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Message from the President

Dear Friends:

2017 was a challenging year for everyone, and The Glaucoma Foundation was certainly not immune to the meaningful economic uncertainties we were all presented. However, as the year ended, we were able to cite meaningful and measurable accomplishments in all key areas.

Our mission continues to embrace the funding of cutting-edge research that is being performed around the world by the best and the most talented investigators. They each offer a vision coupled with an idea, that if validated and achieved, may stand to make a meaningful difference in the diseases that we call glaucoma.

The second component of our core purpose is to provide educational outreach to all, relative to proper eye care and awareness about glaucoma. As we all understand, proper and timely diagnosis is essential to arresting the progress of this disease. We are continually reminded that our efforts have made a huge impact on behalf of the populations of the world.

During the year 2017, we hosted an award-worthy 24th Annual International Think Tank in New York City. Forty eight participants from around the world gathered to address: “EXFOLIATION SYNDROME: ADVANCING TO MOLECULAR THERAPY.”

Enormous positive progress was demonstrated throughout the session, with the hope being that the same exciting report will be forthcoming from the 25th Annual Think Tank that will be held in June, 2018 once more in New York City.

We are very proud of our Foundation and its accomplishments. We are also extremely excited about the future service that will be provided to all of our constituencies. We thank you for your support of and interest in The Glaucoma Foundation. You and we, as partners, can make a significant difference to the world in which we operate.

Scott R. Christensen
President
Chief Executive Officer
Board of Directors

Gregory K. Harmon, MD
Chairman
New York, NY

Robert Ritch, MD
Medical Director, Vice President, Secretary & Founder
The New York Eye & Ear Infirmary
New York, NY

William C. Baker
New York, NY

Salvatore P. Ciampo
Albert Einstein School of Medicine
Bronx, NY

Joseph M. Cohen
J.M. Cohen & Company
New York, NY

James P. Digan
Columbus, Ohio

David Fellows
NightstaRx
London, UK

Murray Fingeret, OD
SUNY College of Optometry
Hewlett, NY

Barry S. Friedberg
FriedbergMilstein, LLC
New York, NY

Ilene Giaquinta
New York, NY

Gerald Kaiser, Esq
Huntington, NY

Paul L. Kaufman, MD
University of Wisconsin-Madison
Madison, WI

Jeffrey M. Liebmann, MD
Columbia University Medical Center
New York, NY

Kumar Mahadeva
Greenwich, CT

Kenneth Mortenson
New York, NY

Louis Pasquale, MD, FARVO
Massachusetts Eye & Ear Infirmary
Boston, MA

Sheldon M. Siegel
Boca Raton, FL

Mary Jane Voelker
Pueblo, CO

Irving Wolbrom
New York, NY

Allergan plc
Karen Ling
Madison, NJ
Scientific Advisory Board

Robert Ritch, MD
Co-Chairman
Medical Director, T.G.F.
Shelley and Steven Einhorn
Distinguished Chair, Professor of Ophthalmology
Chief, Glaucoma Services
Surgeon Director
New York Eye & Ear Infirmary

Louis Pasquale, MD, FARVO
Co-Chairman
Professor of Ophthalmology
Harvard Medical School
Director, Glaucoma Service
Massachusetts Eye & Ear Infirmary

Michael Anderson, PhD
Professor
Department of Molecular Physiology and Biophysics
Carver College of Medicine, Iowa Glaucoma Center

Louis Aung, MMed, FRCS, FRCOphth, FAMS, PhD
Deputy Medical Director (Research) and Senior Consultant
Singapore National Eye Centre

Simon John, PhD
Principal Investigator
Howard Hughes Medical Institute
The Jackson Laboratory

Paul L. Kaufman, MD
Ernst H. Bárány Professor of Ocular Pharmacology
Department Chair Emeritus
Department of Ophthalmology & Visual Sciences
School of Medicine & Public Health
University of Wisconsin-Madison

Jonathan G. Crowston, BSc, MBBS, PhD, FRCOphth,
Ringland Anderson Professor of Ophthalmology
University of Melbourne
Director
Centre for Eye Research Australia

Richard K. Lee, MD, PhD
Walter G. Ross Distinguished Chair in Ophthalmic Research
University of Miami Miller School of Medicine

Jeffrey M. Liebmann, MD
Shirlee and Bernard Brown Professor of Ophthalmology
Vice Chair, Department of Ophthalmology
Director, Glaucoma Service
Harkness Eye Institute
Columbia University Medical Center

