An Eye for Quali

From treating patients with rare infections and diseases to streamlining electronic records and advancing resident training, Robert Swan, MD '08, champions continual improvement at Upstate's Department of Ophthalmology & Visual Sciences.

2023 Award Winner

Medicine is often a bit like solving a mystery, following clues, and ruling out false leads to determine a proper diagnosis. That's especially true in the field of ocular inflammation, a subspecialty of ophthalmology that deals with rare infections and complex conditions from autoimmune disease.

"It's not an area that many ophthalmologists are trained in or comfortable with, so I see patients from a large swath of the Central New York region," says Robert Swan, MD '08, associate professor of ophthalmology and visual sciences at Upstate Medical University.

For Dr. Swan, medical sleuthing is an integral part of the job. Take the patient with scleritis, which is a severe ocular inflammatory condition affecting the outer covering of the eye and almost always caused by an autoimmune condition. "We began treating it like an autoimmune condition, but he didn't get better."

Although the patient had no recollection of any injury to his eye, Swan decided to try an antifungal. Perhaps he'd somehow gotten plant matter in his eye. The patient improved and a biopsy ultimately confirmed the presence of fungus. "There's almost no fungal scleritis, especially for somebody who didn't have a known injury," says Swan. "He was one of those once-in-lifetime patients that you learn from."

During the COVID-19 pandemic, Swan noted an increased number of patients presenting with tubulointerestital nephritis and uveitis (TINU) syndrome, a rare form of inflammation involving the inside of the eye associated with patients with subacute or acute kidney inflammation. When he turned to colleagues on a listserv, others reported the same phenomenon. "We're currently in the process of writing up our experience dealing with this cluster of patients with this unusual disease in association with COVID," he says.

More recently, Swan treated a patient who suffered an eye injury while attempting to fix a cannabis water pipe. "After a prolonged period of trying to figure out what was wrong with that eye, we found DNA for an unnamed species of mouth flora, which had never infected a human eye before," he says. "Once he had the right antibiotics, he got better."

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Dr. Swan at Upstate's Department of Ophthalmology and Visual Sciences

Swan has written up many of his unusual cases for publication, not just because they're interesting, but also to help others. "When you're struggling to find out what something is, the first thing you do is turn to the medical literature, particularly when you've got something really unusual or complicated," he says. "Sharing victories when they come and what worked for us is a way to help others provide better treatment to patients."

Unfortunately, not everything is a win. He's thinking about a three-year old girl who already lost one eye to inflammation. "We don't know what the problem is and we're trying to protect the second eye. Unfortunately, some of these cases go unsolved."

Swan admits he never set out to become a specialist in rare disease.

Growing up in Queensbury, New York, he excelled in math and science and became interested in medicine after participating in the New Visions program, which provides clinical health care experiences for high school seniors.

After earning a bachelor's degree from SUNY Binghamton, he came to Upstate Medical University with no set idea of what specialty he wanted to pursue. Over the course of his clinical rotations, he realized he didn't want to spend his days in a hospital and began focusing on outpatient specialties. A rotation in ophthalmology sealed his interest.

Swan met his wife, Rebecca Swan, MD '08, during a summer anatomy class between first and second year of medical school. She was pursuing radiology and the couple matched for residencies at Albany Medical Center. When

The Swan family at the Making Strides Against Breast Cancer Walk in 2022

Rebecca wanted to do a fellowship in breast imaging in Boston, Swan began to look at fellowship opportunities in ophthalmology. Ocular inflammation stood out.

"I'd had a few patients with inflammation that I had not been able to help," he recalls. "I thought this would be good additional training to support a career in general ophthalmology."

During his fellowship at the Massachusetts Eye Surgery and Research Institution, Swan had the opportunity to train with C. Stephen Foster, MD, a pioneer of the subspecialty and founder of the Ocular Immunology and Uveitis Foundation. "When you work with someone who's at that level, you begin to see what's really possible," says Swan.

Nonetheless, when he and his wife returned to Central New York in 2015, Swan's plan was to practice general ophthalmology.

But patient demand had other ideas.

