
RETINA RESEARCH FOUNDATION NEWSLETTER

Foresight for Sight

Number 3/2006

\$14.6 Million NIH Grant Will Build on Macular Degeneration Findings

A five year \$14.6 million grant from the National Eye Institute of the National Institutes of Health (NIH) will fund an international multidisciplinary effort led by the University of Iowa to leverage two recent genetic discoveries into possible treatments for age-related macular degeneration (AMD). The grant was awarded August 1.

AMD is the most frequent cause of irreversible blindness in developed countries. People with AMD lose the central part of their vision when the macula, a part of the retina, degenerates. No treatment currently exists for early stages of AMD, which affects nearly 50 million people worldwide.

In the past year, the University of Iowa, Columbia University Medical Center and the National Cancer Institute (NCI) along with several other institutions, determined that two genes –complement factor H and factor B-account for nearly three out of four cases of AMD. Variations in these two genes somehow alter the function of a key pathway in the immune system, which researchers suspect leads to AMD. The factor H gene also is linked to similar eye problems associated with membranoproliferative glomerulonephritis type II, (MPGN II), a rare kidney disease.

Now the scientists will begin a series of investigations to learn more about the genes' role in the immune system, with the goal of developing diagnostic tools and treatments. The team will explore how the gene variations affect function of the factor H protein and explore the idea that replacing, augmenting or removing the malfunction protein can delay or even prevent the eye disease caused by AMD and MPGN II.

(continued on page 2)



1. *Two recent genetic discoveries lead to possible treatments for age-related macular degeneration (AMD).*

NIH Grant *(continued from page 1)*

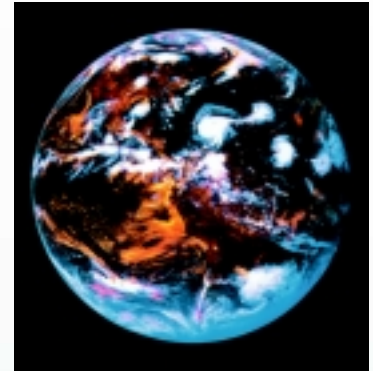
“For the first time, we have strong data on which to base the next phases of research into AMD. We’re excited that the NIH grant will allow us to explore and advance our ideas related to the role of these genes in development of AMD,” Gregory Hageman, PhD, leader of the multi-institutional effort said.

The research requires a multidisciplinary team capable of approaching this challenge from many different investigational angles. The investigation includes efforts to determine whether other genes are associated with AMD and whether other inflammation-based diseases such as Alzheimer’s disease, are caused by dysfunction of the same, or a related, pathway. Additional aims involve studying the biology of the eye’s complement system to determine whether proteins and markers, other than a vision test, can reveal vision decline due to AMD. Other efforts funded by the grant would involve drug design and development and clinical trials.

One of the international collaborators is Giuliani Silvestri, MD, head of surgery and perioperative care in ophthalmology at Queen’s University in Belfast, Ireland. The participation of patients and families in Iowa, Ireland and other sites will play a critical role in the research program. “The DNA resource is of particular value given that the Irish population is characterized by large families and stability. The addition of these families to this research program may provide additional insights into other genes implicated in AMD,” said Dr. Silvestri.

In addition to UI, Columbia, the NDI and Queen’s University, other institutions involved include Washington University in St. Louis, University of California at Santa Barbara, UCLA, University College of London, the University of Helsinki in Finland, the University of Melbourne in Australia, the Shandong Eye Institute and Beijing University, both in China, Centre de Neurochimie in Strasbourg, France and Clinica Las Condes in Santiago, Chili.

— *Medical News Today*



“For the first time, we have strong data on which to base the next phases of research into AMD...”

— Gregory Hageman, PhD 2

2. Dr. Gregory Hageman is the leader of the multi-institutional effort.

New Professorship at University of Wisconsin

Dr. David Gamm is the first recipient of RRF's Edwin and Dorothy Gamewell Professorship, created with an estate gift from Dorothy Portier. The professorship carries a \$50,000 annual grant.

