



## **Pass a bipartisan budget deal to raise the caps with at least \$2 billion NIH increases in FY2018 and 2019**

### **FY2018 and FY2019 National Institutes of Health (NIH) Funding:**

- The vision community thanks Congress for the \$2 billion NIH funding increases in each FY2016 and FY2017.
- We urge Congress to pass a bipartisan budget agreement for FY2018 and 2019 that lifts Budget Control Act caps on nondefense discretionary spending, enabling at least a \$2 billion NIH increase to a funding level of \$36.1 billion in FY2018— as proposed by the Senate Appropriations Committee—and at least \$38.1 billion in FY2019.
- This ensures a pattern of sustained and predictable increases, enabling NIH/NEI to build upon past basic and clinical research that has accelerated 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 innovations.

### **FY2018 and FY2019 National Eye Institute (NEI) Funding:**

- In 2018, the National Eye Institute (NEI) celebrates its 50<sup>th</sup> anniversary as the nation's leader in saving sight and restoring vision. The Senate-proposed FY2018 NEI funding level of \$759 million would continue to restore the commitment to that research, as would FY2019 NEI funding at a level of at least \$800 million.
- Despite the FY2016 and FY2017 NIH increases, current NEI funding of \$733 million is just four percent more than the pre-sequester FY2012 funding level of \$702 million— meaning that it has taken five fiscal years for NEI to experience any significant growth in its budget, which has lost 25 percent of purchasing power since FY2003.
- NEI's current \$733 million funding pays for itself. Because of a technology developed through NEI funding, Medicare saved ~\$730 million in reduced drug spending in 2015. The technology, known as OCT (optical coherence tomography), helps ensure patients only receive treatment when they need it.
- Vision disorders have the fifth highest direct medical costs—only less than heart disease, cancers, emotional disorders, and pulmonary conditions. The U.S. spends only \$2.30 per-person, per-year for vision research, while the cost of treating low vision and blindness is \$6,680 per-person, per-year.
- Based on 2010 U.S. Census data, NEI has estimated that of the 143 million Americans age 40-plus, four million were blind or had significant vision impairment and 37 million had an age-related eye disease.
- The U.S. is the world leader in vision research. Without adequate funding, the NEI may not be able to pursue its primary "audacious goal" of regenerating neurons and neural connections in the eye and visual system, thereby restoring vision and returning individuals to productive, independent, and quality lives.



## **NEI funding has resulted in the successful commercialization of products to save sight and restore vision**

NEI funding of investigator-initiated research grants and Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants has resulted in several commercialized products:

### **Optical Coherence Tomography (OCT)**

OCT is an imaging technology that allows eye care providers to see the back of a patient's eye via a quick, non-invasive and inexpensive exam. This technology supports a private commercial market of \$1 billion per year and more than 16,000 high-paying jobs. A peer-reviewed publication has shown that OCT saved Medicare \$9 billion and patients \$2.2 billion by reducing unnecessary injections of expensive drug therapies.

### **Drug Therapies for AMD and Diabetic Eye Disease**

Development of the first generation of Food and Drug Administration (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 are currently being fast-tracked for approval by FDA for diabetic eye disease, including Diabetic Retinopathy and Diabetic Edema.

### **Over-the-Counter Nutritional Supplement to Reduce AMD Progression**

NEI's *Age-Related Eye Disease Study (AREDS)* showed that a formulation containing vitamins C and E, beta-carotene, and minerals zinc and copper, reduced progression to advanced-stage AMD. New data from a follow-up study, *AREDS2*, suggest that replacing beta-carotene with lutein and zeaxanthin may produce a safer, more effective formulation.

### **Pressure-reducing Glaucoma Drugs**

NEI-funded research has resulted in drug therapies that reduce intraocular pressure, a significant risk factor in the development of glaucoma—the second leading cause of vision loss in the U.S.

### **Sutureless Amniotic Membrane Graft**

The graft is essentially a "biological bandage" that sits on the surface of the eye—the cornea—reducing scarring, prevention of blood vessel formation, and promoting healing, while reducing pain.

### **Robotic Device to Facilitate Corneal Transplantation**

The developer is using this device to transplant an artificial cornea, which is currently under FDA regulatory review, and which may obviate the need for donor corneal tissue.

### **Visual Aide Services Using Camera-Enabled Mobile Phones**

This Smartphone application enables users to identify everyday objects, such as packaged goods, compact discs, and money, with text-reader capabilities using Optical Character Recognition (OCR).

### **Virtual Phaco Trainer for Cataract Surgery**

This simulator enables ophthalmology residents to practice the difficult steps of standard cataract surgery without risk to patients.

### **Field Expansion Prism Glasses for Hemianopia**

High power prisms incorporated into prescription eyeglasses increase the visual field by creating artificial peripheral vision in these patients who experience loss of peripheral vision on the same side of both eyes, a common side effect of stroke or Traumatic Brain Injury (TBI).