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VOLUME CXX

One Hundred and Fifty-Eighth Annual Meeting

PUBLISHED FOR THE AMERICAN OPHTHALMOLOGICAL SOCIETY

THE BROADMOOR
COLORADO SPRINGS, COLORADO
2022

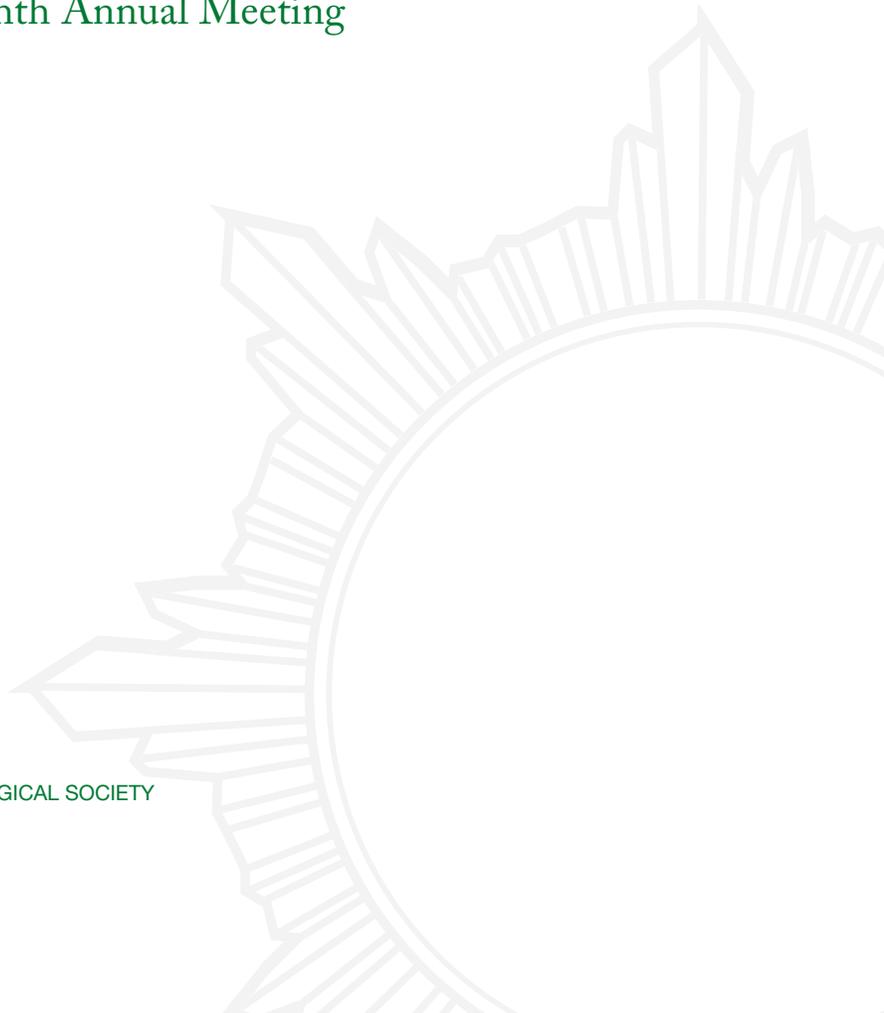


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May 19-21, 2022

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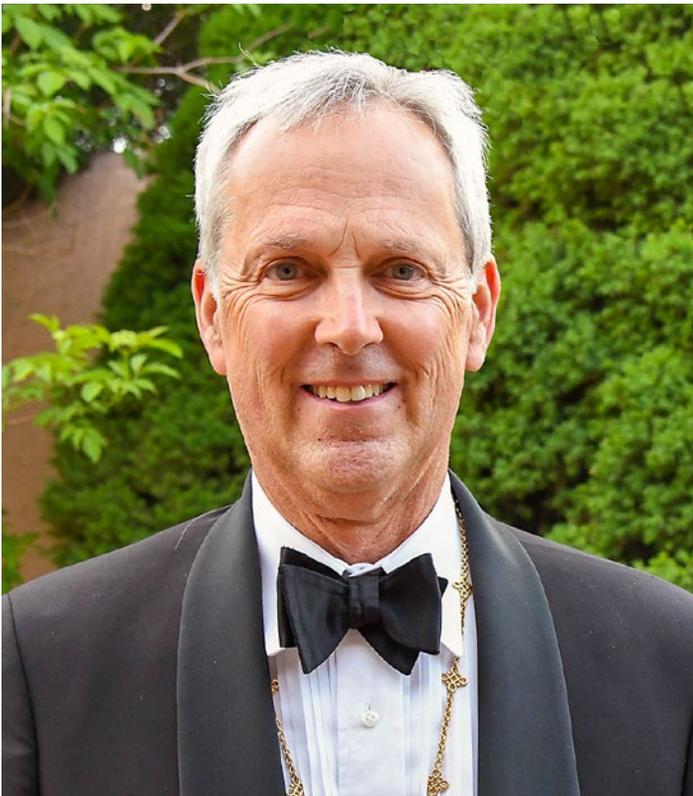
HANS E. GROSSNIKLAUS

EXECUTIVE VICE PRESIDENT AND EDITOR, TAOS

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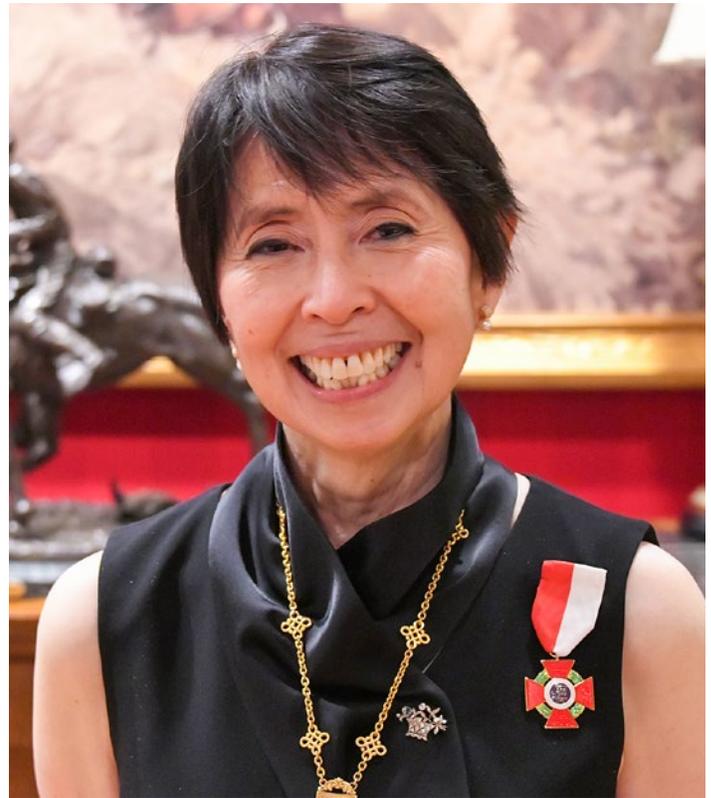
1864-1868 ... DR. EDWARD DELAFIELD, New York, NY
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Elner, Susan (2002)
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Gamm, David (2019)
Gardner, Thomas (1995)
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Gelender, Henry (2006)
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Gragoudas, Evangelos (1998)
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Grossniklaus, Hans (1998)
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Haller, Julia (1996)
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Holland, Gary (2007)
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Kaushal, Shalesh (2006)
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Kinyoun, James (2008)
Koch, Douglas (1996)
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Kuppermann, Baruch (2014)
Lai, Timothy (2015)
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Levin, Leonard (2007)
Lietman, Thomas (2020)
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Lim, Michelle (2020)
Lin, Shan (2016)
Lisch, Walter (2016)
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Lueder, Gregg (2012)
Macasai, Marion (2008)
Manche, Edward (2011)
Mannis, Mark (2000)
Mansberger, Steven (2013)
McCannel, Colin (2017)
McCulley, James (1990)
McCulley, Timothy J. (2013)
McDonald, Marguerite (2005)
McLeod, Stephen (2006)
Merriam, John (1996)
Mian, Shazhad (2015)
Mieler, William (1997)
Miller, Joan (2008)
Miller, Joseph (2010)
Milman, Tatyana (2019)
Morrison, John (2006)
Netland, Peter (2009)
Newman, Steven (2007)
Nguyen, Quan (2016)
Nischal, Kanwal (2016)
Nork, T. Michael (2000)
Nouri-Mahdavi, Kouros (2019)
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Parke II, David (2007)
Parsa, Cameron (2013)
Parver, Leonard (2000)
Pasquale, Louis (2013)
Paysse, Evelyn (2004)
Pepose, Jay (2011)
Perez Quinones, Victor (2022)
Pulido, Jose (1996)
Puro, Donald (2002)
Ramulu, Pradeep (2021)
Rapuano, Christopher (2003)
Reynolds, James (2007)
Rocha, Karolinne (2020)
Rosa, Robert (2022)
Rosen, Richard (2019)
Rush, Ryan (2022)
Sadda, Srinivas (2020)
Sadun, Alfredo (1998)
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Sarraf, David (2014)
Schanzlin, David (1999)
Schein, Oliver (2000)
Schmidt-Erfurth, Ursula (2020)
Schubert, Hermann (2005)
Schuman, Joel (2008)
Schwab, Ivan (1999)
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Scott, Ingrid (2022)
Sears, Jonathan (2013)
Sebag, Jerry (2005)
Seddon, Johanna (2019)
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Shields, Carol (2000)
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Siatkowski, R. Michael (2011)
Siegfried, Carla (2019)
Silkiss, Rona (2016)
Simon, John (2007)
Singh, Arun (2022)
Skuta, Gregory (2022)
Slakter, Jason (2015)
Small, Kent (1998)
Smith, Justine (2018)
Sobrin, Lucia (2021)
Souied, Eric (2020)
Spaide, Richard (2019)
Spencer, Rand (2006)
Stager Jr., David (2013)

