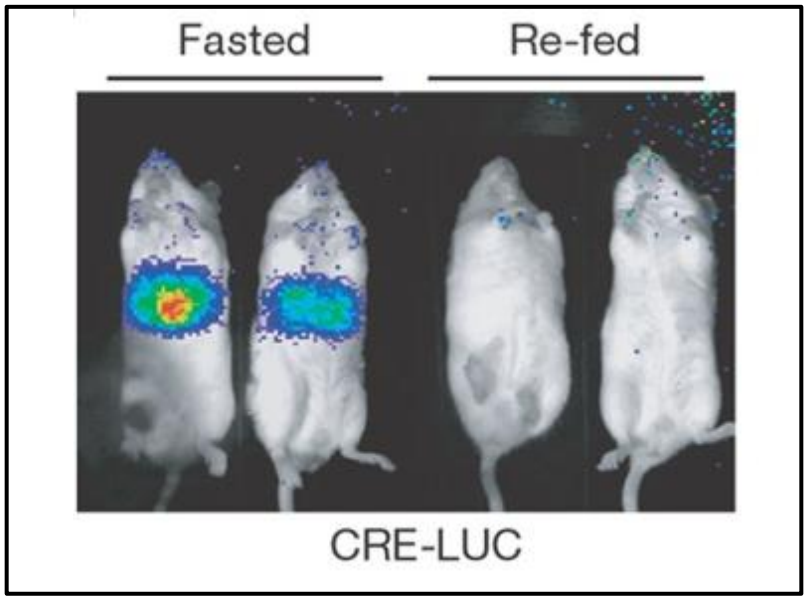


Imaging gene (GFAP) expression patterns underlying neurodegeneration. Cordeau et al, Stroke (2008)

Sample Imaging Applications in Some Key Therapeutic Areas



Monitoring stem cell hematopoiesis in lethally irradiated recipients. Cao et al, PNAS (2004)



Imaging TORC2 modulation in the liver during feeding and fasting. Dentin et al, Nature (2007)