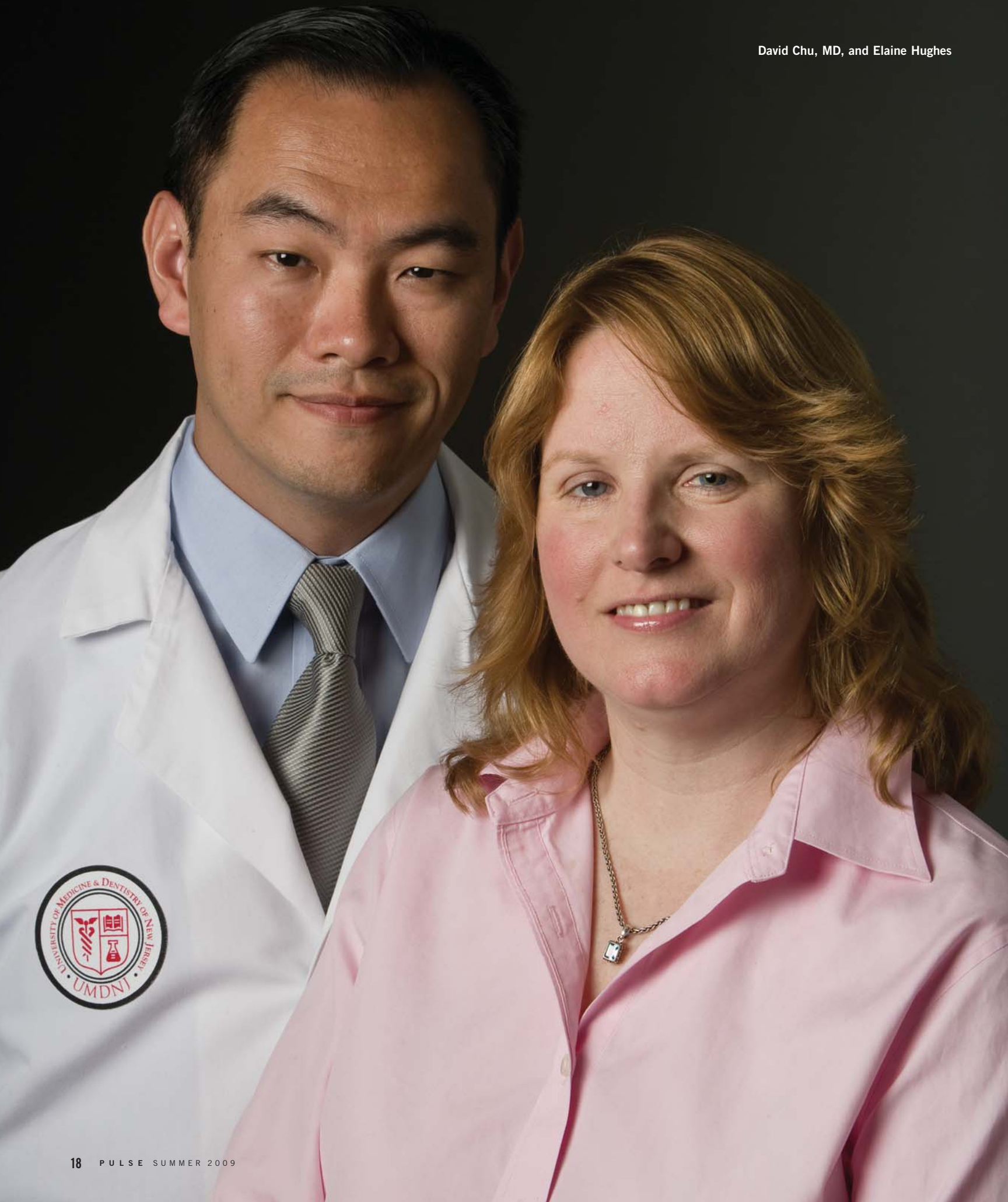


David Chu, MD, and Elaine Hughes



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An accident nearly 30 years ago left her blind in one eye. It took a series of unexpected, fortunate coincidences to change that fate.

BY MARYANN BRINLEY

Elaine Hughes doesn't want to believe in miraculous serendipity but a startling chain of events which began more than 30 years ago makes her pause in amazed gratitude. "I'm not usually that religious but can all this have happened because of just weird coincidence?" Hughes is a 44-year-old computer expert who loves her job in the NJMS Technology Support Services Department. "To be able to help all kinds of people in the medical school keep their computers up and running is great. I'm lucky because I get to talk to the doctors as peers."

In fact, it was on just such an occasion in 2004 while she was working on a malfunctioning computer in the Institute of Ophthalmology and Visual Science (IOVS) that Hughes found the answer to the personal catastrophe that had started three decades earlier. "I was seven years old and had been playing with a pencil and a rubber band like a slingshot," she explains. "My father was nearby and thought about stopping me." But in an instant, the pencil shot into her left eye, shattering the lens and causing what was deemed nearly irreparable damage. "My dad regretted his inaction for the rest of his life. He used to say all the time, 'If I could only go back and do that one thing: stop you.'"

