As you can see above, this first edition of the Report for 2018 bears the NAEVR/AEVR 25th Anniversary logo. What a year it has already been for the Alliances, which have been in the right place at the right time with advocacy and education by vision researchers!

Throughout 2017 and into this year, NAEVR advocated for a budget deal that would raise nondefense spending caps to facilitate Senate-proposed funding increases for the National Institutes of Health (NIH) and the National Eye Institute (NEI)—especially in this year of the 50th Anniversary of NEI’s creation by Congress. On February 9, Congress passed the Bipartisan Budget Act of 2018 that raised defense and nondefense spending caps in the two-year framework, including Fiscal Years (FY) 2018 and 2019. Within hours of passage, NAEVR hosted an Advocacy Day for members of the Association for Research in Vision and Ophthalmology (ARVO), who were able to thank their Congressional offices for the deal and be among the first to request robust and sustained funding as Congress proceeded to finalize FY2018 appropriations, as well as begin the FY2019 process.

Fast forward to the week of March 19, when Congress was facing a March 23 expiration date for the fifth Continuing Resolution (CR) that funded the government. Just as rumors indicated that a negotiated FY2018 Omnibus spending bill would soon issue, more than 80 members of the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) visited their Congressional delegations to support NIH/NEI funding, with messaging developed by NAEVR for this American Academy of Ophthalmology-managed event. And just two days later, as the House was taking floor action on the Omnibus bill entitled the Consolidated Appropriations Act, 2018—with significant funding increases for the NIH/NEI—NAEVR hosted Private Vision Research Funding Foundations in Congressional visits to support the bill and urge a robust FY2019 increase. Advocates also had one last chance to ask their Senators to support the bill, as the Senate did not complete their floor action until early the next morning.

As detailed inside, the FY2018 $3 billion NIH and $41 million NEI increase are historic, as we have not seen such increases since the NIH-doubling ended in FY2002. As much as NAEVR is now thanking Members for their bipartisan support for the NIH, our FY2019 messaging is noting that FY2018 NEI funding is still only ten percent greater than that in pre-sequester FY2012—meaning that the 1.6 percent average annual increase over the six years pales in comparison to the average annual inflation rate of 2.8 percent. NIH/NEI increases are still needed to make up for the years of cuts, flat funding, and biomedical inflation that have significantly reduced purchasing power.

An FY2019 NIH funding increase is not a given, since FY2018 reflects the third year of increases. Despite having strong bipartisan support, the NIH will be competing with other Congressional priorities in the FY2019 Labor, Health and Human Services, and Education (LHHS) spending bill when allocations are made based on the second year of the budget deal. NAEVR’s advocacy efforts will remain strong and focused, as we request NIH funding of at least $39.3 billion and NEI funding of at least $800 million.

Be sure to read about the successful NEI 50th Anniversary Congressional Reception, held amidst the Omnibus negotiations and a government closure due to inclement weather. As stated by NIH Director Francis Collins, MD, PhD at the event—and something which our community already knows—“vision research has played a disproportionately large share in scientific breakthroughs.”

Peter J. McDonnell, MD
NAEVR/AEVR Boards President
pmcdonn1@jhmi.edu

NAEVR/AEVR at the 2018 ARVO Annual Meeting
Sunday, April 29 – Wednesday, May 2
NAEVR Central
8:15 am - 5:00 pm Daily
Honolulu Convention Center

Monday, April 29
NAEVR’s Defense-Related Vision Research Opportunities Session
7:00 am - 8:00 am, Room 313BC
Honolulu Convention Center

Mark Gordon, MS (Alcon Laboratories, Inc.)

Paul Lee, MD, JD (Kellogg Eye Center/University of Michigan)

Jonathan Talamo, MD (Johnson & Johnson Vision)
**SCORECARD LEGISLATIVE ISSUES—NIH/NEI**

**FY2018:**
Two–Year Budget Deal Facilitates FY2018 Spending Increases

On February 9, after both the Senate and House passed the Bipartisan Budget Act of 2018 (H.R. 1892), the President signed the bill into law, ending a brief government shutdown. The agreement extended the previous CR that funded the government in FY2018 from February 8 to March 23, during which time appropriators were to draft an Omnibus spending bill (that includes the twelve annual spending bills) under the revised discretionary spending caps in the two-year budget framework within the legislation that eliminated sequestration, as well as provided emergency supplemental funding for disaster relief and suspended the debt ceiling until March 1, 2019. The deal raises the caps for defense base budget by $80 billion in FY2018 from the previous limit of $549 billion and a bill of $85 billion from $562 billion. In comparison, the nondefense funding for FY2018 is raised $63 billion above the $516 billion cap while FY2019 funding included a $68 billion increase above the prior $529 billion cap.

