As NAEVR and AEVR conclude their 20th anniversary, I am struck by the amount of change that has occurred within the Alliances since we began the celebration a year ago. Sadly, Dr. Ron Smith passed away recently. Ron was a founding member of the Alliances’ Boards, as well as an active member of ARVO and the American Academy of Ophthalmology. Ron was a humble man who let his intellect, compassion, and dedication to the vision community serve as his voice. The silence will be deafening for those of us who cherished our time with him.

Two other long-time Board members concluded their service late last year—Sally Atherton, Ph.D., who during her tenure served as both ARVO Executive Vice President and ARVO Executive Director, and Nobel laureate Torsten Weisel, M.D. (President Emeritus, The Rockefeller University). We were fortunate to benefit from their knowledge and dedication, and thank them for their service. The Alliances’ Vice President Bart Mondino, M.D. (Jules Stein Eye Institute/UCLA) is chairing the Nominating Committee’s efforts to identify candidates to serve in these Director seats, as well as for two additional seats created by a bylaws change adopted by each organization to increase Board size to 15.

The Alliances’ Strategic Assessment and Plan, conducted in 2013, made that recommendation in addition to others regarding how the Alliances can strengthen their advocacy and educational activities, communicate with their various constituents, and ensure adequate resources for programs. The Boards will be engaged in implementation of the recommendations throughout this year, and I will report those to you.

Regarding change, we are already seeing it on Capitol Hill. Two long-time champions for NEI- and DOD-funded research featured within the Report—Senator Tom Harkin (D-IA) and Cong. Jim Moran (D-VA)—have announced their retirement, effective the end of this session of Congress. Although NAEVR is engaging other Members as champions, the retirement of these two leaders for biomedical research, let alone vision research, is a tremendous loss, especially as Congress grapples with balancing funding priorities in a challenging fiscal environment.

I appreciate the time that Cong. Moran spent with AEVR at its 20th Anniversary Congressional Reception, as well as that of Cong. Gene Green (D-TX), a co-Chair of the Congressional Vision Caucus, Cong. Howard Coble (R-NC), who has also announced his retirement, and Cong. Richard Nolan (D-MN). NEI Director Paul Sieving, M.D., Ph.D. spoke about NEI breakthroughs and offered insights into the potential of the primary Audacious Goal of Regenerating Neurons and Neuronal Connections in the Eye and Visual System to transform medicine, as well as the lives of millions of individuals with eye disease. I encourage you to read his remarks, which are posted at www.eyeresearch.org.

Unfortunately, NEI’s purchasing power has decreased by 25 percent since Fiscal Year (FY) 2003, so NAEVR will continue to lead the charge for adequate NEI funding in FY2015 appropriations.

I wish to thank the vision community organizations that have committed time and resources to the Alliances in 2014. Feel free to email me with any comments or observations.

Peter J. McDonnell, M.D.  
NAEVR/AEVR Boards President  
pmcdonn1@jhmi.edu
AEVR Celebrates its Vision Research Value Message on Capitol Hill

On February 25, AEVR concluded its year-long 20th anniversary celebration as “The Friends NEI” with a Capitol Hill reception that focused on its message about the value of federally funded vision research. Hosted by AEVR President Dr. Peter McDonnell, the event featured a welcome by Cong. Gene Green (D-TX), co-Chair of the Congressional Vision Caucus, a Hill perspective on the importance of funding vision research at the NEI and DOD presented by Cong. Jim Moran (D-V), and highlights of NEI breakthrough research and concomitant value for patients presented by its Director Paul Sieving, M.D., Ph.D. Other Members of Congress attending included Cong. Howard Coble (R-NC) and Cong. Richard Nolan (D-MN).

Since the reception was held just before the American Glaucoma Society’s (AGS) Annual Meeting, several AGS members attended and spoke with Congressional staff about their research and clinical practice in glaucoma, which included AGS President Kuldev Singh, M.D. (Byers Eye Institute/Stanford University). He was joined by Janey Wiggs, M.D., Ph.D. (Harvard Medical School/Massachusetts Eye and Ear Infirmary), who was a featured speaker at the next day’s AEVR World Glaucoma Week Congressional Briefing (see story inside right).

