NIH Funding, Structural, and Translational Research
Issues Demand NAEVR’s Attention

NAEVR’s primary mission will always be to advocate for increased federal funding for vision research, primarily that at the National Eye Institute (NEI) within the National Institutes of Health (NIH) but increasingly from the Department of Defense (DOD). In that regard, NAEVR’s initial estimates, shown in the accompanying chart, reveal that vision researchers received about $56 million more in Fiscal Year (FY) 2010 funding as compared to baseline FY2009. Since FY2010 has just ended, NAEVR will further analyze NIH data to determine where vision researchers successfully competed for additional funds—such as from the NIH Common Fund or from other Institutes and Centers (I/Cs). Even prior to that update, the $56 million increase already reflects a 100-fold return on the vision community’s investment in NAEVR and AEVR.

The FY2011 appropriations process has been extremely slow, and most government agencies are operating under a Continuing Resolution (CR) until the spending bills are finalized after the election. NAEVR is already strategizing about the FY2012 appropriations process, as funding will become even tighter. Biomedical research is losing two of its most ardent champions—Senator Arlen Specter (D-PA) and Cong. David Obey (D-WI)—so new champions must be developed. NAEVR will continue to build upon the Capitol Hill relationships cultivated through the Decade of Vision 2010-2020 Initiative to make its case for robust vision funding.

NAEVR not only knows what needs to get done regarding these pivotal NIH funding, structural, and priority-setting issues—it is actively doing it now!

NIH funding is tied closely to its structure and priority-setting process, which NIH Director Francis Collins, M.D., Ph.D. addressed in depth in his first appearance before the House Energy and Commerce Committee in a June 15 hearing. He used that event to publicly announce his request of the NIH’s Scientific Management Review Board (SMRB) to form a working group to make recommendations regarding a translational research strategy. The SMRB’s Translational Medicine and Therapeutics (TMAT) Working Group held its first information-gathering session in mid-September. NAEVR Executive James Jorkasky had a front-row seat and testified at the end of the two days of discussion—the only member of the audience to do so, and the only attendee to mention vision research. Jim identified numerous NEI translational research initiatives, many of which were detailed at NEI’s Translational Research and Vision meeting that is described in this edition, as is the recent NEI/Food and Drug Administration (FDA) Glaucoma Clinical Trial Design and Endpoints Symposium and AEVR’s Congressional briefing on Age-related Macular Degeneration (AMD) translational research. Jim emphasized that, although a smaller Institute, the NEI has smartly and effectively expanded its research dollars through collaborations. His point was to ensure that SMRB members were informed and that vision researchers would “have a seat at the table” in an NIH strategy that could ultimately provide additional funding in key areas.

At the same meeting, the SMRB recommended that the separate Drug and Alcohol Institutes be abolished and an “Addiction” Institute be created. NAEVR testified against this move, as it had done at the SMRB’s May meeting, citing its concern that liver function research could be minimized in a combined or new Institute, just as “front of the eye” corneal research could be minimized if NEI was merged into a “Brain” Institute. NAEVR’s ardent and vocal leadership against I/C mergers/budget clusters and maintaining the NEI budget line is timely, since the newest SMRB member Harold Varmus, M.D., now National Cancer Institute (NCI) Director but former NIH Director, commented that his proposal in 2001 to consolidate NIH’s 27 I/Cs into six units “should be back on the table for consideration.” Although no SMRB members responded to that comment, it is out there and will likely make its way to the Congressional authorizers of NIH, with whom NAEVR will meet.

Clearly, under Jim’s leadership, and with the assistance of legislative counsel John Porter, NAEVR not only knows what needs to get done regarding these pivotal NIH funding, structural, and priority-setting issues—it is actively doing it now! Since this is likely the last Report before year’s end, I want to reiterate how important it is that our community fully supports the NAEVR and AEVR Alliances since, as the “Friends of the NEI,” they need to be at the forefront of these issues that affect the future of vision research.

I appreciate your commitments to NAEVR and AEVR for 2011 when renewals issue next month.

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On September 23, AEVR’s Decade of Vision 2010-2020 Initiative hosted an International AMD Awareness Week 2010 Congressional Briefing with a truly global nature, as it was co-hosted by the AMD Alliance International (AMDAI), the Association for Research in Vision and Ophthalmology (ARVO), and the European Vision Institute (EVI). AMDAI’s Allie Laban-Baker described a March 2010 report by her organization which estimated that 33 million people worldwide currently experience vision impairment from AMD at a direct healthcare cost of $255 billion.

