DEPARTMENT OF HEALTH AND HUMAN SERVICES

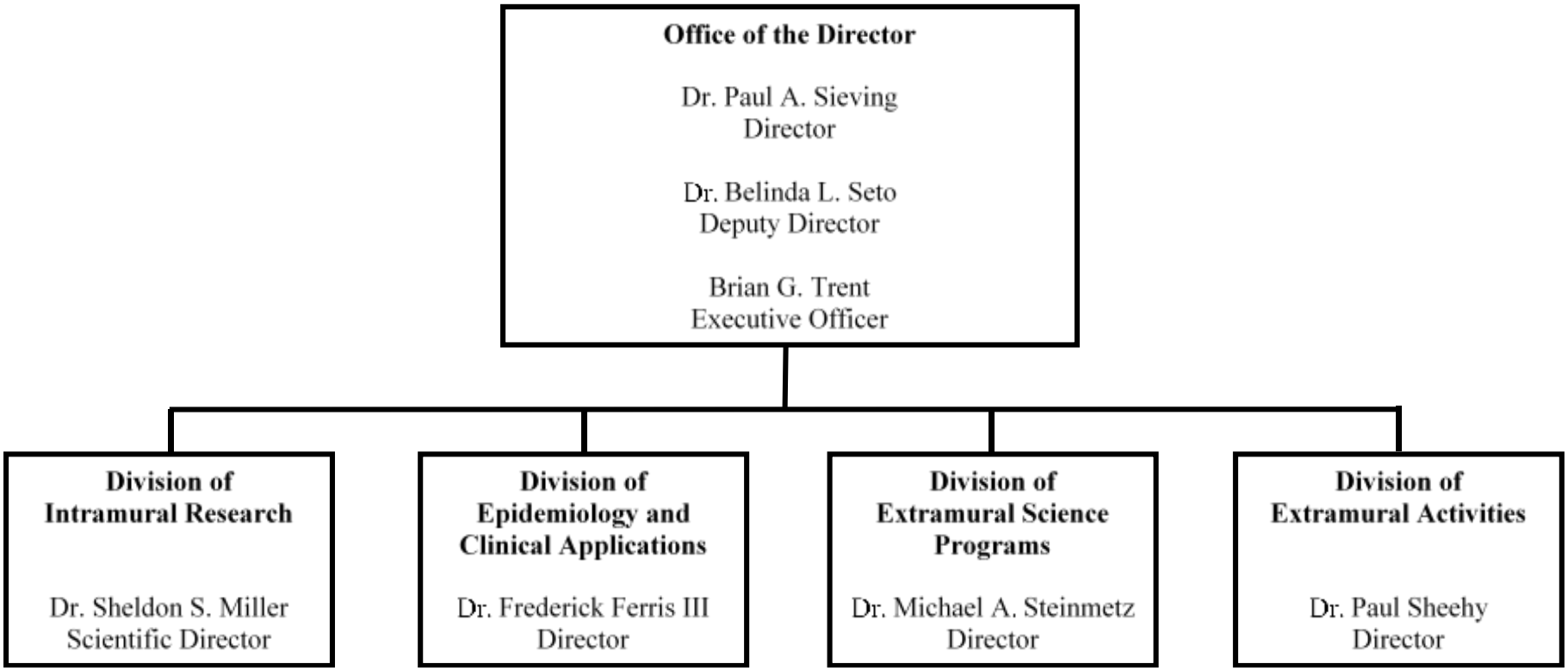
NATIONAL INSTITUTES OF HEALTH

National Eye Institute (NEI)

NATIONAL INSTITUTES OF HEALTH

National Eye Institute

Organization Chart



NATIONAL INSTITUTES OF HEALTH

National Eye Institute

For carrying out section 301 and title IV of the PHS Act with respect to eye diseases and visual disorders, $549,847,000.