Throughout the room, AEVR displayed poster-sized pages from its 20th anniversary brochure The Value of Federally Funded Vision Research—NEI which was released in October 2013 and delivered to all Congressional offices. Paul D’Addario, an Arlington, Virginia resident and Moran constituent who is featured in the brochure, spoke with attendees about his implanted Argus II Retinal Prosthesis System, which enables him to identify objects after years of blindness. This Food and Drug Administration (FDA)-approved device, manufactured by Second Sight Medical Products, Inc., was the result of collaboration between the Department of Energy’s National Laboratories and its Artificial Retina Program and the NEI.

Dr. McDonnell acknowledged the three founding member organizations of AEVR and their attending representatives, which included Roy Chuck, M.D., Ph.D. (Montefiore Medical Center/Albert Einstein College of Medicine of Yeshiva University) and Joel Schuman, M.D. (University of Pittsburgh School of Medicine), representing the Association of University Professors of Ophthalmology (AUPO), Cathy Cohen of the American Academy of Ophthalmology, and Matt Windsor of ARVO. Earlier that day and under the auspices of NAEVR, Dr. Chuck visited offices of the New York delegation to advocate for increased NEI funding. Dr. Schuman participated in the AGS Advocacy Day.

Commenting on the event, AEVR Executive Director James Jorkasky said, “It has been a great year of recognition of AEVR’s past accomplishments and an opportunity to look to the future, as AEVR’s Decade of Vision 2010-2020 Initiative continues its sustained efforts to educate about how federally funded vision research is saving sight and restoring vision, thereby increasing productivity, maintaining independence, and improving the quality of life.”

In his comments (posted on AEVR’s Web site), Dr. Sieving spoke about the purpose of the primary NEI Audacious Goal of Regenerating Neurons and Neuronal Connections in the Eye and Visual System: “The goals are bold but achievable. They are beyond what medicine currently can do. We are planning for a 10-12-15 year effort to reach these endpoints. Success would transform life for millions of people with eye and vision diseases. It would have major implications for medicine of the future, for vision diseases, and even beyond this, for neurological diseases.”

AEVR wishes to thank the Departments of Ophthalmology and Colleges of Optometry which provided funding for the reception:

- Bascom Palmer Eye Institute/University of Miami School of Medicine
- Beckman Vision Center/University of California San Francisco School of Medicine
- Case Western Reserve University School of Medicine
- Casey Eye Institute/Oregon Health and Science University
- Dean McGee Eye Institute/University of Oklahoma College of Medicine
- Doheny Eye Institute
- Duke University Eye Center/Duke University School of Medicine
- The Eye Institute/Medical College of Wisconsin
- Flaim Eye Institute/University of Rochester School of Medicine and Dentistry
- Foundation Fighting Blindness
- Jules Stein Eye Institute/University of California Los Angeles School of Medicine
- W.K. Kellogg Eye Center/University of Michigan Medical School
- Kentucky Lions Eye Center/University of Louisville School of Medicine
- Massachusetts Eye and Ear Infirmary/Scheie Eye Research Institute
- Montefiore Medical Center/Albert Einstein College of Medicine of Yeshiva University
- Scheie Eye Institute/University of Pennsylvania Health System
- Southern College of Optometry
- University of Southern California School of Medicine
- Vanderbilt Eye Institute/Vanderbilt University School of Medicine
- Washington University School of Medicine
- Wilmer Eye Institute/Johns Hopkins University School of Medicine

AEVR Executive Director James Jorkasky (right) greets Cong. Richard Nolan (D-MN)

Left to right: NEI Director Paul Sieving, M.D. Ph.D., Paul D’Addario, and Cong. Jim Moran (D-V). Mr. D’Addario, a Moran constituent, can now identify objects after years of blindness due to the Argus II Retinal Prosthesis System, the development of which was funded in part by NEI.