Featured speaker Hendrik Scholl, M.D., Wilmer Eye Institute at Johns Hopkins University and formerly at the University of Bonn, provided international perspectives from his clinical and research activities in Germany, the United Kingdom, and the United States. A clinician scientist, he not only gave an overview of basic and translational research into AMD—much of which is funded by the NEI—he also discussed differences in biomedical research funding mechanisms between Europe and the U.S. The comprehensive nature of his discussion prompted numerous staff members to publicly state that it was the best briefing they had attended this year.

“Fifteen years ago, there was not a lot new in AMD research, but now it is one of the hottest areas,” said Dr. Scholl, who is a practicing ophthalmologist whose research relates to retinal degenerations and to the development of therapeutic measures in order to retain and restore vision. He described how the NEI has recently created an International AMD Genetics Consortium to share global data on the genetic associations implicated in AMD—to date, 22 such associations have been discovered, including gene variants in the body’s immune and cholesterol pathways that increase susceptibility for AMD. With this knowledge, researchers can develop diagnostic and therapeutic strategies. For example, researchers are investigating the potential for the modulation of the innate immune system to treat AMD, to use genetic and protein biomarkers to investigate pharmacogenomics, and to use the latest technology to monitor therapeutic responses. They are also investigating the use of various stem cell therapies for retinal repair.

Dr. Scholl concluded by describing the fragmented nature of governmental funding for European-based biomedical research in comparison to the centralized nature of federal funding in the U.S. “Funding is only available from the European Commission if it has first issued a specific ‘call’ for that type of research,” he stated, also noting that public funding mechanisms can vary between countries and even states within those countries.

AEVR Co-sponsors Vision Partner Congressional Briefings

On July 14, Michael Fischer, O.D., F.A.A.O. (Northport Veterans Affairs Medical Center) spoke about low vision and why adequate reimbursement for low vision rehabilitation services up-front could save Medicare program costs downstream.

On September 16, Sandra Block, O.D., Ph.D. (Illinois College of Optometry, far left) and Victoria Quinn, Ph.D. (Helen Keller International, far right) spoke about the domestic and international aspects of children’s vision care. They are joined by event co-sponsors, including NAEVR’s David Epstein (second left).

Speakers at the September 29 briefing addressed the danger of ultraviolet rays to vision, including Peter Kehoe, O.D. (Past President of the American Optometric Association), Drusilla Hufford (U.S. Environmental Protection Agency), Congressional Vision Caucus Co-Chair Cong. Gene Green (D-TX), Kovin Naidoo (International Centre for Eyecare Education), PBA CEO Hugh Parry, and Vincent Young, M.D. (Albert Einstein Medical Center).
Legislative Scorecard Issues
Congress Recesses for Election Without Finalizing FY2011 Appropriations

Prior to adjourning on September 29 for its election recess, the Senate and House approved a Continuing Resolution which funds most government programs at the FY2010 level, as the new fiscal year begins on October 1 and Congress had not finalized any of the FY2011 spending bills. The CR expires December 3, so it is the leadership's intent to return in a lame duck session to complete appropriations. This process could extend into February 2011, however, depending on the election outcome. There is also a chance that the CR could last a full year if Congress cannot reach agreement, potentially leaving the NIH and the NEI flat-funded, resulting in a net loss when biomedical inflation is factored in.

Both the House and Senate have proposed FY2011 Labor, Health and Human Services, and Education (LHHS) spending bills that provide for a $1 billion, or 3.2 percent, inflationary funding increase for the NIH to $32 billion (see funding chart). This was also the funding level proposed by President Obama. The House bill has not been approved by the full Appropriations Committee, so only top line details are available. The Senate bill was approved by the Appropriations Committee and details were released. It proposes NEI funding at $723.2 million, or a 2.3 percent increase. I/C increases range from 2.3 to 2.8 percent. The President’s budget had proposed a 2.5 percent NEI increase, but all I/Cs were tapped to underwrite initial funding of the Cures Acceleration Network (CAN) at $50 million. CAN, which was authorized by Congress at $500 million in healthcare reform legislation passed earlier this year [Patient Protection and Affordable Care Act, P.L. 111-148], but not appropriated funds, was created to assist NIH in “crossing the Valley of Death from bench to bedside,” that is, the rapid translation of basic research into treatments. It remains unclear as to what extent the NEI and vision researchers may have access to CAN funds (see story on translational research).

