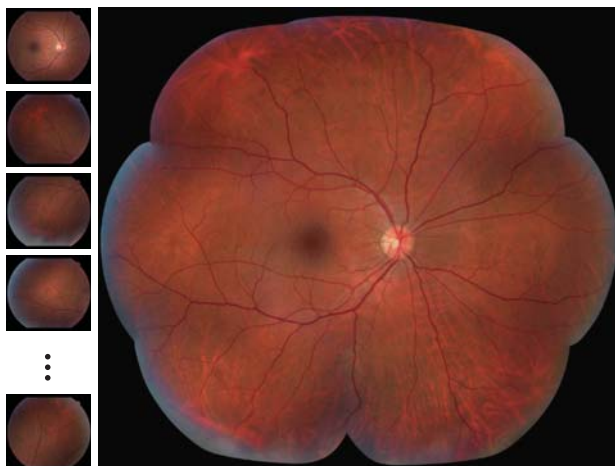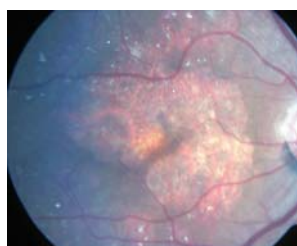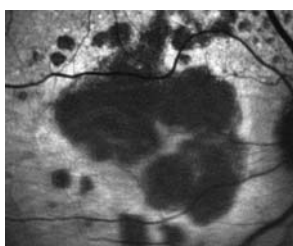# i2k Retina®

Align and Compare

Disease progression can be difficult to visualize without a precise tool to compare images. *i2k Retina* is being used by many of the leading retina disease researchers because of its unmatched ability to precisely align and compare images acquired by a wide variety of systems including autoflorescene, infra-red, and visible spectrum cameras. Images capture before and after treatment can also help patients understand disease progression and treatment results.
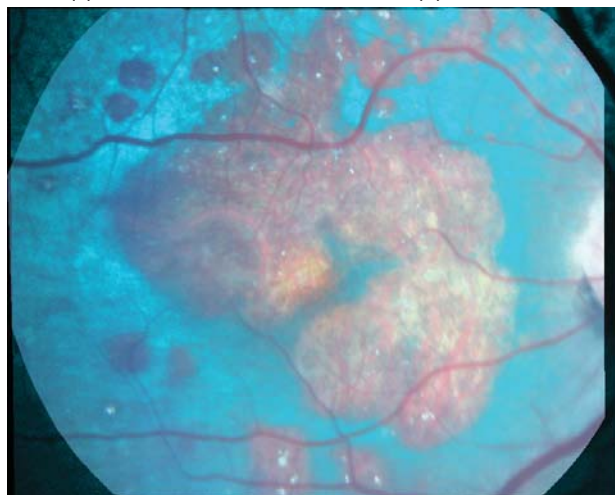

Wide-field composite mosaic image

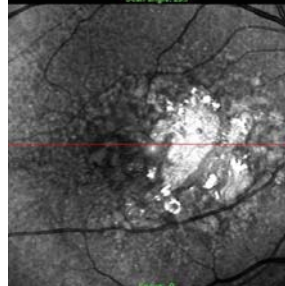(a) Color Fundus   (b)   FAF

(c) Using Fusion feature to show Color Fundus and FAF

Integrated workflow

The *i2k Retina* software library has a diverse set of tools to help software engineers enhance image capture workstations, image management software and medical record systems. Developer tools including command line, C# wrapper, Python wrapper or standard C API are all available for tasks ranging from quick experiments and batch processing to fully integrated products. These integrated products allow clinicians to see mosaics, combine images from different modalities, and compare newly captured images with those from previous studies. Combining images from different modalities, such as the example to the left of fusion between a Fundus Autofluorescence (FAF) image and a color image, allows the clinician to a develop a more comprehensive understanding of the health of the retina.
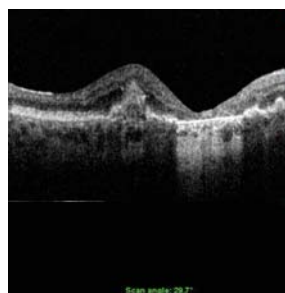
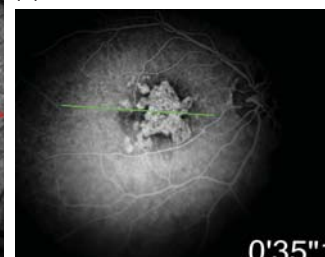(b) Color Fundus with OCT line

