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## Meet the 2025 Jackson Memorial Lecturer: Janey L. Wiggs, MD, PhD

By Brendan Dabkowski, Contributing Writer

Janey L. Wiggs, MD, PhD, presents the 82nd [Edward Jackson Memorial Lecture](#) at the AAO 2025 Opening Session. Wiggs is the Paul Austin Chandler Professor of Ophthalmology at Harvard Medical School in Boston, where she is also Codirector of the Glaucoma Center of Excellence, Vice Chair of Clinical Research, and heads the Genetic Diagnostics Section of the Ocular Genomics Institute. In addition, she serves as Associate Director of the Howe Laboratory and Associate Chief of Ophthalmology Clinical Research at Mass Eye and Ear.

Beyond her professional titles and her accomplishments, who is Janey Wiggs? If you were to go back in time to ask Wiggs' mother, who, as a single parent worked as a commercial artist to support Janey and her sisters, her mother might say that her infinitely curious and scientific-minded daughter was destined not only to make big discoveries but also to pursue the type of work that tangibly helps people. Her mother's influence would resurface decades later to guide her daughter even after Janey had become a doctor.

### From Moss Collections to Molecular Genetics

"My sisters liked to be inside watching TV, and I liked to be outside collecting things," Wiggs said, recalling the thrill of childhood exploration. Like lots of kids, she collected a mishmash of outdoor treasures: flora, rocks, and even moss. As an 8-year-old girl, she keenly remembers buying litmus paper from her town's hobby shop. "I went through our whole house figuring out what was an acid and what was a base."

Wiggs' youthful curiosity grew into a more formal interest in science during college. She started out as a chemical engineering major at the University of California, Berkeley but soon changed course toward a scientific discipline that truly wowed her: the pivotal moment came in a required biology class, when she encountered the concept of the lac operon—a gene-regulation mechanism in bacteria that determines whether the genes produce enzymes to digest lactose in the absence of glucose. Wiggs was struck by the fact that certain environmental conditions can set the rules for gene activity or expression.

"This is a surprisingly complicated regulatory mechanism that bacteria use to turn on the genes necessary for this metabolic pathway if they're in the right environment to use it," she said regarding lac operon. "And I just thought that was amazing—that kind of changed my life."

The moment of awe she experienced was the impetus for redirecting Wiggs' educational path (for the first time, at least): she changed her undergraduate major to biochemistry (BA, 1976) and eventually went on to earn a doctorate in biochemistry, focusing on gene regulation, from the same institution (PhD, 1981). Yet during graduate school, Wiggs began wondering how her molecular research, which truly fascinated her, might be translated into helping real people, real patients, outside of the laboratory.

Wiggs' educational and career paths changed again when she was casually perusing an issue of *Scientific American* during a doctor's appointment, she said. She was drawn to an article that discussed the molecular basis of sickle cell anemia. Like a good book, she couldn't put it down. The article detailed how a single amino acid change could lead to a debilitating disease. "I was so surprised that this seemingly minor change was the molecular basis of this horrible disease." To gain a better understanding of human genetics she decided she had to go to medical school.



## Mom's Impact and an Unexpected Calling

After finishing her PhD at UC Berkeley, Wiggs attended Harvard Medical School (MD, 1985). There, she saw the good in every specialty she studied. Her decision to ultimately specialize in ophthalmology, however, came via an unexpected source: a letter from her mother. In the letter was a newspaper clipping about a woman ophthalmologist climbing Annapurna, a mountain in Nepal, who somehow managed to treat patients in small Himalayan villages along the way, as she ascended.

"She cared for patients in the little towns she hiked through on her way up to the base camp ... I thought it was remarkable that somebody could be so skilled in different types of medicine," Wiggs said, adding that the physician's devotion to helping people while at the same time doing something as rigorous as climbing a mountain was inspiring and shaped her worldview.

Wiggs did a special rotation at Mass Eye and Ear in Boston and "immediately fell in love with ophthalmology, and that was the end of it."

Her early work in the field focused on the childhood eye cancer retinoblastoma (similar to last year's Jackson Memorial Lecture presenter, Jasmine H. Francis, MD). During her time conducting research at Mass Eye and Ear, Wiggs helped clone the gene responsible for retinoblastoma and also began to develop methods for genetic testing using genetic markers in the retinoblastoma gene. She did so under the mentorship of clinician-scientist Thaddeus P. Dryja, MD, who she said showed her what it meant to fuse clinical practice with laboratory science. "It was the first time I really understood what it meant to be a clinician-scientist."

That emphasis on connecting her molecular research with patient care helped shape and define the course of Wiggs' career. She eventually gravitated toward studying glaucoma, finding it scientifically complex because of its many "unknowns" but also clinically meaningful. Today, she is a renowned clinician-scientist specializing in the genetics of glaucoma as well as inherited ocular disorders.

## Advancing Glaucoma Genetics

Wiggs' current research focuses on the genetics of glaucoma, and she hopes to use genetic information to identify people at elevated disease risk through genetic testing. "Glaucoma is one of those diseases that people don't know they have until it's too late," she said. Because assessing genetic risk for glaucoma can be done early and is (mostly) cost-effective, it can be used to prioritize patients for screening and early intervention—with the ultimate goal of preventing blindness.

A foundational step in this work was the 2008-2009 creation of the NEIGHBORHOOD Consortium, which aimed to define the genomic architecture of glaucoma. By pooling data across institutions, it enabled large-scale genetic studies and laid the groundwork for identifying many of the genes now used in risk assessment. In addition to the development of genetic tests that can be used for risk stratification, this work also helped pave the way for a more advanced understanding of glaucoma.

"Understanding disease mechanisms on a molecular level is exciting," Wiggs said, "and knowing which DNA sequence is abnormal, how that leads to an abnormal protein, and how that protein triggers a cascade of dysfunction—that's the kind of information that not only helps us diagnose disease earlier but also paves the way for eventual cures."

## Mentorship and Legacy

Wiggs credits several mentors for helping her navigate her path. Thaddeus Dryja showed her how to fuse clinical care with what she'd learned at the bench.

David L. Epstein, MD, MMM, former director of the glaucoma service at Mass Eye and Ear, encouraged her to pursue glaucoma genetics.

And Joan W. Miller, MD, longtime chair of ophthalmology at Harvard, modeled what it looks like to have a top-tier career while also raising a family. "She's just incredibly accomplished, and she managed to do it while raising three children. She's been an inspiring role model for women," Wiggs said.

Now, as a mentor herself, Wiggs shares her insight with students, residents, fellows, and junior faculty. Her advice is simple: if it fascinates you, dig deeper. "As cliché as it sounds, it's true. If you've found something you're passionate about, that's what you should follow."

*This content is excerpted from the Friday/Saturday edition of AAO 2025 News, the newspaper distributed at the convention center. [Read more news](#) about Subspecialty Day and AAO 2025.*