The Senate bill’s Report Language highlights how NEI is meeting the five research priorities as defined by NIH Director Dr. Francis Collins–genomics, translational research, global health, research that supports healthcare reform, and efforts to reinvigorate the biomedical research enterprise. This language reflects NAEVR’s written submission.

Although the medical research advocacy community, including NAEVR, had requested FY2011 NIH funding at $35 billion, it has thanked Congressional leaders for the proposed $1 billion funding increase and their efforts to ensure that NIH funding keeps pace with biomedical inflation.

Dr. Collins Testifies Before Congress Citing Power of the “Genetic Signature”

On June 15, Dr. Collins was the sole witness at a hearing entitled NIH in the 21st Century: The Director’s Perspective held by the Subcommittee on Health of the House Energy and Commerce (E&C) Committee, which is chaired by Cong. Frank Pallone (D-NJ). The full Committee, which has authorizing jurisdiction over the NIH, spearheaded the last Congressional reauthorization of the NIH through the NIH Reform Act of 2006. In written and oral statements, Dr. Collins provided a status report on NIH activities, including those specifically mandated in the 2006 reauthorization. Dr. Collins’ appearance before the E&C Subcommittee–his first as NIH Director–followed his April 28 and May 5 appearances in hearings held by the LHHS Subcommittees of the House and Senate Appropriations Committees, respectively, on FY2011 NIH funding. The issue of funding and NIH’s concomitant priority-setting process were the subject of many questions. Dr. Collins responded that it is optimal for science to drive the process with due consideration of disease burden and cost. He emphasized that NIH’s two-tiered peer review system–reflecting scientific excellence of investigator proposals balanced with NIH’s programmatic needs–has served the nation well, stating that, “it is a complex calculus that should be best done by scientists.” He acknowledged the importance of funding basic science, which is the backbone of discovery, while aggressively pursuing the translation of that research.

Dr. Collins offered numerous examples of how identifying an individual’s “genetic signature” will facilitate translation of basic research into more effective personalized medicine treatments. In that regard, he described how he was working closely with Food and Drug Administration (FDA) Commissioner Margaret Hamburg, M.D. through the newly formed NIH/FDA Joint Leadership Council to ensure that the latest science is integrated into the regulatory review process.

Visit the NIH/NEI funding section of NAEVR’s Web site at www.eyeresearch.org for full details
**Focus On NIH Structure, Translational Research**

**SMRB Recommends Precedent-Setting NIH Structural Change**

On September 14-15, the NIH’s Scientific Management Review Board (SMRB) held its fifth meeting to address NIH management and structure issues, which is its charter, as set forth by the NIH Reform Act of 2006. At the meeting, the SMRB considered a report and recommendations from its Substance Use, Abuse, and Addiction (SUAA) Working Group and recommended to abolish the National Institute on Drug Abuse (NIDA) and the National Institute on Alcohol Abuse and Alcoholism (NIAAA) to create a new “Addiction” Institute.

The SUAA offered two options in its report. The first reflected a structural change, which would abolish NIDA and NIAAA and establish a new “Addiction” Institute to include drug addiction research from NIDA, alcohol addiction research from NIAAA, tobacco addiction research from the National Cancer Institute (NCI), and gambling addiction research from the National Institute of Mental Health (NIMH), with non-addiction research portfolios from NIDA and NIAAA being transferred to other I/Cs. The second option reflected a functional change in which NIH would create a trans-Institute Addiction Initiative, not unlike the NIH Neuroscience Blueprint. After lengthy discussion, the SMRB voted to recommend the structural option to Dr. Collins. If Dr. Collins accepts the recommendation, it will start a legislatively mandated series of reporting events within a specific timeframe, including notifying Congress of this change.

Although the final SMRB recommendation reflects an action more complex than a simple “merger” of the two Institutes and addresses a long-standing desire within some in the research community for an entity on addiction, NAEVR opposed “merging” Institutes in its public comments at the SMRB’s May meeting and at the September 15 meeting due to its concern that there may be greater pressure on NIH to merge or “cluster” the budgets of other Institutes. In 2001, then-NIH Director Harold Varmus, M.D. (who has subsequently returned to the NIH as the NCI Director) proposed to cluster the budgets/programs of the 27 I/Cs into six units, including a “Brain Institute” which would have incorporated the NEI. NAEVR has consistently opposed this action, including fighting a similar provision in the draft NIH reauthorization legislation in the 2004-2006 timeframe, since it feared that “front of the eye” corneal research could be minimized in a “Brain Institute.” During the SMRB’s discussions, Dr. Varmus supported the concept of an Addiction Institute and commented that “he’d be happy to see his 2001 proposal back on the table for consideration.” As a result, NAEVR will stay vigilant on this issue.