Yutao Liu, MD, PhD
Associate Professor
Cellular Biology & Anatomy
Graduate Studies
Augusta University

Carlo D. Montemagno, PhD
Chancellor
Southern Illinois University

Robert Nickells, PhD
Professor
Department of Ophthalmology & Visual Science
University of Wisconsin Medical School

Colm O’Brien, FRCS, MD
Professor of Ophthalmology
Mater Misericordiae University Hospital
Ireland

Abbot Clark, PhD
Executive Director
North Texas Eye Research Institute
University of North Texas Health Science Center

Miguel Coca-Prados, PhD
Professor (Adjunct) of Ophthalmology
Department of Ophthalmology and Visual Sciences
Yale University School of Medicine

Jeffrey L. Goldberg, MD, PhD
Professor and Chair, Department of Ophthalmology
Byers Eye Institute at Stanford University

Neeru Gupta, MD, PhD
Professor and Dorothy Pitts Chair Chief of Glaucoma
University of Toronto, Canada
Director, Roy Ross and Family Glaucoma Laboratory
Keenan Research Centre for Biomedical Science
Li Ka Shing Knowledge Institute
St. Michael’s Hospital, Canada

Michael Hauser, PhD
Professor of Medicine and Ophthalmology
Duke University Medical Center

Uday B. Kompella, PhD
Professor
Department of Pharmaceutical Sciences
University of Colorado Denver

John Danias, MD, PhD
Professor and Interim Chair
Department of Ophthalmology
State University of New York - Downstate

John H. Fingert, MD, PhD, FARVO
Hadley-Carver Chair in Glaucoma Professor
Department of Ophthalmology and Visual Sciences
Carver College of Medicine, University of Iowa

Terete Borrás, PhD
Professor of Ophthalmology
University of North Carolina School of Medicine

Yutao Liu, MD, PhD
Associate Professor
Cellular Biology & Anatomy
Graduate Studies
Augusta University

Carlo D. Montemagno, PhD
Chancellor
Southern Illinois University

Robert Nickells, PhD
Professor
Department of Ophthalmology & Visual Science
University of Wisconsin Medical School

Colm O’Brien, FRCS, MD
Professor of Ophthalmology
Mater Misericordiae University Hospital
Ireland
Dieter Reinhardt, PhD
Professor and Canada Research Chair in Cell-Matrix Biology
Faculty of Medicine
Department of Anatomy and Cell Biology
McGill University
Canada

Julia E. Richards, PhD
Harold F. Falls Professor of Ophthalmology & Visual Sciences
Professor of Epidemiology
University of Michigan
W.K. Kellogg Eye Center

Ursula Schlötzer-Schrehardt, PhD
Professor
Department of Ophthalmology
University of Erlangen-Nurnberg
Germany

Joel S. Schuman, MD, FACS
Professor and Chairman of Ophthalmology
NYU Langone Health
NYU School of Medicine
Professor of Neuroscience and Physiology
NYU Neuroscience Institute
Professor of Neural Science Center for Neural Science
Bellevue Hospital Center

Ernst Tamm, MD, FARVO
Professor and Chairman
Institute of Human Anatomy & Embryology
University of Regensburg
Germany

Gülgün Tezel, MD
Professor
Harkness Eye Institute
Columbia University Medical Center

Robert N. Weinreb, MD
Distinguished Professor of Ophthalmology
Chairman, Department of Ophthalmology
Director, Shiley Eye Center
Director, Hamilton Glaucoma Center
Morris Gleich Chair
University of California San Diego

M. Roy Wilson, MD, MS
President
Wayne State University

Barbara Wirostko, MD
Clinical Adjunct Associate Professor
Moran Eye Center
University of Utah

Ting Xie, PhD
Investigator and Professor
The Stowers Institute for Medical Research
Department of Anatomy and Cell Biology
University of Kansas Medical Center

INDUSTRY LIAISONS:

Baldo Scassellati Sforzolini, MD, PhD, MBA
Senior Vice President, Clinical Development
Allergan, Inc.
2017 RESEARCH GRANTS

John H. Fingert, MD, PhD
Carver College of Medicine, University of Iowa

The Role of Autophagy and Mitochondrial Dysfunction in the Pathogenesis of Exfoliation Glaucoma

Exfoliation syndrome and exfoliation glaucoma at their core are caused by defects in cellular processes. Preliminary studies have suggested that abnormalities in the processes that cells use to eliminate waste products (autophagy) and by which cells produce energy in their mitochondria may be culprits in exfoliation syndrome. This study will comprehensively test a panel of cell lines from exfoliation patients and control subjects for abnormalities to determine if these cellular processes are involved in exfoliation glaucoma.