Stamper, Robert (1984)
Stein, Joshua (2013)
Stewart, Michael (2019)
Stone, Edwin (2003)
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Suh, Donny (2021)
Tao, Jeremiah (2021)
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Traverso, Carlo (2017)
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Tsang, Stephen (2014)

Tse, David (2005)
Tyschen, R. Lawrence (2007)
Vajaranant, Thasarat (2019)
VanderVeen, Deborah (2022)
Van Gelder, Russell (2021)
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Van Meter, Woodford (1996)
Volpe, Nicholas (2015)
Wallace, David (2007)
Walton, David (1979)
Waring, IV, George (2021)
Weakley Jr., David (1999)
Weinreb, Robert (2001)
Weisenthal, Robert (2021)

Weiss, Jayne (2007)
Wiggs, Janey (2014)
Wilson, David (2002)
Wilson, M. Roy (2002)
Wilson, Steven (2002)
Wilson Jr., M. Edward (2004)
Wladis, Edward (2019)
Wong, Tien (2019)
Yannuzzi, Lawrence (1986)
Young, Terri (2004)
Zacks, David (2009)
Zarbin, Marco (2003)

EMERITUS MEMBERS 2022

Aaberg, Thomas (1986)
Albert, Daniel (1979)
Anderson, Douglas (1981)
Anderson Jr., W. Banks (1968)
Augsburger, James (1988)
Berler, David (1989)
Biglan, Albert (1990)
Blair, Norman (2000)
Bourne, William (1983)
Bronson, Nathaniel (1972)
Brown, Gary (1999)
Bullock, John (1983)
Burton, Thomas (1982)
Carr, Ronald (1974)
Caldwell, Delmar (1997)
Clarkson, John (1992)
Coleman, D. Jackson (1986)
Cooper, William (1985)
Crawford, J. Brooks (1980)
Darrell, Richard (1981)
Dayton, Glenn (1977)
Donshik, Peter (1994)
Ellis, Phillip (1971)
Erie, Jay (2003)
Farris, R. Linsy (1985)
Federman, Jay (1982)
Feldon, Steven (2004)
Feman, Stephen (1994)
Flach, Allan (1998)
Flanagan, Joseph (1980)
Forbes, Max (1974)
Forster, Richard (1992)
Foster, C. Stephen (1986)
France, Thomas (1984)
Frank, Robert (1998)
Fraunfelder, Frederick (1976)

Gaasterland, Douglas (1986)
Glew, William (1979)
Godfrey, William (1987)
Goldberg, Morton (1978)
Gottsch, John (1996)
Gutman, Froncie (1979)
Guyton, David (1986)
Hagler, William (1980)
Harris, Gerald (1993)
Heckelively, John (1987)
Helveston, Eugene (1980)
Holland, Edward (1996)
Hull, David (1990)
Hyndiuk, Robert (1981)
Iloff, W. Jackson (1985)
Ing, Malcolm (1981)
Irvine, Alexander (1980)
Jampol, Lee (1987)
Jarrett, William (1981)
Jones, Dan (1980)
Kass, Michael (1989)
Kaufman, Paul (1990)
Kelley, James (1983)
Kenyon, Kenneth (1985)
Klein, Barbara (1993)
Kreiger, Allan (1991)
Laibson, Peter (1976)
Lakhanpal, Vinod (1993)
Landers III, Maurice (1978)
Lawwill, Theodore (1982)
Lemp, Michael (1989)
L'Esperance Jr., Francis (1968)
Lewis, Richard Alan (1989)
Lichter, Paul (1976)
Liesegang, Thomas (1988)
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Little, Hunter (1976)
Liu, Donald (2005)
Manchester Jr., P. Thomas (1970)
Maumenee, Irene (1981)
Mazow, Malcolm (1987)
McMeel, J. Wallace (1971)
Meredith, Travis (1993)
Mets, Marilyn (1999)
Metz, Henry (1983)
Meyer, Roger (1986)
Meyers, Sanford (1994)
Minckler, Donald (1986)
Mindel, Joel (1986)
Miranda, Manuel (1979)
Mitchell, Paul (1998)
Nelson, J. Daniel (1995)
Nirankari, Verinder (1992)
O'Neill, John (1998)
Parrish II, Richard (1996)
Payne, John (1980)
Pollard, Zane (1997)
Raab, Edward (1982)
Rao, Narsing (1990)
Ravin, James (2008)
Rich, Larry (1999)
Richards, Richard (1966)
Ritch, Robert (1994)
Robb, Richard (1974)
Robertson, Dennis (1978)
Robin, Alan (1989)
Rogers, Gary (2003)
Runge, Paul (2000)
Schaefer, Daniel (2007)
Schocket, Stanley (1986)
Schultz, Richard (1971)
Sears, Marvin (1973)

Sergott, Robert (1991)
Sherwood, Mark (2006)
Shields, Jerry (1981)
Shields, M. Bruce (1983)
Sieving, Paul (1993)
Sommer, Alfred (1983)
Spaeth, George (1975)
Spivey, Bruce (1976)
Srinivasan, B. Dobl (1982)
Stager Sr., David (1996)
Stark, Walter (1980)
Straatsma, Bradley (1968)
Sugar, Alan (1989)
Summers, C. Gail (1996)
Taylor, Daniel (1972)
Taylor, Hugh (1989)
Thompson, H. Stanley (1977)
Townsend, William (1991)
Tso, Mark (1987)
Van Buskirk, E. Michael (1988)
Van Newkirk, Mylan (1997)
Veronneau-Troutman, Suzanne (1978)
Vine, Andrew (2000)
Waller, Robert (1982)
Waltman, Stephen (1984)
Watzke, Robert (1968)
Wilensky, Jacob (1991)
Wilhelmus, Kirk (2000)
Wilkinson, Charles (1981)
Wilson, R. Sloan (1983)
Wong, Vernon (1972)
Woog, John (2007)
Yanoff, Myron (1975)
Yeatts, R. Patrick (2005)
Younge, Brian (1984)

MINUTES OF THE PROCEEDINGS

ONE HUNDRED AND FIFTY-EIGHTH ANNUAL MEETING

MAY 19-21, 2022

THE ONE HUNDRED AND FIFTY-EIGHTH ANNUAL MEETING OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY (AOS) WAS HELD AT THE BROADMOOR IN COLORADO SPRINGS, COLORADO.