NATIONAL INSTITUTES OF HEALTH
National Eye Institute

Amounts Available for Obligation[1]

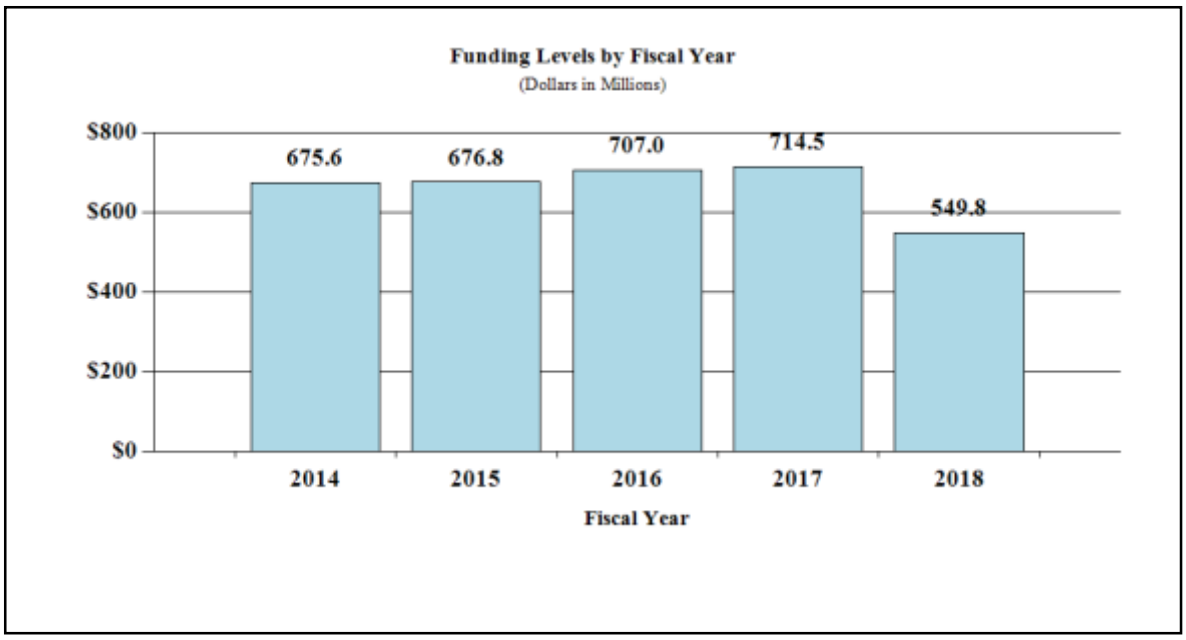
(Dollars in Thousands)

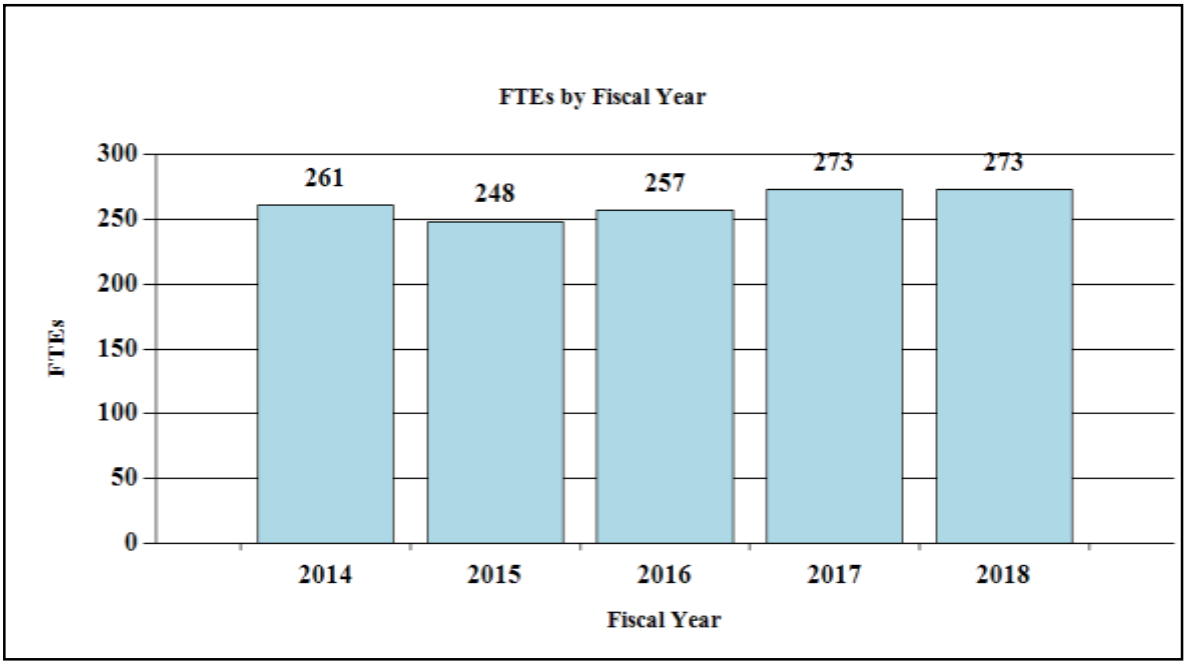
Source of Funding	FY 2016 Final	FY 2017 Annualized CR	FY 2018 President's Budget
Appropriation	$715,903	$715,903	$549,847
Mandatory Appropriation: (non-add)			
Type 1 Diabetes	*(0)*	*(0)*	*(0)*
Other Mandatory financing	*(0)*	*(0)*	*(0)*
Rescission	0	-1,361	0
Sequestration	0	0	0
Zika Intra-NIH Transfer	-991	0	0
Subtotal, adjusted appropriation	$714,912	$714,542	$549,847
OAR HIV/AIDS Transfers	-7,905	0	0
Subtotal, adjusted budget authority	$707,007	$714,542	$549,847
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	$707,007	$714,542	$549,847
Unobligated balance lapsing	-5	0	0
Total obligations	$707,002	$714,542	$549,847