Pedro Gonzalez, PhD
Duke University

Optimization of a Cell Culture Model for Pseudoexfilation Syndrome

Currently there is limited information about the mechanisms leading to the production of exfoliation material and no specific treatment to prevent its accumulation in the eye. A major limitation is the lack of experimental models in which to identify treatments to inhibit the production of exfoliation material. The potential of using induced pluripotent stem cells from exfoliation donors to generate a cell culture model for the disease is being investigated. Preliminary results show that under certain conditions it is possible to replicate the formation of a material similar to that observed in the tissue of exfoliation patients. The objective is to validate this cell culture model for exfoliation syndrome, which would open new avenues to understand the disease and develop treatments.

Simon Kaja, BSc, PhD
Edward Hines Jr Veterans Administration Hospital

Lysyl Oxidase-Like 1 (Loxl1) Dysregulation Promotes Reactive Astrocytosis by Altering Calcium Signaling in Optic Nerve Head Astrocytes

Genetic factors can predispose to exfoliation glaucoma, however, the exact molecular mechanisms leading to the full-blown disease are still unknown. This investigation is studying a novel hypothesis of how an individual’s genetic makeup can cause exfoliation glaucoma. Specifically, the project is studying how genetic factors alter communication within and between cells in the eye. Identifying broken chains in cellular communication can help devise novel therapies for treating exfoliation glaucoma.
Chiea Chuen Khor, MB, BS, DPhil
Genome Institute of Singapore

**Targeted Deep Sequencing of the FLT1 - POMP - SLC46A3 Susceptibility Locus for Exfoliation Syndrome and Exfoliation Glaucoma**

An earlier investigation studied 13,620 XFS patients from 33 countries and identified five new genes contributing to XFS susceptibility. The most significant newly identified loci include a gene encoded for a protein called POMP, which is responsible for ensuring cellular well-being by cleaning up harmful oxidative radicals and degraded proteins. The genetic association mapping to this POMP locus show clear evidence of interaction with geographical latitude, whereby genetic risk conferred increases with distance away from the equator. This grant, utilizing investigators from six countries, will be used to fully sequence this gene locus.

Konstantin Petrukhin, PhD
Columbia University Medical Center

**Development of a Screening System to Identify Treatment Candidates for Exfoliation Glaucoma**

This study’s objective is to identify and characterize inhibitors of the gene that is associated with XFG, LOXL1 (lysyl oxidase-like 1). The overall goal of the proposed study is to develop an assay for LOXL1 modulators and to screen for compounds that inhibit it with the ultimate goal of developing a potent, selective, and non-toxic treatment for exfoliation glaucoma that can be topically administered as eye drops.

Fernando Rodriguez-Pascual, PhD
Centro de Biologia Molecular, Madrid, Spain

**Role of Lysyl Oxidase-Like-1 (LOXL1) Proteolytic Processing in the Development of Pseudoexfoliation Syndrome (PEX)**

Genetic Variations in the LOXL1 gene have been strongly associated with exfoliation syndrome (XFS). The protein product of the LOXL1 gene belongs to a group of enzymes which contributes to building the extracellular matrix (ECM) by promoting the cross-linking of elastin fibers, the ECM scaffold imparting elasticity to animal tissues. LOXL1 must be proteolytically processed in order to fulfill its biological function, but how this process occurs, what cellular enzymes (proteases) are involved, and whether this contributes to XFS disease are not yet known, and are the main questions this research will investigate.
## THE GLAUCOMA FOUNDATION, INC.
### STATEMENT OF FINANCIAL POSITION
#### AT DECEMBER 31, 2017
(With comparative totals at December 31, 2016)