On May 19, 2022, Thursday, **President Anne L. Coleman, MD** called the opening session to order. The program began with the following Thursday sessions.

SCIENTIFIC PAPER SESSION I: THURSDAY, MAY 19, 2022

1. Improved Ocular Survival and Visual Function using Neo-adjuvant Immunotherapy and Targeted Biologic Therapy in Patients with Locally Advanced Periocular Cancer
Bita Esmaeli, Jiawae Zhao, Jeremy Goldfarb
2. Cost-effectiveness of Artificial Intelligence Systems versus Specialist Referral for Diabetic Retinopathy Screening: The Impact of Anti-VEGF Therapy Selection
Harshvardhan Chawla, Joshua H. Uhr, Jonathan S. Williams, Maria A. Reinoso, Jayne S. Weiss
3. Correlation between Annual Changes in Clinical versus Functional and Quality of Life Measures in Patients with Moderate-stage Glaucoma
George L. Spaeth, Eric Shiuey, Benjamin E. Leiby, Sheryl S. Wisov, Carina Sanvincente, Michael Waisbourd
4. Stand-alone Xen Gel Microstent Transscleral Implantation Compared with Stand-alone Kahook Dual Blade Goniotomy
Peter Netland, Ryan Duong, Andrew Pittner, Tina Roa, Arjun Dirghangi
5. Outcomes of Cataract Surgery in Children 7 to 18 Years of Age
M. Edward Wilson, Rupal Trivdeni, Anastasia Alex, Alaa Alsuradi
6. Development and Validation of the "Optic Disc Edema Index" to Distinguish Papilledema from Pseudopapilledema
Sean Donahue, Alexis Flowers, Reid Longmuir, Cindy Chen
7. Visual Field Changes in Thyroid Eye Disease-compressive Optic Neuropathy
Suzanne Freitag

MARILYN T. MILLER LECTURE: FRIDAY, MAY 20, 2022

NEI: Past, Present, and Future
Michael F. Chiang, MD, MA

KNAPP SYMPOSIUM: THE NEW NORMAL OF GENETICS IN OPHTHALMOLOGY

1. Introduction – **Peter A. Netland, MD**
2. Gene Therapy – **Edwin M. Stone, MD, PhD**
3. Gene-based Approaches to AMD – **Bradley D. Gelfand, PhD**
4. Gene-directed Therapy – **John H. Fingert, MD, PhD, FARVO**
5. Genetics in Glaucoma – **Janey L. Wiggs, MD, PhD**
6. Epigenetic Therapy – **Cheryl Y. Gregory-Evans, PhD**
7. Gene-based Prognosis and Beyond in Ocular Oncology – **J. William Harbour, MD**

SCIENTIFIC PAPER SESSION II: FRIDAY, MAY 20, 2022

1. Gene Therapy Rescues Cone Function in Rhesus Macaques with PDE6C-associated Achromatopsia
J. Timothy Stout, Rui Chen, Jeffrey Rogers, Tawfik Issa, Antonio Lopex, Sangwa Park, Eliza Bliss-Moreau, Sara Thomasy, Ala Moshiri
2. Regional Scleral Thickness as a Risk Factor for Central Serous Choroidopathy
Richard Spaide, Yale Fisher, Wei Kiong Ngo, Irene Barbazetto



2022 Marilyn T. Miller Lecturer Michael F. Chiang, MD, MA, Director, National Eye Institute

- Dynamic Microvascular Imaging using OCT Angiography (OCT-A) and Adaptive Optics SLO (AOSLO) – New Tools for Objective Assessment of Sickle Cell Disease Severity and Response to Treatment

Richard Rosen, Davis B. Zhou, Maria Castanos Toral, Alexander Pinhas, Peter Gillette, Justin V. Migacz, Rishard Weitz, Jeffrey Glassberg, Alfredo Dubra, Toco Chui

- 2-year Results from the Phase 3 Yosemite and Rhine Trials: Efficacy, Durability, and Safety of Faricimab in Diabetic Macular Edema

Jennifer Lim, John A. Wells, David A. Eichenbaum, Carl Danzig, Kemal Asik, Zdenka Haskova, Shaun Mohan, David Silverman, Yannan Tang, Hugh Lin

- Aflibercept and Dexamethasone Combination Therapy using Sustained Drug Delivery System

Jennifer Kang-Mieler, Kayla Rudeen, Wenqiang Liu, **William Mieler**

- Association between Dysfunctional Complement Factor I (CFI) Rare Variant Status and Progression to Advanced Age-related Macular Degeneration

Johanna Seddon, Bernard Rosner

- Characterization of Disease Progression in Geographic Atrophy (GA) based on Manual and Automated Quantification of RPE and Photoreceptor Loss on OCT

Ursula Schmidt-Erfurth, Julia Mai, Sophie Riedl, Wolf-Dieter Vogl, Dimitrii Lachinov, Gregor Reiter, Hrvoje Bogunovic

LUNCH SESSION: THE 1918 FLU PANDEMIC, 2020 COVID PANDEMIC, AND THE AOS

Daniel M. Albert, MD, Hans E. Grossniklaus, MD, MBA

EIGHTH ANNUAL ARTISTIC SOIREE, MAY 20, 2022

EXECUTIVE SESSION:

SATURDAY, MAY 21, 2022

FREDERICK H. VERHOEFF LECTURE:

SATURDAY, MAY 21, 2022

From Academia to Social Media: My Journey into Artificial Intelligence and Machine Learning

Kristin E. Lauter, PhD

SATURDAY SYMPOSIUM:

CODE TO CLINIC: AN INSIDER'S UPDATE ON THE PROMISE & CHALLENGE OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

- Introduction – **Julia A. Haller, MD, Emily Y. Chew, MD**
- Building & Translating AI for Healthcare – *Lily Peng, MD, PhD*
- Reimagined Regulatory Paradigm for High-quality Digital Health Innovation – *Malvina B. Eydelman, MD*
- Autonomous Glaucoma Detection – News from the Collaborative Community for Ophthalmic Imagine – **Joel S. Schuman, MD, FACS**
- The Moorfields-Google Deepmind Collaboration – Going from Code to Clinic – *Pearse A. Keane, MD, FRCOphth*



May snowstorm, The Broadmoor, Colorado Springs, CO

SCIENTIFIC PAPER SESSION III:

