Capitol Hill Education
Congressional Briefing Highlights NIH’s Drug Discovery Technology

Finding a vision-saving drug can take years because scientists need to screen tens or hundreds of thousands of compounds before they find one that might work. But thanks to advanced screening technology and a research collaboration involving the Foundation Fighting Blindness (FFB), the NIH’s Chemical Genomics Center (NCGC), and Johns Hopkins University (JHU), the search for drugs to combat retinal diseases has accelerated. The NCGC is a component of the help researchers better understand the compounds’ safety, efficacy, and clinical potential.”

Dr. Rose said that the availability of advanced high-throughput screening systems is limited because of their expense. “Most research institutions can’t afford screening systems as powerful and sophisticated as NCGC’s. To have such a resource available to FFB-funded researchers greatly accelerates our drive for vision-saving treatments,” says Dr. Rose.

Now, new screening technology enables us to more quickly identify promising compounds and move them into animal studies. —Dr. Rose

Molecular Libraries Program destined for inclusion in NCATS (see previous page).

At a June 9 Capitol Hill briefing hosted by AEVR’s Decade of Vision 2010-2020 Initiative and FFB, Donald Zack, M.D., Ph.D., a clinician-scientist at the Wilmer Eye Institute at JHU, spoke about how the NCGC’s high-throughput drug screening systems have greatly accelerated his search for retinal disease treatments. In a research project funded in part by FFB, Dr. Zack and his NCGC colleagues were able to identify several molecules with vision-saving potential in a period of weeks. Without NCGC’s expertise and technology, that same effort would have taken several years.

“Years ago, because technology and access were limited, this part of the process took exponentially more time,” said FFB Chief Research Officer Stephen Rose. “Now, new screening technology enables us to more quickly identify promising compounds and move them into animal studies, which High-throughput systems combine robotics and computers to quickly screen large numbers of compounds. In grid-like plates containing divots, or wells, a variety of compounds are mixed with biological materials — proteins or cells, for instance — to determine if they promote cell health and function. What the latest technology enables researchers to do, via an automated process that involves the incubation and analysis of multiple plates simultaneously, is screen tens of thousands of compounds daily.

As Dr. Zack stressed, speeding up the drug-development process not only increases the quality of life, it is also cost-effective. Rare retinal degenerative diseases including retinitis pigmentosa (RP), Usher syndrome (combined deafness and blindness), and Stargardt disease (juvenile macular degeneration) affect 200,000 Americans, while more common retinal diseases, such as age-related macular degeneration (AMD), affect more than 10 million Americans. Dr. Zack’s research is enabling him to develop new paradigms for the diagnosis, prevention, and treatment of these blinding eye conditions.

NAEVR Speaks at the EU
On June 22, NAEVR’s James Jorkasky presented the United States perspective on vision research funding advocacy at the EuroVisionNet’s Parliamentary Evening at the European Parliament (EU) in Brussels entitled Finding New Treatments for Blinding Disorders. EuroVisionNet, which is managed by the European Vision Institute (EVI) with which NAEVR has a strategic relationship, works to coordinate vision research activities and policies in Europe in order to overcome national fragmentation. The event was hosted by Member of the European Parliament (MEP) Charles Tannock from London.

“Although I spoke about NAEVR’s activities in the United States to advocate for increased vision research funding at the NEI and DOD, I was careful to offer these as just an example of how to influence governmental entities,” said Jorkasky. “Having worked with EVI in the past, I know what it faces in terms of the complexity of coordinating research policies and funding opportunities at the EU, country, and even state level.” He reminded attendees that NAEVR has written a document entitled International Advocacy Handbook: Tools to Influence Vision Research Funding for ARVO, which is posted on its Web site. As with NAEVR’s comments at the meeting, the ARVO Handbook is sensitive to varied cultural differences and attitudes.

NAEVR’s international outreach was also enhanced in a profile in the May 2011 edition of International Innovation, a United Kingdom publication.