[1] Excludes the following amounts for reimbursable activities carried out by this account:
FY 2016 - $18,538 FY 2017 - $25,100 FY 2018 - $20,000

Fiscal Year 2018 Budget Graphs

History of Budget Authority and FTEs:





NATIONAL INSTITUTES OF HEALTH
National Eye Institute

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2017 Amount Authorized	FY 2017 Annualized CR	2018 Amount Authorized	FY 2018 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$714,542,000	Indefinite	$549,847,000
National Eye Institute	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$714,542,000		$549,847,000

NATIONAL INSTITUTES OF HEALTH
National Eye Institute

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2008	$667,820,000	$677,039,000	$681,962,000	$678,978,000
Rescission				$11,862,000
Supplemental				$3,548,000
2009	$667,764,000	$690,721,000	$687,346,000	$688,276,000
Rescission				$0
2010	$695,789,000	$713,072,000	$700,158,000	$707,036,000
Rescission				$0
2011	$724,360,000		$723,220,000	$707,036,000
Rescission				$6,208,198
2012	$719,059,000	$719,059,000	$692,938,000	$704,043,000
Rescission				$1,330,641
2013	$693,015,000		$695,115,000	$702,712,359
Rescission				$1,405,425
Sequestration				($35,271,328)
2014	$699,216,000		$701,407,000	$682,077,000
Rescission				$0
2015	$675,168,000			$684,191,000
Rescission				$0
2016	$695,154,000	$698,108,000	$709,549,000	$715,903,000
Rescission				$0
2017[1]	$707,998,000	$735,576,000	$740,826,000	$715,903,000
Rescission				$1,361,000
2018	$549,847,000			

[1] Budget Estimate to Congress includes mandatory financing.

Justification of Budget Request

National Eye Institute

Authorizing Legislation: Section 301 and title IV of the Public Health Service Act, as amended.

Budget Authority (BA):

	FY 2016 Actual	FY 2017 Annualized CR	FY 2018 President's Budget	FY 2018 +/- FY 2017
BA	$707,007,000	$714,542,000	$549,847,000	-164,695,000
FTE	257	273	273	0

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

Director's Overview

Blinding eye diseases, such as age-related macular degeneration, diabetic retinopathy, and glaucoma affect millions of Americans of all ages and ethnicities. The National Eye Institute (NEI) supports vision research through approximately 1,500 research grants and training awards made to scientists at more than 250 medical centers, hospitals, and universities across 44 states and around the world. NEI also conducts laboratory and patient-oriented research in facilities located on the NIH campus in Bethesda, Maryland. The proposed FY 2018 NEI budget seeks to capitalize on recent scientific accomplishments, while minimizing future obligations. NEI expects to fund substantially fewer new projects, while mainitaining existing research commitments. Funding priorities will focus on basic and discovery research, which may be translated in partnership with private sector research. NEI also plans to fund a limited portfolio of the most promising translational/clinical research.

