

RUTH D. WILLIAMS, MD

Why Advocate for Increased Research Funding?

At this year's Women in Ophthalmology annual meeting, Arlene Drack showed riveting video footage of a child with Leber congenital amaurosis (LCA) before and after gene therapy treatment. An 11-year-old girl—who previously required an aide to help her maneuver between classes—walks confidently into the schoolroom alone, an improvement in quality of life that isn't captured through mere visual acuity measurement.

The landmark gene therapy that made this girl's independence possible grew out of decades of basic science research, much of it supported by NIH funding. Arlene said, "For the first time in human history, we can improve vision in children with a form of congenital blindness. This only happened because of medical research—and NIH funding is the cornerstone of medical research in the United States."

Advances in treatments for eye diseases like LCA grow out of academic research programs (see "Collaboration in Academic Funding," November), which rely on external funding. After a decade of cuts, flat funding, or no inflationary increases, Congress finally boosted NIH funding by \$7 billion in 2016-2018, a 23% increase. And the president recently signed the 2019 spending package, which includes another \$2 billion of funding to NIH (a 5.4% increase). Of this amount, the NEI will be allocated an additional \$24.2 million to bring its funding to nearly \$800 million.

Vision researchers have even more reason to be optimistic. Traditionally, funding for academic research has centered around the NEI R01 investigator-initiated award. However, additional federal funding opportunities for vision research are newly available. For example, Congress allocated \$500 million for research related to combating the opioid epidemic, and researchers—including those studying ocular pain and dry eye—are encouraged to submit proposals. In addition, the Department of Defense (DOD) offers research support through its Vision Research Program (VRP). James Jorkasky, executive director of the National Alliance for Eye and Vision Research (NAEVR), pointed out that "as researchers become familiar with DOD funding opportunities, many then submit grants beyond the Vision Research Programs," using key words such as "sensory" and "rehabilitation" and targeting diseases with visual implications. Thanks to

advocacy by NAEVR and the Academy during the Mid-Year Forum, VRP was funded at \$20 million for 2019.

Another funding opportunity, the 21st Century Cures Act (H.R. 34), was passed by Congress in 2016. Included in this bill are the BRAIN Initiative (initially established in 2013 by President Obama), the Precision Medicine Initiative, and the Regenerative Medicine Initiative, all funding sources available to vision researchers. Ophthalmology has been awarded more than one-third of the BRAIN Initiative funding in the last 4 cycles.

These increasingly diverse funding options reflect the pivotal role of ophthalmic research in neuroscience. In *BRAIN 2025: A Scientific Vision*, the initiative's working group pointed out that "The retina is the region in which the most progress has been made in the characterization of different cell types . . . it could serve as a flagship project for the BRAIN Initiative. It is relevant to the fields of vision, general sensory and signal processing, and to clinical issues including neurodegenerative diseases and vision disorders."¹

My patients often ask when we will have a cure for glaucoma. I tell them that eye research is leading the way, and when we cure glaucoma, we'll have also made gigantic strides in addressing spinal cord injuries, Alzheimer and Parkinson diseases, and the effects of stroke.

When Arlene showed the video of the girl with LCA before and after gene therapy treatment, the room full of ophthalmologists was vibrating with joy. Together we celebrated the impact of research on the life of a single child. This is why we are ophthalmologists. This is why we support and advocate for vision research. This is what gives our work meaning.



Ruth D. Williams, MD
Chief Medical Editor, EyeNet

1 <https://acd.od.nih.gov/documents/reports/06052014report-BRAIN.pdf>. Accessed Nov. 12, 2018.