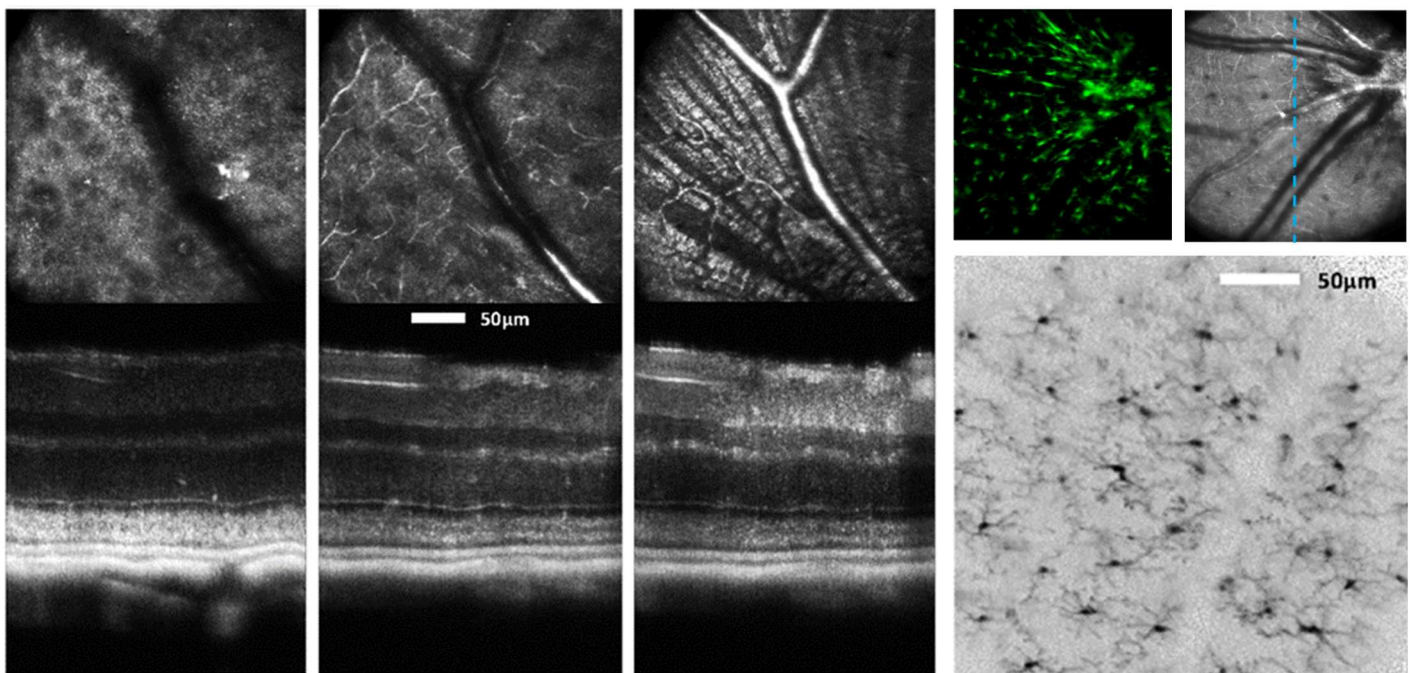




HIGH-RESOLUTION IMAGING OF ANIMAL RETINA

8x R&D is a research and product development company that brings novel technologies to the market through direct sales, joint development, technology transfer, and strategic partnerships. We can design and build custom imaging systems to address the needs of the early adopters of adaptive optics (AO) technology. Our instruments simultaneously acquire AO-assisted OCT and SLO images with cellular-level resolution in a compact footprint suitable for pre-clinical operation. We develop research instruments based on your specifications.