SATURDAY, MAY 21, 2022

- A Convolutional Neural Network for OCT-based Detection of Keratoconus and Fuch's Endothelial Dystrophy
David Huang, Elias Pavlatos, Yan Li, Winston Chamberlain
- In Vivo Determination of the Human Corneal Elastic Modulus by VOCT
Zeba Syed, Marcos Crespo, Hiram Jiminez, Dominick Benedetto, Jose Pulido, Tanmay Deshmukh, Christopher Rapuano, Fred Silver
- Remission of Non-infectious Anterior Scleritis: Incidence and Predictive Factors
John Kempen, Maxwell Pistilli, Nirali Bhatt, **C. Stephen Foster**, **Douglas Jabs**, Grace Levy-Clarke, James Rosenbaum, **H. Nida Sen**, Eric Suhler, Jennifer Thorne
- Long Term Study of Topical Interferon A-2B Eye Drops as Primary Treatment of Ocular Surface Squamous Neoplasia
Carol Karp, Wathanee Sripawadkul, Daniela Reyes-Capo, Adam Wylegala, Ghada AlBayyat, **Anat Galor**
- Static and Dynamic Factors Associated with Extended Depth of Focus in Monofocal Intraocular Lenses
Karolinne M. Rocha, Larissa Gouvea, **George O. Waring, IV**, Jorge Haddad
- Vitrectomy Improves Contrast Sensitivity in Multifocal Pseudophakia
J. Sebag, Justin Nguyen
- Large Diameter Lamellar Keratoplasty with and without Endothelial Transplantation Significantly Improves Long Term Survival of Grafts Performed in Eyes with Herpetic Scars
Angeli Christy Yu, Massimo Busin

AOS MEDAL PRESENTATION, MAY 21, 2022

PAPER AND POSTER ABSTRACTS

PAPER ABSTRACTS

IMPROVED OCULAR SURVIVAL AND VISUAL FUNCTION USING NEO-ADJUVANT IMMUNOTHERAPY AND TARGETED BIOLOGIC THERAPY IN PATIENTS WITH LOCALLY ADVANCED PERIOCCULAR CANCER

Bitá Esmaeli, Jiawae Zhao, Jeremy Goldfarb

COST-EFFECTIVENESS OF ARTIFICIAL INTELLIGENCE SYSTEMS VERSUS SPECIALIST REFERRAL FOR DIABETIC RETINOPATHY SCREENING: THE IMPACT OF ANTI-VEGF THERAPY SELECTION

Harshvardhan Chawla, Joshua H. Uhr, Jonathan S. Williams, Maria A. Reinoso, **Jayne S. Weiss**

CORRELATIONS BETWEEN ANNUAL CHANGES IN CLINICAL VERSUS FUNCTIONAL AND QUALITY OF LIFE MEASURES IN PATIENTS WITH MODERATE-STAGE GLAUCOMA

George L. Spaeth, Eric Shiuey, Benjamin E. Leiby, Sheryl S. Wizov, Carina Sanvincente, Michael Waisbourd

STAND-ALONE XEN GEL MICROSTENT TRANSSCLERAL IMPLANTATION COMPARED WITH STAND-ALONE KAHOOK DUAL BLADE GONIOTOMY

Peter Netland, Ryan Duong, Andrew Pittner, Tina Roa, Arjun Dirghangi

OUTCOMES OF CATARACT SURGERY IN CHILDREN 7 TO 18 YEARS OF AGE

M. Edward Wilson, Rupal Trivedi, Anastasia Alex, Alaa Alsuradi

DEVELOPMENT AND VALIDATION OF THE "OPTIC DISC EDEMA INDEX" TO DISTINGUISH PAPPILLEDEMA FROM PSEUDOPAPPILLEDEMA.

Sean Donahue, Alexis Flowers, Reid Longmuir, Cindy Chen

VISUAL FIELD CHANGES IN THYROID EYE DISEASE-COMPRESSIVE OPTIC NEUROPATHY

Suzanne Freitag

GENE THERAPY RESCUES CONE FUNCTION IN RHESUS MACAQUES WITH PDE6C-ASSOCIATED ACHROMATOPSIA

J. Timothy Stout, Rui Chen, Jeffrey Rogers, Tawfik Issa, Antonio Lopex, Sangwa Park, Eliza Bliss-Moreau, Sara Thomasy, Ala Moshiri

REGIONAL SCLERAL THICKNESS AS A RISK FACTOR FOR CENTRAL SEROUS CHORIORETINOPATHY

Richard Spaide, Yale Fisher, Wei Kiong Ngo, Irene Barbazetto

DYNAMIC MICROVASCULAR IMAGING USING OCT ANGIOGRAPHY (OCT-A) AND ADAPTIVE OPTICS SLO (AOSLO)- NEW TOOLS FOR OBJECTIVE ASSESSMENT OF SICKLE CELL DISEASE SEVERITY AND RESPONSE TO TREATMENT

Richard Rosen, Davis B. Zhou, Maria Castanos Toral, Alexander Pinhas, Peter Gillette, Justin V. Migacz, Rishard Weitz, Jeffrey Glassberg, Alfredo Dubra, Toco Chui

2-YEAR RESULTS FROM THE PHASE 3 YOSEMITE AND RHINE TRIALS: EFFICACY, DURABILITY, AND SAFETY OF FARICIMAB IN DIABETIC MACULAR EDEMA

Jennifer Lim, John A. Wells, David A. Eichenbaum, Carl Danzig, Kemal Asik, Zdenka Haskova, Shaun Mohan, David Silverman, Yannan Tang, Hugh Lin

AFLIBERCEPT AND DEXAMETHASONE COMBINATION THERAPY USING SUSTAINED DRUG DELIVERY SYSTEM

Jennifer Kang-Mieler, Kayla Rudeen, Wenqiang Liu, **William Mieler**

ASSOCIATION BETWEEN DYSFUNCTIONAL COMPLEMENT FACTOR I (CFI) RARE VARIANT STATUS AND PROGRESSION TO ADVANCED AGE-RELATED MACULAR DEGENERATION

Johanna Seddon, Bernard Rosner

CHARACTERIZATION OF DISEASE PROGRESSION IN GEOGRAPHIC ATROPHY (GA) BASED ON MANUAL AND AUTOMATED QUANTIFICATION OF RPE AND PHOTORECEPTOR LOSS ON OCT

Ursula Schmidt-Erfurth, Julia Mai, Sophie Riedl, Wolf-Dieter Vogl, Dmitrii Lachinov, Gregor Reiter, Hrvoje Bogunovic

A CONVOLUTIONAL NEURAL NETWORK FOR OCT-BASED DETECTION OF KERATOCONUS AND FUCH'S ENDOTHELIAL DYSTROPHY

David Huang, Elias Pavlatos, Yan Li, Winston Chamberlain

IN VIVO DETERMINATION OF THE HUMAN CORNEAL ELASTIC MODULUS BY VOCT

Zeba Syed, Marcos Crespo, Hiram Jimenez, Dominick Benedetto, **Jose Pulido**, Tanmay Deshmukh, **Christopher Rapuano**, Fred Silver

REMISSION OF NON-INFECTIOUS ANTERIOR SCLERITIS: INCIDENCE AND PREDICTIVE FACTORS

John Kempen, Maxwell Pistilli, Nirali Bhatt, **C. Stephen Foster**, **Douglas Jabs**, Grace Levy-Clarke, James Rosenbaum, **H. Nida Sen**, Eric Suhler, Jennifer Thorne

LONG TERM STUDY OF TOPICAL INTERFERON A-2B EYE DROPS AS PRIMARY TREATMENT OF OCULAR SURFACE SQUAMOUS NEOPLASIA

Carol Karp, Wathanee Sripawadkul, Daniela Reyes-Capo, Adam Wylegala, Ghada AlBayyat, **Anat Galor**