Congressional Vision Caucus co-Chair Cong. Gene Green (D-TX), who provided a welcome, is a member of the House Energy and Commerce Committee with oversight jurisdiction of NIH

AEVR President Dr. Peter McDonnell with American Glaucoma Society (AGS) President Kuldev Singh, M.D. (Byers Eye Institute/Stanford University) and AGS member Janey Wiggs, M.D., Ph.D. (Harvard Medical School/Mass Eye and Ear Infirmary), who spoke the next day at AEVR’s World Glaucoma Week Congressional Briefing

Earlier that day, Dr. Chuck met with Veronica Duron in the office of Senator Chuck Schumer (D-NY)

Left to right: Michael Duenas, O.D. (American Optometric Association), Lester Marks (Lighthouse Guild), Roy Chuck, M.D., Ph.D. (Montefiore Medical Center/Albert Einstein College of Medicine of Yeshiva University) and Mark Ackermann (Lighthouse Guild)

AEVR wishes to thank the Departments of Ophthalmology and Colleges of Optometry

Left to right: AGS members Edward Sung, M.D. (University of Illinois at Chicago and Wheaton Eye Clinic) and John Fingert, M.D., Ph.D. (University of Iowa) visited Congressional offices the next day during the AGS Advocacy Day

Left to right: AEVR members attending included Jennifer DeMatteo (Eye Bank Association of America), Lester Marks (Lighthouse Guild) and Shannon Curtis and Rebecca Hyder of AEVR founding member the American Academy of Ophthalmology
At NEI’s January 23 National Advisory Eye Council (NAEC) meeting, Dr. Sieving highlighted final FY2013:

- Although NEI’s final FY2013 appropriation was $662.1 M (net of $36 M sequester cut and $3.9 M Department of Health and Human Services (DHHS) Secretary transfer), its final operating net was reduced further by $5.6 M to $657 M, due to the transfer back to the NIH Office of AIDS Research (OAR) for funding of the dissolved NEI-sponsored Ocular Implications of AIDS clinical trials. NAEVR fought to prevent this transfer in the past three funding cycles.
- FY2013 NEI Success Rate was 24%, compared to an FY2012 rate of 30%. NEI had the highest success rate of any NIH Institutes and Centers (I/Cs), as in most past years, since it focuses on investigator-initiated research. FY2013 NIH success rate was 16%.
- NEI funded 267 competing grants as compared to 296, a reduction of 29 grants. NEI minimized a potential 60 grant reduction by making across-the-board cuts, including a five percent reduction in funding for non-competing grants and holding the average cost of competing RPGs flat at the FY2012 level of $404,300.
- NEI received 1,127 grant applications, the highest since FY2006.

On January 16, the Senate passed the Consolidated Appropriations Act of 2014 following House passage the previous day. The $1.012 T omnibus spending bill was passed just as the Continuing Resolution (CR) to fund the government through January 18 was set to expire. The bill was developed after the December 18, 2013, Congressional passage of the Bipartisan Budget Act of 2013, which established discretionary spending caps for FY2014 and 2015, eliminating $63 B in sequestration cuts in those fiscal years. The omnibus funds NIH at $29.93 B, a $1 billion or 3.5 percent increase over the FY2013 budget after sequester and transfers, but $714 M below the FY2013 pre-sequestration appropriation of $30.64 B. The bill funds the NEI at $682 M, a $20 M or 3 percent increase over the FY2013 post-sequester/transfer budget, but $19 M below the FY2013 pre-sequestration level of $701.3 M. Similar to FY2013, NEI’s operating net was reduced by $6.9 M to $674 M due to the transfer back to NIH/OAR.

The bill’s accompanying Joint Explanatory Statement provides detail into Congressional priorities for NIH, as well as steps it must take to implement and report on key programs. Highlights include:

- Congress directs NIH to develop an update on Usher Syndrome (deaf blindness) research in the FY2015 budget request, addressing funding and how the I/Cs coordinate on research. This review was requested by NAEVR member organization Coalition for Usher Syndrome Research.
- The Salary Cap remains at Executive Level II (EL II), but that amount has been increased by the Office of Personnel Management (OPM) from $179,700 to $181,500.
- The NIH is to conduct an agency-wide study of the post-peer review priority-setting process, resource allocation process, and portfolio evaluation such that it provides decision-makers with answers to such questions as how the research advances biomedical science, improves human health, and relates to an I/C or overall NIH program goals.