Restoring vision by regenerating neurons: NEI launched its Audacious Goal Initiative (AGI) in 2013 to restore vision by regenerating neurons and their connections with the visual system. It takes many months for the visual system to develop in humans, a process that is not fully completed until after birth. From the formation of the transparent lens and other parts of the eye, to the generation and maturation of different classes of retinal neurons that detect and process light, to the wiring of the optic nerve, in which projections from the retina must travel long distances to make proper connections in the brain, each component depends on an exquisitely complicated orchestration of genes, developmental cues and even patterned input from visual activity. Because of this complexity, blindness from trauma, disease, and cell death has been hard to reverse. Although fish and other animals can regenerate their damaged visual system, this does not occur in humans or other mammals. NEI awarded AGI grants in August 2016 to six interdisciplinary teams to identify factors that either stimulate or inhibit regeneration of cells required for vision, and factors which guide optic nerve fibers to appropriate brain targets or help form appropriate connections.

This spring, NEI will launch a challenge competition to develop 3D retina organoids—human stem cell-derived miniature multilayered functional retinas in a dish. These organoids will be used for disease modeling and drug development. Along these lines, NEI researchers established a standardized protocol to develop retinal ganglion cells (RGCs) from adult-tissue derived human stem cells. RGCs are neurons that process vision in the eye and send signals to the brain via their nerve fibers; these fibers comprise the optic nerve, which degenerates in diseases like glaucoma. Using these patient-derived RGCs in the lab, the researchers studied what makes glaucoma patients' cells vulnerable. Regenerative therapies for RGC loss are being explored by a handful of researchers. One NEI-supported team developed a new technique to transplant RGCs into the eyes and tested it in adult rats. Many of the transplanted cells grew projections to the proper brain targets and responded to light. In glaucoma, the optic nerve is damaged before the RGC cells die, but natural inhibitory factors block growth of new RGC projections to the brain. NEI-funded researchers showed that drugs that block these inhibitory factors can partially regenerate damaged RGC projections in mice, but they did not grow all the way to the brain targets. The researchers then improved on this technique by taking a clue from neural development: during development neurons need to respond to visual activity for proper patterning the neural circuitry, in addition to chemical cues like the ones blocked in the above experiment. Because regeneration mirrors development, the researchers also tested if visual activity would aid regeneration of existing neurons by having mice view high-contrast image patterns. The visual stimulation, combined with the drugs, promoted nerve fiber growth over long-distances to their correct brain targets. Not only did this regimen accelerate growth 500 times faster than untreated neurons, treated mice were able to perform vision-based behavioral tests, showing some restoration of sight.

Since stem cells proliferate and develop into mature cells, patient-derived stem cells can be used to replace lost tissue while avoiding immune system rejection. In a proof-of-concept study, NEI scientists derived stem cells from a patient with a form of blinding degeneration called retinitis pigmentosa. In these cells, they then corrected the genetic mutation using a DNA editing technology known as CRISPR. Although these cells were not transplanted back into the patient, efforts such as the NEI AGI are studying how to safely integrate functional retinal cells back into the eye to replace lost cells in patients with degenerative diseases. In December 2016, NEI convened a conference on Clinical Application of Stem Cell Therapies for Human Eye Disease which led to a white paper summarizing best practices for clinical trials based on sound science.

Therapies for complex eye diseases: Many of the leading causes of blindness, such as age-related macular degeneration (AMD) and diabetic retinopathy (DR) are complex, involving the interaction of many genes, behavioral, and environmental risks. Genomics studies in the past decade have identified genetic variants which contribute risk for AMD. Recently, an NEI-led international consortium analyzed 16,144 patients and 17,832 controls and identified 52 common and rare variants in 34 distinct genetic locations. While the genetics for the wet and dry forms of AMD are similar, the study identified a gene specifically associated with wet AMD. To further elucidate the biology of AMD, NEI established the AMD Pathobiology Working Group in October 2016, which will review basic AMD research and provide guidance on paths forward to translate progress into therapy.