STATIC AND DYNAMIC FACTORS ASSOCIATED WITH EXTENDED DEPTH OF FOCUS IN MONOFOCAL INTRAOCULAR LENSES

Karolinne M. Rocha, Larissa Gouvea, **George O. Waring, IV**, Jorge Haddad

VITRECTOMY IMPROVES CONTRAST SENSITIVITY IN MULTIFOCAL PSEUDOPHAKIA

J. Sebag, Justin Nguyen

LARGE DIAMETER LAMELLAR KERATOPLASTY WITH AND WITHOUT ENDOTHELIAL TRANSPLANTATION SIGNIFICANTLY IMPROVES LONG TERM SURVIVAL OF GRAFTS PERFORMED IN EYES WITH HERPETIC SCARS

Angeli Christy Yu, **Massimo Busin**

POSTER ABSTRACTS

RESULTS OF COST-FREE PANEL-BASED GENETIC TESTING FOR SUSPECTED INHERITED RETINAL DISEASES IN A PEDIATRIC RETINA CLINIC

Hasenin Al-khersan, Anne Kunkler, Ashley López-Cañizares, Catherin Negron, Kenneth Fan, Nimesh Patel, Carlos Mendoza-Santiesteban, **Audina Berrocal**

VITRECTOMY VERSUS VITRECTOMY WITH SCLERAL BUCKLING IN THE TREATMENT OF GIANT RETINAL TEAR RELATED RETINAL DETACHMENTS: AN INTERNATIONAL MULTICENTER STUDY

J. Fernando Arevalo, Ishrat Ahmed, Abdullmajeed Al-Fakhri, Hamad Al-Subaie, Faisal Al-Qahatani, Sluaiman Alsulaiman, Marco Mura, Mauricio Maia, Dante Akira, Natalia Trench Maia, Maria Berrocal, James Handa

SAFE AND EFFECTIVE COMMUNITY OUTREACH DURING A PANDEMIC: IS IT POSSIBLE?

Janet Coleman-Belin, **Anne Coleman**, Bartly Mondino

PREVALENCE OF THE INFANTILE STRABISMUS COMPLEX IN CHILDREN WITH CEREBRAL VISUAL PATHWAY WHITE MATTER INJURY

Fatema Ghasia, Sangeeta Khanna, Aseem Sharma, **Lawrence Tychsen**

MOVING NEUROPROTECTION BENCH TO CLINIC: UPDATE ON GLAUCOMA CLINICAL TRIAL DATA

Jeffrey Goldberg

INTRAVITREAL PANITUMUMAB FOR PREVENTION OF MYOPIC AXIAL ELONGATION IN HIGHLY MYOPIC ADULT EYES WITH MYOPIC MACULAR DEGENERATION. A CLINICAL PHASE-1 STUDY

Jost B. Jonas, Gyulli M. Kazabbaeva, Frank G. Holz, Songhomitra Panda-Jonas, Leisan Gilemzianova, Mukharram M. Bikbov

THE SOCIOECONOMIC IMPACT OF COVID-19 ON ADULTS WITH SENSORY IMPAIRMENT IN CALIFORNIA

Ken Kitayama, Victoria Tseng, Deyu Pan, Fei Yu, **Anne Coleman**

LASER TREATMENT AFTER MINIMIZED EYE MOVEMENT (LTMEM) FOR REPAIR OF RETINAL DETACHMENT

Gregg Kokame, Sydney Yee, Jase Omizo, Leslie Villanueva, Jonathan Liu

CHESELDEN'S 1728 REPORT OF EYE SURGERY IN THE CONGENITALLY BLIND: NEW INFORMATION.

Christopher Leffler, Stephen Schwartz, Natario Couser, Abdul-Rahman Salman

EXPERIENCES OF GENETIC TESTING AMONG INDIVIDUALS WITH RETINITIS PIGMENTOSA

Alex Levin, Emily Krauss, Jared Macher, Jenina Capasso, Barbara Bernhardt, Zohra Al-Khan Catts, Rachel Brandt

UNDERSTANDING THE EFFECTS OF THREE GLAUCOMA MEDICATIONS ON TRABECULAR MESHWORK PROTEOME

John Lind, Chevy Singh, Avinash Soundararajan, Rekha Sundararajan, **Louis Cantor**, **David Wallace**, Padmanabhan Pattabiraman

TELEMEDICINE LENSOLOGY: DETERMINATION OF SPECTACLE PRESCRIPTION BY ANALYSIS OF CELL PHONE IMAGES OF COINS THROUGH SPECTACLE LENSES.

Joseph Miller, Jim Schwiegerling, Erin Harvey

CYCLIN D1 EXPRESSION AND MOLECULAR GENETIC FINDINGS IN PERIOcular HISTIOCYTIC-DENDRITIC NEOPLASMS

Tatyana Milman, Maya Eiger-Moscovich, Roger Henry, Cristiane Ida

RETURN OF THE KING

Steven Newman

AUTOPTOSIS: INTRODUCING ARTIFICIAL INTELLIGENCE TO THE OCULOFACIAL SURGERY

Pete Setabutr, **Jeremiah Tao**, Darwin Yi, Abdullah Aleem, Manoj Nallabothula, Joelle Hallak

CLOSURE OF MACULAR HOLES WITH TOPICAL THERAPY AND WHY THE HYDRATION THEORY OF MACULAR HOLE FORMATION MAY BE INACCURATE

Kent Small, Jessica Avetisjan, Fadi Shaya

OVERMINUS LENS THERAPY FOR CHILDREN 3 TO 10 YEARS OF AGE WITH INTERMITTENT EXOTROPIA: A RANDOMIZED CLINICAL TRIAL

Donny Suh, PEDIG Members

A DIGITAL MICRO SCREEN FOR THE ENHANCED APPEARANCE OF OCULAR PROSTHETIC MOTILITY

Jeremiah Tao, Emily Charlson, Ian Harris

ASSOCIATION BETWEEN SOCIAL VULNERABILITY SCORES AND GLAUCOMA IN THE CALIFORNIA MEDICARE POPULATION

Victoria Tseng, Ken Kitayama, Deyu Pan, Fei Yu, **Anne Coleman**

COMPUTER VISION SYNDROME (CVS) IN UNDERGRADUATE AND MEDICAL STUDENTS DURING THE COVID-19 PANDEMIC

Catherine Wang, Katherine Joltikov, Sasha Kravets, **Deepak Edward**

CORRELATION OF INTRAOPERATIVE OPTICAL COHERENCE TOMOGRAPHY OF CRYSTALLINE LENS DIAMETER, THICKNESS AND VOLUME WITH BIOMETRY AND AGE