## FY2013

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* Finalized by second six-month Continuing Resolution (H.R. 933); number is pre-sequester
** NEI appropriated amount is net of $36M in sequester cut and $3.9M Secretary transfer. Operational net reflects $5.6M transferred back to NIH Central of dissolved Ocular Implications of AIDS trials funding.
^^ NEI operational net reflects $4.6M transferred back to NIH Central of dissolved AIDS trial funding

## FY2014

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NAEVR focused the vision community’s FY2014 advocacy on restoring the sequester cuts. AEVR focused the NonDefense Discretionary (NDD) United’s development and November 2013 release of its report entitled Faces of Austerity: How Budget Cuts Have Made Us Sicker, Poorer, and Less Secure. The report’s chapter on biomedical research funding emphasizes that the sequester cuts are jeopardizing innovation, economic growth, competitiveness, and the biomedical researcher career life line. NAEVR and ARVO were signatories on community letters by NDD United and the Ad Hoc Group for Medical Research to Congress urging replacement of the sequester.

In November 2013, Senate Labor, Health and Human Services, and Education (LHHS) Appropriations Subcommittee Chair Tom Harkin (D-IA) addressed a standing room-only crowd of advocates for government programs funded through the LHHS appropriations bill. In addition to thanking them for “speaking for people who don’t have voices,” he challenged them to strenuously oppose the inclusion of sequester cuts in the FY2014 budget agreement. Earlier in 2013 and under Senator Harkin’s leadership, the Subcommittee reported out a “regular order” bill that would have eliminated sequester cuts that was useful in the FY2014 omnibus negotiations.

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Senator Appropriations Chair Barbara Mikulski (D-MD) and House Appropriations Chair Hal Rogers (R-KY) announce final FY2014 appropriations. NAEVR has coordinated an ongoing dialogue about NIH/NEI funding between Senator Mikulski’s office and its Maryland members—ARVO, Association of Schools and Colleges of Optometry, BrightFocus Foundation, and Foundation Fighting Blindness. NAEVR issued a statement on the omnibus, thanking Congress—especially the appropriations leaders—for their efforts to partially restore the sequester cuts, but noting that the funding level does not allow for growth or balance biomedical inflation, as well as adequately fund the NEI to address the challenges of the “Decade of Vision.”
President Proposes Modest NIH and NEI Increase

On March 4, President Obama released a proposed FY2015 budget. Since Congress already has an FY2015 discretionary spending cap of $1.044 trillion negotiated through the Bipartisan Budget Act of 2013, the President’s budget has been described as more of a “wish list” than a legislative mandate. Details of NIH and NEI funding were not available until their respective Congressional Justifications (CJs) were posted on March 7. The NEI CJ is especially instructive, as its budget is based on an operational net versus the Congressionally appropriated level.

NIH:
The President requests NIH funding at $30.13 B, an increase of $200 M or 0.7 percent over FY2014. Additionally, he proposes a new Opportunity, Growth and Security Initiative that would add $970 M to the NIH budget for a total of $31.3 B in FY2015. These funds would be used to increase the number of new grants funded and provide additional resources for “signature” activities such as the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, improving the sharing and analysis of complex biomedical data sets, expanding research on Alzheimer’s disease and vaccine development, further accelerating partnership efforts to identify and develop new therapeutic drug targets, and other innovative projects. Since this effort would be paid for through cutting spending and narrowing tax loopholes—the latter of which has not been supported by Republican Members of Congress—it faces an uncertain future.