**SMRB Considers an NIH Strategy for Translational Research**

Per Dr. Collins’ request at the SMRB’s May meeting, it has established a Translational Medicine and Therapeutics (TMAT) Working Group, chaired by Arthur Rubenstein, M.B.B. Ch. (Dean of the University of Pennsylvania School of Medicine). Most of the SMRB’s September meeting was spent in initial discussions of how NIH coordinates its numerous initiatives regarding clinical and translational research—not only internally, but with other Department of Health and Human Services (DHHS) agencies [such as the FDA], with other government agencies, with the private biomedical research sector, and with the patient and advocacy community. Representatives from these various sectors participated in a series of panels to address the challenges that NIH faces in this regard. Much of the conversation focused on how the NIH would implement the Cures Acceleration Network (see NIH funding story) and use it as a means by which to foster translational research. As many panelists commented, the exact role for CAN in accelerating the development of new therapies (especially drugs) needs to be determined, as its initial proposed $50 million funding level in FY2011 appropriations pales in comparison to the $1 billion cost to bring a new drug therapy to market. Several panelists also emphasized that translation not only applies to drug therapies, but to devices and biological and combinations thereof, as well as gene therapy approaches.

The TMAT set an ambitious goal of year-end 2010 for development of a recommendation to Dr. Collins, as it next meets December 7-8. However, many SMRB members questioned whether this timeframe was realistic considering the complexity of this subject. Since Dr. Rubenstein also chairs the SMRB’s NIH Intramural Program (IRP) Working Group, which was charged with developing recommendations regarding funding, structure, and interactions with the extramural community for the NIH Clinical Center, he recommended and the SMRB agreed to defer any action on the IRP’s recommendations since they could be affected by the more comprehensive strategy recommendations for translational research.

**NAEVR Testifies on Translational Vision Research**

Since none of the panelists represented the vision space, NAEVR provided public comments about NEI’s collaborations trans-NIH, trans-DHHS, with other government agencies, with private funding organizations, and internationally to “smartly and effectively expand its research dollars to develop a rich repertoire of patient solutions.”
NEI Features Translational Research in Final 40th Anniversary Event

On June 24-25, the NEI concluded its 40th anniversary celebration with an NIH campus-based meeting entitled *Translational Research and Vision*. In keynote comments, Dr. Collins recognized the NEI as a leader in translational research—one of NIH’s top five priorities. “The NEI has been central to advances in translational research,” Collins said, adding that “NEI’s vision [for translational research] has allowed us to see farther and better and has enabled the NIH to attain its vision. Most importantly, the best is yet to come.”

Dr. Collins also cited the NEI’s leadership in ocular genetics, noting that it has worked collaboratively with other NIH Institutes and in an inter-disciplinary fashion to elucidate the basis of eye disease and to develop treatments. “Translational research is not easy, especially since it deals with complex biological systems that require an inter-disciplinary approach to science,” he said.

Dr. Collins stated that he was pleased to feature an example of NEI’s translational research—the successful human gene therapy to treat the neurodegenerative disease Leber Congenital Amaurosis (LCA) in his testimony at April 28 and May 5 hearings of the LHHS Appropriations Subcommittees of the House and Senate, respectively. Dr. Collins also lauded the NEI’s use of Genome-Wide Association Studies (GWAS) to determine the increased risk of developing AMD from gene variants in the Complement Factor H (CHF) immune pathway. “This was the first demonstration that GWAS is a useful tool to make the connection between gene variants and disease conditions,” he said.

In his comments, NEI Director Paul Sieving, M.D., Ph.D. stated that, as rewarding as it was to look back on the 40 years of accomplishments, he was most proud of the future-oriented focus of the Symposia Series that NEI hosted this past year on topics such as genetics/genomics, optical imaging, neuroscience, stem cell therapies, and the latest in glaucoma research. He reminded attendees that the April 2009 inaugural symposium featured blind mountain climber Erik Weihenmayer, who was engaged in testing a new device that uses the tongue to get visual signals to the brain, the development of which had been supported by the NEI.