George O. Waring, IV, **Karolinne Rocha**, Larissa Gouvea, Rapheal Penatti

TREATMENT OF SMALL POSTERIOR UVEAL MELANOCYTIC LESIONS

David Wilson

REGISTERED MEMBERS OF THE ANNUAL MEETING

| | | | |
|---|-----------------|---|-----------------|
| Daniel M. Albert, MD | Emeritus Member | Dean P. Hainsworth, MD..... | Active Member |
| J. Fernando Arevalo, MD, PhD, FACS..... | Active Member | Julia A. Haller, MD | Active Member |
| Anthony C. Arnold, MD | Active Member | Dennis P. Han, MD..... | Active Member |
| Dimriti T. Azar, MD | Active Member | Anne Hanneken, MD | Active Member |
| George B. Bartley, MD..... | Active Member | J. William Harbour, MD..... | Active Member |
| J. Bronwyn Bateman, MD | Active Member | Mary Elizabeth Hartnett, MD | Active Member |
| Audina M. Berrocal, MD | Active Member | David Huang, MD, PhD | Active Member |
| Bradley C. Black, MD | Active Member | G. Baker Hubbard, MD..... | Active Member |
| Preston H. Blomquist, MD..... | Active Member | Lee M. Jampol, MD..... | Emeritus Member |
| Michael Brodsky, MD..... | Active Member | Jost B. Jonas, MD, PhD | Active Member |
| Edward G. Buckley, MD..... | Active Member | Carol L. Karp, MD..... | Active Member |
| Clement K. Chan, MD, FACS | Active Member | L. Jay Katz, MD | Active Member |
| R.V. Paul Chan, MD | Active Member | John H. Kempen, MD, MHS, MPH, PhD..... | Active Member |
| Teresa Chen, MD..... | Active Member | Natalie C. Kerr, MD, FACS..... | Active Member |
| Emily Y. Chew, MD..... | Active Member | Judy E. Kim, MD..... | Active Member |
| Michael F. Chiang, MD | Active Member | Gregg T. Kokame, MD | Active Member |
| George A. Cioffi, MD | Active Member | Ronald R. Krueger, MD, MSE..... | Active Member |
| David K. Coats, MD..... | Active Member | Baruch D. Kuppermann, MD, PhD | Active Member |
| Anne L. Coleman, MD | Active Member | Mary G. Lawrence, MD, MPH | Active Member |
| Mary Louise Z. Collins, MD | Active Member | Christopher T. Leffler, MD..... | Active Member |
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| John Danias, MD, PhD | Active Member | Jennifer I. Lim, MD | Active Member |
| Susan H. Day, MD..... | Active Member | Michele C. Lim, MD..... | Active Member |
| Sean P. Donahue, MD, PhD..... | Active Member | Irene H. Ludwig, MD..... | Active Member |
| Raymond S. Douglas, MD, PhD | Active Member | Mark J. Mannis, MD..... | Active Member |
| Ralph C. Eagle, Jr. MD | Active Member | Steven Mansberger, MD..... | Active Member |
| Deepak P. Edward, MD..... | Active Member | James P. McCulley, MD..... | Active Member |
| Bitu Esmaeli, MD, FACS | Active Member | Stephen D. McLeod, MD..... | Active Member |
| Steven E. Feldon, MD..... | Emeritus Member | Marilyn B. Mets, MD..... | Emeritus Member |
| Gary E. Fish, MD | Active Member | William F. Mieler, MD | Active Member |
| Christina Flaxel, MD..... | Active Member | Joan W. Miller, MD..... | Active Member |
| Thomas D. France MD..... | Emeritus Member | Joseph M. Miller, MD, MPH..... | Active Member |
| Frederick T. Fraunfelder, MD | Emeritus Member | Tatyana Milman, MD..... | Active Member |
| Frederick W. Fraunfelder, MD..... | Active Member | Paul R. Mitchell, MD..... | Emeritus Member |
| Suzanne K. Freitag, MD..... | Active Member | Peter A. Netland, MD, PhD..... | Active Member |
| David M. Gamm, MD, PhD..... | Active Member | Steve A. Newman, MD | Active Member |
| Steven J. Gedde, MD | Active Member | Kanwal "Ken" Nischal, FRCOPHTH, MD..... | Active Member |
| Jeffrey L. Goldberg, MD, PhD | Active Member | T. Michael Nork, MD, MS..... | Active Member |
| Hans E. Grossniklaus, MD | Active Member | Kouros Nouri-Mahdavi, MD, MS | Active Member |

Timothy W. Olsen, MD..... Active Member
 Evelyn A. Paysse, MD..... Active Member
 Jose S. Pulido, MD, MS Active Member
 Pradeep Y. Ramulu, MD, PhD..... Active Member
 Alan L. Robin, MD Emeritus Member
 Karolinne Rocha, MD, PhD..... Active Member
 Robert H. Rosa, MD Active Member
 Richard B. Rosen, MD..... Active Member
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 José-Alain Sahel, MD..... Active Member
 Ursula Schmidt-Erfurth, MD, PhD Active Member
 Joel S. Schuman, MD..... Active Member
 Ivan R. Schwab, MD..... Active Member
 Jerry Sebag, MD, FACS, FRCO, FARVO..... Active Member
 Johanna M. Seddon, MD Active Member
 Robert C. Sergott, MD..... Emeritus Member
 Roni M. Shtein, MD..... Active Member
 John W. Simon, MD..... Active Member
 Kent W. Small, MD Active Member
 Alfred Sommer, MD..... Emeritus Member
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 Joshua D. Stein, MD, MS Active Member
 Michael W. Stewart, MD..... Active Member
 Edwin M. Stone, MD, PhD..... Active Member
 J. Timothy Stout, MD, PhD, MBA..... Active Member
 Donny W. Suh, MD Active Member
 Jeremiah P. Tao, FACS, MD Active Member
 Hugh R. Taylor, AC, MD, FRACS..... Emeritus Member
 Mark A. Terry, MD Active Member
 Fotis Topouzis, MD..... Active Member
 Lawrence Tychsens, MD Active Member
 Russell N. Van Gelder, MD, PhD..... Active Member
 Woodford S. Van Meter, MD..... Active Member



New member Ursula M. Schmidt-Erfurth, MD, Vienna, Austria

Nicholas J. Volpe, MD Active Member
 David K. Wallace, MD..... Active Member
 George Waring IV, MD..... Active Member
 Jayne S. Weiss, MD..... Active Member
 Janey L. Wiggs, MD, PhD..... Active Member
 David J. Wilson, MD Active Member
 M. Edward Wilson, Jr. MD..... Active Member
 M. Roy Wilson, MD, MS Active Member
 Edward J. Wladis, MD Active Member
 Terri L. Young, MD, MBA..... Active Member
 Marco A. Zarbin, MD, PhD Active Member

NAMED LECTURES

FREDERICK H. VERHOEFF LECTURERS

| | | | |
|------|---|------|---|
| 1961 | DR. ARTHUR J. BEDELL (Inaugural) | 2003 | DR. THADDEUS P. DRYJA <i>How Molecular Genetics is Lifting the Fog: The Etiology of Retinitis Pigmentosa</i> |
| 1964 | SIR STEWART DUKE-EDLER | | |
| 1969 | DR. DAVID G. COGAN | | |
| 1971 | DR. LORENZ E. ZIMMERMAN | 2010 | DR. ADRIAN GLASSER <i>Physiology of Accommodation and Pathogenesis of Presbyopia</i> |
| 1973 | DR. IRVING H. LEOPOLD | | |
| 1975 | DR. ARTHUR GERARD DEVOE | 2013 | DR. ALFRED SOMMER <i>Preventing Blindness & Child Mortality with Vitamin A: An AOS Odyssey</i> |
| 1977 | PROF. JULES FRANCOIS | | |
| 1979 | DR. SAIICHI MISHIMA | | |
| 1983 | DR. RICHARD W. YOUNG | 2014 | DR. TIMOTHY STOUT <i>The Rocky Road to Successful Human Gene Therapy</i> |
| 1989 | DR. FREDERICK C. BLODI | | |
| 1992 | DR. FRANCIS I. COLLINS | 2019 | DR. MICHAEL TRESE <i>A New Approach to VEGF Driven Retinal Vascular Leakage in Inherited and Acquired Retinal Vascular Disease</i> |
| 1993 | DR. JORAM PIATIGORSKY | | |
| 1997 | DR. GEOFFREY ARDEN | 2022 | KRISTIN E. LAUTER <i>From Academia to Social Media: My Journey into Artificial Intelligence and Machine Learning</i> |
| 2002 | DR. PAUL SIEVING <i>How Many Photoreceptors Do We Need for Vision?</i> | | |