NEI:
The President requests $675.17 M for the NEI, which is a $0.9 M or 0.15 percent increase over the NEI’s FY2014 operational net of $674.25 M. NEI proposes to spend 85 percent of its budget on extramural research, consistent with past practice, and will fund 23 fewer Research Project Grants in FY2015 versus FY2014. The NIH CJ provides insights into NIH policies and priorities as the budget proposes to:

- Maintain the Salary Cap at Executive Level II.
- Increase the Program Evaluation Transfer levied on all DHHS agencies from the current 2.5 percent to 3 percent.
- Increase NIH’s commitment to the BRAIN Initiative to $100 M from the $40 M in FY2014, the first year of this initiative. Combined, the NIH, the Defense Advanced Research Projects Agency (DARPA), and the National Science Foundation (NSF) are committing $200 M in FY2015 to the initiative, double that of FY2014.
- Increasing NIH’s investment in the Cures Acceleration Network (CAN), the initiative within the National Center for Advancing Translational Sciences (NCATS) to accelerate the translation of research.

Secretary Sebelius Defends President’s Budget at House Hearing

On March 13, Secretary Sebelius was the lone witness at a hearing of the House LHHS Appropriations Subcommittee regarding President’s FY2015 budget for DHHS. Although the clear focus of the hearing was funding and implementation of the Affordable Care Act—with questions in that regard coming from all Republican members—there were comments and questions regarding NIH.

Subcommittee member and Ranking Member of the Appropriations Committee Cong. Nita Lowey (D-NY) expressed her concern about the President’s proposed modest FY2015 NIH funding increase. She noted that, despite FY2014 appropriations restoring $1 B of the $1.7 B cut by the FY2013 sequester, the proposed budget would not fully restore NIH to the pre-FY2013 level. She reminded all that Congress worked on a bipartisan basis to double the NIH budget from FY1999-2003.

Cong. Andy Harris, M.D. (R-MD) also questioned the President’s commitment to NIH, as the budget proposes to increase from 2.5 percent to 3 percent the Program Evaluation Transfer that the NIH and other DHHS agencies must pay to fund cross-cutting programs, such as the National Center for Health Statistics. Dr. Harris noted that the proposed 0.5 percent TAP increase levied on the $30 B NIH budget would reduce its $200 M FY2015 increase by $150 M. He recommended that “the Department redirect that transfer increase back to NIH so that it essentially has a $350 M increase.” Secretary Sebelius responded that the transfer is directed by the LHHS Appropriations bill, and several veteran Democratic members echoed that it is within the purview of the Subcommittee—and its companion Senate Subcommittee—to make such changes. Although the Obama Administration has proposed in previous budgets to increase the transfer, both House and Senate Subcommittees have kept it at 2.5 percent.

The Subcommittee has scheduled a March 26 hearing with Dr. Collins.

NAEVR on the President’s Proposal: NEI Funding Goes the Wrong Direction!

NAEVR has urged Congress to fund the NIH at $32 billion and the NEI at $730 million in FY2015 to fully restore the FY2013 sequester cut partially restored in FY2014 and enable an inflationary increase—since the NIH and NEI have lost 22 and 25 percent, respectively, of their purchasing power since FY2003—and modest growth. NAEVR has expressed its disappointment in the President’s budget request:

“As NEI’s budget decreases, the incidence of eye disease and vision impairment increases, as does the associated cost, estimated at $139 B annually in the United States.”

NAEVR is submitting written testimony to the House and Senate LHHS Subcommittees by their respective March 28 and May 23 due dates.

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

Dr. Collins Describes new DARPA-like Authority

In a March 4 DHHS press conference hosted by Secretary Kathleen Sebelius, NIH Director Francis Collins, M.D., Ph.D. described the proposed budget’s creation of a $30 M DARPA-like authority within the NIH Common Fund to rapidly respond to scientific opportunities. He cited as an example projects relating to the peripheral nervous system as an area of research that could benefit from a DARPA model, as the central nervous system is already being addressed through the BRAIN Initiative.

NEI Pays Tribute to Dr. Jules Stein

In January, the NEI held a ceremony dedicating a bronze bust of Research to Prevent Blindness (RPB) founder Jules Stein, M.D., who played a leading role in its creation. After a successful career—first as an ophthalmologist and then the founder of the Music Corporation of America (MCA)—Dr. Stein founded RPB and became the leading advocate with Congress to establish the NEI as a free-standing institute within the NIH. “AEVR, the Friends of NEI, would not have existed without RPB’s leadership to create the NEI,” said AEVR Executive Director James Jorkesy, “and RPB continues its unprecedented support of vision research through its March 19 announcement of a $50,000 grant to support AEVR’s sustained educational efforts.”