As part of the agreement, Congressional leaders publicly committed to setting aside at least $1 billion of the new funding for an NIH increase in each FY2018 and 2019. NAEVR issued a statement praising the increase in discretionary spending caps, noting that the deal “acknowledges the NIH as a critical national priority as Congress turns to the forthcoming FY2018 Omnibus bill.”

**Congress Passes Omnibus with Significant NIH/NEI Funding Increases**

On March 22—just one day before the fifth CR that funds the government was set to expire—the House and, early the next morning, Senate approved the Consolidated Appropriations Act, 2018, which was signed by the President later that day. The 2,200 page bill reflecting $1.3 trillion in spending includes $3 billion for NIH above FY2017, or an 8.8 percent increase. Funding includes $496 million for the NIH Innovation Account (created by the 21st Century Cures Act passed in December 2016 to fund special initiatives, such as the BRAIN Initiative, Cancer Moonshot, Precision Medicine, and Regenerative Medicine) and $500 million for Opioid Abuse research, split evenly between the National Institute of Mental Health (NIMH) and the National Institute on Drug Abuse (NIDA). Absent the Cures and Opioid funding, the $2.36 billion increase enabled robust increases for the NIH Institutes and Centers (I/Cs), including the NEI, which is funded at $772.3 million, or a 4.1 percent increase over its FY2017 Operating Budget of $731.2 million. This reflects the highest annual appropriation increase for the NEI since the NIH doubling ended in FY2002.

The bill also maintains the Extramural Salary Cap at Executive Level II ($187,000 in FY2017 dollars), prohibits a reduction in the reimbursement for Facilities and Administrative (indirect) costs in NIH grants, and does not make any NIH structural changes—essentially rejecting all of the Trump Administration’s proposals. The bill is also silent on the use of fetal tissue in research. NAEVR has issued a statement praising the NIH/NEI funding increases and commending the Appropriations leaders.

**FY2019:**
Trump Administration Issues FY2019 Budget Proposal

On February 12, the Trump Administration released its FY2019 budget request and a budget addendum to account (in part) for new discretionary spending caps enacted as part of the Bipartisan Budget Act of 2018 ($9.17 billion added to what was initially a cut). The Department of Health and Human Services (DHHS) “Budget in Brief” presents proposed NIH funding of $35.52 billion (inclusive of Cures and opioid funding) and NEI funding of $711 million—all well below what Congress finalized in FY2018 appropriations. Other provisions similar to that in the FY2018 proposal include:

- Reducing the Extramural Salary Cap from EL II to EL V; and
- Moving the Agency for Healthcare Research and Quality into NIH as a new institute called the National Institute for Research on Safety and Quality. For FY2019, the proposal would also move two more DHHS agencies and their budgets into NIH—the National Institute for Occupational Safety and Health (NIOSH) and the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR).

The FY2019 Trump budget does not does not propose to reduce reimbursement for Facilities and Administrative (indirect) costs in NIH grants. Since Congress rejected the funding, policy, and structural changes proposed in FY2018, the FY2019 proposed budget is generally considered dead on arrival as “the President proposes, the Congress disposes.”

**House Dear Colleague Letter Requests “Robust” FY2019 NEI Funding**

NAEVR wishes to thank Cong. Pete Sessions (R-TX) and Cong. Scott Peters (D-CA) for co-authoring a bipartisan Dear Colleague letter to House Appropriations leaders calling for “robust” FY2019 NEI funding.

Visit the NIH/NEI funding section of NAEVR’s Web site at www.eyeresearch.org for full details.
ADVOCA

Vision Community on Capitol Hill as Budget Deal and Omnibus Pass

NAEVR was pleased to host/support numerous Advocacy Days in first-quarter 2018 that were held as Congress was considering the Budget Deal and FY2018 Omnibus.

On February 9—just hours after Congress passed the Bipartisan Budget Act of 2018—26 domestic and international ARVO members reflecting Annual Meeting Planning Committee (AMPC) members, ARVO Advocacy and Outreach Committee members, and ARVO Science Communication Training Fellows made 40-plus visits to Congressional offices thanking them for past NIH/NEI funding increases and requesting sustained future funding increases. In emphasizing the value of the NIH/NEI investment, the advocates cited the recent ARVO paper published in December 2017 in the American Journal of Ophthalmology highlighting $11.2 billion in government and patient savings stemming from the invention of Optical Coherence Tomography (OCT).