(a) OCT   (c) FA with OCT line

i2k Retina can align OCT images to other images such as the color fundus and fluorescein angiography images above, effectively combining anterior anatomic information with any imageries.

Evaluation copies of i2k Retina are available by visiting DualAlign's website:

www.dualalign.com

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i2k Retina®Adaptive Optics

Alignment tools

Images of the retina captured using adaptive optics techniques permit visualization of individual rods and cones. The resulting images however have a very narrow field of view and are most effectively displayed, compared and evaluated when combined into a larger mosaic. When precisely aligned, mosaic images allow metrics to be calculated such as cone density and spacing to clarify our understanding of retinal structure, function, and progress of retinal diseases.

i2k Retina AO provides a simple-to-use and intuitive graphical interface that allows users to automatically or manually align adaptive optic image sets including those with non-uniform distortions.
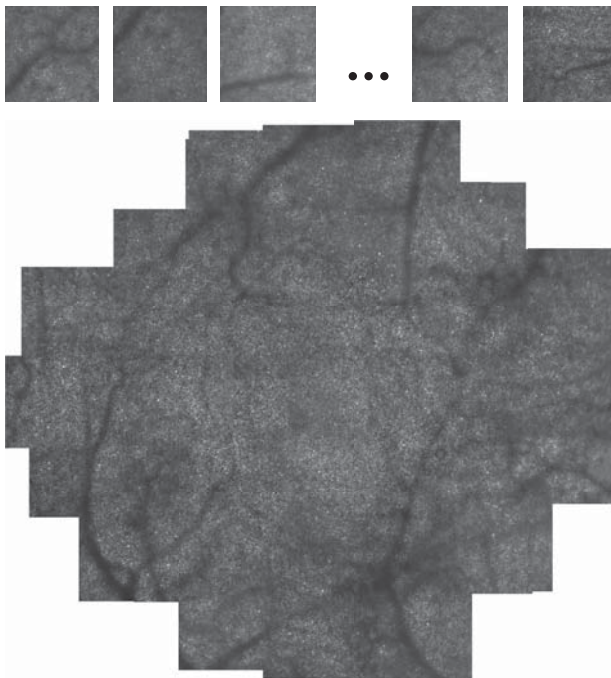
This mosaic is generated from 56 AO images. The field of view of each image is about 1.2 degree.

Workflow

i2k Retina AO is tailored for ease of use and integrated workflow. *i2k Retina AO* can easily generate AO mosaics, combine mosaics with images from other camera systems and different modalities, and perform analysis on mosaics.

Multi-modal registration: *Combining AO images with various modalities, such as with a color fundus image shown here, but also OCT and fluorescein angiography, allows a clinician to develop more comprehensive understanding of the health of the retina.*

System partners

DualAlign software libraries are widely used within retinal image-capture and image-management systems. The *i2k Retina AO* software was developed in collaboration with leading adaptive optics research groups, including those at the University of California, San Francisco and the Medical College of Wisconsin. While the *i2k Retina AO* software is a feature rich tool for researchers it is also a reference design for vendors planning to deliver adaptive optics systems to clinical users. Customized software features are currently being developed with industry partners and details of the *i2k Retina AO* software library are available.

The *i2k Retina Adaptive Optics* software was developed with the financial assistance of the Foundation Fighting Blindness.

Email support@dualalign.com for an evaluation copy.

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