NEI and FDA Hold Second Joint Symposium on Glaucoma Endpoints

On September 24, the NEI and FDA jointly held a *Glaucoma Clinical Trial Design and Endpoints Symposium* which engaged the glaucoma research community and the drug and device approval divisions within the FDA—specifically the Center for Drug Evaluation and Research (CDER) and the Center for Devices and Radiological Health (CDRH). Subtitled *Measures of Structural Change and Visual Function*, this meeting followed up on an initial March 2008 symposium by reviewing the latest research to examine whether measures of structural change correlate to visual function and therefore serve as endpoints in clinical studies to support the approval of new drug and device diagnostics and therapies for glaucoma. Additional endpoints could potentially make glaucoma trials more logistically feasible by reducing study length, cost, and number of participants enrolled, thereby getting new therapies to patients sooner.

At the March 2008 meeting, FDA representatives stated that new clinically relevant endpoints could be considered in the regulatory review process if they are properly validated. At the follow-up meeting, noted glaucoma researchers, many funded by the NEI, reported data from studies of several imaging techniques to determine structural changes to the optic nerve head or retinal nerve fiber layer that may be correlated to visual function changes in glaucoma progression. For each imaging technique, speakers addressed the optimal criteria for measuring the rate of tissue loss and defining structural events, the statistically significant extent of structural change considering known variability of the imaging technique, and how structure predicts clinically relevant functional outcomes.

The Symposium, managed by ARVO, is the fourth in a series of collaborative meetings between the NEI and FDA, following up on the November 2006 *Ophthalmic Clinical Trial Design and Endpoints Symposium*, which focused on new treatments for AMD and diabetic retinopathy, and the September 2009 *Patient Reported Outcomes* meeting. The symposia grew out of NAEVR-initiated meetings between the NEI and FDA and exemplify NEI’s leadership in facilitating the translation of its basic research—an NIH priority.
Defense Related Vision Research

DOD Announces $11 Million in Funding Due to Quality of Grants

The Department of Defense’s (DOD) Telemedicine and Advanced Technology Research Center (TATRC), which manages the dedicated Peer Reviewed Medical Research-Vision (PRMR-Vision) line item in Defense appropriations, announced $11 million in awards for its Vision Research Program. This total reflects FY2009 and 2010 Congressional appropriations of $4 million and $3.75 million, respectively, from the PRMR-Vision line item plus $4.1 million from the Traumatic Brain Injury (TBI) program, minus administrative costs. The awards fund twelve domestic and international ophthalmic and optometric researchers.

The TBI dollars are funds transferred NAEVR at Blinded Veterans National Convention

In late August, NAEVR attended the Blinded Veterans Association’s (BVA) 65th National Convention in Arlington, Virginia, and in late September, the Fourth Military Vision Symposium on Ocular and Brain Injury held by the Schepens Eye Research Institute (SERI) in Boston. NAEVR met with key DOD and Department of Veterans Affairs (VA) contacts, vision researchers, and active and retired military members who benefit from advocacy.

BVA hosted hundreds of veterans and their families including, as in past years, 14 veterans who recently returned from Operation Iraqi Freedom and Operation Enduring Freedom (Afghanistan) and had been blinded or experienced significant visual impairment.

The scientific program featured Randy Kardon, M.D., Ph.D. (University of Iowa), whose research is funded by the NEI, VA, and DOD. He is one of the recipients of TATRC’s most recent awards (see story above). Dr. Kardon was joined by NEI Extramural Research Director Dr. Lore Anne McNicol, who spoke about the latest in NEI funded research.

NAEVR’s James Jorkasky and David Epstein attended, with Jorkasky joining TATRC Vision Portfolio Manager Robert Read in discussing PRMR-Vision funding. “David and I were honored to attend this meeting, at which we interacted with the ophthalmic and optometric consultants to the various branches of the military with whom we serve on the TATRC Programmatic Committee. We also had an opportunity to speak with many of the investigators and hear their formal scientific presentations about research which is addressing immediate military needs.”

**Visit the Defense-related Vision Research section of NAEVR’s Web site for more details**

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Status of FY2011 PRMR-Vision

With TATRC’s awards announcement, NAEVR has tangible examples of vision research to share with Capitol Hill champions. With BVA’s assistance, NAEVR was able to secure a House “Dear Colleague” letter by Cong. Tim Walz (D-MN) supporting PRMR-Vision funding at $10 million in FY2011 Defense appropriations. The Senate bill’s Report Language includes vision in a list of 33 areas of research that it recommends for funding, but details have not been released. The Senate bill’s Report Language includes vision in a list of 33 areas of research that it recommends for funding, but defers to the House bill on details.