Left to right: Ambassador and RPB Founding/Current Board Member William vanden Heuvel, RPB Board Member and granddaughter of Jules Stein Katrina vanden Heuvel, RPB President Brian Hofland, Ph.D., and Dr. Sieving
World Glaucoma Week 2014 Briefing
Focuses on Genetic Basis of Glaucoma

On February 26, AEV R held its World Glaucoma Week 2014 Congressional Briefing two weeks earlier than other worldwide events held during March 9-15 since the American Glaucoma Society (AGS) was holding its Annual Meeting in Washington, D.C. Held in conjunction with the AGS Advocacy Day and co-hosted by all major glaucoma societies and research organizations (see boxes below), the briefing was the first time AEV R featured NEI-funded researchers engaged in studying the genetic basis of glaucoma—which will lead to new insights into the molecular pathogenesis, effective screening and prevention strategies, and more rational treatment approaches.

Research’s overall goal is to identify glaucoma risk factors, which can be both genetic and environmental. —Dr. Wiggs

Entitled Determining the Genetic Basis of Glaucoma to Develop Novel Treatments, the briefing featured two researchers from Harvard Medical School’s Massachusetts Eye and Ear Infirmary—Janey Wiggs, M.D., Ph.D., the Associate Chief of Ophthalmology Clinical Research and Associate Director of the Ocular Genomics Institute and Louis Pasquale, M.D., Director of Glaucoma Service and Director of Telemedicine. Both participate in the NEI Glaucoma Human Genetics Collaboration (NEIGHBOR) Consortium and augmented Glaucoma Gene Environment Initiative (GLAUGEN), a joint project of the NEI with the National Human Genome Research Institute (NHGRI). These collaborative efforts are under the umbrella of a larger NEIGHBOR Heritable Overall Operational Database (NEIGHBORHOOD) that involves clinicians and geneticists at multiple institutions throughout the U.S. The consortium’s goal is to identify genetic variants associated with Primary Open Angle Glaucoma (POAG), the most common form of the disease. NEIGHBOR is unique because it is the largest Genome-Wide Association Study (GWAS) for POAG-to-date and has identified the first genetic risk factors for normal pressure glaucoma.

Dr. Wiggs explained that the research’s overall goal is to identify glaucoma risk factors, which can be both genetic and environmental. This makes it possible to develop screening and diagnostic tests that can identify those at risk before irreversible damage to the optic nerve. Characterizing the genes and environmental exposures will help define the molecular abnormalities responsible for the disease, which is the first step toward developing novel therapies targeted to the disease-causing events. She spoke primarily about NEIGHBOR’s focus on adult-onset POAG, since it is strongly age-related and has “complex inheritance,” meaning that multiple genes, each with moderate effects, contribute to the disease susceptibility. NEIGHBOR created the NEIGHBORHOOD database to compare the distribution of genetic markers distributed through the human genome in a very large number of glaucoma cases and controls. She described the gene variants identified to-date, noting that there is still much to discover, especially with regard to rare gene variants and their impact on disease risk.

Dr. Pasquale described the use of The Nurses’ Health Study—which was begun at Harvard in 1976, initially included 120,000 participants, and tracks incidence of 40 different diseases, including glaucoma—to research a potential link between estrogen level and POAG risk pre- and post-menopause. He cited a number of studies that have shown a relationship between attributes of female reproductive health and increased POAG risk. He also provided evidence that the relation between declining estrogen levels and POAG has a genetic basis. Specifically, he discussed how common genetic variants involved in estrogen metabolism and nitric oxide signaling are related to POAG. He concluded by noting that both environmental and genetic factors relating to estrogen levels are associated with POAG, and that gender biology research has identified several potential targets for POAG, including estrogen itself and components of the nitric oxide signaling pathway.