When he died at age 75 in 2002 from a stroke, he even willed his eyes and corneas to science, hoping that they might somehow benefit his daughter. "My father was a truly optimistic person, who would tell me, 'Elaine, I just don't think you should give up. I really don't.' He was very honorable and sweet and I guess, in a sense, after his death, when his own eyes weren't going to benefit me, he figured out another way to get me help."

Immediately following the accident, her parents rushed her to a hospital in Brooklyn, where the family lived. One of seven children, she explains, "There was so much trauma to the eye that one of the first doctors suggested it be taken out completely." Physicians

believed that sympathetic ophthalmia might rob Hughes of the sight in her other eye. In rare cases, tissue from a damaged eye circulating in the bloodstream can set off an inflammatory, autoimmune reaction in which the body starts attacking similar but healthy material in the uninjured eye. However, another expert at the hospital bravely argued to save her eye and to adopt a wait-and-see approach. He also performed surgery to remove some lens fragments and told her parents to take her home and "just let it heal."

It wasn't until she was a teenager that Hughes actually and fully realized that she would probably be blind in the eye forever. "I could see light, just day or night, but I had thought it could be fixed eventually. I was about 12 when I asked the doctor, 'When is this going to be resolved?' And I remember being told, 'Never. I'm sorry. It can't be fixed.' You can imagine how shocked and disheartened I was."

Growing up and going through school, Hughes describes herself as "self-conscious. I used to wear my hair covering the eye all the time. I was clumsy and would knock over things on my left side. I'd run into walls and it would be embarrassing. I had very little depth perception."

On numerous doctors' visits, throughout her lifetime, Hughes was informed that there was nothing that could be done. "Leave it alone," she would hear. "It's not doing anything. It's not hurting you." There was just too much scar tissue on the retina. Meanwhile, it would take her parents more than ten years to pay off the original surgical bill. "There was just a lot of guilt for everyone about the entire experience," she recalls.

In 2003, this mother of two daughters—Sara, now 24, and Jane, 21—was working for a computer software firm when she was suddenly laid off on the first anniversary of her father's death. It was not a good day at all. But her father's dream was far from over. Robert Luciano, a friend and co-worker whose own father had died on the same date, though a different year, vowed to make things right for her. Luciano couldn't believe how unfair the lay-off was, especially on that particularly sad day. So he called his wife Linda, who was employed at NJMS at the time, and asked about job openings. "You'll love it here," she was told. Little did Hughes know that something even more loving would happen because of her new position.

In the summer of 2004, she developed a sty in her right eye. On assignment to tend to a computer at IOVS, Hughes asked the office manager, Barbara Churchill, to recommend a physician who could

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take care of it. "Go see Dr. Chu," Churchill suggested.

"Immediately, I walked over to Dr. Chu's office and he could see me right away," she says. Then, Assistant Professor David Chu, MD, asked her, "What's the story with that other eye?"

"It was obvious to anyone looking at her that the left eye was not functioning," he recalls, as he pulls out her chart to refresh his memory about the details. Not having been able to see with the eye for so many years, the muscles had weakened, letting the eye drift out. "When the brain has no intention of keeping both eyes targeting one spot, this happens." He could even see the scar from where the pencil had gone in.

"Want to do something about it?" he asked her point blank. "I think I can fix it." She was stunned. Within minutes after a test that day to determine if she was a surgical candidate, more good news arrived. "I

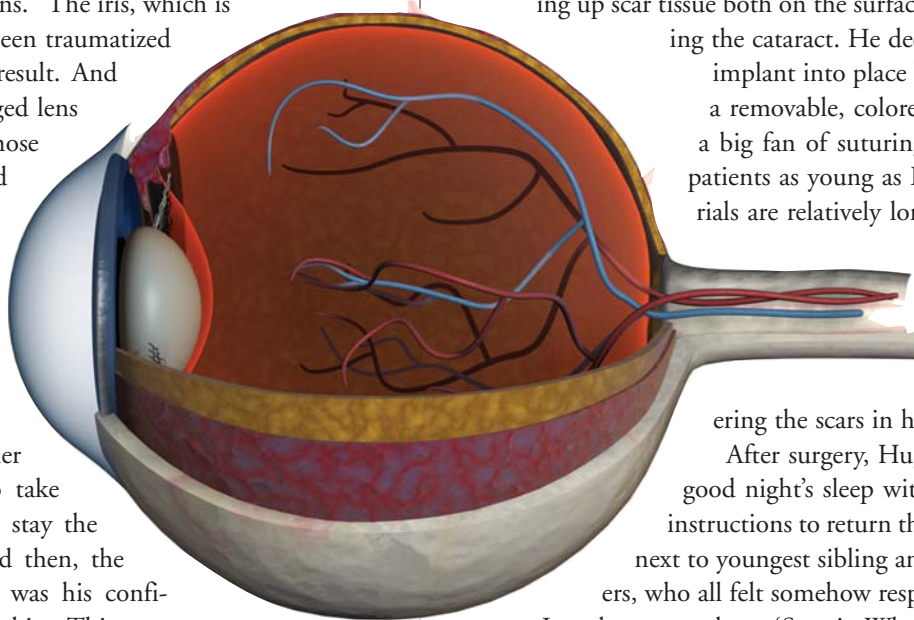
was expecting to have to wait days for the test results. I hardly had time to become nervous. ‘Guess what?’ a technician said, ‘The news is good. You’re a candidate.’”

