SOMEWHERE IN THE WORLD, SOMEONE GOES BLIND EVERY 5 SECONDS

80% OF OUR LEARNING OCCURS THROUGH VISION.
60% OF BLINDNESS IS PREVENTABLE.

“To improve vision through research, education, and supporting access to care.”
From the President

The Knights Templar Eye Foundation, Inc. is pleased to announce the publication of the latest edition of the Foundation’s informational booklet. This booklet briefly reviews the history and formation of the Foundation, outlines its services and programs, and describes the Foundation’s various initiatives to fulfill its mission to “improve vision through research, education, and supporting access to care.”

As the result of the hard work of its visionary officers, trustees, and numerous supporters, such as yourself, the Foundation has grown to $125M while expending $154M on research, education, and patient care; awarding $26M in research grants; and creating $2M endowed professorships at each of three leading ophthalmology research and educational institutions (matched dollar for dollar by the institution).

Whether through a planned gift, annual sustaining support, or a one-time contribution, we hope that you will help us end pediatric blindness.

Sincerely,

Jeffrey N. Nelson
President

Inquiries & Requests for materials regarding the Knights Templar Eye Foundation, Inc. should be made directly to:

Robert W. Bigley
Office Administrator/Assistant Secretary
Knights Templar Eye Foundation, Inc.
1033 Long Prairie Road, Suite 5
Flower Mound, TX 75022-4230
Phone: (214) 888-0220
Fax: (214) 888-0230
E-mail: manager@ktef.us
Website: www.knightstemplar.org/ktef

The report of the Knights Templar Eye Foundation, Inc. as of June 1, 2019.

$154 million has been spent on research, patient care and education.
**Officers**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>City, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Jeffrey N. Nelson</td>
<td>Bismarck, ND</td>
</tr>
<tr>
<td>Vice President</td>
<td>Michael B. Johnson</td>
<td>Crowheart, WY</td>
</tr>
<tr>
<td>Vice President</td>
<td>David J. Kussman</td>
<td>Anaheim, CA</td>
</tr>
<tr>
<td>Vice President</td>
<td>Jeffrey A. Bolstad</td>
<td>Lewistown, MT</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Bobby B. Simmons</td>
<td>Bonaire, GA</td>
</tr>
<tr>
<td>Secretary</td>
<td>Lawrence E. Tucker</td>
<td>Bellaire, TX</td>
</tr>
<tr>
<td>Assistant Secretary &amp; Office Administrator</td>
<td>Robert W. Bigley</td>
<td>Flower Mound, TX</td>
</tr>
</tbody>
</table>

**Trustees**

<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeffrey A. Bolstad</td>
<td>Lewistown, MT</td>
</tr>
<tr>
<td>David M. Dryer</td>
<td>Indianola, IA</td>
</tr>
<tr>
<td>Kenneth B. Fischer</td>
<td>Friendswood, TX</td>
</tr>
<tr>
<td>David D. Goodwin</td>
<td>Vestal, NY</td>
</tr>
<tr>
<td>James C. Herndon</td>
<td>Blackfoot, ID</td>
</tr>
<tr>
<td>Michael B. Johnson</td>
<td>Crowheart, WY</td>
</tr>
<tr>
<td>William Jackson Jones D.D.S.</td>
<td>Villa Grove, IL</td>
</tr>
<tr>
<td>William H. Koon</td>
<td>Columbus Grove, OH</td>
</tr>
<tr>
<td>David J. Kussman</td>
<td>Anaheim, CA</td>
</tr>
<tr>
<td>Rodney A. Mann</td>
<td>Shelbyville, IN</td>
</tr>
<tr>
<td>Jeffrey N. Nelson</td>
<td>Bismarck, ND</td>
</tr>
<tr>
<td>Terry L. Plemons</td>
<td>Chattanooga, TN</td>
</tr>
<tr>
<td>Daniel R. Sherry</td>
<td>Ellsworth, WI</td>
</tr>
<tr>
<td>Bobby B. Simmons</td>
<td>Bonaire, GA</td>
</tr>
<tr>
<td>David W. Studley</td>
<td>Mountain Ranch, CA</td>
</tr>
<tr>
<td>Lawrence E. Tucker</td>
<td>Bellaire, TX</td>
</tr>
<tr>
<td>Duane L. Vaught</td>
<td>Bloomington, IN</td>
</tr>
<tr>
<td>James M. Ward</td>
<td>Water Valley, MS</td>
</tr>
</tbody>
</table>

**General Counsel**

<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>James C. Herndon</td>
<td>Blackfoot, ID</td>
</tr>
</tbody>
</table>

---

**Who are the Knights Templar?...**

Today’s organization known as the Knights Templar does not claim to be a direct descendant of the ancient order of Knights Templar that was founded during the crusades in the 12th century. The purpose of those crusader knights was to protect pilgrims from danger when on their way to the Holy Land. These men took vows of poverty, chastity, and obedience, and were renowned for their courage in battle. In 1118 A.D., nineteen years after the successful crusade, these Poor Fellow Soldiers of Christ and the Temple of Jerusalem, as they termed themselves, were officially recognized, sanctioned, and given, for their headquarters, a building on Mount Moriah, the site of the Temple of King Solomon. Consequently, they became known as Knights of the Temple, or Knights Templar.

**What are Knights Templar doing today?...**

Eight centuries after the crusades, the current organization is still dedicated to assisting those in need and in using its efforts for the prevention of blindness. Because sight is a most precious gift, *The Knights Templar Eye Foundation* is often referred to as "A Great Humanitarian Charity."
A history of the Knights Templar Eye Foundation must begin with knowing something about its founder, Walter Allen DeLamater, a truly remarkable man. He was born in New York City, April 18, 1880, son of Washington Irving and Clara DeLamater, descendants of the DeLamaters who, under the name of DeLamater Iron Works, were the builders of the Monitor of the historic Monitor-Merrimac Battle during the War between the States. DeLamater, Sr. was the first president of the Village of Rhinebeck, New York, founded in 1688.

Walter DeLamater's illustrious career covered a broad range of interests. He was a soldier with a brilliant WWI record in both combat and important staff assignments. He was an executive in a broad range of industries and businesses focusing primarily on matters of organization, management, research and development, sales promotion and was a public relations consultant.

With all these diverse fields of interest in which he excelled, one ponders his decision to choose the Great Order of Templary to be his life's work.

Young DeLamater was educated in New York City public schools and St. Mark's private school. In 1901, at the age of 21, he married Marie West, who died March 31, 1940. They had two children, Marie Lillian (Mrs. Herbert Norton) and Walter, Jr.

His public career began March 2, 1900, when he enlisted as a Private in the 71st Infantry, New York National Guard. He became the only person in the Regiment's long history, dating back to 1850, to rise from a Private to a Major General. In 1916 he served in the Mexican Border affair for which he received special commendation for action under extremely trying circumstances.

Remaining in the service through WWI, he was engaged in several difficult campaigns in France, received a number of awards, decorations and citations for exceptional bravery and distinguished service under heavy shell fire without regard for his personal safety, repaired roads, opening them to traffic, and supervised the evacuation of wounded under deadly shell fire.

He had been promoted from Major to Lieutenant Colonel in the 106th Infantry. Soon he was transferred to the 79th Division in France, and became Assistant Chief of Staff, then to the 77th Division, Chief of Staff and a full Colonel by 1920.

By the end of the war he had received numerous awards and citations for exceptional bravery as well as for brilliant staff work many times performed under deadly shell fire. For this he was awarded the Distinguished Service Medal. He had been promoted to the rank of Major General.

Although a Republican, Major General Walter A. DeLamater, RET. then a Soldier Citizen, upon request by Major Fiorello LaGuardia, approved by President Franklin D. Roosevelt was appointed Federal Civil Works Administrator of New York City. Several other important civilian assignments followed.
His Masonic Career

He was raised a Master Mason in Halteman Lodge #412 at Middletown, New York, July 26, 1917. As might be expected, this extraordinarily energetic and talented individual joined and rose rapidly in the many degrees, orders, and rites of Masonry.

He was Knighted in Yonkers Commandery #47, New York State, March 17, 1921, and moved up rapidly through the lines. He served as Right Eminent Grand Commander, State of New York, 1934, and was elected to the Grand Encampment Line in 1937.

He told of being stricken and paralyzed in 1941 for a period of two months from a clot on the brain. During those two months the doctors said it was impossible for him to live and there wasn’t one chance in a million of his doing so. After the physicians gave him up, why then and for what purpose was he saved? It was during the Grand Conclave in 1946 that we first heard the story of Sir Knight DeLamater’s vision he had while still anesthetized for an operation. In his vision, heavenly bodies, angels, admonished him that if he lived he must do something to heal the blind as Jesus had done when on earth. After his miraculous recovery from near death he firmly believed that his recovery must have been for this divine purpose.

Prior to the September 20-26, 1952, Triennial Conclave in New Orleans, Louisiana, then Deputy Grand Master Walter Allen DeLamater, began his campaign in earnest. With all the skills of a public relations consultant he launched his campaign promoting Knights Templar Eye Hospitals in connection with existing hospitals throughout the United States. Thus fulfilling the admonitions of his vision “to heal the blind.”

The idea of a hospital or hospitals for the blind lead to many long debates and bitter arguments, prior to and during the Grand Encampment meeting. Arguments were still going on in the halls and cloakrooms before the meeting was called to order by Most Eminent Grand Master William Catron Gordon. At the conclusion, the original resolution was amended to include instead of “Eye Hospitals” the words “Eye Foundation”. After a vote, the Grand Master declared “the chair rules that the resolution is adopted by the required three-quarters vote”, but following a break another 3 hours of debate resulted in around 25 additional proceeding pages containing resolutions and clarifications which finally resulted in a final and conclusive vote which again passed by three-quarters vote.

From the very beginning, a Medical Advisory Council consisting of able and dedicated ophthalmologists from all over the country guided the Foundation. For a good many years funds for research were granted somewhat haphazardly on recommendations from knowledgeable Sir Knights but without particular focus. This would be corrected in 1985 when the distinguished Dr. Alfred Edward Maumanee, Jr., Director of the Wilmer Eye Institute at Johns Hopkins University in Baltimore, established a Scientific Advisory Committee. The Scientific Advisory Committee consists of five distinguished ophthalmologists from throughout the United States. This committee screens all proposals for grants for research in pediatric ophthalmology.