Dr. Gamm's Background

Upon completing his fellowship in pediatric ophthalmology and adult strabismus at UW Hospital and clinics, Dr. Gamm began a combined clinical and research position at UW in 2003. He now works as a pediatric ophthalmologist with the UW Pediatric and Adult Strabismus service and as a researcher in the UW Dept. of Ophthalmology and Visual Sciences. In his laboratory at the Weisman Center and as an investigator in the UW Stem Cell Research Program, Dr. Gamm focuses on research involving retinal stem cells.

More recently, Dr. Gamm has been named a member of a nationwide Retinal Stem Cell Consortium. Its collective mission is to study stem and progenitor cells for the purpose of developing effective treatments for retinal degenerative diseases. The consortium has fostered collaborations among individuals who possess different backgrounds, capabilities and expertise, thereby maximizing their scientific progress and understanding.

The Target: Retinal Degenerative Diseases

During his training as a pediatric ophthalmology fellow, Dr Gamm met Clive Svendsen, PhD, a professor of anatomy and neurology and director of the UW Stem cell Research Program at the Weisman Center. Dr. Svendsen's laboratory is on the forefront of the fight against neurodegenerative diseases such as Parkinson Disease and Amyotrophic Lateral Sclerosis (ALS, or Lou Gehrig's disease). These diseases share much in common with the inherited and acquired forms of retinal degenerative disease (RDD), such as retinitis pigmentosa (RP) and age-related macular

(continued on page 4)



3

3. Dr. David Gamm conducts retinal stem cell research in his laboratory.

Dr. David Gamm *(continued from page 3)*

degeneration (AMD). Namely, they all cause an inexorable loss of neurons, a class of cells responsible for initiating, transmitting, processing, and interpreting signals within the central nervous system. RDD affects a specified type of neuron in the retina designed to detect light (photoreceptors) whose ultimate death result is vision loss and blindness.

Because degenerated neurons in the human retina, brain, and spinal cord are not spontaneously replaced, diseases that cause neuronal death such as RP, AMD, PD and ALS are incurable, difficult to treat, and frequently devastating to patients and their families. Because of the common goals and interest, Dr. Gamm and Dr. Svendsen began working together at the Weisman Center to investigate the potential uses of stem cells in the treatment of these diseases.

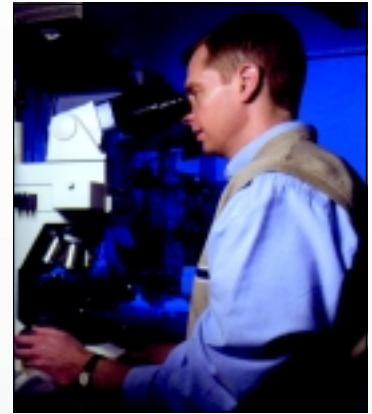
Potential Uses of Stem Cells: What We Hope to Accomplish?

“Stem cells have the potential to alter the course of retinal degenerative disease in many different ways, Dr. Gamm says. “First, they may be able to replace cells lost through disease or injury.

A second clinical use for stem cells involves delivery of therapeutic drugs to diseased retina. “Stem cells naturally secrete protective molecules and some have the ability to migrate and survive within tissues for long periods of time,” the clinician-scientist says. “This effect can be augmented by genetically modifying stem cells to over-express large amounts of a particular beneficial molecule. Therefore, stem cells could be used as microscopic drug factories aimed at keeping neighboring cells healthy.”

In addition, retinal cells created from stem cells in a culture dish could be used to screen many different drugs to determine their relative effects on cell survival and function. This approach could potentially speed the development of more traditional treatments for retinal diseases.

— *Seeing is Believing, UW,
2005 Annual Report*



“...I see the impact of retinal degenerative diseases on the lives of afflicted individuals and their families. This has served to focus my research...”

