



**NAEVR**

National Alliance For  
Eye And Vision Research

*Serving as Friends of the National Eye Institute*

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**WRITTEN TESTIMONY IN SUPPORT OF INCREASED  
FUNDING FOR THE NATIONAL INSTITUTES OF HEALTH (NIH)  
AND THE NATIONAL EYE INSTITUTE (NEI)  
LABOR, HEALTH AND HUMAN SERVICES, EDUCATION AND RELATED  
AGENCIES SUBCOMMITTEE OF THE  
U.S. SENATE COMMITTEE ON APPROPRIATIONS  
April 8, 2010**

**EXECUTIVE SUMMARY**

**NAEVR requests Fiscal Year (FY) 2011 NIH funding at \$35 billion, which reflects a \$3 billion increase over President Obama's proposed funding level of \$32 billion. Funding at \$35 billion, which reflects NIH's net funding levels in both FY2009 and FY2010, ensures it can maintain the number of multi-year investigator-initiated research grants, the cornerstone of our nation's biomedical research enterprise.**

The vision community commends Congress for \$10.4 billion in NIH funding in the American Recovery and Reinvestment Act (ARRA), as well as FY2009 and FY2010 funding increases that enabled NIH to keep pace with biomedical inflation after six previous years of flat funding that resulted in a 14 percent loss of purchasing power. FY2011 NIH funding at \$35 billion enables it to meet the expanded capacity for research— as demonstrated by the significant number of high-quality grant applications submitted in response to ARRA opportunities—and to adequately address unmet need, especially for programs of special promise that could reap substantial downstream benefits, as identified by NIH Director Francis Collins, M.D., Ph.D. in his top five priorities. As President Obama has stated repeatedly, including at a visit to the NIH in September 2009, biomedical research has the potential to reduce healthcare costs, increase productivity, and ensure the global competitiveness of the United States.

**NAEVR requests that Congress improve upon the President's proposed 2.5 percent NEI increase—the second smallest increase of all Institutes and Centers—especially if it does not increase overall NIH funding above the President's request.**

In 2009, Congress spoke volumes in passing S. Res 209 and H. Res, 366, which acknowledged NEI's 40<sup>th</sup> anniversary and designated 2010-2020 as *The Decade of Vision*, in which the majority of 78 million Baby Boomers will turn 65 years of age and face greatest risk of aging eye disease. This is not the time for a less-than-inflationary increase that nets a loss in the NEI's purchasing power, which eroded by 18 percent in the FY2003-FY2008 timeframe. NEI-funded research is resulting in treatments and therapies that save vision and restore sight, which can reduce healthcare costs, maintain productivity, ensure independence, and enhance quality of life.

**FY2011 NIH FUNDING AT \$35 BILLION ENABLES THE NEI TO BUILD UPON THE IMPRESSIVE RECORD OF BASIC AND CLINICAL COLLABORATIVE RESEARCH THAT MEETS NIH'S TOP FIVE PRIORITIES AND WAS FUNDED THROUGH FY2009-2010 ARRA AND INCREASED "REGULAR" APPROPRIATIONS**

NEI's research addresses the preemption, prediction, and prevention of eye disease through basic, translational, epidemiological, and comparative effectiveness research which also address the top five NIH priorities, as identified by Dr. Collins: genomics, translational research; comparative effectiveness; global health, and empowering the biomedical enterprise. NEI continues to be a leader within the NIH in elucidating the genetic basis of ocular disease—NEI Director Paul Sieving, M.D., Ph.D., has reported that one-quarter of all genes identified to date through collaborative efforts with the National Human Genome Research Institute (NHGRI) are associated with eye disease/visual impairment.

NEI received \$175 million of the \$10.4 billion in NIH ARRA funding. As a result, NEI's total funding levels in the FY2009-2010 timeframe were \$776 million and \$794.5 million, respectively. In FY2009, NEI made 333 ARRA-related awards, the majority of which reflect investigator-initiated research that funds new science or accelerates ongoing research, including ten Challenge Grants. Several examples of research, and the reasons why it is important, include:

- **Biomarker for Neovascular Age-related Macular Degeneration (AMD):**  
Researchers will use a recently discovered biomarker for choroidal neovascularization (CNV)—the growth of abnormal blood vessels into the retina and responsible for 90 percent of vision loss associated with AMD—to develop an early detection method to minimize vision loss. *Why important? AMD is the leading cause of vision loss in the U.S., especially in the elderly.*
- **Cellular Approach to Treating Diabetic Retinopathy (DR):**  
Researchers propose to develop a clinical treatment for diabetic retinopathy—in which diabetes damages small blood vessels in the retina, causing them to leak—that uses stem cells from the patient's own blood that have been activated outside of the body and then returned to repair damaged vessels in the eye. *Why important? DR is the leading cause of vision loss in younger Americans, and its incidence is disproportionately higher in African Americans, Latinos, and Native Americans.*
- **Small Heat Shock Proteins as Therapeutic Agents in the Eye:**  
Researchers propose to develop new drugs to prevent or reverse blinding eye diseases, such as cataract (clouding of the lens), that are associated with the aggregation of proteins. Research will focus on the use of small "heat shock" proteins that facilitate the slow release and prolonged delivery of targeted macromolecules to degenerating cells of the eye. *Why important? Delivering effective, long-lasting therapies through a minimally invasive route into the eye is a major challenge.*