(Taken from “A History of the Founding of the Knights Templar Eye Foundation”, written by the late Edmund F. Ball K.G.C., H.P.G.M. and Trustee of the Foundation.)
The Knights Templar Eye Foundation, incorporated in 1956, is a charity sponsored by the Grand Encampment of Knights Templar. The Foundation is governed by a Board of Trustees comprised of the six elected officers of the Grand Encampment, all Past Grand Masters of the Grand Encampment, and six trustees-at-large elected from and by the membership for a term of nine years. It is exempt from federal income taxation under Section 501(c)3 of the Internal Revenue Code and contributions made to the Foundation are deductible by donors.

The original mission of the Foundation was “to provide assistance to those who face loss of sight due to the need for surgical treatment without regard to race, color, creed, age, sex or national origin provided they are unable to pay or receive adequate assistance from current government agencies or similar sources and to provide funds for research in curing diseases of the eye.”

On December 31, 2010, the Knights Templar Eye Foundation, Inc., by direction of the board, shifted the Foundation’s focus and adopted a new mission statement “to improve vision through research, education, and supporting access to care.” The Foundation now only participates in direct patient care through the Seniors Eye Care Program in partnership with EyeCare America and the Foundation of the American Academy of Ophthalmology. With this change, the Foundation is benefitting untold millions in generations to come through grants that support research and education. Our research dollars have helped develop new, non-surgical, treatments for strabismus (crossed eyes) and ophthalmologists have told us that our efforts in funding pediatric ophthalmology research have been the primary reason that there are fewer and fewer surgeries for strabismus. The Knights Templar Eye Foundation, Inc., annually announces its call for research grant applications. The Foundation invites eligible investigators to submit applications for pediatric ophthalmology research grants for the award period which normally runs from July 1 to June 30. From the applications received, the Scientific Advisory Committee recommends to the Trustees which requests should be funded.

Since its inception, the Foundation has expended over $154 million on research, patient care, and education. Research grants totaling in excess of $28 million have been awarded to researchers working in the fields of pediatric ophthalmology and ophthalmic genetics.
Pediatric Ophthalmology Grants

The Knights Templar Eye Foundation, Inc. is committed to support research that can help launch the careers of clinical and basic researchers focused on the prevention and cure of potentially blinding diseases in infants and children. Grants supported by the Knights Templar Eye Foundation, Inc. are awarded to impact the care of infants, children, and adults. Clinical and basic research on conditions that may be potentially preventable or correctable such as amblyopia, cataract, glaucoma, optic nerve hypoplasia, nystagmus, retinopathy of prematurity, and hereditary diseases that occur at birth or within early childhood, such as retinoblastoma, is encouraged. Proposals for support of basic research on eye and visual system development also are welcome.

Each year the Knights Templar Eye Foundation, Inc., invites eligible investigators to submit applications for pediatric ophthalmology research grants:

Career-Starter Research Grants
up to $70,000 per grant. Applicants for these grants must be at the beginning of their academic careers and must have received an M.D., Ph.D., or equivalent degree.

Competitive Renewal Grants
up to $70,000 per grant to extend the original grant project for one additional year when the data collected from the original grant is compelling enough to apply.

www.knightstemplar.org/ktef

Knights Templar Eye Foundation, Inc.
1033 Long Prairie Road, Suite 5
Flower Mound, TX 75022-4230

Telephone: (214) 888-0220
Fax: (214) 888-0230
E-mail: manager@ktef.us
Sources of Funds

Funds for the operation of the Knights Templar Eye Foundation (KTEF) are obtained from an annual assessment of each Knight Templar, contributions made by Masons from throughout the Masonic Family, fund-raising activities, memorials, wills and bequests, and donations from endowment funds or similar sources.

Special award programs for contributions include:

- **Life Sponsor** – Available to Sir Knights (members of a Commandery) who donate $30.
- **Associate Patron** – Available to any person or organization that makes a donation of $50.
- **Patron** – Available to any person or organization that makes a donation of $100.

*Payments for Life Sponsor, Patron, and/or Associate Patron will exempt your Grand Commandery from further assessment to the Knights Templar Eye Foundation, Inc.*

- **The Grand Master’s Club** – One Thousand Dollars enrolls you as a concerned individual in the humanitarian work of the Foundation. The Grand Master’s Club is available to all individuals, whether Templars or others, but not to organizations. Your membership in the Grand Master’s Club entitles you to a lapel pin, an engraved wall plaque and the Crusaders Cross issued for the first 5 Grand Master Clubs.

- **The Grand Commander’s Club** – You can enroll in the Grand Commander’s Club by sending in your first installment of $100.00 or more. At the time of your enrollment, you will receive a lapel pin and wallet card (signifying your membership). In addition, members of the Grand Commander’s Club pledge to make annual contributions of $100.00 or more for nine more years until the total of $1,000.00 is reached. Once contributions total $1,000.00, the individual is enrolled in the Grand Master’s Club.

**The Grand Master’s Club and Grand Commander’s Club are available to all individual Templars or others, but not to organizations. (As of 2/1/2015 once 25 Grand Master’s Clubs are reached, a Sword of Merit will be awarded.)**

- **Memorial Donations** – These donations are of any amount in memory of a deceased person. A form is provided on the donor envelope.
- **Honorary Gifts** – These donations are given in honor of a living person in recognition of service or friendship.
- **Wills and Bequests** – Anyone who believes in the service provided by the Knights Templar Eye Foundation, Inc. may leave a bequest to the Foundation in their will.
• **Sight Crusader** – Anyone who designates the KTEF in their will and provides suitable notification to the Knights Templar Eye Foundation, Inc. will be listed in the Gold Book and designated a Sight Crusader.

• **The Permanent Donor Fund** – This unique fund gives perpetual recognition to any person or organization that becomes a recipient of the Golden Chalice or Sword of Merit. Recognition is given by presentation of the Golden Chalice or Sword of Merit and the name and amount contributed appear in the Annual Report on a continuing basis. Additional donations by the individual or organization in the amount of $1,000 or more will be acknowledged in future annual reports. The donor may be an organization, foundation, corporation, or individual.

• **The Golden Chalice** –
  The Chalice is awarded in recognition of a single donation of $10,000 or more. The donation may be applied to the Permanent Donor Fund.

• **The Grand Master’s Sword of Merit** –
  This coveted award is given in recognition of a single donation of $25,000 or more. The donation may be applied to the Permanent Donor Fund.
Endowed Professorship Awarded

In 2011, the Board explored the feasibility and desirability of establishing an endowed professorship program at a leading research university or teaching hospital focusing on ophthalmic education. Preliminary groundwork proved positive and in 2012 the President formed a committee of Board members to further explore this idea.

Advantages to the Foundation of endowing a professorship identified by the committee included the fact that an endowed professorship would be consistent with the Foundation’s mission, it would provide a perpetual benefit to the Foundation from a one-time investment, it would promote visibility of the Foundation, and it would create a new partnership legacy for the Foundation. Advantages to the institution identified by the committee included the fact that an endowed professorship would provide the institution with a financial resource, it would be consistent with the institution’s mission statement, and it would provide publicity for the institution.

All endowed professorships are awarded $2 million, matched dollar for dollar by the institution.

MAYO CLINIC

AUGUST 2013
“Knights Templar Eye Foundation Inc., Professor in Ophthalmology Research”

Michael Brodsky, M.D
The Mayo Clinic  |  Campuses in Rochester, MN, Phoenix, AZ, and Jacksonville, FL

WILMER EYE INSTITUTE

AUGUST 2015
“Knights Templar Eye Foundation Inc., Professor of Ophthalmology”

Thomas McCarthy Bosley, M.D.
The Wilmer Eye Institute of Johns Hopkins University  |  Baltimore, MD

BAYLOR COLLEGE OF MEDICINE

AUGUST 2017
“Knights Templar Eye Foundation Inc., Presidential Chair in Ophthalmology”

Wei, Li, PhD
Baylor College of Medicine  |  Houston, TX
The Knights Templar Eye Foundation, Inc. has a number of donation programs most with associated recognition programs. One of our primary contribution programs is the Grand Master’s Club. These are contributions of $1,000 which can be accumulated over time. These accumulations are known as the Grand Commander’s Club ($100 each until $1,000 is reached). Currently Grand Master’s Club donors receive a plaque, lapel pin and now to thank our donors we have introduced a new jewel, the Crusader’s Cross, for those who are in the Grand Master’s Club.

The Jewel comes in 5 levels, $1,000, $2,000, $3000, $4,000 and $5,000 or above. The $1,000 level has the single, larger cross in the center. Each additional $1,000 is identified with an additional small cross in a quadrant until at $5,000 or above all four quadrants are occupied to complete the emblem known as the Crusader’s Cross also known as the Cross of Jerusalem. The various levels of the Crusader’s Cross are displayed on this page.

Because this is one of the Grand Encampment philanthropies. As such, it is a Grand Encampment jewel and may be worn on the right side of the uniform. However, generally all medals are worn on the left of the uniform as space permits.

Only the Grand Master’s Club donations given by the individual will count toward this award.

---

Knights Templar Eye Foundation, Inc.  
1033 Long Prairie Road, Suite 5  
Flower Mound, TX 75022-4230

Telephone: (214) 888-0220  
Fax: (214) 888-0230  
E-mail: manager@ktef.us

www.knightstemplar.org/ktef
As the KTEF has grown since its 1955 inception, we have expanded the number and size of our grants, and we have commenced new initiatives in ophthalmology research and education. Our research grants are targeted to new research by those in the early stages of their careers. By stretching out a helping hand to those just starting their careers, we started the travel grant program in 2015 for these PhD and MD students, travel grants can make all the difference in whether they can attend and present their research at the national meeting. With this program we hope to encourage and expedite more successful careers in these young researchers.

We currently sponsor two programs:

**ARVO (The Association for Research in Vision and Ophthalmology)**
95 awarded representing 27% of the total travel grants awarded

**ISER (International Society for Eye Research)**
34 awarded representing 35% of the total travel grants awarded
Fund Raising Can be Fun

There are numerous ways to raise funds for the Annual Voluntary Campaign of the Knights Templar Eye Foundation, Inc. You can be creative, put on your thinking cap and ask other Sir Knights to get involved. One project may raise enough to reach the Goals set for the Campaign or more.

PURPOSE OF THE ANNUAL VOLUNTARY CAMPAIGN

The purpose of the Annual Voluntary Campaign is to supplement the income of the Knights Templar Eye Foundation, Inc. through bequests, gifts, endowments and other sources so that sufficient funds are available to provide the assistance as stated in the Mission Statement of the Knights Templar Eye Foundation, Inc. The Voluntary Campaign runs from October 1st to April 30th annually. Funds received in the office at any time throughout the year will be credited to a campaign. It should be noted that bequests and wills are counted for credit of the Commanderies or Grand Commanderies during each Campaign.