On March 20, as Congressional leaders were preparing to release the FY2018 Omnibus spending bill text, 80-plus advocates attending the annual meeting of the American Academy for Pediatric Ophthalmology and Strabismus (AAPOS) visited Capitol Hill, using NAEVR-generated messages about the value of NEI-funded pediatric research among several requests. NAEVR’s James Jorkasky attended the preparatory session for the event, which was managed by the American Academy of Ophthalmology.

On March 22—as the House was considering the FY2018 Omnibus bill—NAEVR hosted a Private Vision Research Funding Foundations Advocacy Day with attendees of the previous day’s Fifth Annual Vision Research Funding Partnership event, hosted by Research to Prevent Blindness (RPB, see below). Advocates described the importance of their organizations to the state/district and their role in providing early-stage and bridge funding for investigators.

The Association for Research in Vision and Ophthalmology

ARVO

Research to Prevent Blindness

RPB

American Association for Pediatric Ophthalmology and Strabismus

AAPOS

From left: Morgan Brand from the office of Senator Kristen Gillibrand (D-NY) with RPB’s Brian Holland, PhD and Diana Friedman. The group also visited the office of Cong. Nita Lowey (D-NY)—Ranking Member of the House Appropriations Committee—just as the House concluded its vote on the bill.

Sandra Blackwood (International Retinal Research Foundation), left, and Torrey DeKeyser (EyeSight Foundation of Alabama), right, with Katie Campbell in the office of Senator Doug Jones (D-AL)

Representatives of the American Macular Degeneration Foundation with Cong. Jim Himes (D-CT, second right) from left include: Neena Haider, PhD (Mass Eye & Ear/Harvard), Matt Levine, Chip Goehring, and Paul Gariepy

Kathleen Rydar (That Man May See), right, with Carrie Colla, PhD in the office of House Minority Leader Nancy Pelosi (D-CA)

Ms. DeKeyser visited Cong. Robert Aderholt (R-AL)—a House Appropriator—and his staffer Megan Medley

NEI Director Paul Sieving, MD, PhD joined the Fifth Annual Vision Research Funding Partnership event to update attendees on NEI initiatives. The convening of organizations that support vision research provides an opportunity for funders to discuss potential collaborations with each other. NAEVR has been engaged in the event since the beginning and is pleased to host the accompanying Advocacy Day.

Above: James Jorkasky with AAPOS President Derek Sprunger, MD (Indiana University School of Medicine), below with Iris Kassem, MD, PhD (Medical College of Wisconsin) and John Brabyn, PhD (Smith Kettlewell Eye Research Institute). Dr. Kassem participated in AEVR’s Third Annual Emerging Vision Scientists Day in September 2017.
On March 21 and despite the inclement weather that closed the federal government, more than 125 attendees — including Members of Congress and their staff, NIH/NEI employees, and members of the vision community—participated in a Congressional Reception recognizing the 50th Anniversary of NEI’s creation by Congress, with President Lyndon Johnson signing legislation on August 16, 1968. Hosted by Cong. Pete Sessions (R-TX), the program featured comments by NIH Director Francis Collins, MD, PhD; NEI Director Paul Sieving, MD, PhD, and RPB President Brian Hofland, PhD. Cong. Sessions awarded the Inspirational Vision Research Award to Gordon Legge, PhD, the Distinguished McKnight University Professor of Psychology and Neuroscience at the University of Minnesota, for his work in low vision.

“I proposed this Inspirational Vision Research Award to recognize the remarkable work in support of NEI’s mission. I am proud to present it to Professor Legge, since his work embodies the translation of basic research on visual perception and cognition into useful applications to improve the lives of people with low vision and blindness.”
— Cong. Sessions

“Today, NEI is at the forefront of regenerative medicine. The Audacious Goals Initiative launched in 2013 has the goal of restoring vision. The AGI funds major research consortia that are developing new ways to image the visual system. We can now look at individual nerve cells in the eyes of patients and learn quite directly whether new treatments are successful.”
— Dr. Sieving

“RPB and NEI have always been connected. Since RPB’s creation in 1960, Founder Jules Stein, MD and President David Weeks both felt passionately that the federal government needed to focus more on vision research. They began a robust campaign that included Congressional testimony in favor of legislation to create a separate National Eye Institute. After legislation passed, they also led efforts to ensure that President Johnson signed it.”
— Dr. Hofland