And yet, the landscape of wet AMD treatment has dramatically changed in the past decade since the debut of anti-angiogenesis drugs, which block growth of abnormal, leaky blood vessels in the eye. Prior to the drugs, diagnosis of wet AMD rapidly led to severe visual impairment with 75 percent of untreated patients declining to legal blindness (20/200) within a year, and less than 10 percent retaining 20/40 vision, which is typically required to read or drive. By contrast, an NEI study in 650 wet AMD patients treated with these drugs showed that even after five years of treatment, half still had 20/40 vision or better and only 20 percent were 20/200 or worse. Building on this remarkable advance, the NEI-led Diabetic Retinopathy Clinical Research Network has conducted trials showing these drugs are effective for multiple eye complications of diabetes which also exhibit abnormal blood vessels. A trial comparing three drugs showed that after two years, all three yielded similar gains in patients with mild to moderate vision loss, but two of the drugs outperformed the third for patients with more severe vision loss. These results provide options for patients and doctors to personalize treatment based on their condition.

New paradigms for treatments and rehabilitation: Drugs that reduce high fluid pressure in the eye are available for some forms of glaucoma, but no FDA-approved therapies address RGC death, common in all forms of glaucoma. NEI preclinical development of eye drops containing a neuroprotective drug is aimed at preventing RGC loss. If successful, this approach could be combined with glaucoma eye pressure drugs.

Just as the Human Genome project created a paradigm shift in understanding and treating disease, the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative is developing new tools and technology to understand the organization of the nervous system which may revolutionize treatment. Vision is a key focus of the BRAIN Initiative, and vision neuroscientists are leveraging big data and new imaging and gene expression analyses to create a comprehensive atlas of retinal neurons. Retinal bipolar (BP) cells process information from light-detecting photoreceptor cells and transmit signals to RGCs. NEI scientists compared gene expression in 25,000 individual BP cells, which defined 15 subtypes, including two previously unidentified. They then mapped these gene patterns to cells based on their shape and pattern of neural connections. Merging high resolution imaging with electrical recording, they can now dissect the circuitry of thousands of neurons with millions of connections.

While the visual cortex occupies nearly one quarter of the brain and is responsible for most visual processing, other parts of the brain also rely on visual information. The parietal cortex is the part of the brain that integrates vision and other information related to the position of objects in space and initiates movement of the eyes and limbs. An NEI scientist has developed a parietal brain implant for rehabilitation of quadriplegic patients with spinal cord injuries. When the patient thinks about moving a limb, the parietal cortex generates signals to plan the movement. The brain-machine interface consists of 100 electrodes to detect signals; a computer can convert these signals to control a robotic arm, or a cursor on a screen.

Videogames may be an effective blindness rehabilitation tool. High attention demands and obtainable rewards in videogames stimulate the training circuits of the brain. Which is why simulators are very effective for training surgeons or pilots: two hours in a flight simulator is comparable to an hour in flight. Gamers can quickly learn to navigate a maze in virtual reality. NEI researchers have created an audio based simulator to teach blind individuals to navigate a

virtual building. Users trained on the simulator were able translate this map to the real-world building; however, training was even more effective when the simulator was presented as a game (users had to find jewels while being chased by monsters). Extending this research, the team will soon be releasing an audio-based subway map simulator game for blindness rehabilitation.

Overall Budget Policy:
The FY 2018 President's Budget request is $549.847 million which is $164.7 million below the FY 2017 Annualized CR Level. These reductions are distributed across all programmatic areas and basic, epidemiology or clinical research.

Program Descriptions and Accomplishments

Retinal Diseases Research: The retina is the light-sensitive neural tissue that lines the inside of the eye and sends visual messages through the optic nerve to the brain. Damage to the retina through disease or retinal detachment can lead to severe vision loss. The goals of this program are to increase the understanding of disease mechanisms that cause vision loss and to develop improved methods of prevention, diagnosis, and treatment. To meet these goals, NEI supports research on the cell biology, physiology, neuroscience, and immunology of the retina.