Commanderies reaching the goal of $10.00 per member or more will receive a plaque and seal, and those Commanderies reaching a contribution of $5.00 per member but less than $10.00 per member will receive appropriate recognition for their efforts.

THE QUESTION IS OFTEN ASKED: “HOW CAN WE RAISE FUNDS?”

FIRST METHOD (The Easy Way)
Even though it may seem painful to some Sir Knights, an out of pocket or check donation from ALL SIR KNIGHTS requires the least effort. It does require a charitable attitude which we have all committed ourselves to in the Order of the Temple. The Knights Templar Eye Foundation is THE RESPONSIBILITY OF EVERY SIR KNIGHT. This method is almost painless. “Your attitude will determine your altitude.”

SECOND METHOD (Special Approach)
Donations from outside of our membership may be accomplished with a tactful approach. These sources are businesses, fraternal organizations, foundations, and generous individuals.

THIRD METHOD (Efforts of many)
Projects require special effort, dedication, and enthusiasm of many Sir Knights who enjoy fund raising and believe in the purpose. Fun and Fellowship are part of working on projects. Give it a try.
SOME FUND RAISING METHODS FOR CONSIDERATION

1. Dinners before Conclaves
2. Public Dinner/Dance/Entertainment
3. A “Big Band” Dance
4. Hoagie Sale
5. Flea Market
6. Auction
7. Jewelry Sale
8. Fish Fry
9. Spaghetti Dinner
10. Bake Sale
11. Candy Sale
12. Fruit Cake Sale
13. Pancake/Sausage Breakfast
14. Plant Sale
15. Shirt Sale
16. Baseball Cap Sale
17. Fruit Sale
18. A collection following a Conclave

Your imagination will provide many other ways and methods to provide funds so “That Others May See.”

AN IDEA FOR 100% PARTICIPATION:

Pass a collection plate at your Christmas Observance as you would at any other religious service. By doing this, every Commandery in the Grand Encampment will have participated in the Voluntary Campaign before the end of December. PLEASE EXPLAIN THIS TO THE MEMBERS AND TRY IT. YOU WILL BE SURPRISED AT THE SUCCESS.
Knights Templar Eye Foundation, Inc.

Supports the ONE® Network:
Pediatric Ophthalmology Education Center

In the pursuit of our mission to improve vision through research, education and supporting access to care, your Knights Templar Eye Foundation has partnered with the American Academy of Ophthalmology, the largest ophthalmic organization in the world, to create a Pediatric Ophthalmology Education Center. This Center, a part of the Academy’s Ophthalmic News and Education (ONE®) Network, will be comprehensive in scope, and global in reach.

Our support of this global educational resource will be an important step toward addressing a large and growing burden of vision loss. More than 285 million people globally are blind or visually impaired, and at an estimated economic cost of $3 trillion annually. Childhood blindness is among the top five causes of visual loss worldwide. An estimated 500,000 children become blind annually, and up to 60 percent of these children in developing countries are thought to die within one year. Nearly half of all blindness in children is due to avoidable causes that could be prevented with interventions using existing knowledge.

The purpose of the Pediatric Ophthalmology Education Center (Education Center) is to ensure a strong educational foundation for current and future generations of ophthalmologists, and by doing so, eliminate a lack of ophthalmic education as a contributor to global blindness. It will speed the adoption of new knowledge, technology and treatments. No such resource currently exists, even though the pace of innovation is increasing, and there is a real and growing need for the Education Center among pediatric ophthalmologists.
The Education Center will enable pediatric ophthalmologists throughout the United States and worldwide, including countries where we have Subordinate Commanderies, to access a single online resource of the highest quality content, vetted by experts. In combination with an extensive surgical simulation library, this virtual skills transfer center will address the needs of residents and fellows, mid-career practitioners, and international training programs in less-developed countries. The Education Center will teach:

- Basic science principles
- Pathology and pathogenesis of disease
- Specific disease content
- Diagnosis and differential diagnosis
- Medical and surgical management
- Risk management
- Complications management
- Patient instructions
- Outcomes assessment

Visit: www.aao.org/one

In recognition of our support, the American Academy of Ophthalmology has named the ONE® Network pediatric ophthalmology subspecialty center:

The Knights Templar Eye Foundation, Inc., Pediatric Ophthalmology Education Center

in perpetuity

By supporting the Pediatric Ophthalmology Education Center within the American Academy of Ophthalmology’s ONE® Network, we have a real opportunity to make a difference and improve the outcomes in eye care for children worldwide.
Providing Access to Care for Seniors

WHAT  EyeCare America provides eye care at no cost to those who qualify through its corps of 7,000 volunteer ophthalmologists (EyeMDs) nationwide. To see if you qualify, visit their Online Referral Center at www.eyecareamerica.org.

WHY  One-in-three Americans has some form of vision impairing eye disease by age 65, and nearly three million people of all ages have glaucoma. Most people do not know it either because there are often no early warning symptoms or they assume that poor sight is a natural part of growing older. Detecting and treating eye disease early through annual, dilated eye exams can prevent unnecessary vision loss and preserve sight well into the future.

WHO  Through its Online Referral Center, the Seniors EyeCare Program offers two types of services based on qualifications.

Service I for:

- US citizens or legal residents
- Age 65 or older
- Have not seen an EyeMD in three or more years.
- Not belong to an HMO or have eye care through the Veteran’s Administration

These patients may be eligible to receive a comprehensive, medical eye exam and up to one year of care at no out-of-pocket cost for any disease diagnosed during the initial exam. Volunteer ophthalmologists waive co-payments and unmet deductibles, and accept Medicare and/or other insurance reimbursement as payment in full; patients without insurance receive this care at no charge.
Service II for:

- US Citizens or Legal Residents
- Increased risk for glaucoma (determined by their age, race and family history)
- Those who have not had an eye exam in 12 months or more.

**These patients may be eligible to receive a free glaucoma eye exam if they are uninsured.** Those who are eligible and insured will be billed for the exam and are responsible for any co-payments.

**HOW**

Visit [www.eyecareamerica.org](http://www.eyecareamerica.org) for more information or to see if you qualify for a referral to one of EyeCare America’s 7,000 volunteer ophthalmologists nationwide.

**EXCLUDED**

Eyeglasses, prescription drugs, hospital services, and fees of other medical professionals.

**CONTACTS**

David Palmer, MD -- Chair,
EyeCare America’s Seniors EyeCare Program

Betty Lucas -- Director, EyeCare America

ECA staff 877-887-6327; Fax 415-561-8567,
PO Box 429098 San Francisco, CA 94142

**Visit www.eyecareamerica.org**

EyeCare America is co-sponsored by the Knights Templar Eye Foundation, Inc., with additional support provided by Alcon. EyeCare America is endorsed by state and subspecialty ophthalmological societies.

*A public service program of the Foundation of the American Academy of Ophthalmology, EyeCare America’s mission is to reduce avoidable blindness and severe visual impairment through education and public service.*
How to join the Grand Commander’s or the Grand Master’s Clubs
Any individual may send a check in the amount of $100 or more specified for the purpose of beginning a Grand Commander’s Club membership and made payable to the Knights Templar Eye Foundation. This initial contribution will begin your Grand Commander’s Club membership. In addition, members of the Grand Commander’s Club pledge to make annual contributions of $100 or more. Once contributions total $1,000, the individual is enrolled in the Grand Master’s Club. Membership is open to individuals only, and Commandery Credit is given for participation.

Qualified Charitable Distributions Can Yield Big Tax Savings
Congress has now made the qualified charitable distribution (QCD) option permanent for those who wish to make direct contributions from their IRA to charity. The tax law allows individuals age 70 ½ or older to transfer up to $100,000 a year from their IRA to a qualified charity. This distribution counts toward their required minimum distribution but isn’t added to their adjusted gross income the way a normal IRA distribution is. This can provide a tax savings of up to 40% depending upon an individual’s tax situation.

Planned Giving – Create a Charitable Legacy
Your Foundation now has a full web site dedicated to Planned Giving which you can access from our web site, shown at the bottom of this page. So if you’re thinking of ways to make a lasting legacy for yourself please check out the tab on the home page that says “Planned Giving”. Leaving your mark on the future is so simple with a gift in your will. To leave a gift in your Will or Trust it is as easy as asking your attorney to include a sentence that says:

I bequeath (lump sum) or ( % ) of my estate to:
Knights Templar Eye Foundation, Inc. (address shown below)
Planned Giving
Create a Charitable Legacy

Your Foundation has a full web site dedicated to Planned Giving which you can access from our website, shown at the bottom of this page. So if you are thinking of ways to make a lasting legacy for yourself please check out the tab on the home page that says “Planned Giving”. Leaving your mark on the future is so simple with a gift in your will. To leave a gift in your Will or Trust it is as easy as asking your attorney to include a sentence that says:

I bequeath (lump sum) or ( % ) of my estate to:
Knights Templar Eye Foundation, Inc.

Knights Templar Eye Foundation, Inc.
1033 Long Prairie Road, Suite 5
Flower Mound, TX 75022

Telephone: 214-888-0220
Fax: 214-888-0230
Email: plannedgiving@ktef.us

www.knightstemplar.org/ktef
Research at work:

Retinoblastoma is an eye cancer that affects young children. In almost half of cases, it is an inheritable disease, with children of a retinoblastoma survivor having 50% risk of also developing the cancer. Retinoblastoma is fatal if untreated, and even when successfully treated with surgery or chemotherapy, it often leaves patients with very poor vision or even blind.

Terry Hoddinott (top left in the picture) lost both his eyes to retinoblastoma as a child. Both his children inherited the retinoblastoma mutation, but improvements in therapy enabled one eye of his son to be saved with good vision. Advances in genetic testing, including the identification of the mutant gene that causes the disease, led to early detection of the cancer in his daughter, and both her eyes were saved with 20/20 vision.

These children were treated by Dr. Brenda Gallie at the Hospital for Sick Children in Toronto, Canada. Research supported by the Knights Templar Eye Foundation has helped improve our understanding of retinoblastoma genetics and biology and enabled development of improved therapies, with the hope that loss of sight, eyes, and lives to retinoblastoma will one day be eliminated.