- **Identification of Genes and Proteins that Control Myopia Development:** Researchers propose to identify targets that will facilitate development of interventions to slow or prevent myopia (nearsightedness) development in children. Identifying an appropriate myopia prevention target can reduce the risk of blindness and reduce annual life-long eye care costs. Why important? *More than 25 percent of the U.S. population has myopia, costing \$14 billion annually, from adolescence to adulthood.*
- **Comparison of Interventions for Retinopathy of Prematurity (ROP):** In animal studies, researchers will simulate Retinopathy of Prematurity—a blinding eye disease that affects premature infants—and then study novel treatments that involve modulating the metabolism of the retina’s rod photoreceptors. Why important? *ROP affects 15,000 children a year, about 400-600 of whom progress to blindness, at an estimated lifetime cost for support and unpaid taxes of \$1 million each.*
- **The NEI Glaucoma Human genetics collaBORation, NEIGHBOR:** This research network, in which seven U.S. teams will lead genetic studies of the disease, may lead to more effective diagnosis and treatment. Researchers were primarily funded through ARRA supplements. Why important: *Glaucoma, a complex neurodegenerative disease that is the second leading cause of preventable blindness in the U.S., often has no symptoms until vision is lost.*
- **Comparative Effectiveness of Interventions for Primary Open Angle Glaucoma (POAG):** Researchers will evaluate existing data on the effectiveness of various treatment options for primary open angle glaucoma—many emerging from past NEI research. Why important? *POAG is the most common form of the disease, which disproportionately affects African Americans and Latinos.*

In addition to ARRA funding, the “regular” appropriations increases in FY2009-2010 enabled the NEI to continue to fund key research networks, such as the following:

- **The African Descent and Glaucoma Evaluation Study (ADAGES)**, which is designed to identify factors accounting for differences in glaucoma onset and rate of progression between individuals of African and European descent.
- **The Diabetic Research Clinical Research Network’s (DRCR)** initiation of new trials comparing the safety and efficacy of drug therapies as an alternative to laser treatment for diabetic macular edema and proliferative diabetic retinopathy.
- **The Neuro-Ophthalmology Research Disease Investigator Consortium (NORDIC)**, which will lead multi-site observational and treatment trials, involving nearly 200 community and academic practitioners, to address the risks, diagnosis, and treatment of visual dysfunction due to increased intracranial pressure and thyroid eye disease.

The unprecedented level of FY2009-2010 vision research funding is moving our nation that much closer to the prevention of blindness and restoration of vision. With an overall NIH funding level of \$35 billion, which translates to an NEI funding level of \$794.5 million, the vision community can accelerate these efforts, thereby reducing healthcare costs, maintaining productivity, ensuring independence, and enhancing quality of life.

**IF CONGRESS DOES NOT INCREASE FY2011 NIH FUNDING ABOVE THE PRESIDENT'S REQUEST, IT IS EVEN MORE VITAL TO IMPROVE UPON THE PROPOSED 2.5 PERCENT INCREASE FOR NEI**

The NIH budget proposed by the Administration and developed by Congress during the very first year of the Congressionally-designated *Decade of Vision* should not contain a less-than-inflationary increase for the NEI due to the enormous challenges it faces in terms of the aging population, the disproportionate incidence of eye disease in fast-growing minority populations, and the visual impact of chronic disease (e.g., diabetes). If Congress is unable to fund NIH at \$35 billion in FY2011 (NEI level of \$794.5 million) and adopts the President's proposal, the 2.5 percent increase in funding must be increased to at least an inflationary level of 3.2 percent to prevent any further erosion in NEI's purchasing power. NEI funding is an especially vital investment in the overall health, as well as the vision health, of our nation. It can ultimately delay, save, and prevent health expenditures, especially those associated with the Medicare and Medicaid programs, and is, therefore, a cost-effective investment.

**VISION LOSS IS A MAJOR PUBLIC HEALTH PROBLEM: INCREASING HEALTHCARE COSTS, REDUCING PRODUCTIVITY, DIMINISHING LIFE QUALITY**

The NEI estimates that more than 38 million Americans age 40 and older experience blindness, low vision, or an age-related eye disease such as AMD, glaucoma, diabetic retinopathy, or cataracts. This is expected to grow to more than 50 million Americans by year 2020. The economic and societal impact of eye disease is increasing not only due to the aging population, but to its disproportionate incidence in minority populations and as a co-morbid condition of chronic disease, such as diabetes.

Although the NEI estimates that the current annual cost of vision impairment and eye disease to the US is \$68 billion, this number does not fully quantify the impact of direct healthcare costs, lost productivity, reduced independence, diminished quality of life, increased depression, and accelerated mortality. The continuum of vision loss presents a major public health problem and financial challenge to the public and private sectors.

**ABOUT NAEVR**

The National Alliance for Eye and Vision Research (NAEVR) is a 501(c)4 non-profit advocacy coalition comprised of 55 professional, consumer, and industry organizations involved in eye and vision research. Visit NAEVR's Web site at [www.eyeresearch.org](http://www.eyeresearch.org).