- **Age-related Macular Degeneration.** A leading cause of vision loss, AMD is a disease that blurs the sharp, central vision required for reading, driving, and face recognition. There are two forms of advanced AMD: geographic atrophy ("dry" AMD), a gradual breakdown of the light-sensing photoreceptor neurons cause vision loss; neovascular AMD ("wet" AMD), when abnormal blood vessels grow underneath the retina.
- **Retinopathy.** Diabetic retinopathy is a complication of diabetes in which abnormal blood vessels grow on the surface of the retina and may swell and leak fluid. Retinopathy of Prematurity is a potentially blinding disorder that affects premature infants with very low birthweight.
- **Retinal monogenic disorders.** Some retinal degenerative diseases are caused by single genetic mutations, including retinitis pigmentosa, Usher syndrome, and ocular albinism.
- **Uveitis.** Inflammatory diseases that produce swelling and destroy eye tissue can lead to severe vision loss.

Investigators in NEI's retina program have had success in regenerating retinal neurons and their connections after axon injury in animal models. However, regenerated RGCs project long nerve fibers from the eye to brain, and electrical signals from the eye are not transmitted the whole distance. These fibers lack an insulated sheath of proteins and fats called myelin, which normally protects signal transduction. In a proof of principle advance, researchers restored electrical conduction by using chemicals that blocked voltage-sensitive channels with regenerated RGC fibers. This treatment rescued visually induced behaviors in mice, demonstrating that restoring conduction can lead to functional recovery in regenerated nerves.

Program Portrait: Implementing a Vision Screening Telemedicine System
FY 2017 level: $4.200 million
FY 2018 level: $3.200 million
Change: -$1.000 million

The NEI SBIR program funds promising projects at small businesses with the goal of developing and commercializing products for diagnosis, treatment, or rehabilitation of visual impairments. One recent success story led to the development of a semi-automated telemedicine system screen for diabetic retinopathy (DR). DR, a leading cause of blindness, is caused by abnormal changes in blood vessels in the retina. Although DR is treatable if detected early, a significant proportion of diabetic patients do not receive an annual eye exam. Current screening for DR requires manual grading of retinal images by trained specialists, a system that would be overwhelmed by any large-scale community based screening effort. Furthermore, at $8,000-$12,000, portable low-cost retinal cameras remain unaffordable for many community clinics wishing to conduct regular eye screening. The SBIR funded telemedicine system can easily and affordably evaluate high volumes of retinal images, taken from geographically remote or underserved communities. The portable system costs 25-50 percent of current low cost cameras and can be deployed in community settings or clinics without eye care specialists. The computer-based system screens for abnormalities in the retina or vasculature. Abnormalities are first reviewed by trained technicians and patients with potential disease are referred to the eye doctor. Clinical testing was conducted in rural southwest Texas communities. It has also been tested internationally in Mexico and Malawi. More recently, the classification program has been expanded to screen for other eye diseases, such as glaucoma and macular degeneration. The SBIR program has supported this project from early conceptual phases through clinical development and regulatory assistance. Other SBIR projects are developing and deploying telemedicine tools for screening and diagnosis of eye disease.

Corneal Diseases, Cataract, and Glaucoma Research: Corneal diseases, cataract, and glaucoma cause more visits to ophthalmologists than any other vision disorders. NEI supports research to address these conditions that originate in the front of the eye.

- **Corneal disease research.** The cornea is the transparent layer forming the front surface of the eye and protecting the eye from the outside environment. Corneal injuries, infections, and diseases can be extremely painful and require immediate medical attention. Corneal transplantation is the main treatment for diseases of the ocular surface, however donor corneas are often not suitable for transplantation. NEI researchers isolated the specialized corneal endothelial cells from human cadavers, and could get them to multiply in a dish and then form a tight sheet that functioned like the ocular surface, providing a potential new option for cell therapy for corneal disease.
- **Cataract research.** Cataracts, a clouding of the lens in the eye that affects vision, are the leading cause of blindness worldwide. NEI investigates strategies to prevent cataract formation and progression through research to understand the physiological basis of how the lens in the eye remains transparent at the cellular and molecular levels.
- **Glaucoma research.** Glaucoma is a family of blinding diseases that result from damage to the optic nerve, the bundle of fibers that transmit signals from the eyes to the brain. Current therapies focus on reducing excessive fluid pressure in the eye, which causes nerve damage in the most common form of glaucoma. The trabecular meshwork (TM) which regulates outflow of fluid in the eye is often damaged in glaucoma. In FY 2016, NEI investigators derived TM tissue from pluripotent stem cells, which they transplanted into mouse models of glaucoma. Transplanted TM cells induced native TM cells to divide, leading to significantly reduced pressure, and greater survival of optic nerve cells.

