



WHAT'S YOUR NICHE?

OPHTHALMIC PHOTOGRAPHER

Mark Maio's passion for the science and art of photographing the human eye has led him to one professional opportunity after another over a career spanning nearly four decades. **By David Walker**

MARK MAIO HAS DEDICATED A LONG CAREER TO photographing the human eye, demonstrating that even the narrowest specialty is only as limited as a photographer's imagination, curiosity and ambition.

He has photographed eyes for research, clinical diagnosis and advertising, and as abstract fine art. In 1999, he built a prototype of one of the first high-resolution digital retinal cameras, which led to a second career as an ophthalmic photography consultant. Maio also founded Digital Imaging Institute, an educational organization dedicated to the advancement of imaging in medicine, science and research.

What has kept Maio interested in his work for nearly four decades is the technical and intellectual challenge of it. "I was always learning new techniques, and also learning about medicine," he says. But just as important, he says, is the potential his work has to improve people's lives. Digital imaging technology has enabled ophthalmologists (eye doctors) to diagnose diseases in the earliest stages, he explains.

"We can see changes in the retina before people notice changes in their vision," he says. "There are tons of things you can diagnose by looking at the retina of the eye." They include hypertension, AIDS and sickle cell anemia. Alzheimer's is detectable from deposits that appear on the retina before patients show any symptoms of the disease, Maio says. That diagnostic capability "bodes well for the development of prophylactic drugs" to prevent or slow the onset of certain diseases, he notes. (He's currently consulting for a company that's trying to develop drugs to treat Alzheimer's.)

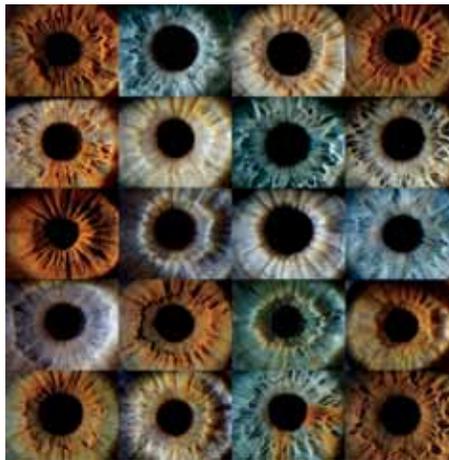
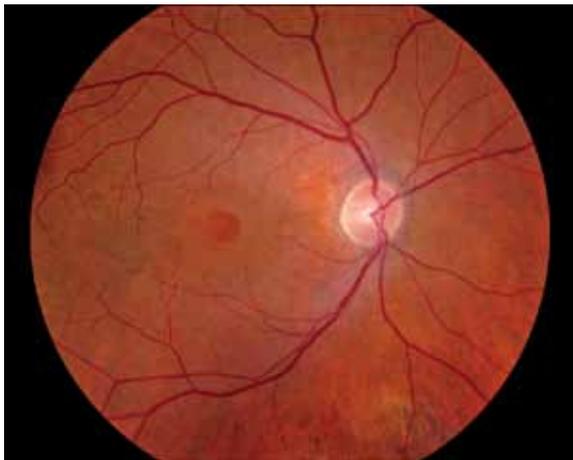
As a college student in the early 1970s, Maio wasn't interested in science or medicine. He wanted to pursue documentary photography to affect change in peoples' lives. But *LIFE* magazine had recently folded, and the Vietnam War was being covered on television.

"I looked at all of that and realized the days of photographers being paid for long-term



© MARK MAIO

The iris membrane. Mark Maio was looking for a way to use photography to help people when he discovered medical photography.



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Maio has photographed eyes for research, diagnosis, advertising and fine art. Clockwise from top, left: A macular hole; a series of images of eyes; a cyst on an iris.

In search of a creative outlet as the clinical and administrative demands of his work grew, Maio began making art with his images.