“I attended NEI’s 25th Anniversary event when I began leading the National Human Genome Research Institute at NIH. Here we are now celebrating its 50th Anniversary. Due to the architecture, accessibility, and elegance of the eye, vision research has always been a few steps ahead in biomedical research. Understanding the genetic basis of eye diseases has led the way for understanding the genetic basis of many common diseases.”
— Dr. Collins

From left: Shefa Gordon, NEI’s Acting Director; Office of Program Planning and Analysis, with Michael Buckley and Diane Bovenkamp, PhD, both from BrightFocus Foundation

From left: James Tsai, MD (New York Eye and Ear Infirmary/Mount Sinai Health System), Alan Morse, JD, PhD (Lighthouse Guild), Benjamin Yerxa, PhD (Foundation Fighting Blindness) and Michael Chiang, MD (Casey Eye Institute/Oregon Health and Science University)

From left: Phil Albano (Lions Club International Foundation); Victoria Sheffield (International Eye Foundation) and Torrey DeKeyser (EyeSight Foundation of Alabama). In 1968, Lions Clubs of America coordinated an advocacy campaign in which more than 100,000 letters were sent to Congress to support NEI’s creation.

From left: NIH Director Francis Collins, MD, PhD, Gordon Legge, PhD (University of Minnesota); Cong. Pete Sessions (R-TX), and NEI Director Paul Sieving, MD, PhD

From left: Shefa Gordon, NEI’s Acting Director, Office of Program Planning and Analysis, with Michael Buckley and Diane Bovenkamp, PhD, both from BrightFocus Foundation

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AEVR expresses special appreciation to Ron Donado in Cong. Sessions’ office who worked with NEI and AEVR on the NEI 50th anniversary reception. In its role as the “Friends of the NEI,” AEVR was pleased to promote this event and provide food and refreshments.
Dr. Huang explained that by using aqueous angiography—which is real-time imaging of aqueous humor outflow in patients—he has determined that each eye’s fluid pathway is unique, including each eye in the same individual. By mapping this fluid flow, he can unveil the native outflow pathways of each eye, where fluid will preferentially flow or not flow, too. By coupling real-time aqueous angiography with real-time Optical Coherence Tomography (OCT), which is minimally invasive three-dimensional imaging of the structures of the eye, functional action of flow can be linked to structural correlates of flow, and he hopes that by combining these synergistic concepts surgery can be precisely placed in optimal areas for best IOP-lowering outcome.

“The combination of new technologies to map fluid flow and image the eye’s structures can now open a path to a new generation of individualized and precision glaucoma surgery for the individual patient,” said Dr. Huang.

In addition to his work on glaucoma, Dr. Huang also studies visual alterations in space through research funded by the National Aeronautics and Space Administration (NASA) regarding countermeasures to ocular changes that American astronauts undergo in the International Space Station.

In addition to speaking at the Briefing, Dr. Huang also visited his Congressional delegation in NAEVR-hosted visits.

Glaucoma, the second leading cause of blindness that affects more than 60 million individuals worldwide, is a neurological disease affecting the optic nerve and causing loss of peripheral vision—and ultimately blindness. It affects more than 2.7 million Americans over age 40, with that number estimated to more than double by year 2050. It includes both diagnosed and undiagnosed cases, as often individuals are unaware they have the disease until vision is lost. Certain characteristics such as age, ethnicity, high blood pressure, high intraocular pressure (IOP), and optic nerve appearance are associated with disease development. Groups at highest risk include African Americans over age 40, individuals over age 60, and those with a family history of the disease.

About World Glaucoma Week 2018

The first World Glaucoma Day was held on March 6, 2008, and the United States House of Representatives passed H.R. 981, which recognized the event and supported the NEI’s efforts to research the causes of and treatments for glaucoma. Since 2010, the day has expanded into a week of educational events held worldwide, with all major glaucoma professional societies and research organizations co-sponsoring AEVR’s 2018 event, including:

• Research to Prevent Blindness
• American Glaucoma Society
• Association for Research in Vision and Ophthalmology
• Glaucoma Research Foundation
• Optometric Glaucoma Society

Refering to himself as “plumber in a white coat,” Dr. Huang used graphics of a sink and drain to explain how the aqueous humor, a clear fluid that nourishes tissues, flows in and out of the anterior chamber of the eye, which is the space between the cornea and iris. Aqueous humor flows out of the anterior chamber through the open angle where the cornea meets the iris. The open angle consists of two routes: the trabecular pathway consisting of a spongy layer called the trabecular meshwork, and the uveoscleral pathway, through the ciliary muscle that controls the eye’s focusing mechanism.