While anterior eye diseases (affecting the front of the eye) can lead to vision loss in patients at any age, NEI places additional priority on research exploring the impact of aging and environmental factors on conditions such as corneal dysfunction and cataract formation.

Program Portrait: Treatment trial for Herpes Zoster

FY 2017 level:	$3.400 million
FY 2018 level:	$2.600 million
Change:	-$0.800 million

NEI launched a new multicenter randomized clinical trial in 2016 to determine whether long-term antiviral drug treatment reduces complications of herpes zoster ophthalmicus (HZO) in the eye. HZO, is a form of Herpes Zoster, or shingles, affecting the eye, is a common and serious disease caused by the reactivation of the chicken pox virus. With one million new cases in the U.S. each year, 10-20 percent affect the eye, causing incapacitating pain, and can be life threatening or potentially lead to vision loss. The cost to society is estimated to be one billion dollars. Long after the immune system fights an initial chicken pox infection, viral particles quietly reside in pockets of the nervous system and can occasionally flare up in parts of the body. In the eye, this is manifested as inflammation and scarring of the cornea, and in some cases development of corneal ulcers, an open sore of dead tissue on the surface of the eye. This trial will determine if prolonged treatment with a low dose of antiviral drug improves outcomes in reducing eye disease as well as debilitating chronic pain. The Zoster Eye Disease Study (ZEDS) chair will oversee 100 expert corneal investigators at 60 planned clinical centers, and work with the coordinating center. Patients will be randomized into two groups: treated with oral valacyclovir, and placebo plus standard eye care. Treatment will last 12 months, followed by six months of follow up. If successful, the treatment may be applicable to herpes zoster patients with chronic pain in other parts of their bodies.

Sensorimotor Disorders, Visual Processing, and Rehabilitation Research: NEI funds basic and applied brain research, and research on and rehabilitation for individuals with low vision.

- **Sensorimotor disorders and visual processing research.** Strabismus (misalignment of the eyes) and amblyopia (known as "lazy eye") are common disorders that develop during childhood. Program goals center on gaining a better understanding of the neuromuscular control of gaze and the development of the visual system in children at high risk for these disorders. Vision neuroscientists seek to understand how the brain processes the visual information that floods our eyes, how neural activity is related to visual perception, and how the visual system interacts with cognitive and motor systems.
- **Refractive errors.** Refractive errors, such as nearsightedness, farsightedness, and astigmatism, are commonly correctable with eye glasses or contact lenses in the United States, but remain a tremendous economic and personal burden globally. Major goals of this program are to discover the biochemical pathways that govern eye growth and to uncover the risk factors associated with refractive errors.
- **Rehabilitation research.** Low vision is the term used to describe chronic visual conditions that are not correctable by eye glasses or contact lenses. NEI supports rehabilitation research to improve the quality of life for people with visual impairments by helping them maximize the use of remaining vision and by devising improved aids and strategies to assist those without useful vision.

NEI's multi-center Vision in Preschoolers study found that children with moderate uncorrected farsightedness (hyperopia), which makes it difficult to see things up close, did significantly worse in preschool literacy tests than peers with normal vision. Moderate hyperopia may affect

up to 14 percent of preschool children. While refractive errors can lead to literacy deficits that affect grade school readiness, early detection with screening can lead to correction with glasses.

Program Portrait: Cortical Vision Impairment

FY 2017 level:	$1.000 million
FY 2018 level:	$0.750 million
Change:	-$0.250 million