Tim Corson, PhD
Eugene and Marilyn Glick Eye Institute
Indiana University School of Medicine
Retinoblastoma: A Genetic Cancer

Father: Retinoblastoma; both eyes removed

Daughter: Retinoblastoma; both eyes saved

Son: Retinoblastoma; one eye saved

“A Masonic Charity”
At an annual meeting held every March, officers and trustees of the Foundation come together with ten doctors specializing in pediatric ophthalmology from many leading hospitals and research institutions throughout the country to review the applications and recommend which applications based on the merits of the proposal should be funded with a grant.

We are pleased to report that this year we received thirty-seven career-starter research grant applications and twelve competitive renewal grant applications. Seventeen career starter grants and eight competitive renewal grants were recommended for funding by the committee and all twenty-five were approved by the officers and trustees serving on the Scientific Advisory Committee. Officers and committee consists of Jeffrey N. Nelson, President, and Trustee of the Foundation; Michael B. Johnson, Chairman of the Committee, Vice President, and Trustee of the Foundation; David J. Kussman, member of the Committee, Vice President and Trustee of the Foundation; Jeffrey A. Bolstad, member of the Committee, Vice President and Trustee of the Foundation; Lawrence E. Tucker, member of the Committee, Secretary and Trustee of the Foundation, William J. Jones, member of the Committee, Past President and Trustee of the Foundation.
Knights Templar Eye Foundation, Inc.

Announces a 2020 Pediatric Ophthalmology Research Grant Program of $2 Million

Flower Mound, TX – September 2019

The Knights Templar Eye Foundation has announced a Pediatric Ophthalmology Research Grant Award Program of $2 Million. The Knights Templar Eye Foundation (KTEF) invites eligible investigators to submit applications for Pediatric Ophthalmology Career-Starter Research Grants for the next award period of July 1, 2020 to June 30, 2021. They estimate approximately 30 grants of $70,000 each will be awarded. Deadline for the receipt of the submission is Wednesday January 15, 2020.

Grants supported by the Knights Templar Eye Foundation are awarded to impact the eye care of infants and children. Clinical or basic research on conditions that are potentially preventable or correctable such as amblyopia, cataract, glaucoma, optic nerve hypoplasia, nystagmus, retinopathy of prematurity, and hereditary diseases that occur at birth or within early childhood, such as retinoblastoma, are encouraged. Proposals for support of basic research on eye and visual system development also are welcome. Please visit our website for the guidelines.

The Knights Templar Eye Foundation is a 501 (c) 3 charity sponsored by and is the principal charity of the Grand Encampment of Knights Templar. Its mission is to improve vision through research, education, and supporting access to care. To date, the KTEF has provided in excess of $154 million of assistance in surgeries and in excess of $26 million in pediatric research grant awards.

For more information please see the grant guidelines at www.knightstemplar.org/ktef/grantinfo.html
The Apl.de.ap Foundation was formed by Allan Pineda Lindo better known as Apl.de.ap, a member of the Grammy Award-winning group The Black Eyed Peas. Apl.de.ap is a Filipino-American who himself suffers from an eye ailment and is considered legally blind. The Campaign for Filipino Children is an initiative that addresses a critical medical concern in the Philippines, the pediatric eye affliction known as retinopathy of prematurity. Which is in line with the goal of the Knights Templar Eye Foundation to educate doctors around the world.

Combining the expertise and passion of the Apl.de.ap Foundation and its principal program partner Dr. Thomas Lee, Director of the Vision Center of Children’s Hospital Los Angeles, the campaign will provide a sustainable approach to the diagnosis and treatment of this specialized medical condition. Dr. Lee is also a member of the Knights Templar Eye Foundation’s Scientific Advisory Committee.

At the most recent annual board meeting of the Knights Templar Eye Foundation, the board approved its second $95,000 grant to assist in purchasing digital imaging systems that will be used in this pilot program. The first grant approved by the Knights Templar Eye Foundation was in 2015.

At least ten percent of all births in the Philippines involving premature babies each year are the result of the relative deficient nature of prenatal care available to the poor. At least thirty percent of these premature babies develop retinopathy, a disease that causes abnormal blood vessel growth in the retina from excessive oxygenation. If the affliction is not treated within 48 hours of diagnosis, these premature babies become permanently blind.

Many practitioners in the Philippines are not thoroughly familiar with retinopathy of prematurity. Many practitioners may not have had adequate training in this area and hospitals may not have appropriate equipment to recognize, diagnose, and treat the affliction and prevent blindness.

The Campaign for Filipino Children intends to enter into partnerships with four pilot hospitals in the Philippines. Dr. Lee and his team travels to the Philippines and trains medical staff from these participating hospitals. The Philippines is unique in the sense that the archipelago is composed of 7,100 islands. Access is always an issue.

From four pilot hospitals alone, the initiative will potentially train from 6 to 10 medical practitioners from each hospital, a total of 24 to 40, and potentially prevent blindness for 4,380 premature babies each year. In the future, doctors from these pilot hospitals will train their counterparts in other hospitals, especially those in other rural and hard-to-reach provincial hospitals, and share the original equipment to sustain diagnosis and treatment on their own. The goal is to create the internal capacity in the Philippines to diagnose retinopathy of prematurity and perform needed surgeries within the first 48 hours of diagnosis.

The two hospitals supported by the Knights Templar Eye Foundation were The Southern Philippines Medical Center located in Davao City in the island of Mindanao and the second hospital was Jose B. Lindo Memorial Regional Hospital Angeles city, Pampanga.
Sir Knight Victor Antonio T. Espejo, Grand Commander of the Philippines gives his praise to the Apl.de.ap Foundation for taking on this great humanitarian project.

Many Sir Knights throughout the country were present at both formal presentations.
Mary Elizabeth Hartnett, M.D.
Professor of Ophthalmology, Adjunct Professor of Pediatrics, University of Utah - Department of Ophthalmology, John A. Moran Eye Center

I have the great honor of serving on the Knights Templar Eye Foundation Scientific Advisory Committee, where I have the opportunity to review scientific proposals designed to understand causes and find treatments for blinding pediatric eye diseases. As a clinician scientist and vitreoretinal specialist, I understand the predicament that M.D.s and scientists find themselves in when beginning their research careers, namely how to obtain resources to get started, develop preliminary data, and put together laboratories and laboratory teams. The Knights Templar Eye Foundation provides grant funding and support for scientists in their early careers to obtain preliminary data necessary to refine scientific questions, start laboratories, and successfully compete for later funding through organizations, including the National Institutes of Health.

In my situation, I was a practicing vitreoretinal surgeon with specialty training and expertise in pediatric retinal diseases. I had always wanted to pursue science from the time of high school, but I was concerned that taking time out of my career to pursue a Ph.D. would cause a gap between my surgical training and the start of a medical practice and interfere with my ability to provide the best care and treatment for my patients as a physician and surgeon. Therefore, I pursued a postdoctoral fellowship as a practicing M.D. and was able to learn many of the techniques and ways of approaching questions as a scientist. When I was ready to start my independent research program, I found that funding organizations required preliminary data and publication before ever considering funding. I well recognize how important it is to have funding sources at early stages in one’s career in order to pursue science. I fortunately was able to successfully obtain support. Also important in developing one’s research program is mentorship. One of my mentors was John Penn, now the chair of the Scientific Advisory Committee, who had developed an animal model that mimicked many of the features of human retinopathy of prematurity. John was very helpful in helping me get the model up and running in my own laboratory. Although I did not apply for funding from the Knights Templar Eye Foundation, I have mentored others, including my own laboratory members, and have had one research assistant professor who has been successfully funded through the Knights Templar Eye Foundation.

Now as a Scientific Advisory Committee member, I think back to the difficult times in my early career and how beneficial it is to have research support early in one’s career. I also remember the importance of mentors and I try to reach out and offer support to other scientists and clinicians beginning their research programs. The Knights Templar Eye Foundation provides needed support to scientists and clinician scientists at the beginning of their research careers and is one of the only, if not the only, organizations that specifically provides funding for pediatric eye disease. Pediatric eye research is such an important and needed area of research support. I believe that through the support of the Knights Templar Eye Foundation, the Scientific Advisory Committee is able to help clinician scientists and scientists develop worthwhile careers to improve the outcomes and quality of life of children and infants with blinding eye diseases.
Ashwath Jayagopal, Ph.D.
Section Head, Ophthalmology Division, Roche Pharmaceuticals AG

The Importance of KTEF funding
I recall very fondly the year I received a Knights Templar Eye Foundation grant, as that award enabled me to dedicate my career toward the prevention and treatment of childhood blindness. As a biomedical engineer, my career goal has always been to develop solutions for treating patients. Historically, biomedical engineers have made contributions to medicine that we see every day, including cardiac pacemakers, prosthetics, MRIs, and robotic surgery. After obtaining my undergraduate degree from Vanderbilt University in this field in 2003, I wanted to sharpen my engineering skills with a PhD so I could hopefully make a mark of my own, to develop the next big thing in medicine.

In graduate school, my mentor was John Penn, Ph.D.*, who himself was once a Knights Templar Eye Foundation Awardee when he began his career. He wanted me to apply my engineering skills to a difficult problem in ophthalmology: drug delivery to the eye. When drugs are delivered to the eye, a needle is inserted and the injected drug is exposed to the entire eye. Therefore, both diseased and healthy tissues receive the drug. This is particularly a problem for treating a major cause of childhood blindness, called Retinopathy of Prematurity (ROP). In ROP in newborns, who at this stage are still developing their eyes’ blood supplies, some of the vessels that develop are abnormal, and if this abnormal vessel growth is not corrected, some patients can experience irreversible vision loss. However, in the newborn eye, many blood vessels, which are growing normally, can be adversely affected if any drugs are injected, since the drugs are designed to combat blood vessel growth and cannot distinguish between healthy vessels and abnormal, diseased ones.

To address this problem, Dr. Penn wanted me to engineer the surface coating of drugs with polymers, in order to make the drugs “smarter,” such that the drug could only bind to abnormal vessels and correct them, while leaving healthy blood vessels alone. I proposed an engineering strategy for achieving this goal, and Dr. Penn helped me land a faculty position at the Vanderbilt Eye Institute and gave me a laboratory next to his in order to test my drug delivery strategy. He suggested that, like him, I ask the Knights Templar Eye Foundation to obtain financial assistance for developing the ROP treatment strategy so that I could prove it works. The Sir Knights and their families came through with a generous grant which enabled me to prove that targeted drug delivery can be achieved in ROP. Seven years later, I am now a head of R&D for a major drug company, Roche Pharmaceuticals in Switzerland, and it hired me to further develop my drug delivery strategy in order to make smarter drugs for diseases like ROP. Thanks to the KTEF, my dream of developing a new therapy to stop childhood blindness from ROP is a very tangible reality. I will never forget the pivotal role that the Foundation played in my career development, and I am excited to make a substantial return on its investment in the form of new treatments that will improve clinical outcomes for children facing vision loss.

