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**Support National Eye Institute at \$800M, National Institutes of Health at \$39.3B in
FY2019**

Labor, Health and Human Services, Education and Related Agencies Subcommittee of
the House Committee on Appropriations

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Executive Summary

The Association for Research in Vision and Ophthalmology (ARVO), on behalf of its 11,000 members in the vision research community, extends our gratitude to Congress for the \$2 billion NIH funding increases in FY2016 and FY2017 and the \$3 billion increase in FY2018. Congress is helping NIH to regain lost ground after years of effectively flat budgets that did not keep up with biomedical inflation, thereby reducing purchasing power. With the FY2018 increase, Congress continued to make progress in reversing those losses by providing a substantial increase to all NIH Institutes and Centers (I/Cs), in addition to dedicated funding through the *21st Century Cures Act* and other funding devoted to specific programs.

In FY2019, ARVO recommends at least \$39.3 billion for the NIH, including funds provided through the *21st Century Cures Act* for targeted initiatives. This funding level would continue the momentum of recent years by enabling meaningful base budget growth above inflation to expand NIH's capacity to support promising science in all



disciplines, and would also ensure that the Innovation Account supplements NIH's base budget, as intended, through dedicated funding for specific programs.

ARVO also recommends at least \$800 million in FY2019 NEI funding. In 2018, NEI celebrates the 50th anniversary of its creation by Congress as the lead Institute for our nation's sight-saving and vision restoring research. Congress must ensure robust NEI funding to address the challenges of *The Decade of Vision 2010-2020*—as recognized by Congress in H. Res. 366 in 2009—including an aging population, disproportionate risk/incidence of eye disease in fast-growing minority populations, and the impact on vision of numerous chronic diseases. Despite recent NIH increases, NEI's FY2018 enacted funding of \$772.3 million is just ten percent greater than the pre-sequester FY2012 funding of \$702 million. Averaged over the six fiscal years, the 1.6 percent annual growth rate is less than the average annual biomedical inflation rate of 2.8 percent, thereby eroding purchasing power. We must maintain the momentum of vision research since vision health is vital to overall health and quality of life. Additionally, since the United States is a world leader in vision research and in training the next generation of vision scientists, the very health of the global vision research community is at stake.

NEI research saved Medicare, patients \$11.2B in drug payments

A technology invented and developed with NEI funding has saved Medicare and patients \$11.2 billion in reduced drug costs. A peer-reviewed publication in the *American Journal of Ophthalmology* compared this savings to the \$423 million in NIH

and National Science Foundation funding necessary to invent and develop the technology. These numbers suggest that in just this single area of research funded by the NEI, the U.S. government has seen a 2,100% return on its investment. The technology, known as optical coherence tomography, enables better personalization of eye care and more efficient use of healthcare dollars. As the technology continues to be applied to new medical conditions such as Alzheimer’s disease and Parkinson’s disease, it supports a private commercial market of \$1 billion and more than 16,000 high-paying jobs. <https://doi.org/10.1016/j.ajo.2017.09.027>

NEI research is resulting in new therapies

Speaking at the March 21, 2018 Congressional Reception for the NEI’s 50th Anniversary, NEI Director Paul Sieving, MD, PhD observed that:

“As we look back 50 years, we remember times when people had untreatable eye diseases. These included AMD, diabetic retinopathy, and glaucoma. These were blinding conditions, and doctors had little more than hope to offer patients.”

The federal commitment—made in 1968 when President Lyndon Johnson signed legislation creating the NEI—has made possible treatments and therapies for the very diseases that Dr. Sieving cited as previously resulting in blindness or severe vision loss:

- **AMD:** The treatment of the “wet” form of AMD has made great strides resulting from the use of Anti-Vascular Endothelial Growth Factor (VEGF) therapies—which emerged from initial NIH-funded research—that stabilize vision loss and may improve lost vision. The NEI has established an AMD Pathobiology Working Group within its National Advisory Eye Council to evaluate knowledge learned

from its extensive AMD portfolio and identify what is still uncertain, such as the relationship between genes and biological pathways, therapies for the more-prevalent “dry” form of the disease, and how to diagnose and treat the disease much earlier. The NEI has launched a prospective international study of patients that uses the latest advances in retinal imaging to identify biomarkers of the disease and targets for early therapeutic interventions.

- **Diabetic Retinopathy:** Over the span of 50 years, NEI has funded a number of randomized controlled trials (RCTs), which have led to major vision health improvements. In the 1960s, about half of patients with diabetic retinopathy were blind within five years of diagnosis. NEI-sponsored clinical trials, starting in the 1970s with the Diabetic Retinopathy Study and most currently with the Diabetic Retinopathy Clinical Research Network, has reduced the incidence of severe vision loss from diabetic retinopathy by 90 percent.
- **Glaucoma:** The Food and Drug Administration (FDA) has approval of two new drug therapies emerging from decades of NEI research into the role of high intraocular pressure (IOP) as a causal risk factor for primary open-angle glaucoma, the most common form of the disease and a leading cause of vision loss and blindness. 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 that lower IOP and better meet the needs of patients.



Our nation's investment in vision health is an investment in its overall health. NEI's breakthrough research is a cost-effective investment, since it is leading to treatments and therapies that can ultimately delay, save, and prevent health expenditures. It can also increase productivity, help individuals to maintain their independence, and generally improve the quality of life—especially since vision loss is associated with increased depression and accelerated mortality.

Without adequate funding, however, the NEI may not be able to fund breakthrough research. Congress demonstrated strong support for vision research with the creation of the NEI and recognition of its past accomplishments and current/future challenges. NEI must be robustly funded to continue U.S. leadership in vision research and training.

In summary, ARVO requests FY2019 NIH funding of at least \$39.3 billion and NEI funding of at least \$800 million.

About ARVO

ARVO is a community of over 11,000 vision researchers from 80 countries; we are the largest, most respected vision research organization in the world. Our aim to advance research worldwide into understanding the visual system and into preventing, treating and curing its disorders.