FREDERICK C. BLODI LECTURERS

| | | | |
|------|---|------|--|
| 2015 | DR. TIMOTHY W. OLSEN (Inaugural) <i>The Age-related Macular Degeneration Complex: Linking Epidemiology and Histopathology Using the Minnesota Grading System</i> | 2016 | DR. ELIAS I. TRABOULSI <i>Zonules and Molecules: The Underlying Pathophysiology of Ectopia Lentis</i> |
| | | 2017 | DR. JOSEPH CAPRIOLI <i>Retinal Ganglion Cell Rescue in Glaucoma</i> |

MARILYN T. MILLER LECTURERS

| | |
|------|--|
| 2021 | DR. ANTHONY FAUCI (Inaugural) <i>COVID-19 in 2021: Lessons Learned and Remaining Challenges</i> |
| 2022 | DR. MICHAEL F. CHIANG <i>NEI: Past, Present, and Future</i> |

MEDAL RECIPIENTS

RECIPIENTS OF THE LUCIEN HOWE MEDAL

| | | | |
|------------|---|------------|--|
| 1922 | DR. CARL KOLLER, New York, NY | 1961..... | DR. FREDERICK C. CORDES, San Francisco, CA |
| 1923 | DR. ALEXANDER DUANE, New York, NY | 1962..... | DR. FRANK B. WALSH, Baltimore, MD |
| 1924 | DR ERNEST FUCHS, Vienna, Austria | 1963 | DR. EDWIN B. DUNPHY, Boston, MA |
| 1925 | NO AWARD | 1964 | DR. WILLIAM L. BENEDICT, Rochester, MN |
| 1926 | DR. EDWARD JACKSON, Denver, CO | 1965 | DR. DAVID G. COGAN, Boston, MA |
| 1927 | MR. PRIESTLY SMITH, Birmingham, England | 1966 | DR. DOHRMANN K. PISCHEL, San Francisco, CA |
| 1928 | NO AWARD | 1967 | DR. PAUL A. CHANDLER, Boston, MA |
| 1929 | DR. THEODOR AXENFELD, Freiburg, Germany | 1968 | DR. WALTER MORTON GRANT, Boston, MA |
| 1930 | NO AWARD | 1969 | DR. A. EDWARD MAUMENEE, Baltimore, MD |
| 1931 | NO AWARD | 1970 | DR. PETER C. KRONFELD, Chicago, IL |
| 1932 | DR. F. H. VERHOEFF, Boston, MA | 1971 | DR. C. WILBUR RUCKER, Rochester, MN |
| 1933 | NO AWARD | 1972 | DR. WALTER S. ATKINSON, Watertown, NY |
| 1934 | DR. GEORGE E. DE SCHWEINITZ, Philadelphia, PA | 1973 | DR. GORDON M. BRUCE, Fort Lee, NJ |
| 1935 | NO AWARD | 1974 | DR. IRVING H. LEOPOLD, New York, NY |
| 1936 | SIR JOHN HERBERT PARSONS, London, England | 1975 | DR. MICHAEL J. HOGAN, San Francisco, CA |
| 1937 | DR. ARNOLD KNAPP, New York, NY | 1976 | DR. EDWARD W. D. NORTON, Miami, FL |
| 1938 | NO AWARD | 1977 | DR. KENNETH C. SWAN, Portland, OR |
| 1939 | NO AWARD | 1978 | DR. S. RODMAN IRVINE, Newport Beach, CA |
| 1940 | NO AWARD | 1979 | DR. FRANK W. NEWELL, Chicago, IL |
| 1941 | NO AWARD | 1980 | DR. FREDERICK C. BLODI, Iowa City, IA |
| 1942 | DR. E. V. L. BROWN, Chicago, IL | 1981 | DR. DAVID O. HARRINGTON, San Francisco, CA |
| 1943 | NO AWARD | 1982 | DR. ARTHUR GERARD DEVOE, New York, NY |
| 1944 | NO AWARD | 1983 | DR. J. DONALD M. GASS, Miami, FL |
| 1945 | DR. WALTER B. LANCASTER, Boston, MA | 1984 | DR. HAROLD G. SCHEIE, Philadelphia, PA |
| 1946 | SIR STEWART DUKE-ELDER, London, England | 1985 | DR. ROBERT N. SHAFFER, San Francisco, CA |
| 1947 | DR. LAWRENCE T. POST, St Louis, MO | 1986 | DR. ROBERT W. HOLLENHORST, Rochester, MN |
| 1948 | DR. WILLIAM ZENTMAYER, Philadelphia, PA | 1987 | DR. DUPONT GUERRY III, Richmond, VA |
| 1949 | DR. PHILLIPS THYGESON, San Jose, CA | 1988 | DR. THOMAS D. DUANE, Philadelphia, PA |
| 1950 | DR. ALGERNON B. REESE, New York, NY | 1989 | DR. MARSHALL M. PARKS, Washington, DC |
| 1951..... | DR. JONAS S. FRIEDENWALD, Baltimore, MD | 1990 | DR. DAVID SHOCH, Chicago, IL |
| 1952 | DR. FRANCIS H. ADLER, Philadelphia, PA | 1991 | DR. ARNALL PATZ, Baltimore, MD |
| 1953 | DR. ALAN C. WOODS, Baltimore, MD | 1992 | DR. BRADLEY R. STRAATSMA, Los Angeles, CA |
| 1954 | DR. JOHN H. DUNNINGTON, New York, NY | 1993 | DR. BRUCE E. SPIVEY, San Francisco, CA |
| 1955 | DR. ARTHUR J. BEDELL, Albany, NY | 1994 | DR. THOMAS P. KEARNS, Rochester, MN |
| 1956 | DR. BERNARD SAMUELS, New York, NY | 1995 | DR. WILLIAM H. SPENCER, San Francisco, CA |
| 1957 | DR. GEORGIANA DVORAK-THEOBALD, Oak Park, IL | 1996 | DR. ROBERT MACHEMER, Durham, NC |
| 1958 | DR. IDA C. MANN, Nedlands, Western Australia | 1997 | DR. W. RICHARD GREEN, Baltimore, MD |
| 1959..... | DR. LUDWIG VON SALLMANN, Bethesda, MD | 1998 | DR. ALAN B. SCOTT, San Francisco, CA |
| 1960..... | DR. DERRICK T. VAIL, Chicago, IL | 1999 | DR. LORENZ E. ZIMMERMAN, Washington, DC |

2000 DR. WILLIAM S. TASMAN, Philadelphia, PA
2001 DR. STANLEY M. TRUHLSEN, Omaha, NE
2002 DR. CROWELL BEARD, San Jose, CA
2003 DR. ALFRED SOMMER, Baltimore, MD
2004 DR. ARTHUR JAMPOLSKY, Belvedere, CA
2005 DR. STEPHEN J. RYAN, Los Angeles, CA
2006 DR. MATTHEW D. DAVIS, Madison, WI
2007 DR. DANIEL M. ALBERT, Madison, WI
2008 DR. PAUL R. LICHTER, Ann Arbor, MI
2009 DR. DENIS O'DAY, Nashville, TN

2010 DR. MARILYN T. MILLER, Chicago, IL
2011 DR. ROBERT R. WALLER, Memphis, TN
2012 DR. HUGH R. TAYLOR, Carlton, Australia
2013 DR. DAN B. JONES, Bellaire, TX
2014 DR. MORTON F. GOLDBERG, Baltimore, MD
2015 DR. JOHN G. CLARKSON, Miami, FL
2016 DR. SUSAN H. DAY, Chicago, IL
2017 DR. GEORGE L. SPAETH, Philadelphia, PA
2018 DR. JOAN MILLER, Winchester, MA
2019 DR. JERRY A. SHIELDS, Philadelphia, PA