AGS Members Educate Capitol Hill about Glaucoma Research and Clinical Practice

AEVR coordinated its March 26 event with the AGS Advocacy Day, which was held just prior to the start of its Annual Meeting. A total of 52 AGS advocates from 23 states participated in 105 visits with Members of Congress, sharing their message about the impact of glaucoma, why it is vital to fund this research within the NEI, and the importance of the glaucoma sub-specialty clinical practice. NAEVR was pleased to assist AGS and to accompany its members on Hill office visits. Later that day, the AGS joined with the FDA in convening a workshop to advance the science of minimally invasive glaucoma surgery devices. At the AGS Annual Meeting, Dr. Wiggs provided the Clinician-Scientist Lecture, delineating two different approaches to using genetics in glaucoma research depending on whether the disease occurs early or late.

Lindsay Rhoades, M.D. (University of Alabama at Birmingham) meets with Jen Deci in the office of Senator Richard Shelby (R-AL), a member of the Senate Labor, Health and Human Services, and Education (LHHS) Appropriations Subcommittee who previously served as its ranking member. Dr. Rhoades worked on Capitol Hill for Senate Majority Leader Harry Reid (D-NV) prior to attending medical school.

World Glaucoma Week History

The first World Glaucoma Day was held on March 6, 2008, and the U. S. House of Representatives passed H.R. 981, which recognized the event and supported NEI’s efforts to research the causes of and treatments for glaucoma. Since 2010, the day has expanded into a week of events held worldwide, with all major glaucoma professional societies and research organizations co-sponsoring AERV’s 2014 event, including, AGS, ARVO, Glaucoma Research Foundation, Optometric Glaucoma Society, and The Glaucoma Foundation.
Vision Trauma Research Program (VTRP)

**FY2013: Review in Process for $14.5 M in Awards**

The Department of Defense (DOD) is currently reviewing full proposals requested from researchers who submitted successful pre-proposal submission by the November 25, 2013, due date for the $14.5 M in translational research and hypothesis development awards [precedent-setting Congressional appropriation of $10 M, minus 8 percent sequester cut, plus $5 M transferred from other DOD agencies, primarily the Traumatic Brain Injury (TBI) Program]. Unlike past years, DOD’s Teledermatology and Advanced Technology Research Center (TATRC) is managing the tail-end of the process, while its “sister” agency, the Congressionally Directed Medical Research Program (CDMRP), is managing front-end programmatic review.

**FY2014: $10 M Appropriation Added to FY2013 Cycle**

The Consolidated Appropriations Act of 2014 funded VTRP at $10 M—the second year at this level. Although that funding is also subject to a sequester cut, TATRC anticipates that sister DOD agencies may again add to the amount available for research awards, which will be combined with the FY2013 cycle funding. TATRC will fund further down the list of awardees approved in the current review cycle described above. With the addition of the FY2014 $10 M appropriation, the VTRP will yield at least $50 M in awards to vision researchers since it was created in FY2009 through NAEVR’s advocacy.

**FY2015: NAEVR, VSOs/MSOs Request $10 M**

NAEVR has requested $10 M in FY2015 VTRP funding, which has once again been supported by The Independent Budget submitted by Veterans Service Organizations (VSOs) and Military Service Organizations (MSOs) whose support was coordinated by NAEVR member Blinded Veterans Association (BVA).

PRMRP to Issue Funding Opportunities in April

In late March, DOD’s Peer Reviewed Medical Research Program (PRMRP) issued a press release to alert the medical research community about the upcoming release of its FY2014 Program Announcement, which is expected to be issued sometime in April. Unlike the VTRP, PRMRP does not focus on one particular area of research, but rather solicits research proposals from a list of 25 widely ranging topics. Two are potentially of interest to vision researchers: Neuroprosthetics and Dystonia, two forms of which can affect the muscles around and within the eyelids. To be added to NAEVR’s email interest list for alerts of DOD funding opportunities, please contact NAEVR’s David Epstein at depstein@eyeresearch.org.

DOD-Funded Researcher Develops Novel Patch for Ocular Trauma

On March 6, AEVR hosted a Congressional briefing co-sponsored by BVA and ARVO entitled Development of a Thermo-Responsive Patch for Ocular Trauma featuring Mark Humayun, M.D., Ph.D., Interim Ophthalmology Chair and Co-Director of the newly-created Eye Institute at the University of Southern California (USC), and FY2011-2012 VTRP funding cycle awardee. His research addresses a major DOD-identified gap—lack of a means for battlefield medics to seal lacerations and perforations of the eye to protect it while a soldier is transported to a more robust medical facility where trained oculares can properly suture the globe.