* John S. Penn, Ph.D. as referenced above is currently Vice Chair of the Department of Ophthalmology and Visual Sciences at Vanderbilt University and Chair of the Knights Templar Eye Foundation Scientific Advisory Committee.
In this article Dr. Penn outlines what effect KTEF funding has had on the development of his career.

In 1986 I was an assistant professor of ophthalmology at the Cullen Eye Institute at Baylor College of Medicine, and I was just embarking on my research career. I was interested in a particularly tragic form of blindness known as retinopathy of prematurity or ROP. This condition is tragic because it blinds premature infants at the very onset of life, before they have an opportunity to appreciate the wonder of their visual surroundings. At the time we didn't know much about how ROP developed in infants or how it progressed to its blinding form. I applied to the Knights Templar Eye Foundation for two years of financial support, and I used that support to develop an animal model of the ROP condition so its pathogenesis could be investigated. Two years later, when my KTEF funding ended, I submitted an application to the National Eye Institute of NIH, relying on the model I'd developed with KTEF support. In my NEI application, I proposed experiments to better understand the onset and progression of the ROP condition. I was fortunate enough to receive NEI funding for that project, and I’m proud to say that grant has been renewed multiple times and is now in its 28th year of consecutive funding. That simply would not have happened if not for the Knights Templar grant. Our findings, first in Houston, then in Little Rock at the University of Arkansas for Medical Sciences and finally in Nashville at Vanderbilt University where I’ve been for the last 15 years, and those of other labs during this nearly three-decade period, have altered the way in which premature infants are cared for and the way in which ROP is treated. And I’m proud of that legacy and appreciative of the pivotal role that the KTEF played in it.

The primary pathologic feature of ROP is abnormal capillary growth in the retina of the eye. The ROP model I developed proved to be applicable to abnormal capillary growth in a wide variety of non-ocular tissues and diseases. So, the model became a valuable tool for use beyond the realm of eye disease….for studying these other conditions and for testing pharmacotherapies to address them. Over the last three decades, we’ve used the model to conduct drug efficacy trials in partnership with the pharmaceutical industry, and this activity has contributed to the development of a number of drugs that are on the market today.

Thus, KTEF funding had a clear and direct impact upon my early professional development and on the success of my research program. Also, it led to findings that had a significant impact on patient care in a particularly vulnerable population, tiny infants. I believe that my experience can serve as an example of what the KTEF can do for young vision scientists throughout the country. I know that’s the case, because KTEF funding has catapulted the careers of four of my trainees, each of whom have gone on to make their own mark in vision science.
When I think of the impact the Knights Templar Eye Foundation has had on my career, I am reminded of my high school motto, (“Finis origine pendet”) which is Latin for “The end depends upon the beginning.” Early events can have a profound impact on the ultimate direction we take. In my case, receiving a Knights Templar Eye Foundation grant was one such event.

Growing up in Minnesota, I was sure I would become either a farmer or an astronaut. Little did I know what the future would have in store for me. My education took me out of Minnesota to Johns Hopkins in Baltimore for college, then further north to New York City where I went to medical school at Cornell and then finally up to Boston where I completed a retina fellowship at Harvard. During that journey, I knew that to create a better future, we needed to discover new treatments that would help us in our fight against childhood blindness. In my case, I focused on a hereditary cancer, retinoblastoma, which occurred in the eyes of newborn babies. In 1998, I was awarded a Knights Templar Eye Foundation grant to study the fundamental aspects of this blinding cancer. Through this work I realized that there was much more we could do to protect childhood sight. Since then, I have devoted my life to this cause, and now as Director of the Vision Center at Children’s Hospital Los Angeles, I oversee seven doctors who are all equally dedicated to eradicating childhood blindness.

This path I took all started with a simple grant application 14 years ago to the Knights Templar Eye Foundation, and I am very grateful for the generosity of all of the members and their families for supporting doctors and scientists like myself. Our motto at the Vision Center is that every child should be able to see a sunset. Through the support from the Knights Templar Eye Foundation, we are now closer to making that a reality.

Thomas C. Lee, M.D.
Knights Templar Eye Foundation, Inc.

A Predictive Medicine Approach to Childhood Blindness

David Cobrinik, MD, PhD, Associate Professor of Ophthalmology and Biochemistry & Molecular Medicine, The USC Roski Eye Institute and Norris Comprehensive Cancer Center, Division of Ophthalmology, Children’s Hospital Los Angeles and a member of the Knights Templar Eye Foundation Scientific Advisory Committee (KTEF).

As indicated I am a member of the KTEF Scientific Advisory Committee for the past five years and a member of a team of childhood blindness researchers at Children’s Hospital Los Angeles (CHLA). However, I was not always a vision researcher. In college, my research focused on genes that cause tumors in plants. This got me interested in understanding how genes cause human diseases, and I continued studying cancer because that was the first area to which I was exposed. After graduate school at Case Western Reserve University, I took a postdoctoral position in an MIT laboratory that was studying a childhood eye cancer called retinoblastoma. They and others had been in a race to clone the gene that causes retinoblastoma, and by the time I arrived the challenge had turned towards understanding how this gene causes the eye cancer in children. Continuing as a faculty member at Columbia University, I realized that we had to understand the retinal origin of retinoblastoma in order to develop preventive strategies. Around this time I met Dr. Tom Lee, who passionately shared this interest and recruited me to pursue this at Cornell Medical School. As a pediatric ophthalmologist, Tom also enlisted me in efforts to study childhood blindness more broadly. He later recruited me to join the Vision Center at CHLA and the KTEF scientific board. This increased my understanding and appreciation of important childhood blinding conditions.

Of late, these experiences have enabled me to participate in the CHLA team that aims to model inherited retinal dystrophies (the main genetic cause of childhood blindness) and curative genetic approaches. (See below picture for team member details.) The team seeks to develop a predictive medicine approach that was initiated by Dr. Lee, in which a blinding disease can be modeled and a therapy developed in the interval between the first detection of the condition and the irreversible retinal damage. Unfortunately, there is no one-size-fits-all cure, so we aim to tailor approaches to the unique blinding mutations in each child. I am privileged to work with the CHLA team and the Knights Templar Eye Foundation in this endeavor - to save the vision of every at-risk child, one child at a time. Time is short and there is much to do.

David Cobrinik

CHLA Predictive Medicine Team members from left: David Cobrinik MD, PhD; Jennifer Aparicio PhD; Aaron Nagiel MD, PhD, and team originator Tom Lee MD, Additional members Jesse Berry MD and Paula Cannon PhD (not shown).
Bibiana Jin Reiser, M.D., M.S.

Associate Professor of Ophthalmology at USC Roski Eye Institute
Director of Cornea and Glaucoma Services at Children’s Hospital Los Angeles

The Knights Templar Eye Foundation, Inc. grant was a game changer for me.

Dr. Bibiana Jin Reiser, an Associate Professor of Ophthalmology at USC Roski Eye Institute and Director of Cornea and Glaucoma Services at Children’s Hospital Los Angeles, and is a former KTEF grant recipient.

As I was finishing up my last training year on my way to becoming a cornea and refractive surgeon for adults, my mentor suggested that I do a year in pediatrics. In order to be the best, he said that I should be able to work with babies and children. He called it the “final frontier”, where only the few and the brave would dare venture forth. After hearing the “to be the best” comment, I was all in. I jumped in, head first, and never looked back. This extraordinary year was only made possible with financial support of the KTEF, and today I serve as the Director of the Cornea and Glaucoma services at the Vision Center at Children’s Hospital of Los Angeles, one of the busiest in the country specializing in critical eye care for children.

Growing up a daughter of immigrants, I wanted to dream big in America, and my dream was to be a doctor. My mother, a nurse, strongly discouraged it. She felt that work as a doctor would not let me be a mother to her future multiple grandchildren. Ever-stubborn and driven, I wanted to prove her wrong. I believed that I could do it all, and I have. Today, I have two children, one in college and the other in junior high school. And as my children grow older, I have many others, my patients and their parents, for whom I am a caregiver. What a privilege and honor it is to be part of their lives, shepherding care, saving a child’s vision.

In these 10 years since my year supported by the KTEF educational grant, I have built one of the largest anterior segment practices in the country that serves not only families in Southern California but families across the globe. Today, we are developing techniques and innovations resulting in better clinical outcomes and decreased complications in very rare, blinding eye diseases, such as congenital cataracts, Peter’s anomaly, and glaucoma. So, since progress cannot happen in a vacuum, we present our work internationally so others can benefit from our experience.

The fight that we fight to preserve a child’s vision is not always rewarded by easy success. Sometimes, keeping and not losing vision is a hard-fought victory. Because this is the struggle pediatric eye specialist’s face, it is not always the path that is chosen by many. The financial support of the KTEF grant allowed me the breathing room to give this challenging area a hard, close look. Past my gaze, staring back at me, were the eyes of a child. Behind this child stood his parents and, behind them, the will and support of many others. This includes the many who will never be in the exam or operating room but those who are tirelessly fundraising for this noble cause, the fight to prevent childhood blindness.

Thank you for your support, my work today would not have been possible without it.
Jesse Berry, M.D.

Associate Professor of Ophthalmology and Associate Director of Ocular Oncology at USC Roski Eye Institute at Children’s Hospital Los Angeles, is a former KTEF grant recipient.

Knights Templar Eye Foundation funding is sky-rocketing careers and creating significant advances for children with ocular cancer

In addition to a busy clinical practice treating ocular tumors in adults and children, she trains residents and fellows in ophthalmology and ocular oncology, and leads an exciting research team in developing the first ever liquid biopsy for retinoblastoma from the aqueous humor – which is the clear fluid in front of the eye. The team calls this the ‘surrogate tumor biopsy’. With funding from the Knights Templar Eye Foundation Career Starter Grant, Berry et.al. extracted and sequenced DNA from the retinoblastoma tumor, in the aqueous humor. Her initial work was published in JAMA Ophthalmology on October 12th (which also happened to be Dr. Berry’s birthday!) with a commentary from another prominent ocular oncologist, Bill Harbour, MD. The media response to the manuscript has been immense. To date the paper has been viewed over 500 times, released by four news outlets, and tweeted 75 times. The research was presented at the American Academy of Ophthalmology in November 2017 in New Orleans where it was awarded best paper and featured on the One Network of the American Academy of ophthalmology as well as the Knights Templar Eye Foundation Pediatric Ophthalmology Education Center.