<table>
<thead>
<tr>
<th>Assets</th>
<th>12/31/17</th>
<th>12/31/16 *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>$1,308,832</td>
<td>$1,190,737</td>
</tr>
<tr>
<td>Pledges receivable</td>
<td>334,038</td>
<td>571,930</td>
</tr>
<tr>
<td>Prepaid expenses and other assets</td>
<td>5,199</td>
<td>4,634</td>
</tr>
<tr>
<td>Security deposit</td>
<td>27,796</td>
<td>27,796</td>
</tr>
<tr>
<td>Property and equipment, net (Note 3)</td>
<td>4,401</td>
<td>3,333</td>
</tr>
<tr>
<td>Investments held for endowments (Note 5)</td>
<td>6,121,951</td>
<td>5,283,643</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>$7,802,217</td>
<td>$7,082,073</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities and Net Assets</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liabilities:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable and accrued expenses</td>
<td>$50,534</td>
<td>$58,230</td>
</tr>
<tr>
<td>Grants payable</td>
<td>240,000</td>
<td>117,500</td>
</tr>
<tr>
<td>Deferred rent</td>
<td>9,476</td>
<td>9,482</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>300,010</td>
<td>185,212</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net assets:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unrestricted</td>
<td>721,440</td>
<td>782,566</td>
</tr>
<tr>
<td>Board designated</td>
<td>2,109,535</td>
<td>1,738,839</td>
</tr>
<tr>
<td><strong>Total unrestricted net assets</strong></td>
<td>2,830,975</td>
<td>2,521,405</td>
</tr>
</tbody>
</table>

| Temporarily restricted (Note 4)    | 3,151,145   | 2,875,419   |
| Permanently restricted (Note 5)    | 1,520,087   | 1,500,037   |
| **Total net assets**               | 7,502,207   | 6,896,861   |

| **Total liabilities and net assets** | $7,802,217 | $7,082,073 |

*Reclassified for comparative purposes
## THE GLAUCOMA FOUNDATION, INC.
### STATEMENT OF ACTIVITIES
#### FOR THE YEAR ENDED DECEMBER 31, 2017
(With comparative totals for the year ended December 31, 2016)

<table>
<thead>
<tr>
<th></th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total 12/31/17</th>
<th>Total 12/31/16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support and revenue:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions</td>
<td>$940,352</td>
<td>$20,050</td>
<td>$960,402</td>
<td>$1,712,592</td>
<td></td>
</tr>
<tr>
<td>Special event income (net expenses with a direct benefit to donor (Note 6))</td>
<td>57,000</td>
<td>57,000</td>
<td>133,880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest income</td>
<td>6,566</td>
<td></td>
<td>6,566</td>
<td>1,303</td>
<td></td>
</tr>
<tr>
<td>Net assets released from restrictions</td>
<td>524,596</td>
<td>($524,596)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total support and revenue</strong></td>
<td>1,528,514</td>
<td>(524,596)</td>
<td>20,050</td>
<td>1,023,968</td>
<td>1,847,775</td>
</tr>
<tr>
<td><strong>Expenses:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program services</td>
<td>1,210,934</td>
<td></td>
<td></td>
<td>1,210,934</td>
<td>1,104,452</td>
</tr>
<tr>
<td>Supporting services:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management and general</td>
<td>114,505</td>
<td></td>
<td></td>
<td>114,505</td>
<td>106,019</td>
</tr>
<tr>
<td>Fundraising</td>
<td>185,772</td>
<td></td>
<td></td>
<td>185,772</td>
<td>167,172</td>
</tr>
<tr>
<td><strong>Total supporting services</strong></td>
<td>300,277</td>
<td>0</td>
<td>0</td>
<td>300,277</td>
<td>273,191</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td>1,511,211</td>
<td>0</td>
<td>0</td>
<td>1,511,211</td>
<td>1,377,643</td>
</tr>
<tr>
<td><strong>Change in net assets from operating activities</strong></td>
<td>17,303</td>
<td>(524,596)</td>
<td>20,050</td>
<td>(487,243)</td>
<td>470,132</td>
</tr>
<tr>
<td><strong>Non-operating activities:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment income (Note 5)</td>
<td>292,267</td>
<td>800,322</td>
<td></td>
<td>1,092,589</td>
<td>598,158</td>
</tr>
<tr>
<td><strong>Total non-operating activities</strong></td>
<td>292,267</td>
<td>800,322</td>
<td>0</td>
<td>1,092,589</td>
<td>598,158</td>
</tr>
<tr>
<td><strong>Change in net assets</strong></td>
<td>309,570</td>
<td>275,726</td>
<td>20,050</td>
<td>605,346</td>
<td>1,068,290</td>
</tr>
<tr>
<td><strong>Net assets - beginning of year</strong></td>
<td>2,521,405</td>
<td>2,875,419</td>
<td>1,500,037</td>
<td>6,896,861</td>
<td>5,828,571</td>
</tr>
<tr>
<td><strong>Net assets - end of year</strong></td>
<td>$2,830,975</td>
<td>$3,151,145</td>
<td>$1,520,087</td>
<td>$7,502,207</td>
<td>$6,896,861</td>
</tr>
</tbody>
</table>