With only two fellowship-trained specialists in ocular inflammation in Albany and two in Rochester, Swan began receiving patients from a huge swath of Upstate New York, from Binghamton to the Canadian border and as far west as Buffalo. It didn't take long for him to focus solely on his subspecialty.

In 2016, Swan became director of Upstate's ophthalmology residency program, a role he says is "a completely different set of challenges than treating inflamed eyes.

"How do you make the people we train the best they can be, but also make the program that's creating those people the best it can be? And how do you take that experience and help others who are trying to do the same thing?" he says.

Swan believes all of those things are interconnected but begins with the personal development of the individuals in the program.

"The smartest person in the room does not always make the best doctor," he says. "The challenge is to help people who are very, very smart, but who are not communicating effectively or behaving in their best interest. There's a way to coax people to be their best and most effective selves. And if you can frame it the right way, you can show them that this is how they're going to be effective at achieving their ultimate goals."

He's talking about medical professionalism: helping someone curb a hot temper or to simply write more effective emails. "My chair has mentored me in some of these regards and we've incorporated that into the residency training," says Swan, who has spoken on professionalism and learning from his own foibles at the 2021 SUNYTedx conference.

But Swan is also working to make improvements at a systems level. Through creation of the Erie Canal Lecture Series, Swan leveraged clinical connections between SUNY Upstate, the University at Buffalo, and Albany Medical Center to launch a joint electronic didactic vehicle that has measurably raised resident test scores.

He also created a Smartphone App to place the "institutional memory" of the department at a resident's fingertips, including orientation

Dr. Swan with ophthalmology residents after an educational conference

Dr. Swan speaking at a TEDx SUNYUpstate conference

materials, equipment guides, call guidelines and procedures. "It's easily accessible information that doesn't have to be duplicated from year to year for a new incoming class of residents," says Swan. "That's something I'm really proud of."

Swan also serves as the Ophthalmology Department Quality officer and EPIC Champion and many of his efforts overlap his varied roles. "I'm always looking for improvements that give a win on multiple levels," he says. "If I can find something that helps my trainees' wellness and my colleagues' wellness and also lets them take care of patients faster, that's a big win."

By focusing on the electronic health record (EHR), Swan helped found the EPIC ophthalmology specialty steering board, a group of 12 ophthalmologists from 12 institutions nationwide that meets with EPIC on a monthly basis. His efforts have streamlined documentation and reduced the "click burden" for the department by almost 50 percent over the last eight years. He is currently focused on identifying and integrating social determinants of health into the EHR, both to improve resident knowledge and patient safety and outcomes. Having recently finished EPIC Physician Builder Training, he's also working with other departments to explore and collaborate on ways to improve the EHR.

Swan serves on several national committees. He is the chair for the Committee for Resident Education through the American Academy of Ophthalmology, an elected member of the AUPO Program Directors Council, and a member of the steering committee for the regional Vision Forum and state ophthalmological society meetings.

He's been honored for his efforts as both Downtown Provider of the Year and Program Director of the Year by Upstate Medical University in 2018, with the President's Education Award in 2023, and most recently, with the Outstanding Young Alumnus Award from the Upstate Medical Alumni Foundation, presented at Reunion Weekend in October.

Many of the patients Swan sees in his practice present with some form of eye inflammation. There can be an infinite number of causes, including sarcoidosis, a systemic inflammatory disease.

One of the first questions he asks these patients is whether they have a tattoo, and by chance, is that tattoo swollen?

"All it took was one patient with the combination and I've learned that if a patient has inflamed eyes and a swollen tattoo, they probably have sarcoidosis," he says.

Being able to make a quick and accurate diagnosis is part of Swan's focus on continual improvement, whether that's coming up with new ways to diagnose disease, offering residents feedback, or developing more efficient methods for patient documentation.

Swan believes it's all connected. "As we've implemented improvements to our program, the residents are doing better, and from that, the outcomes get better. The patients are happier, the staff is happier," he says.

"When you're in the middle of it day to day, you don't always see those connections. But if you can start approaching things at a systems level, you can really make progress."