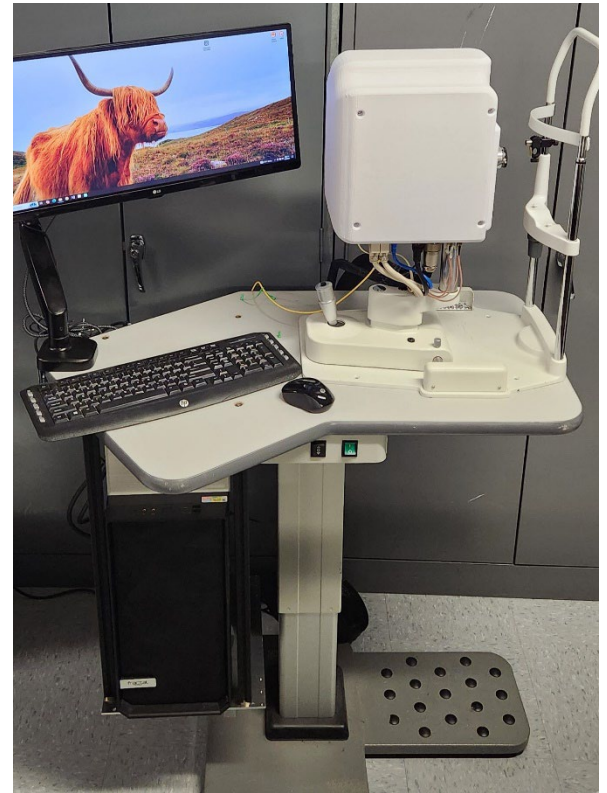


CHARMER is a novel ophthalmic imaging platform for characterizing retinal morphology and monitoring ocular blood flow abnormalities. This platform combines non-invasive measurements of retina/choroid structure and ocular blood flow based on optical coherence tomography (OCT) and wide-field semi-quantitative global flow visualization using line-scanning Doppler flowmetry (LSDF). The combination of these two imaging modalities within the same imaging platform enables comprehensive and quantitative assessment of blood flow in the retina and choroid without injection of additional contrast agents in humans and rats.

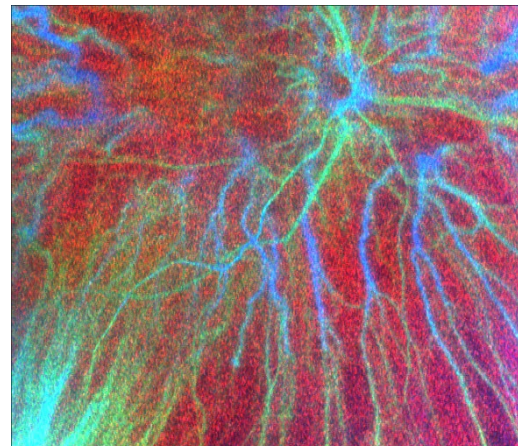
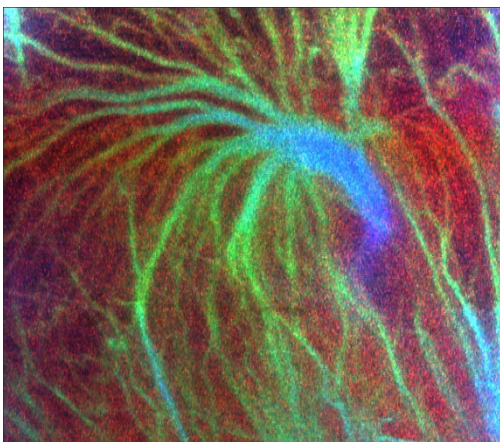


INSTRUMENT CAPABILITIES

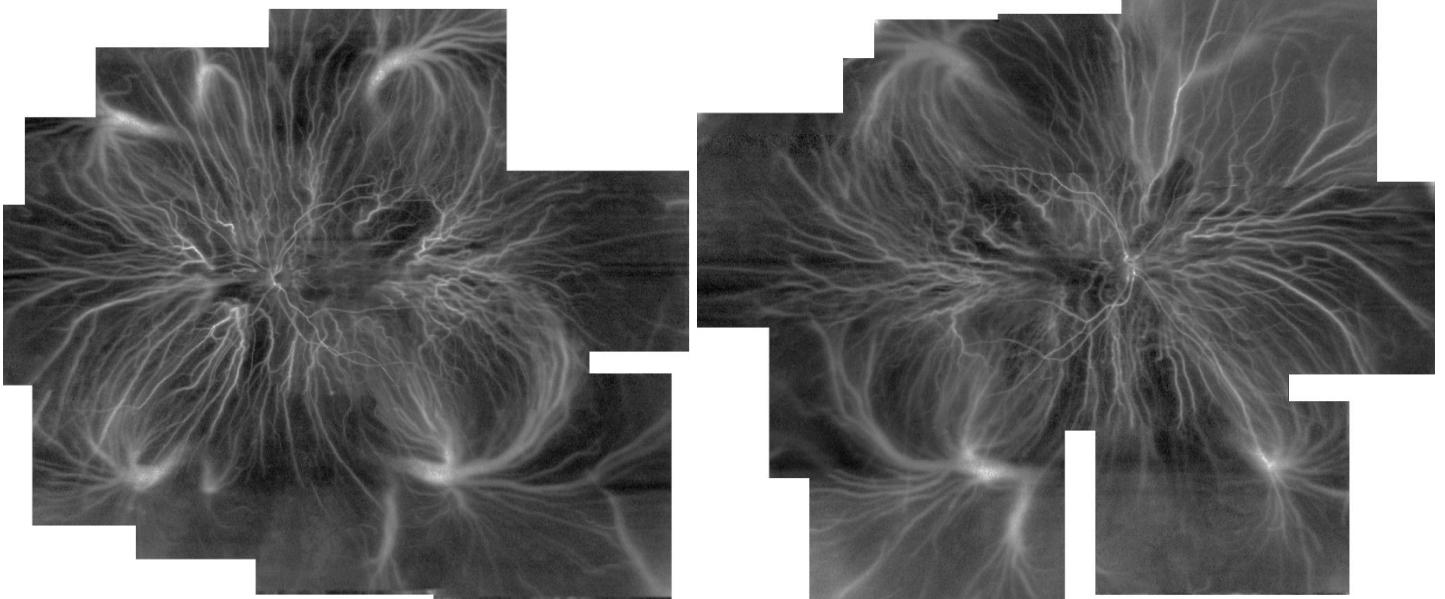
- LSDF provides large area maps of standard Doppler flowmetry parameters (velocity, volume, and flow)
- OCT/Doppler OCT provides layer thickness maps, axially resolved location of blood vessels, their diameters and quantitative flow velocity in these vessels
- Quantitative Velocity maps calibrated with Doppler OCT live in the eye (Patent application)

