



DISCOVERY

THE DISCOVERY EYE FOUNDATION

The Discovery Eye Foundation (DEF) supports research and is dedicated to finding treatments and cures to sight-threatening eye diseases.

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In this Issue:

- [- Private Funding Makes a Difference in Translational Research](#)
- [- Profile - Board Treasurer Touts DEF Accomplishments](#)
- [- Marijuana and Glaucoma](#)
- [- Usher Syndrome Lesson](#)

PRIVATE FUNDING MAKES A DIFFERENCE IN TRANSLATIONAL RESEARCH

President Barack Obama signed the Consolidated Appropriations Act of 2016 in December, which included increases in spending for the National Institutes of Health and the National Eye Institute. That’s good news for research on eye-related diseases, but there remains a big question on what the new administration means for future funding. The uncertainty puts an even bigger eye on the private funding of research.

Private funding is of increasing importance to researchers for a variety of reasons, according to *The Chronicle of Philanthropy*. Among them:

- “Large gifts can jumpstart new areas of research neglected by federal dollars or provide a jolt to stalled scientific advances.”
- Private gifts make it easier to collaborate with international researchers.
- Private funds often help support younger scientists — the average age at which researchers receive their first NIH grant is 43.
- Private grants often come without the “strings” of government grants.

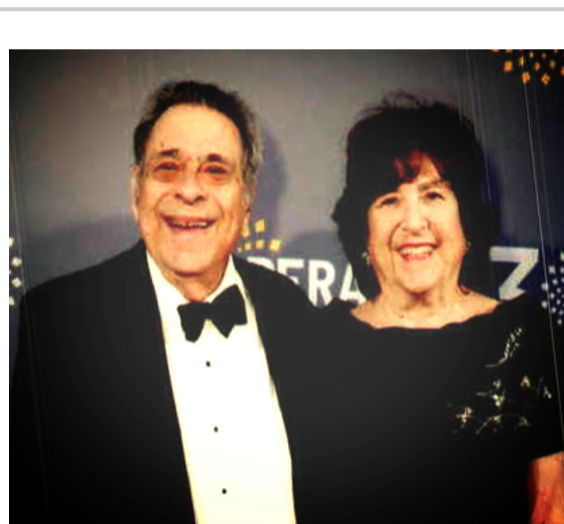
Additionally, private funding can fill big gaps between stages of research. According to *The Chronicle of Philanthropy*, tax money often pays for basic discoveries, while private donations are more likely to support research to convert basic findings into cures. This “translational research” works to develop drugs or treatments for diseases. Translational research bridges the gap between promising discoveries in the laboratory and their testing in the clinic — and it is the type of research in which the Discovery Eye Foundation specializes.

Dr. Tibor Juhasz, a professor of biomedical engineering at UC Irvine, invented the first femtosecond laser for use in eye surgery in the late 1990s. The laser is now also being tested for corneal cross-linking (CXL) to treat keratoconus. According to Juhasz, once the basic research was complete, it was very difficult to get funding for the translational phase.

[Private Funding Makes a Difference In Translational Research cont'd...](#)

PROFILE - Board Treasurer Touts DEF Accomplishments

Currently serving as treasurer, Joan Seidel has been on the board of directors of the Discovery Eye Foundation for more than two decades. The Los Angeles transplant — she grew up in Brooklyn — first got involved with DEF, because her husband, Arnold, has keratoconus.



“I heard stories of his mother being called in to his kindergarten, because he couldn’t see the board. It’s something he’s dealt with his entire life,” Seidel says, adding he has not let it have a negative impact on any aspect of his personal or professional life. He has had two successful corneal transplants, and since his second transplant, she says, “He’s been able to read for pleasure, not just read what he *has* to read. It’s a wonderful thing.” The couple works together in the family business, a stock brokerage, and travels extensively with their children and grandchildren. Additionally, they are active with the Los Angeles Opera, Hebrew Union College, American Technion Society, Jewish Home for the Aging and Friends of the Observatory (Griffith Park).