AOSLO reflectance and AO-OCT simultaneously at independent focal depth. Bottom Right: GFP Microglia

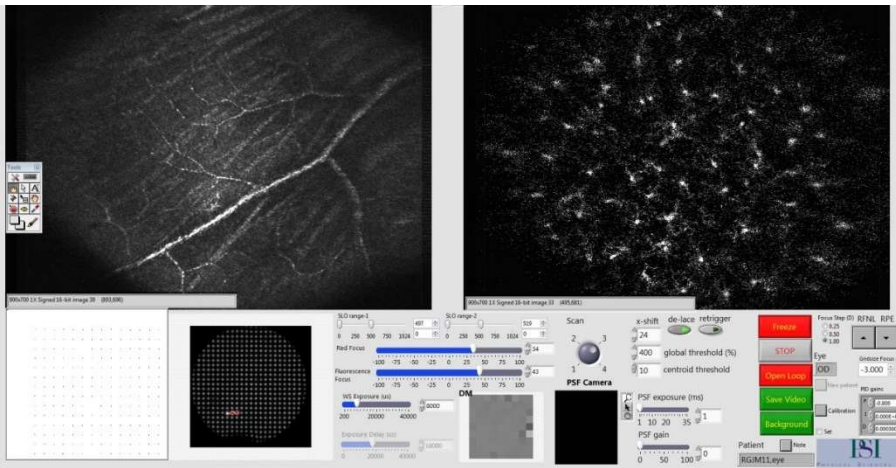
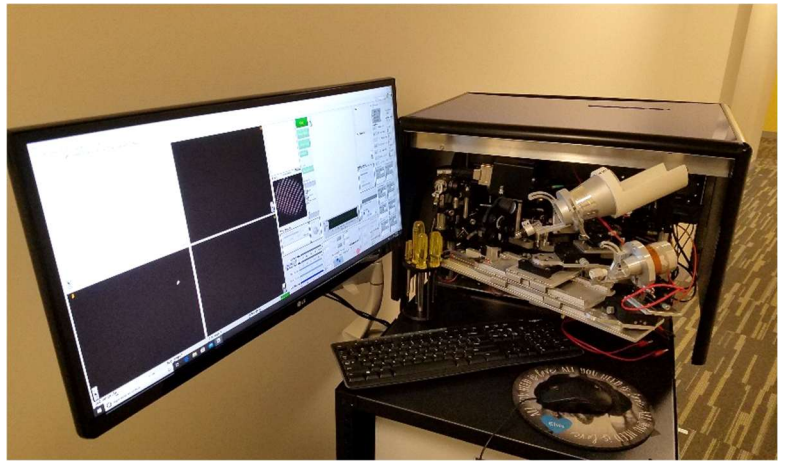
Flexible, high-resolution ($<1\mu\text{m}$) benchtop confocal reflectance Adaptive Optics Scanning Light ophthalmoscope (rAOSLO) and/or fluorescence AOSLO (fAOSLO) small animal imager with simultaneous AO-OCT for routine laboratory imaging applications in animal research.

- High-contrast confocal imaging depth-sectioning of the inner retina for high resolution imaging of nerve fiber bundles, capillaries, blood flow, and the optic nerve head
- Simultaneous AO-OCT B-scan / volume, and AOSLO reflectance / fluorescence imaging
- Multi-fiber bundle for bright-field / dark-field, phase contrast imaging
- Acquisition and analysis software for rapid retinal scanning, automated post-processing for alignment, averaging, and motion contrast for vasculature mapping.

EASY ANIMAL HANDLING

6 degree-of-freedom goniostage with focus and pupil control.

- Heated animal holder to support the anesthetized animal body temperature at $\sim 37^\circ\text{C}$ to prevent lens opacification.
- Low-flow anesthesia system with integrated digital micro vaporizer (optional for Isoflurane).



Example GUI for live visualization of confocal and fluorescence images, wavefront sensor, and instrument control.

CUSTOMIZED TO YOUR NEED

The imager configuration is adaptable to individual user requirements. Contact us to discuss the potential for additional advanced control and imaging modalities.

OPTICAL DESIGN PARAMETERS

- Standard image: 640x640 pixels
- Pupil diameter: 0.5 – 5 mm
- Lateral resolution: $< 1\ \mu\text{m}$
- Axial resolution: $< 10\ \mu\text{m}$
- Field size: 2° to 30°
- Full-field frame rates up to 24 fps

CUSTOM OPTIONS

- Multiple fluorescence imaging channels to simultaneously image structural and functional markers
- Two-photon excitation fluorescence with illumination in the NIR
- High-speed OCT (MHz)
- Large area fundus image for navigation

TECHNICAL CONTACT

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