She had scars on her cornea, “which is the shell to the clear window of the eye,” Chu explains. “The iris, which is the color part of the eye, had been traumatized and had scarred severely as a result. And she had remnants of her damaged lens scattered all over the place. Those pieces along with the scars had been blocking her view as well as the view for any doctors trying to look inside.”

Though Chu, who co-directs the Division of Cornea and Refractive Surgery at IOVS, could not promise that she would regain her vision, Hughes was willing to take the chance. “I had planned to stay the way I was. But right there and then, the most significant thing for me was his confidence,” she says. “I had just met him. This was a person who was going to cut into my eye. He told me there would be risks but I knew I could trust him. For me to be able to make that decision right there on the spur of the moment after 30 years was a real shock.”

Chu explains that the technology had changed dramatically in 30 years. The instruments alone have been remarkably refined. While other doctors had told this patient to leave the eye alone, the case was “a challenge for me,” Chu says. “There were enough clues that she might possibly regain some sort of reasonable vision. This wasn’t a case that you jump into quickly for instant gratification as an eye surgeon.” By contrast today, simple cataract surgery takes only minutes with no stitches. And, with Lasik surgery, he explains, the patient is wearing glasses one minute and the next minute, they’re not. “Those situations don’t excite me. Challenges, with lots of pitfalls, keep me going. Hers would be tricky,” he explains. A mathematician as an undergraduate, he focuses his research attention on inflammatory diseases and likes “the physics of ophthalmology. That’s why I chose this field.” There would be many steps involved. “It would take effort. It would take time and we didn’t know whether Elaine would get her vision back at all. In fact, she would begin a long journey because there was so much wrong with that eye.”

There was also real concern that her initial loss of sight had occurred right at what is considered a cut-off age of six to seven. Would her brain have learned enough vision? Even if he was able to restore the eye physically, would there be any memory in the brain letting her actually see? He couldn’t be sure. “If she did have amblyopia, the surgery wouldn’t have made any difference. Basically the brain can lose the ability to



see.” So, if her accident had occurred any younger, there might not be enough memory embedded to allow vision to return.

In surgery, Chu removed and cleaned out old scattered lens fragments, draining the vitreous fluid humor as part of the process, breaking up scar tissue both on the surface and inside, and removing the cataract. He decided not to stitch a lens implant into place but to plan on the use of a removable, colored contact lens. “I’m not a big fan of suturing lenses into the eyes of patients as young as Elaine. The suture materials are relatively long-lasting but nothing is ever permanent and the contacts can serve two purposes: letting her see, of course, but also covering the scars in her eye.”

After surgery, Hughes left for home and a good night’s sleep with her eye bandaged and instructions to return the following day. “I’m the next to youngest sibling and I have so many brothers, who all felt somehow responsible for the accident.

I used to say to them, ‘Stop it. What could you have done?’” Her youngest brother, Chris, did the chauffeuring on that next day.

On August 6, 2004, when Chu removed the bandages, he held a high powered lens substitute up to her left eye. *Voila*. Her vision in that eye was immediately 20/50. “She was pretty excited,” he remembers.

Excited is not quite the word Hughes herself uses to describe her emotional high. “This really is a miracle,” she insists. “Right away, I could even read the eye chart with my good eye covered,” she says. And when she walked out to the waiting room, her big brother cried. Her mother, who was still alive at the time, was thrilled. “This was one of the happiest moments of her life,” Hughes says.

A month later, when the eye had healed from surgery and, as Chu says, “settled down,” she went for a permanent contact lens fitting. And later that year, she had more surgery to correct double-vision that was being caused by those 30 years of misalignment. Rudolph S. Wagner, MD, a clinical associate professor of ophthalmology at NJMS who specializes in strabismus, performed that procedure.

On follow-up visits to IOVS, Elaine Hughes is the one in the waiting room almost always willing to share her story. She is also the person who can elicit similar happy endings. “I met the daughter of a patient who was able to see after 20 years of being blind in both eyes,” she says in amazement.

So on the day of the interview with Chu, the question just had to come up: “How often do you get to restore sight to someone who has been blind?”

And without a moment of hesitation, smiling, he says, “Hopefully, we do that every day. Or at least we try.” Definitely the answer Elaine Hughes’ optimistic father would have loved. ●