— David Gamm, MD, PhD

4

4. Dr. David Gamm has been named a member of a nationwide Retinal Stem Cell Consortium.

What a Cane Can Do for You

“A Cane is for blind people. And I’m not blind!”

It’s a common myth that is hard to change. In fact, the long cane can also benefit people who are partially sighted. However, the decision about whether or not to use a mobility device can be a very difficult one. If you have some usable vision, you may wonder if it’s really necessary. There are also your emotions – how you feel about being identified as a person who is visually impaired. You may also feel uneasy about how others will react and how you will deal with that. These concerns are common and normal. Fortunately, there are professionals you can turn to for guidance and help.

Travel Problems You May Experience

Depending on the type of vision loss you have, you can experience a variety of different problems as you navigate your surroundings.

- Embarrassment at your inability to see and identify faces, causing you to ignore someone you know
- Inability to differentiate between a puddle or a hole, or to know when you are approaching curbs or steps
- Difficulty determining the height of a step or curb
- Trouble discerning if the “walk” signal is on or off or reading street signs
- Not feeling safe when crossing streets
- Not noticing obstacles in your path or landmarks

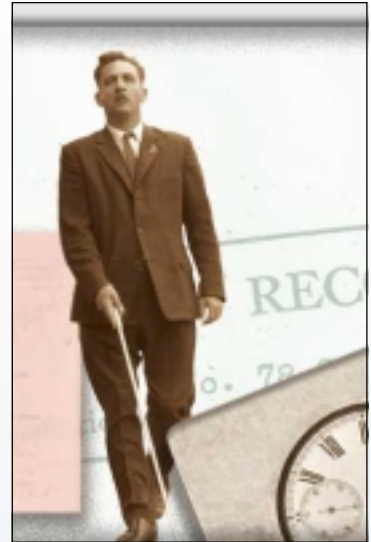
If you experience any of these problems, it’s a good idea to consider an evaluation with a certified orientation and mobility specialist.

What to Expect in an Evaluation

A Certified Orientation and Mobility Specialist will ask you questions about your travel experience and also observe how you move around. There are a number of factors to consider:

- Your walking pace
- Walking style (shuffling, marching)

(continued on page 6)



5

5. *“A cane is for blind people.
And I’m not blind.”*

What a Cane Can Do *(continued from page 5)*

- Use of feet to probe ahead, or to trail the grass or building line
- Over or under stopping an object
- Number of critical incidents, such as bumping into, or tripping over, objects
- Ability to detect drop-offs, such as curbs and stairs
- Position of your head when walking
- Use of existing vision
- Management of irregularities (cracks and bumps) on the ground

To travel safely using your sight alone, you need to have adequate forward and side vision to react in sufficient time to people moving about you, and you must be able to see and react to dangers such as curbs, stairs, holes, puddles or other obstacles in the sidewalk, or furniture in your home.

Why use a long cane?

A cane is a tool that is like an extension of one's arm. It is used to preview what's ahead and can help with detecting obstacles, ground irregularities and curb or step drop-offs before you reach them. Advance warning is critical for safety, allowing you to have sufficient time to react.

Types of Canes

Three types of traditional canes are currently used: the straight or rigid, non collapsible; the folding, which usually has between four and six sections and is held together by an elastic cord; or the telescopic, which collapses. The folding and telescopic canes are easily stowed in briefcases or pocketbooks.

Your Emotions

Making the decision to use a cane can stir up a variety of emotions and many people have a hard time accepting its use. For one thing people often associate the cane with blindness, and family and friends may not understand why someone with usable vision would need a cane. Others find that they're

(continued on page 7)



6



7



6

Types of canes:

6. *The telescoping cane*

7. *The folding cane*

8. *The rigid, non collapsible cane.*

Carl G. Mueller, Jr.

RRF Board Service: Board of Managing Directors 1974 to present; Secretary 1974 to present; Fund Drive Chair 1983; Chairman, Legal Committee

Education: BBA '51 and JD '53 from the University of Texas. Elected to Kappa Sigma fraternity; Phi Delta Phi legal fraternity, Law Review and Order of Coif.