To say that the Knights Templar Grant has started my career is an understatement; it skyrocketed it. On March 30th I heard the official news that I was selected. I was quite literally over the moon and immediately we started sequencing our banked samples of aqueous humor with stunning results: tumor-derived DNA was present – but more exciting – certain chromosomal changes correlated with aggressive tumors that responded poorly to therapy and these changes were absent in eyes where the tumors that did well. This suggests that genomic evaluation of the aqueous could be used to predict the ability to save the eye and maybe in the future help direct more intensive therapy to the more aggressive tumors.

The Knights Templar grant has been revolutionary for me and my career – but more importantly, the research it supports will dramatically change the way we care for the children who suffer from this blinding – and deadly --- ocular cancer. Imagine a world where a tiny sample of aqueous from an eye in a child with retinoblastoma can be used for diagnosis, for prognosis of treatment response and maybe even, to provide a means for the first ever attempts at personalized, directed therapy for retinoblastoma. With the support of KTEF, that world is now within reach. Thank you for giving me the chance to jumpstart my career – thank you even more for helping me to change the paradigm of retinoblastoma management and to contribute to a new future of personalized, predictive medicine for my patients. I could not be more grateful for this opportunity.
The American Academy of Ophthalmology was awarded $2 million from the Knights Templar Eye Foundation, Inc. to establish a permanent research fund to advance the practice of pediatric ophthalmology. This fund will be used to support the work of researchers investigating both rare and common eye diseases affecting children and to uncover optimal, real-world approaches to prevention and treatment.

Insights for these projects will be gleaned from the Academy's IRIS® Registry (Intelligent Research in Sight), the world's largest clinical specialty data registry. The Academy developed the IRIS Registry to provide insights on eye disease, and to empower ophthalmologists to effectively improve their practices and their patients' lives. Having amassed data on 50 million patients in just four years, this data-rich resource has already improved the quality of eye care for adult patients.

The fund will enable the Academy's IRIS Registry team to enhance the capture of data collected on pediatric patients to reveal patient characteristics associated with disease and better approaches to their prevention and treatment. The IRIS Registry team will also focus on attracting more pediatric ophthalmologists to contribute to the database, further enhancing the power of its data-driven insights.

The IRIS Registry will also be used to drive individualized learning for pediatric ophthalmologists, providing them with information on their performance, outcomes of treatment, and adherence to best practices. It will also connect ophthalmologists to an online tool offering the best educational resources in pediatric ophthalmology.

"This grant is an extraordinary gift for ophthalmology," said David W. Parke II, MD, CEO for the American Academy of Ophthalmology. "It will build upon the strengths of the world's largest clinical data registry to drive insights on children's eye health. I have no doubt that it will improve the care of individual children. The Knights Templar Eye Foundation is a tremendous partner for our profession and our patients."
Knights Templar Eye Foundation, Inc.

Video Clips
Available for viewing and downloading from the Foundation’s website
www.knights templar.org/ktef

Dr. John S. Penn
Vanderbilt University
Chair of the Knights Templar Eye Foundation, Inc.
Scientific Advisory Committee

Dr. Thomas Lee
Division Head – The Vision Center
Children’s Hospital Los Angeles
Member of the Knights Templar Eye Foundation, Inc.
Scientific Advisory Committee

Dr. Jill Bolstad
Specializes in pediatric medicine

EyeCare America
Co-sponsored by the Knights Templar Eye Foundation, Inc.
Seen Through Doctors’ and Patients’ Eyes

ONE Network
The Ophthalmic News & Education Network named:
The Knights Templar Eye Foundation, Inc.
Pediatric Ophthalmology Education Center
In perpetuity
Dr. Christie L. Morse
Chair, American Academy of
Ophthalmology Foundation Advisory Board
A THANK YOU from EyeCare America

Dear Sir Knights,

On April 20, at an Academy meeting in DC, 98 ophthalmology Residents signed a pledge to volunteer for EyeCare America once they become practicing ophthalmologists. Looking forward, this is exciting news for older Americans on limited incomes and EyeCare America’s volunteer future.

Back in 2010 when newspapers were still king, most of the patients EyeCare America referred heard about the program by reading their local newspaper. Every year since, a significant number of newspapers no longer exist. Today, the primary way people hear about us is through online searches, the second way is through our partners - senior centers, social workers, friends and family.

If each Sir Knight told one senior about EyeCare America, thousands more would know about this vital public service. Any Sir Knight interested in receiving a brochure about EyeCare America may email us at, eyecareamerica@aao.org, or call our staff line at 877-887-6327 (M-F, 8am to Noon, Pacific Time).

The late B. Thomas Hutchinson, MD, Founder of EyeCare America, would have been proud to see so many young ophthalmology Residents stepping up to volunteer and carry the volunteerism baton for EyeCare America’s future. I hope you will consider doing the same by spreading the word about this great program you and the Knight’s have been supporting for the last 23 years.

I appreciate your ongoing support.

Sincerely,

C. Pat Wilkinson,
Chair, EyeCare America
2018 Africa Symposium

Thanks to the generous support of the Knights Templar Eye Foundation (KTEF), we are pleased to announce that the International Pediatric Ophthalmology and Strabismus Council (IPOS) will be providing education grants for selected retinopathy of prematurity (ROP) teams in Sub-Saharan Africa to attend the IPOS ROP Symposium in Cape Town, South Africa.

The objectives of the International Pediatric Ophthalmology and Strabismus Council (IPOS) ROP Africa Symposium is to teach fundamental skills in Retinopathy of Prematurity (ROP) care management and build a network in Africa to prevent blindness from prematurity. Following this Symposium, the development of ROP “centers of excellence” in Sub-Saharan Africa (SSA) will represent the most tangible step forward. With these “centers of excellence,” improved capacity for ROP care and education can be achieved through initiatives led by local experts.

The goals of this Symposium are well aligned with all three of the key components of the mission of the Knights Templar Eye Foundation. Through research, education and supporting access to care, they will help improve the vision and decrease the number of children who go blind from ROP.
Since 1956, the Knights Templar Eye Foundation (KTEF) has supported research and helped launch the careers of clinical and basic researchers focused on the prevention and cure of potentially blinding diseases in infants and children.

Retinopathy of Prematurity (ROP) is one of those diseases.

The leading cause of preventable childhood blindness, ROP affects preterm infants who are born before 31 weeks, before the retina has developed a full network of blood vessels to nourish it.

This June, the KTEF awarded a $65,000 Career-Starter Research Grant to John A. Moran Eye Center retinal researcher Colin Bretz, M.S., Ph.D, for his work to better assess the risk of ROP and the infants in need of treatment.

Working in the National Institutes of Health-funded lab of top retinal research Mary Elizabeth Hartnett, MD, Bretz and his colleagues work to understand what causes blood vessels to grow outside their normal tissue compartments and into other areas of the eye where they cause damage.

**Long-term goal: safe treatment**

Whether an infant experiences surgery for the most progressive stages of ROP or develops a milder form that eventually resolves on its own, infants with ROP are considered to be at higher risk for developing certain eye problems later in life, such as retinal detachment, myopia, strabismus, amblyopia, and glaucoma.

“Clinical findings have shown that a factor, soluble E-selectin (sE-selectin), is elevated in the bloodstream of preterm infants who develop ROP compared to those who do not. We will study how sE-selectin is elevated and if it is involved in the pathology leading to blindness in ROP. We will use experimental models to understand the role of sE-selectin in ROP as initial steps in our long-term goals to find a safe treatment for ROP and develop biomarkers to better identify preterm infants at increased risk or in need of treatment for ROP,” said Bretz.
“We have taken ROP as far as we can—we need something more, something that will move us forward and can make a difference,” said Randall J. Olson, MD, professor and chair of the University of Utah Department of Ophthalmology and Visual Sciences and CEO of the Moran Eye Center. “Dr. Bretz’s work is translational research at its best, and the Knights Templar Eye Foundation’s support is a wonderful catalyst.”

**Competitive proposals focus on prevention and correction**

Securing federal funding can be difficult for a new researcher, and there are not many other eye foundations that solely fund pediatric research. By offering Pediatric Ophthalmology Research Grants to support physicians and researchers who are beginning their academic careers, the KTEF is investing in the future.

Proposals, vetted by the KTEF Scientific Advisory Committee comprised of 10 physicians specializing in pediatric ophthalmology at leading hospitals and research institutions, are highly competitive and must be focused on research that can prevent vision loss—first and foremost—and correct conditions early.

To date, KTEF has expended over $154 million on research, patient care, and education. The organization has awarded research grants totaling over $26 million to researchers working in the fields of pediatric ophthalmology and ophthalmic genetics.

**Bretz background**

Before joining the Hartnett lab, Bretz completed his doctorate in the lab of John Penn, Ph.D., at the Vanderbilt Eye Institute, where he focused on identifying critical and potentially therapeutic signaling targets important in the pathogenesis of ocular diseases, such as diabetic retinopathy, retinopathy of prematurity, and age-related macular degeneration.

Bretz obtained his master’s degree in biology from Wake Forest University and his bachelor’s degree in neuroscience from Vanderbilt University.
Doug Chung, Ph.D., from Jules Stein Eye Institute, UCLA was awarded a $65,000 research grant to get a better understanding of an inherited disorder in children that currently requires corneal transplantation.

Congenital hereditary endothelial dystrophy (CHED) is an inherited disorder of the corneal endothelium that is present at birth or early childhood and is characterized by corneal opacities, which significantly impair vision. Children affected with CHED often require corneal transplantation, which is currently the only method to treat CHED.

However, the worldwide shortage of donor corneas and postoperative complications present challenges to surgically treating children who are blind from CHED. Therefore, a clearer understanding of disease mechanisms that underlie CHED is needed in an effort to develop alternative treatments (e.g. gene based therapeutics) that will improve patient outcomes and decrease the dependence on donor cornea tissue.

The corneal endothelium is made up of a monolayer of endothelial cells that govern the transport of fluids across the back of the cornea, which is necessary for the maintenance corneal clarity. Mutations in the SLC4A11 gene have been identified in approximately 80% of screened CHED patients. The SLC4A11 gene encodes a membrane transporter that is hypothesized to be essential for corneal endothelial pump function, and potentially for other cellular functions.