If your children have vision problems, you take them to the eye doctor, but sometimes there is absolutely nothing wrong with their eyes. Children born with Cortical Visual Impairment (CVI) have damage affecting the part of the brain that processes vision. Their eye exams and eye anatomy may be normal, and even though CVI is the leading cause of childhood visual disability, it is often misdiagnosed. CVI affects between 10-22 babies per 10,000 born in developed countries and the prevalence is rising. It is often caused by lack of blood flow and oxygen delivery to the brain, as occurs during a stroke, and is more common in premature infants. Other causes include brain malformation, infection, seizure, and head trauma. Children exhibit variable levels of vision loss that may fluctuate over time, and have particularly poor attention to stationary objects, or processing complex visual environments, such as recognizing their parents in a crowd. While current treatments are limited, early intervention during the critical periods of visual development maximizes improvement. NEI research on CVI focuses on diagnosis and rehabilitation. One key challenge is screening for CVI—some affected children lack verbal and cognitive skills for standard diagnoses. An NEI project is developing an automated tool based on tracking eye movements in response to image projections, which will assess visual processing capabilities. This methodology is being validated with CVI patients who are able to communicate. The spectrum of CVI deficits requires rehabilitation individualized to each patient, and must often be handled differently from standard rehabilitation for ocular visual impairments, NEI seeks to include CVI as it develops tools for blindness rehabilitation.

Intramural Research: NEI clinical studies are focused on the cause, prevention, and treatment of eye diseases and vision disorders; cellular and molecular mechanisms of eye development, infectious diseases of the eye; inflammatory and immunological responses; mechanisms of visual perception by the brain; and sensory control of movements.

In FY16, intramural investigators extended preclinical studies on AMD patient-derived stem cells converted into retinal pigment epithelium (RPE), a tissue layer that supports and nourishes retinal photoreceptors but degenerates in dry AMD. They are on track to initiate a clinical trial in FY18 to replace RPE in AMD patients with tissue derived from their own cells.

Research Management and Support (RMS): RMS supports, provides essential services, and monitors the budgets of research programs. Included in these funds is personnel to carry out leadership and management functions, human resource support, training, travel, purchasing, facilities, budget, planning, information technology, and extramural grant award and management. NEI currently oversees more than 1,500 grants and contracts, including research project grants, core center grants, research career development awards, cooperative clinical research agreements, and research and development contracts.

NATIONAL INSTITUTES OF HEALTH
National Eye Institute

Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2016 Final			FY 2017 Annualized CR			FY 2018 President's Budget		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Epidemiology and Clinical Applications									
Direct:	11		11	11		11	11		11
Reimbursable:									
Total:	11		11	11		11	11		11
Division of Extramural Activities									
Direct:	9		9	17		17	17		17
Reimbursable:									
Total:	9		9	17		17	17		17
Division of Extramural Science									
Direct:	24		24	16		16	16		16
Reimbursable:									
Total:	24		24	16		16	16		16
Division of Intramural Research									
Direct:	157	2	159	167	2	169	167	2	169
Reimbursable:	3		3	3		3	3		3
Total:	160	2	162	170	2	172	170	2	172
Office of the Director									
Direct:	51		51	57		57	57		57
Reimbursable:									
Total:	51		51	57		57	57		57
Total	255	2	257	271	2	273	271	2	273
Includes FTEs whose payroll obligations are supported by the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0

FISCAL YEAR	Average GS Grade
2014	12.2
2015	12.3
2016	12.3
2017	12.4
2018	12.4

NATIONAL INSTITUTES OF HEALTH
National Eye Institute

Detail of Positions[1]

GRADE	FY 2016 Final	FY 2017 Annualized CR	FY 2018 President's Budget
Total, ES Positions	1	1	1
Total, ES Salary	185,100	188,987	192,672
GM/GS-15	36	34	34
GM/GS-14	21	25	25
GM/GS-13	39	38	38
GS-12	30	39	39
GS-11	35	34	34
GS-10	1	1	1
GS-9	6	7	7
GS-8	2	2	2
GS-7	4	3	3
GS-6	3	3	3
GS-5	0	0	0
GS-4	2	2	2
GS-3	0	0	0
GS-2	1	0	0
GS-1	1	0	0
Subtotal	181	188	188
Grades established by Act of July 1, 1944 (42 U.S.C. 207)	0	0	0
Assistant Surgeon General	0	0	0
Director Grade	1	1	1
Senior Grade	1	1	1
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	2	2	2
Ungraded	83	85	85
Total permanent positions	0	0	0
Total positions, end of year	0	0	0
Total full-time equivalent (FTE) employment, end of year	257	273	273
Average ES salary	185,100	188,987	192,672
Average GM/GS grade	12.3	12.4	12.4
Average GM/GS salary	105,019	108,309	110,421

[1] Includes FTEs whose payroll obligations are supported by the NIH Common Fund.