Career: Entered law practice at Butler & Binion in 1953. Retired from private solo practice in 1998.

Memberships: American Bar Assn., State Bar of Texas, Houston Bar Assn., Texas Academy of Real Estate Lawyers, American College Real Estate Lawyers, Texas Academy of Probate and Trust lawyers; Fellow, American College of Trust and Estate Counsel; Student Aid Foundation Enterprises. Active member of St. Luke's United Methodist Church and served as Chairman of the Church Board of Trustees, Chairman of the Finance committee and Chairman of the Board of Stewards. He also serves as Director of M.D. Matthews Foundation and Director of St. Luke's Methodist Church Foundation.

Awards: St. Luke's Distinguished Life Award

Personal: Third generation native Houstonian. Married the former Joanne Youngblood in 1950. Three sons, three grandchildren. Enjoys fishing, traveling, sports, watching grandchildren play softball, baseball and football.



9

Cane *(continued from page 6)*

concerned about letting the world know that they have a vision loss. Or they may feel vulnerable, embarrassed or worried that people will feel sorry for them. All of these feelings can get in the way of learning about, and evaluating the benefits of a cane in one's own life.


Next Steps

The decision to use a cane is best made in collaboration with a certified orientation and mobility specialist who can provide the expertise in evaluation, can selection and training in its use. And that's what it's all about – being safe, having independence and maintaining your quality of life.

— *Sharing Solutions Spring 2006*

9. Carl G. Mueller, Jr.

FREE MATTER
FOR THE
BLIND OR
HANDICAPPED



Remove name from mailing list. 3/06

Change name or address as shown on address

clip and return entire address label in an envelope.


Please indicate changes in boxes and make any corrections needed next to your name and address, then clip and return entire address label in an envelope.

Address Correction Requested

Retina Research Foundation is dedicated to the eradication of retinal disease through programs in research and education.

Editor in Chief: Alice McPherson, M.D.
Managing Editor: Carolyn Mata

e-mail: RRF@retinaresearchnd.org
6560 Fannin, Suite 2200 Houston, Texas 77030 (713)797-1925



SPECIAL REMEMBRANCES

HAPPY BIRTHDAY

- Harriet Stoler**
Mr. & Mrs. Daniel Forbes
- Abe Margolin**
Mr. & Mrs. Morris Kriger
Barbara Konig
Richard Margolin
- Frances Ross**
Frances W. Wolff
- Katherine Tyson**
Ruth Lack

IN HONOR OF

- Anniversary of Mr. & Mrs. Abe Margolin**
Ruth Lack

IN MEMORY OF

- H.E. "Pete" Carrico**
Barbara Monroe Kirsch
Charles Richard Evice
Elizabeth & Lockert Sleeper
- E.J. Hagstette, Jr.**
Kristi S. Martin
- William J. Miller**
Charles & Betty Moreton
- Anthony Mierzwa**
Evan & Peggy Miller
- Our parents**
Alex and Maryann Munroe
- M. Doris Mc Nerney-Ward**
Karen M. Adams
- Lucyille Rowan Dawson**
Mr. & Mrs. Evans Atwell
Dr. & Mrs. JA Burdine
Mr. & Mrs. Dunbar Chambers
Mr. & Mrs. Thomas Cronin
Mr. & Mrs. John L. Cater

- Mr. & Mrs. James Elkins III
Mr. & Mrs. L. Henry Gissel, Jr.
Mr. & Mrs. John B. Holstead
Mr. & Mrs. Emmett Humble
Dr. & Mrs. Carlos Hamilton
Mr. & Mrs. Harry Reasoner
Mr. & Mrs. Taft Symonds
Robert L. Stillwell
Vinson & Elkins, LLP
Margaret Weaver
Lillian Wallace
- Eunice Palmer McMahan**
Mr. & Mrs. James Deatherage
Pearl Fuchs
Mr. & Mrs. Jesse Gunstream
Mr. & Mrs. Michael Vecellio