As such, to better understand how mutations in SLC4A11 cause CHED, the first aim of this proposal is to elucidate the impact of CHED associated SLC4A11 mutations on various corneal endothelial cell functions. The second aim of this proposal is to examine the feasibility of SLC4A11 gene replacement therapy in treating CHED by determining whether or not introducing exogenous SLC4A11 in cell-based models of CHED will restore normal corneal endothelial cell transcriptional and functional profiles.
Presenting the $65,000 check to Dr. Engelberg at Boston College are Sir Knights Stuart Drost, Northeastern Department Commander; Grand Commander, Mark Kay; and Richard Van Doren, Honorary Past Grand Commander of Mass/RI along with Nancy Van Doren

The research grant award to Postdoctoral Fellow Klemens Engelberg is to study Toxoplasma gondii, a parasite that infects nearly a third of the world’s population and can complicate pregnancies and lead to eye disease and blindness.

Ocular toxoplasmosis is defined as an infection of the eye with the parasitic single-celled organism Toxoplasma gondii. Around 20% of the US population is infected with Toxoplasma, but healthy individuals stay mostly asymptomatic. Often undiagnosed, the parasite can spread from a primary infected mother to the unborn child, causing a spectrum of birth defects. Even if newborns appear healthy, ocular disease (retinochoroiditis) can emerge during childhood: the parasite infects cells of the retina, which leads to retinal lesions and scars (Chorioretinitis) and results in impaired vision and blindness. Chorioretinitis is present in 70-90% of congenital infected patients and is the most common manifestation of the disease. Currently available therapeutics cannot prevent parasite transmission from the mother to the fetus, but can reduce retinal damage in newborns when administered prophylactically. However, strong side effects during prolonged treatment are common, illustrating the urgency for improved anti-Toxoplasma therapeutics. In general, biological processes different between parasites and their hosts offer targets for specific drug intervention. One such process is the parasite’s replication cycle. Controlled by principally distinct signaling mediators (kinases) the replication cycle is executed by known and as yet unknown components that could be exploited for a better therapy.

This research proposes to dissect the signaling network of a parasite-specific kinase and to expose and characterize its members. The results will reveal new insights into the parasite’s destructive replication cycle, which creates a jump off point for the development of new and specific therapeutics to better treat and prevent ocular toxoplasmosis in infants.
Many current and past grand officers of the Grand Commandery of Ohio along with many Constituent officers traveled to the Cole Eye Institute at the Cleveland Clinic to present a $65,000 research grant check to Joseph Fogerty, Ph.D., to study a common blinding disorder in children known as Leber’s Congenital Amaurosis (LCA).

Many children with LCA have limited vision at birth, and most are severely impaired by their first birthday. The retina covers the back of the eye and converts the light entering the eye into a nerve signal that goes to the brain.

There are many different causes of LCA, but in most cases, the rod and cone cells in the retina die. Unfortunately, the body has no way to replace those cells once they are gone. They will be studying zebrafish, small freshwater fish that you can find in a pet shop, because unlike humans, these fish can regenerate neurons and replace the dead rods and cones. Their goal is to understand how the fish regenerates their retinas so that they can perhaps one day mimic the same process in LCA patients in order to restore vision.

The specific type of zebrafish they will be studying, however, do not replace all of their dying retina cells, and this makes them a particularly helpful animal model for LCA. By comparing regeneration-deficient zebrafish to healthy zebrafish, they can identify the molecular signals they lack that are essential for complete regeneration. By determining what signals are required to trigger regeneration of the rods and cones in zebrafish, it may be possible to translate this information to humans where regeneration is not currently possible.
Presenting the check to Dr. Grieg were Sir Knights from California; David Studley, Grand Generalissimo and Trustee of the Knights Templar Eye Foundation; other Sir Knights present were Howard Ramsey, Past Grand Commander; Brandon Duenas, Past Commander San Jose #10; Norman Mallillin, Commander of California #1; and William Eadus, Generalissimo California #1

Luciano Custo Greig, M.D., Ph.D., from Stanford University School of Medicine located in Palo Alto, CA was awarded a $65,000 grant for his research on regeneration of retinal ganglion cells from endogenous progenitors.

These studies aim to take dormant progenitor (stem) cells that reside in the eye and induce them to make new retinal neurons so that they may replace those lost to disease or injury. In particular, they will focus on making new retinal ganglion cells, which are the neurons in the eye that send information to the brain along the optic nerve, making them very important for vision.

Once retinal ganglion cells die as a result of glaucoma or other disorders, the eye is unable to replace them. However, other animals, such as zebrafish, have dormant stem cells that can produce new neurons in response to injury and rebuild visual circuits. Although these stem cells are also present in humans, their response to injury is ineffective and fails to generate replacement neurons.

These approaches to stimulate production of new retinal ganglion cells could be used in the future to develop treatments for a number of pediatric eye disorders, including pediatric glaucoma, hereditary optic neuropathies, developmental syndromes associated with optic nerve hypoplasia and traumatic optic nerve injuries.
Dr. Zhengping Hu from Schepens Eye Research Institute, Harvard Medical School in Boston, MA was awarded a $65,000 check to support her research in Retinopathy of Prematurity (ROP) which is a leading cause of blindness in premature and low birth weight infants.

In ROP the absence of retinal vessels in the immature retina leads to the release of vascular growth factors. Vascular endothelial growth factor (VEGF) is a major regulator in the development of ROP. Anti-VEGF has been transformative in the treatment of ROP and is being a mainstream treatment. Yet, the use of anti-VEGF for ROP is controversial because VEGF also plays a role as a neuroprotectant for a variety of retinal cells, which makes anti-VEGF treatment a double-edged sword.

Their group has recently shown that a molecule called endomucin that is specifically expressed on endothelium, cells that comprise new vessels, is an essential regulator of VEGF-stimulated endothelial responses. Thus, it has potential as a therapeutic target.

This study is aimed at using this information to develop a novel endothelium-specific therapy to prevent vision loss in ROP.

A $65,000 check was presented to Dr. Hu by Sir Knights Stuart Drost, Northeastern Department Commander; officers of the Grand Commandery of MASS/RI, Mark Kay, Grand Commander; Richard Seychew, Past Grand Commander; and Richard Van Doren, Honorary Past Grand Commander.
Irina De La Huerta, M.D., Ph.D., Assistant Professor at Vanderbilt University School of Medicine, Vanderbilt Eye Institute has received a grant in the amount of $65,000 which will support her research which will pave the way toward developing future treatments to prevent retinal diseases of childhood that are associated with high blood sugar levels.

Increasing numbers of children are born prematurely, and are diagnosed with diabetes. Retinopathy of prematurity develops in premature infants whose retinal blood vessels are not fully grown. Most premature infants who are very small at birth have abnormally high blood sugar levels, and this is associated with delayed retinal blood vessel growth. In children with diabetes, high blood sugar levels are associated with the development of retinal blood vessel abnormalities typical of diabetic retinopathy. Photoreceptors are the most numerous cells in the retina, and the cells that use the most energy.

Photoreceptors are affected by high blood sugar levels and may contribute to the delay in retinal blood vessel growth in premature infants and to the development of retinopathy in patients with diabetes. However, the mechanisms by which photoreceptors under high sugar conditions impact the retinal blood vessels are not well understood.

This project aims to investigate the response of photoreceptors to high sugar conditions by testing the effect of photoreceptors exposed to high sugar on the retinal cells that are responsible for blood vessel growth and for maintaining blood vessel integrity and the goal is to help develop future treatments to prevent childhood retinal diseases.
Two $65,000 grants were awarded to early career vision scientists, Oussama M’Hamdi, M.D., Ph.D., and Robert Hufnagel, M.D., Ph.D., from the National Institutes of Health (NIH), Bethesda, Maryland, to research inherited retinal degenerations, diseases that can cause blindness in early childhood.

The health and maintenance of the retina, the light-sensitive tissue at the back of the eye, depends on coordination among its various cell layers. The light-sensing photoreceptors are nourished and supported by the adjacent retinal pigment epithelium (RPE) and choroid. Failure of one cell type can lead to retinal degeneration and subsequent blindness.

Dr. M’Hamdi has recently identified mutations in a novel retinal gene that cause an inherited form of retinal degeneration, called autosomal recessive retinitis pigmentosa (RP). The mutations in these families cause loss of vision in infancy or childhood and early onset blindness.

“There’s very little known about this gene,” said M’Hamdi. “We were the first to find this protein in the retina, but we still don’t know exactly what it’s doing.”

He believes that the mutated gene functions in the photoreceptor, providing support for the membranous disks containing rhodopsin in the outer segments. He is using cell culture systems as well as zebrafish and mice to study the gene’s role in photoreceptor function and survival.

Dr. Hufnagel is studying how the photoreceptors and RPE communicate. Mutations in the protein neuropathy target esterase (NTE) can lead to a syndrome known as Oliver- McFarlane syndrome, which causes retinal degeneration in childhood. NTE is important for maintaining cellular membranes. He proposes that NTE’s function might extend to the formation of membrane-enclosed vesicles, also called exosomes, that ferry proteins and metabolites between cells. He believes that exosomes transport factors crucial for the health of photoreceptors from the RPE, and that impairment of this process may lead to vision loss in Oliver-McFarlane syndrome and other pediatric retinal degenerations.

“We’ve known for a long time that the retinal pigment epithelium maintains the function of the photoreceptors by recycling their outer segments and completing the visual transduction cycle,” said Dr. Hufnagel. “Less clear is how else the RPE, photoreceptors, and the choroid communicate and support each other to maintain function of the retina. That’s what we’re looking into.”
Ellen Ingolfsland, MD, Pediatrics Fellow at the University of Minnesota Medical School, has been awarded a $65,000 grant for her work with a common blinding eye disease among premature infants which accounts for up to 40% of childhood blindness.

The goal of this study is to investigate the impact of neonatal anemia and its treatment with erythropoietin (EPO) on the development of retinopathy of prematurity (ROP), which is characterized by abnormal blood vessel development in the retina. ROP remains a common blinding eye disease among premature infants. Observational studies suggest that anemia may worsen ROP, but isolating the role of anemia has been difficult in the complex clinical environment of the hospital. In this study, she will use a preclinical model to study the effect of neonatal anemia and its treatment with EPO on the developing retina. She will measure gene and protein levels of molecules important in regulating retinal blood vessel development as well as visualizing changes to the retinal blood vessels themselves.

