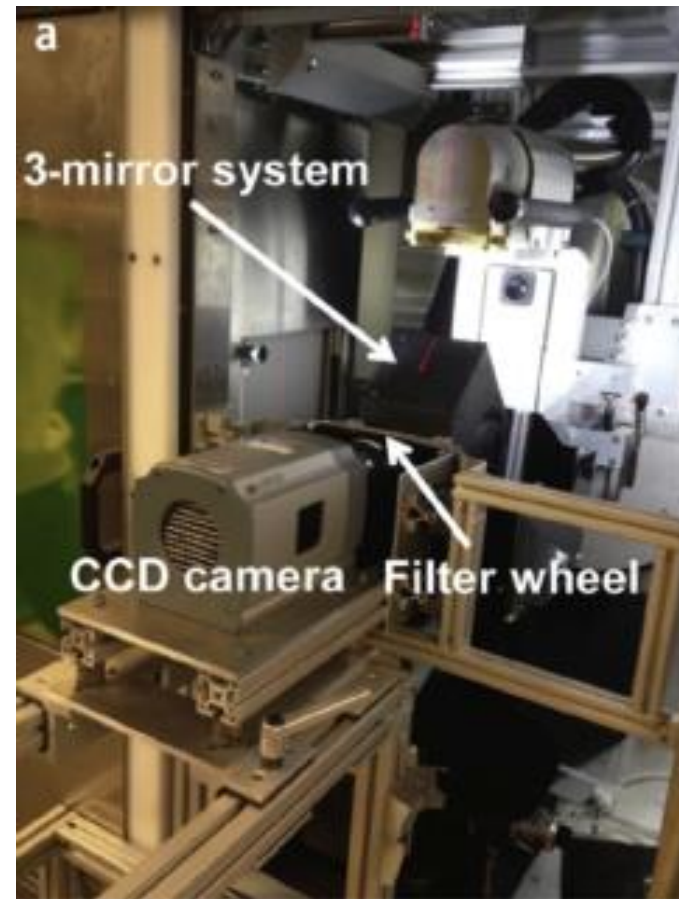


Optical Properties for Bioluminescence Tomography in Mice

Student: Alan Cham

Mentors: Drs. Ken Wang and Bin Zhang

- SARRP used for radiation research in small animal models
 - Imaging and radiation delivery
- In cancer radiation research, it is often useful to be able to localize soft-tissue targets
 - Problem: low CT contrast
- BLT can be used as alternative localization method
 - Previous work in relatively homogeneous abdomen of mouse produced localization error $< 1\text{mm}$
 - Next: targeting in optically heterogeneous environment



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Goals:

- To gather a set of optical properties for use in simulation and BLT reconstruction
- To describe effects of the mouse's optical heterogeneity

Significance:

- An initial step for feasibility of using SARRP BLT for targets in heterogeneous environment

Results:

- Set of reasonable optical properties for use in simulations and reconstruction
- Simulation workflow and experiments along heterogeneous mouse midline