Dr. Humayun—a clinician-scientist trained as both an ophthalmologist and engineer—leads a team conducting biomedical and biomechanical research for civilian and defense applications.

He explained that a sight-impaired or blinded veteran may face upwards of 50-60 years of life with vision loss, since 97 percent of injuries occur in soldiers 24 years old. That is why his research is investigating ways to stabilize battlefield eye injuries—specifically corneal and scleral (eye wall) wounds—such as lacerations, perforations, and penetrating injuries, as well as intraocular foreign bodies (IOFBs). Combat medics usually do not have the skills or treatments to provide immediate care to prevent the vitreous gel from leaking out, dangerously low eye pressure, or infection from setting in before the soldier can be transported to a medical facility with the required microsurgical equipment and an oculare surgeon.

He described battlefield treatment options, noting the importance of maintaining the transparent nature of the cornea and minimizing scarring. Gluing is impractical, since it is irreversible and may have toxicity issues. Simply patching the eye has the potential complication of placing too much pressure on the globe, forcing further leakage of ocular fluids from the lacerations. His approach is using nanotechnology to develop the world’s first reversible glue. In contrast to most glues, it does not become adhesive until it is warmed up and reaches body temperature—meaning that it can be safely and easily transported to the eye, and only then does it become adhesive and form a seal. This material has a long shelf life and can be stored in extreme conditions, and only becomes sticky when applied to the body.

The material Dr. Humayun’s team has developed also prevents scarring, because it is only sticky on one side—the other side being smooth—so the patch does not adhere to surrounding tissue. He explained that the material, Poly-N-Isopropylacrylamide, or PNIPAM, is also not exothermic during the phase transition, meaning that it does not give off heat as it becomes adhesive, again preventing damage to the eye. The early versions of PNIPAM did not have the desired strength to ensure a solid bond, but the current version has the strength needed to ensure that the patch will hold the tissue together while the soldier is transported.

What makes this ocular patch so ideal for temporary wound closure for an injured globe is that, once implanted in an eye, it can remain there until the soldier is transported to a medical facility with an oculare surgeon, who can remove the patch by the simple application of sterile saline. The saline lowers the material’s temperature sufficiently so that it loses its adhesive quality and is easily extracted, allowing the surgeon to then perform the necessary permanent repairs to the eye. In a video that was part of the presentation, the patch can be seen as repeatedly transitioning from sticky to non-sticky as saline is applied to an in-vitro eyeball. Because the patch is intended to be used for a very short term, the FDA regulatory approval process is also anticipated to be shorter, which should accelerate the process for getting it into battlefield medical kits.

Dr. Humayun stressed that there are no limits on the size or shape of the wounds for which the patch can be used. He also explained that this work is his team’s first step in the development of several other novel treatments. “While a temporary patch is an important step in preventing ocular damage until a surgeon can repair the eye, we are looking to develop a limbic stem-cell treatment that would actually stimulate the eye to repair itself, rather than needing microsurgery to treat an ocular trauma.”

We are also looking to develop a limbic stem-cell treatment that would actually stimulate the eye to repair itself. — Dr. Humayun

Attendees from left: Jim Vale (Vietnam Veterans of America), Chong Cornell and her husband BVA President Mark Cornell, and Glenn Minney and Tom Zampieri, Ph.D. (BVA). Mr. Cornell testified earlier that day at a joint House/Senate Veterans Affairs Committee hearing, at which he stated BVA’s support for FY2015 VTRP funding of $10 million. Mr. Minney, BVA’s Chief Advocate in Washington, D.C., served 21 years in the U.S. Navy before losing his vision as a result of an Improvised Explosive Device (IED) explosion in 2005 while serving as a medical corpsman in Iraq. Dr. Zampieri will continue to advise BVA from his new home in Houston, Texas.

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