National Institutes of Health
National Eye Institute
Support at Least $41.6 Billion in NIH Funding in FY 2020
Support $850 Million in NEI Funding in FY 2020

ISSUE SUMMARY
The vision community supported the $7 billion in funding increases from Fiscal Year (FY) 2016 through 2018 for the National Institutes of Health (NIH), which were the first substantial increases since sequestration cuts in 2013 and demonstrated a pivotal shift in how Congress plans to provide more stability and sustainability in the medical research community.

In September 2018, Congress passed, and the President signed, the Consolidated Conference Report that increased NIH funding by another $2 billion to an FY2019 funding level of $39.1 billion. This $2 billion increase—for a total of $9 billion in increases in the past four fiscal years—represents Congress’ continuing commitment to innovation and research. The bill also increased National Eye Institute (NEI) funding by $24 million to an FY2019 funding level of $797 million. In the past four fiscal years, NEI funding has been increased by $120 million.

Request: For FY2020, the vision community is requesting funding of at least $41.6 billion for NIH and $850 million for NEI. These recommended funding levels will ensure a pattern of sustained and predictable increases, enabling NIH/NEI to build upon past basic and clinical research to accelerate the development of life-changing cures, train the next generation of scientists, drive the nation’s economy by creating jobs and economic growth, and maintain U.S. leadership in global innovation.

FEDERAL FUNDING FOR VISION RESEARCH IS VITAL
In House and Senate resolutions passed in 2009, Congress designated 2010-2020 as “The Decade of Vision” since eye disease is a major public health problem that is growing and disproportionately affects aging and minority populations. Today, more than 38 million Americans age 40 and older experience significant eye disease, with this number expected to grow to 50 million by 2020. Much of this prevalence will be driven by growth within Hispanic and African American populations, who experience a disproportionate incidence of glaucoma, cataracts, and diabetic retinopathy.

The economic and societal costs of vision impairment and eye disease are significant and growing. A 2014 study released by Prevent Blindness estimates the annual U.S. cost for vision disorders at $145 billion, which will grow to $717 billion in inflation-adjusted dollars by 2050. That study also concluded that direct medical costs associated with vision disorders are the fifth highest—only less than heart disease, cancer, emotional disorders, and pulmonary conditions. Adequately funding NEI can delay, save and prevent expenditures associated with Medicare and Medicaid programs, private insurance programs, and family care.

A 2016 JAMA Ophthalmology article reported that a majority of Americans across racial and ethnic lines describe potentially losing vision as having the greatest impact on their day-to-day life, more so than the loss of a limb, hearing, or speech.
BACKGROUND-DELIVERABLES FROM NEI RESEARCH

In 2018, NEI celebrated the 50th anniversary of its creation by Congress as the lead Institute for our nation's sight-saving and vision-restoring research. In addition to its “Audacious Goals” Initiative, which aims to regenerate neurons and neural connections in the eye and visual system within the next 10-12 years to restore vision and return individuals to productive, independent and quality lives, NEI-funded research is also leading to:

- NEI planning its first-in-human clinical trial that would test a stem cell-based therapy from induced pluripotent stem cells (iPSC) to treat geographic atrophy, also known as the “dry” form of age-related macular degeneration (AMD), which is the leading cause of vision loss among people age 65 and older. The human trial would convert a patient’s own blood cells to iPS cells, which are then programmed to become retinal pigment epithelial (RPE) cells, which nurture the photoreceptors necessary for vision and die in the geographic atrophy stage of macular degeneration. Bolstering the remaining photoreceptors, the therapy replaces dying RPE cells with iPSC-derived RPE cells.

- NEI launching the prospective international AMD Ryan Initiative Study of patients that use the latest advances in retinal imaging to identify biomarkers of the disease and targets for early therapeutic interventions.

- NEI identifying, through its Glaucoma Human Genetics Collaboration Heritable Overall Operational Database (NEIGHBORHOOD) International Consortium, 133 genetic variants that predict, within 75 percent accuracy, a person’s risk for developing glaucoma related to elevated intraocular pressure (IOP). Among the 133 variants identified, 68 had not been previously linked to IOP, and their loci point to cellular processes, such as lipid metabolism and mitochondrial function, that contribute to elevated pressure.

NEI-funded investigator-initiated research grants and Small Business Innovation Research (SBIR) grants have resulted in several commercialized products, including:

- **Optical Coherence Tomography (OCT)**
  OCT is an imaging technology that allows eye care providers to view the back of the eye without dilation, making patient visits faster and easier. It facilitates quicker, more accurate diagnoses than previous techniques. This technology supports a private commercial market of more than $1 billion per year, more than 16,000 high-paying jobs and has saved more than $11 billion by reducing unnecessary injections of prescription drug therapies.

- **Drug Therapies for AMD and Diabetic Eye Disease**
  Development of the first generation of FDA-approved anti-angiogenic ophthalmic drugs to inhibit abnormal blood vessel growth in "wet" AMD, stabilizing vision loss and, in some cases, improving lost vision. These drugs were fast-tracked by FDA for approval to treat diabetic eye disease.

- **New Generation of Glaucoma Drugs**
  NEI research into the role of IOP as a causal risk for primary open-angle glaucoma (POAG), the most common form of the disease, has resulted in two FDA-approved drug therapies that add to those that have already emerged from NEI research. Targeting the eye’s trabecular meshwork—which is one of the pathways responsible for regulating fluid flow within the eye—the new generation of therapies reflects an expanding menu of drugs, potentially in combination therapy, that lower IOP and better meet the needs of patients.

- **Robotic Device to Facilitate Corneal Transplantation**
  The developer is using this device to transplant an artificial cornea, which may obviate the
need for donor corneal tissue. It is currently under FDA regulatory review.

WHAT TO TELL CONGRESS
• Thank Congress for the continued funding increases for NIH and NEI in FY2019.
• Urge Congress to support FY2020 NIH funding of at least $41.6 billion.
• Urge Congress to support FY2020 NEI funding at $850 million to continue to restore our nation’s commitment to vision research.