He explained that in glaucoma’s most common form—primary open angle glaucoma (POAG)—nerve damage results from high IOP, which occurs when the fluid drains inadequately. NEI-funded research has resulted in various pressure-reducing drug regimens, including two new therapies recently approved by the Food and Drug Administration (FDA) that specifically act on the trabecular meshwork. NEI’s Ocular Hypertension Treatment Study (OHTS) found that, although pressure-reducing eye drops delayed disease onset, there are often issues with patient compliance with their drug regimen. Glaucoma is also treated through traditional and now Minimally Invasive Glaucoma Surgeries (MIGS), primarily to the trabecular meshwork. These include FDA-approved tools that either ablate or bypass the trabecular meshwork to facilitate fluid flow. Newer options can also access the uveoscleral outflow pathway.
Since it was created by Congress in FY2009 in Defense appropriations through NAEVR advocacy, the DOD’s Peer Reviewed Vision Research Program (VRP) within the Congressionally-directed Medical Research Program (CDMRP) will have awarded 77 grants totaling $66.5 million (including FY2015/2016 awards). FY2017 is in process (see below).

New VRP Manager Named, Meets with NAEVR and ARVO

In late 2017, the CDMRP Director named Q. Tian Wang, PhD as the Vision Program Manager, coupling this program with the hearing/deafness to create a Sensory Program. Dr. Wang has a BS in Biochemistry from Peking University and a Doctorate in Biochemistry, Molecular Biology, and Cell Biology from Northwestern University. She has more than 23 years of experience in biomedical science research, teaching, training and administration, and has co-authored 24 peer-reviewed publications.

On January 8, NAEVR and ARVO met with Dr. Wang, who will attend the ARVO Annual Meeting and participate in NAEVR’s Defense Vision Opportunities session (see front page box). On April 17, the CDMRP will host a Stakeholder Meeting at which the VRP Programmatic Committee will analyze its current funding portfolio and consider updates to its list of DOD-identified research gaps.

FY2017: Programmatic Panel Meets to Finalize Awards

The VRP Programmatic Committee includes Michael Steinmetz, PhD (NEI’s Acting Deputy Director and Director of Extramural Programs, left) and Robert Mazzoli, MD (Col. US Army, Retired) who is the Acting Director for Research at the joint DOD-Department of Veterans Affairs (VA) Vision Center of Excellence and also serves as Chair of the Committee.

NAEVR attended the March 8 Programmatic Committee meeting at which the FY2017 grant submissions were graded for programmatic relevance scores that were then added to peer review scores to determine the final FY2017 funding cycle grantees and alternates. The VRP was funded at $15 million in FY2017—$5 million greater than in FY2016, and the first time at that increased level after funding at $10 million in each FY2013-2016. The FY2017 VRP Program Announcement had two funding mechanisms: Clinical Trial Awards (CTA), with a maximum funding of $5.25 million per award, and Technology and Therapeutic Development Awards (TTDA), with a maximum funding of $2.1 million per award. Selected grantees will be notified shortly.

FY2018: Omnibus Includes VRP Funding at $15 M

For the second year, the Defense section of the FY2018 Omnibus spending bill has funded the VRP at $15 million. The CDMRP is unlikely to issue an FY2018 Program Announcement until after the ARVO Annual Meeting, especially in light of the planned Stakeholders meeting to update DOD-identified research gaps.

FY2019: NAEVR Requests FY2019 VRP Funding at $20 M

NAEVR is requesting FY2019 VRP funding at $20 million—a $5 million increase from the $15 million funding level in each FY2017 and FY2018—updating its request to include:

• With assistance from Dr. Wang, NAEVR has updated the number of published papers that have emerged from VRP funding since FY2009, which now stands at 153. In addition, VRP-funded projects have resulted in 15 patents or applications for patents. NAEVR emphasizes that the VRP-funded research has helped to develop the field of military eye trauma care.

• An updated $45.5 billion cost of deployment-related eye injuries and blindness in the 2000-2017 timeframe, as estimated by Dr. Frick in the 2017 AEVR-funded update of NAEVR’s 2012 Cost of Military Eye Injury Study. Note that $44.4 billion of that cost reflects the present value of a lifetime of long-term benefits, lost wages, and family care. At this time, AEVR is only releasing the top line estimate, as the study manuscript is being prepared for journal submission in 2018.

Visit the Defense-related Vision Research section of NAEVR’s Web site at www.eyeresearch.org for details