“I prided myself first and foremost in providing the information that clinicians and researchers needed, but once I did that, there was no boundary on me to experiment,” he says. “I can play with the light; I can play with the magnification, and focus on a portion of [the eye]. I can make it look artistic in an abstract way, and people respond to it.”

He quickly realized that his employers owned all the rights to his work, so he couldn’t legally sell art prints without their permission. “If I don’t own [the images], I can’t do things with them,” he says. So he started asking his employers for language in his contracts that gave him the copyrights to his images. (Maio says they’ve never balked at his request, because he gives them the right to do whatever they want with his images, too.)

The market for Maio’s work has always been diverse. Besides textbooks and medical journals, his images have appeared in ads, commercial product brochures and trade show booths. Some of his commercial assignments have come on the strength of his fine-art work. For instance, he photographed irises for a Merck calendar to help promote an eye drop the company markets for treating glaucoma.

Maio says that digital technology has diminished opportunities for ophthalmic photographers somewhat, because eye doctors (and their technicians) can now do their own ophthalmic photography. But according to Maio, there’s still plenty of opportunity for ophthalmic photographers at teaching hospitals and private eye clinics all over the country. And they make an enviable living, because their services are billed as a diagnostic test, and covered by insurance.

“I have friends who make a really, really good living—\$200,000 a year—just shooting for doctors in private practices,” Maio says.

He is now concentrating on consulting work, photographing eyes for drug trials, and helping companies design and test products and services related to ophthalmic photography.

Maio segued from clinical work to consulting in the industry more than a decade ago when he realized digital technology was lagging in the field of ophthalmic photography. The earliest digital ophthalmic camera sensors were 1 mb, he says. Those cameras were still in use when commercial photographers were using higher resolution Phase One digital backs.

Maio approached digital imaging company MegaVision of Santa Barbara, California, about building and marketing a (then) high-resolution camera back—its files were six megapixels—that was compatible with retinal cameras.

“The president flew to my house. We bought a Philips chip, and built the camera in my garage,” Maio says. “We pretty much took over the market with that camera. The majority of [ophthalmic photography] was still film. But that became the tipping point, when [digital retinal photography] became better than film.”

That was in 1999. Maio spent the next decade employed by two different medical imaging companies, and now does consulting work for various companies, including Adobe. (He’s a member of their Biomedical Imaging Advisory Group, which has helped the company design a version of Photoshop that’s tailored to the needs of medical, scientific and technical users of the software.)

His advice to photographers interested in checking out the field of ophthalmic photography is to visit the Ophthalmic Photographers’ Society Web site, which provides information about events, meetings, training and certification. Maio’s own Web site is markmaio.com. **pdn**

assignments were over,” Maio says. “I was asking myself how else I could use photography to help people. And that’s how I found medical photography.”

Maio earned an associate’s degree in photography from Milwaukee Area Technical College. The training, he says, “had nothing to do with art. They taught us how to be photographic problem solvers. That was key.” He spent three years as a staff photographer at St. Joseph’s Hospital in Milwaukee, photographing surgeries, autopsies and lab slides through microscopes. “It was mostly for pathology labs and surgeons, documenting whatever they were doing for teaching purposes,” Maio says.

“Then I heard about ophthalmic photography and I thought: What better way to help people than with their vision?” His first job as an ophthalmic photographer was at the Medical College of Wisconsin’s Eye Institute. During the 1980s and 1990s, he held positions at Emory University and SUNY/Buffalo. Along the way he helped set up Bachelor of Science degree programs in ophthalmic photography at SUNY and Rochester Institute of Technology.

Ophthalmic photographers use the same instruments that eye doctors use for patient examinations, attaching cameras to capture the images. Maio explains that there are two primary light sources: a diffuse light for overall illumination—“it would almost be like umbrella lighting,” he says—and a so-called slit lamp with an aperture for targeting light on specific points, or directing light at different angles to create relief and make pathological features of the eye more visible.