The results of this study will define whether and how anemia and its treatment with EPO affect ROP development. If anemia is found to increase severity of retinopathy, it would support more aggressive management of anemia in premature babies. If treatment of anemia with EPO decreases severity of ROP, it would support use of this therapy in premature babies and influence the timing of how it is used. The management of neonatal anemia remains controversial. The results of this study have the potential to influence clinical care and to improve the vision and outcomes of preterm infants.
Grand Commandery officers from the Grand Commandery of California traveled to the University of California, located in Berkeley to make a $65,000 check presentation to Manoj Mohan Kulkarni, Ph.D. The Sir Knights presenting the check were: David Studley, Grand Generalissimo and Trustee of the Knights Templar Eye Foundation; Howard Ramsey, Past Grand Commander; Gregg Hall, Past Grand Commander; Brandon Duenas, Past Commander, San Jose #10; Walter Crossley, Past Commander, San Jose #10

Inherited forms of retinal degenerations such as retinitis pigmentosa (RP) & Leber Congenital Amaurosis (LCA) are a leading cause of blindness with a worldwide prevalence of 1:3000-4000. RP and LCA are typically diagnosed early in childhood.

The affected pediatric population quickly loses the ability to see in dim light. This stage is followed by loss of daylight vision resulting in complete blindness around adolescence. Current treatments either slow vision loss or attempt to restore vision by making residual neurons in the retina artificially light-sensitive. Recent studies in mouse models of RP have demonstrated that such therapies are compromised by the appearance of abnormal spontaneous neural activity, or “neural noise”, then can mask and thus degrade the important visual signals. Identifying neural origins of this noise is a critical next step to finding ways to reduce it and thus improve the efficacy of therapies.

Previous studies have demonstrated that a particular interneuron, the AII amacrine cell, may generate and spread the abnormal activity to other neurons in the diseased retina. Dr. Kulkarni hypothesizes that the neural circuits activating the AII amacrine cells become abnormal during disease progression. These studies aim to identify the abnormal changes in the neural circuits, and thus reveal potential pharmacological targets that may allow them to silence aberrant activity while preserving the signals essential for vision. Knowledge from these studies is expected to inform the development of therapies for treating affected children.
A $65,000 grant was awarded to Sriganesh Ramachandra Rao, Ph.D., who is a Postdoctoral Associate at State University of New York, Buffalo, VA Western New York Healthcare System. This grant aims to further understand the role of the gene DHDDS during retinal development.

Making the check presentation were Sir Knights from the Grand Commandery of New York: David D. Goodwin, Past Grand Master of the Grand Encampment and Past President and Trustee of the Knights Templar Eye Foundation; David Hardy, Grand Commander; Steven Wing, Past Grand Commander and Grand Recorder; W. Bruce Renner, Past Commander; and Aide-de-camp to PGM Goodwin; present with Dr Rao was Steven Fliesler, Ph.D, Preceptor, and Vice Chair & Director of Research

Autosomal recessive Retinitis Pigmentosa-59 (arRP59) — an early-onset, progressive and irreversible hereditary blinding disorder— involves degeneration of photoreceptor (PR) cells, for reasons that remain unclear. The disease is caused by mutations in the gene encoding DHDDS (dehydrodolichyldiphosphate synthase), an enzyme required for the synthesis of a lipid molecule (dolichol) essential for adding sugars to proteins (N-glycosylation) in cells. However, contrary to expectations, cells from patients carrying known DHDDS mutations surprisingly lack any obvious glycosylation defects.

To understand the mechanism underlying this disease requires generation of novel genetic animal models that faithfully mimic DHDDS dysfunction and, hence, cause dolichol synthesis defects. They recently generated the first viable vertebrate model of arRP-59, by genetically ablating the Dhdds gene selectively in just the retinal rod PR cells in mice, but at a time point after PR cell fate had been specified. This animal model exhibits rapid PR degeneration, but curiously without obvious protein glycosylation defects.

Several studies suggest a requirement for dolichol synthesis during cell fate determination, cell cycle progression and tissue development. Hence, they hypothesize that if DHDDS is ablated prior to differentiation of PR cells, disruption of normal retinal development will occur, resulting in blindness. The proposed project aims to further our understanding of the role of Dhdds during retinal development, with relevance to the retinal dysfunction and degeneration observed in arRP-59 patients with “severe” DHDDS mutations. The proposed study will advance our fundamental understanding of dolichol homeostasis and N-glycosylation during photoreceptor genesis, as well as disease mechanisms pertaining to this pediatric blinding disorder.
The grant of $65,000 was awarded to Rajalekshmy Shyam, Ph.D.; the goal of this research grant is to look at the use of gene therapy to treat a corneal disease that would bypass the need for corneal transplantation.

Congenital Hereditary Endothelial Dystrophy (CHED) is a disease that affects children. In this disease, the cornea, the major refractive element of the eye becomes cloudy and cannot allow efficient passage of light. This results in poor visual acuity. Loss of function of a gene, SLC4A11, causes CHED.

The current treatment for this disease is corneal transplantation. In children, this surgical process is complicated because of various risks such as transplant rejection, a growing eye, and glaucoma. Procurement of transplant tissue can be challenging as well. In this proposal, they are suggesting alternative methods to treat CHED in a mouse model of this disease. This mouse model recapitulates all the features that are present in human patients.

In the first part of the proposal, they plan to introduce a normal copy of Slc4a11 gene into the mouse eye to treat the progression of CHED. In the second part, they propose the use of topical drugs to treat this disease. If successful, the project will be one of the first to be productive in the use of gene therapy to treat a corneal disease that bypasses the need for corneal transplantation. If the topical drug use is effective, it can provide a minimally invasive treatment method for human patients.
Making the check presentation were Sir Knights from the Grand Commandery of New York: David D. Goodwin, Past Grand Master of the Grand Encampment and Past President and Trustee of the Knights Templar Eye Foundation; Conrad Johnson, Grand Senior Warden; present with Dr. Smith was Hirofumi Morishita, M.D., Ph.D., Preceptor, and Associate Professor, Departments of Ophthalmology, Neuroscience and Psychiatry.

Critical periods are childhood windows of brain plasticity that respond to sensory and social experience to enable development of optimal cognition and behavior. Disruption of critical periods can lead to neurodevelopmental disorders - for example, normal visual processing in the brain can be disrupted by early eye problems such as misalignment of the eyes (“cross eyed”). If caught early, the resulting amblyopia can be corrected and good vision can be restored. However, if the eye alignment is not resolved until after the critical period has closed, the condition becomes permanent impacting 3% of adults.

Discovering drugs that can reactivate critical period plasticity after a critical period has closed would be a boon for treating plasticity-related neurodevelopmental disorders, such as amblyopia. Among hundreds of neural subtypes, this lab has recently identified a single subtype marked by a protein called somatostatin that when transiently activated in adult mice reactivates critical period plasticity.

Inspired by this finding, they are using genetic engineering approaches to grow these somatostatin neurons in a dish with a fluorescent molecule called GCaMP6 that glows brightly green when the neuron becomes active. If successful, this study will set the stage to scale this approach to screen 1000s of drugs for their ability to activate this important neuron type. Positive hits from this screen will be candidate drugs to be tested further for their ability to reactivate plasticity in adult mice and to restore good vision, correcting amblyopia.
A $65,000 grant was awarded to Oliver Voecking, Ph.D., Postdoctoral Research Scholar, at the University of Kentucky, Lexington, Kentucky; the Sir Knights from the Grand Commandery of Kentucky were: J. William Riggs, Grand Commander and William Jackson, Grand Generalissimo

The vertebrate eye is a highly complex organ, made of different functional components. The acuity of vision mainly depends on the well-known neural retina on the one hand and the anterior segment on the other. Even though the latter is critically important, knowledge about its origins and development is still limited. It is known, that a group of cells named periocular mesenchyme (POM) serves as the main source of the anterior segment. However, their understanding of molecular function and processes during POM development is scarce.

Accordingly, diseases associated with anterior segment dysgenesis, like corneal dystrophy, cataracts Axenfeld-Rieger syndrome and several others, have no clear molecular explanation or treatment. So far, the molecular identity of POM can only be characterized by a few marker genes, mainly transcription factors, without knowing much about their actual function during development. One of these transcription factors, known to be crucially important, is Foxc1.

In this study they propose to analyze the development of POM cells in zebrafish, by focusing on the molecular function of Foxc1b. They will characterize its regulation and expression and compare it between different developmental stages. For this, they will generate single-cell transcriptomes, which will also enable them to identify further POM specific genes and even potential interacting partners of Foxc1b. This will drastically increase their understanding of POM development and ultimately help to develop screening for anterior segment associated diseases.
Amblyopia (sometimes called lazy eye) is not as much a disease of the eye but rather a brain disorder that is caused when the part of the brain processing information from one eye fails to develop normally.

There are two basic types of amblyopia, one caused by poor focus and the other caused by misalignment of the two eyes. Without treatment, a child’s motor skills, social interactions, self-image, and school performance are affected by amblyopia. Treatment for amblyopia must begin early in life, before the brain matures and it is no longer possible to regain lost vision.

In this study, they will test and compare three measures of visual function in patients with the two basic types of amblyopia as well as in healthy volunteers. The measures to be tested include contrast sensitivity (like vision on a foggy day), stereoacuity (3-D vision or depth perception), and ocular dominance (which eye is favored by the brain).

Testing will be conducted not just in straight-ahead gaze but also in the peripheral visual field (side vision). They hypothesize that they will discover that the two types of amblyopia have important differences in their responses and that this information will one day allow them to customize treatment to give the best outcome in each type of amblyopia.
Dear Sir Knights,

You have all helped us provide research dollars which have helped develop new, non surgical treatments for strabismus (crossed eyes). Ophthalmologists have told us that our efforts in funding pediatric ophthalmology research have been the primary reason that there are fewer and fewer surgeries for strabismus today.

The Knights Templar Eye Foundation, Inc. is pleased and honored to make this exclusive offer.

First Name: _____________________________________________
Last Name: _____________________________________________
Address: _______________________________________________
City/State/Zip: __________________________________________
Home Phone: ___________________       Cell Phone: ____________
Commandery Affiliation: __________________________________

I would like my donation applied toward:

☐ Tie Only - $25
☐ Tie & Case - $85
☐ Knife & Case - $100

Total enclosed: $ ___________________

MAIL TO:
Knights Templar Eye Foundation, Inc.
1033 Long Prairie Road, Suite 5
Flower Mound, TX 75022
The Mission

The mission of the Knights Templar Eye Foundation, Inc., is “to improve vision through research, education, and supporting access to care.”

To that end, the Knights Templar Eye Foundation, Inc., annually announces its call for research grant applications. The Foundation invites eligible investigators to submit applications for pediatric ophthalmology research grants for the award period which normally runs from July 1 to June 30.

From the applications received, the Scientific Advisory Committee recommends to the trustees which requests should be funded.