Seidel first became involved with DEF after Arnold started seeing DEF Medical Director Dr. Tony Nesburn, who performed the first of his two transplants. “We are grateful patients,” she says. She has stayed involved for so long largely due to the “great accomplishments and research of the organization. Selfishly, my husband has benefitted from it, and Cris [Kenney, DEF’s research director] is working on all kinds of other implications and other eye diseases. It’s nice to be part of something that is really accomplishing things and showing such potential great success.

“Government funding has been cut. The NIH is not giving the kind of money scientists need. Research takes time; you have to have the patience and the ability to move forward. When they discover one facet of eye problems, very often they discover other things. Giving to DEF is a way to encourage solutions.”

MARIJUANA AND GLAUCOMA

Can smoking marijuana help glaucoma?



While the current political climate could put recent marijuana-legalization laws in peril nationwide, there is still a movement afoot to use marijuana to treat a host of medical conditions, including glaucoma.

Glaucoma is a disease that causes damage to the major nerve of the eye — the optic nerve — a part of the central nervous system that carries visual information from the eye to the brain. The eye experiences a gradual increase of intraocular pressure (IOP) due to an imbalance of the fluid produced in the eye and the amount of fluid drained. Over time, elevated IOP can cause vision loss.

[\(For more about glaucoma, visit our website here\)](#)

The National Eye Institute has been studying the idea that marijuana can be helpful in treating glaucoma by lowering IOP since the 1970s. According to the American Academy of Ophthalmology (AAO), research throughout the years has shown that smoking marijuana does lower the IOP of people with glaucoma. However, it only lowers IOP for about three or four hours.

“This short period of time is a major drawback for the use of marijuana as a glaucoma treatment,” AAO found. “Because glaucoma needs to be treated 24 hours a day, you would need to smoke marijuana six to eight times a day around the clock to receive the benefit of a consistently lowered IOP.”

Furthermore, AAO reported in 2014, the risks of smoking marijuana outweigh any benefit. Side effects include an increased heart rate and a decrease in blood pressure, which “raises concerns there could be compromised blood flow to the optic nerve, though no data has been published on the long-term systemic and ocular effects from the use of marijuana by patients with glaucoma.”

The 2014 report concluded that “decreased blood pressure, decreased optic nerve blood flow and short duration of the IOP-lowering effect are significant actual and potential problems with marijuana ...” Other adverse effects include conjunctival hyperemia (blood-shot eyes), impaired immune system response, impaired memory for recent events and difficulty concentrating.

In summary, the report found “no significant evidence demonstrating increased benefit and/or diminished risk of marijuana use in the treatment of glaucoma compared with the wide variety of pharmaceutical agents now available.” The report did call for additional studies to see if any of the many active ingredients in marijuana, if purified, could offer an effective treatment for glaucoma and other diseases in the future.

USHER SYNDROME LESSONS

An Excerpt from *Walk in my Shoes*

Usher syndrome is the most common genetic cause of combined blindness and deafness. More than 400,000 people worldwide are affected by this disorder; there is no cure. A recent book, *Walk in my Shoes*, is a collection of essays by people who have lost both senses to Usher syndrome. DEF is excited to present an excerpt from one of the chapters.



Mary Dignan was diagnosed as “mentally retarded” before her deafness was diagnosed around age five. She was then fitted with hearing aids and attended public schools. At the age of 20, she was diagnosed with retinitis pigmentosa and, years later, was told she has Usher syndrome. Her career in agriculture and water resources management issues includes work as a news reporter, and as a legislative aide to the US House of Representatives in Washington, DC, as well as the California State Assembly Committee on Agriculture in Sacramento. She earned her law degree from the University of Pacific-McGeorge School of Law in 1994 and practiced law until 1997.

TO READ FULL ESSAY VISIT: [DEF BLOG - WALK IN MY SHOES](#)



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