OPTICAL DESIGN PARAMETERS

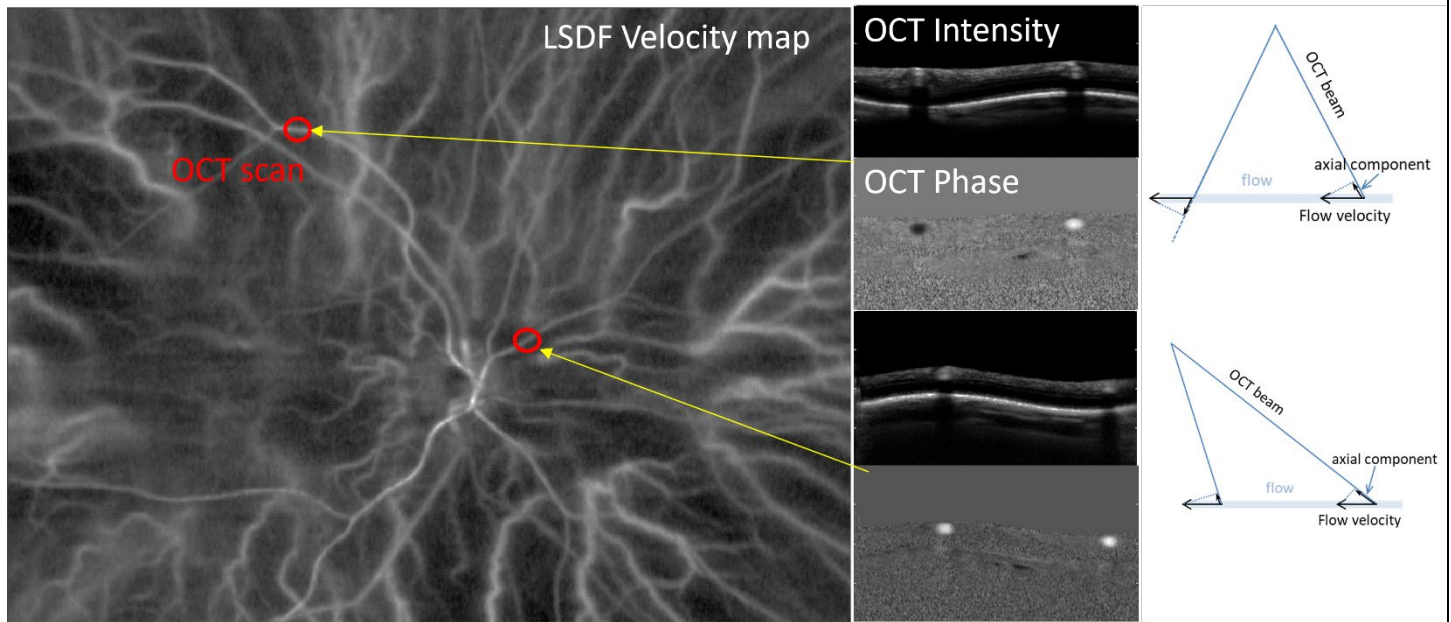
- Imaging field of view > 60°
- Field of regard > 100° (with fixation for humans and animal repositioning for small animals)
- LSDF sampling line rate > 60 kHz (up to 92 kHz)
- LSDF imaging at 850 nm with a laser diode
- OCT sampling line rate > 60 kHz (up to 140 kHz)
- OCT imaging at 1060 nm (~100 nm bandwidth)
- OCT axial resolution of the order of 5 μm
- Lateral resolution ~ 60 μm
- Measurable velocity range: at least 1-100 mm/s
- Measurable flow rate range: at least 0.25-10 ml/min.



Color-coded Velocity map (slow; medium; fast flow) of a Vortex Vein – left and ONH – right.



Ultra-widefield Velocity montage of the left and right eye of a human volunteer illustrating visualization of vortex veins without injecting contrast agent.



LSDF Velocity map and circular OCT scan for quantitative Doppler OCT velocity measurement.

CONTACTS/INFORMATION

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