RECIPIENTS OF THE AOS MEDAL

2020..... NO AWARD
2021..... DR. PETER R. LAIBSON, Philadelphia, PA
2022..... DR. EMILY Y. CHEW, Bethesda, MD



2022 AOS Medalist Emily Y. Chew, MD

2022 THESES PUBLISHED IN THE AJO

Renato Ambrosio, Jr., MD, PhD

OPTIMIZED ARTIFICIAL INTELLIGENCE FOR ENHANCED ECTASIA DETECTION USING SCHEIMPFLUG-BASED CORNEAL TOMOGRAPHY AND BIOMECHANICAL DATA

Winston Chamberlain, MD, PhD

CHANGES IN CORNEAL POWER UP TO 2 YEARS AFTER ENDOTHELIAL KERATOPLASTY: RESULTS FROM THE RANDOMIZED CONTROLLED DESCOMET ENDOTHELIAL THICKNESS COMPARISON TRIAL

Ta Chen Peter Chang, MD

LGBTQ+ IDENTITY AND OPHTHALMOLOGIST BURNOUT

Karl A. Csaky, MD

CROSS-SECTIONAL STUDY OF CONE FUNCTION IN AGE-RELATED MACULAR DEGENERATION SUBJECTS WITH NON-FOVEAL NASCENT GEOGRAPHIC ATROPHY

William J. Foster, MD, PhD, FRCS, ING

COMPUTATIONAL MODELING OF OPHTHALMIC PROCEDURES

Jeffrey L. Goldberg, MD, PhD

CORRIGENDUM TO PHASE 1B RANDOMIZED CONTROLLED STUDY OF SHORT COURSE TOPICAL RECOMBINANT HUMAN NERVE GROWTH FACTOR (RHNGF) FOR NEUROENHANCEMENT IN GLAUCOMA: SAFETY, TOLERABILITY, AND EFFICACY MEASURE OUTCOMES

K. Thiran Jayasundera, MD, FRANZCO, FRCS

CONSTRUCT VALIDITY OF INHERITED RETINAL DISEASE-SPECIFIC PATIENT-REPORTED OUTCOME MEASURES

Ula V. Jurkunas, MD

CULTIVATED AUTOLOGOUS LIMBAL EPITHELIAL CELL TRANSPLANTATION: NEW FRONTIER IN THE TREATMENT OF LIMBAL STEM CELL DEFICIENCY

Victor L. Perez, MD

MEIBOMIAN GLAND DYSFUNCTION: A ROUTE OF OCULAR GRAFT-VERSUS-HOST DISEASE PROGRESSION THAT DRIVES A VICIOUS CYCLE OF OCULAR SURFACE INFLAMMATORY DAMAGE

Robert H. Rosa, MD

INTRAVITREAL ADMINISTRATION OF STANNIOCALCIN-1 RESCUES PHOTORECEPTOR DEGENERATION WITH REDUCED OXIDATIVE STRESS AND INFLAMMATION IN A PORCINE MODEL OF RETINITIS PIGMENTOSA

Ryan B. Rush, MD

GAS TAMPONADE FOR THE PREVENTION OF POSTOPERATIVE VITREOUS HEMORRHAGING AFTER DIABETIC VITRECTOMY: A RANDOMIZED CLINICAL TRIAL

Ingrid U. Scott, MD, MPH

MONTH 60 OUTCOMES AFTER TREATMENT INITIATION WITH ANTI-VASCULAR ENDOTHELIAL GROWTH FACTOR THERAPY FOR MACULAR EDEMA DUE TO CENTRAL RETINAL OR HEMIRETINAL VEIN OCCLUSION

Bhavna P. Sheth, MD, MBA

RELATIONSHIP BETWEEN THE AMERICAN BOARD OF OPHTHALMOLOGY MAINTENANCE OF CERTIFICATION PROGRAM AND ACTIONS AGAINST THE MEDICAL LICENSE

Arun D. Singh, MD

SMALL CHOROIDAL MELANOMA: OUTCOMES AFTER SURVEILLANCE VERSUS IMMEDIATE TREATMENT

Gregory L. Skuta, MD

AN IRIS REGISTRY-BASED ASSESSMENT OF PRIMARY OPENANGLE GLAUCOMA PRACTICE PATTERNS IN ACADEMIC VERSUS NONACADEMIC SETTINGS

Deborah K. VanderVeen, MD

DEVIATIONS FROM AGE-ADJUSTED NORMATIVE BIOMETRY MEASURES IN CHILDREN UNDERGOING CATARACT SURGERY: IMPLICATIONS FOR POSTOPERATIVE TARGET REFRACTION AND IOL POWER SELECTION

REPORTS

REPORT FROM THE EXECUTIVE VICE PRESIDENT & EDITOR

HANS E. GROSSNIKLAUS, MD

The 2020 AOS meeting was canceled due to COVID. The 2021 AOS meeting was held virtually. The venue for the 2020 meeting, Torrey Pines, will be moved to 2024, and the venue for the 2021 meeting, the Ritz Carlton in Naples, Florida, will be moved to 2025. We held a virtual Fall Council meeting on October 2, 2021.

As of March 31, 2022, our assets were approximately the same as the year prior. These assets subsequently decreased due to a downshift in the stock market. We have 388 members, including 250 active members, and 138 emeritus members. The number of candidates for membership has remained steady since 2017, which are approximately 15 to 16 candidates per year. We sponsor 7 Council/Knapp travel grants and 3 CES travel grants annually. We also sponsor the Verhoeff and other named lectures, as well as non members invited as symposium speakers. We also help sponsor the Heed Annual Retreat, a Council lecture series at the Fall Council Meeting, and help sponsor the AAO Museum of Ophthalmology. We had created a Diversity, Equity, and Inclusion (DEI) Task Force

in 2021, which has been chaired by **Dr. Jose Pulido**. The purpose is to raise the awareness of the AOS, especially to underrepresented physician groups. We also help sponsor the AAO/AUPO Minority in Ophthalmology Mentoring (MOM) Program. We have cosponsored an annual AAO symposium with the ABO, which has been “What You Need to Know from the Past Year’s Literature.” We greatly appreciate those who have participated in this symposium and will honor them at this year’s AAO meeting.

Regarding the TAOS Editor’s Report, there were 10 AOS theses published in the AJO in 2021, 9 AOS theses to be published in the AJO in 2022 with an additional 4 more theses in revision. This process of having AOS theses published in the AJO has been well received, and we are indebted to **Richard Parrish, M.D.**, Editor of the AJO for enabling this process. A big thank-you to our AOS members of committees. It has been an honor and privilege serving as your EVP.

REPORT FROM THE COUNCIL CHAIR

JULIA A. HALLER, MD

What a difference a year has made! There was a palpable air of euphoria at our May meeting, and it has extended to all aspects of AOS interactions!

Your AOS Council has, as in every year, been hard at work. **Preston Blomquist**, **Stephen McLeod**, and **David Wallace** served as AOS Council members this year, along with **Bill Mieler** who is the new Council Chair. We welcomed **ME Hartnett** as the new Council member along with **Marco Zarbin** as the new President. **David Wilson** serves now as both Executive Vice President and Editor for TAOS.

MEETING 2022

Our Colorado Springs meeting was a standout in absolutely every regard — the spirit, the engagement, the program, the people — and the WEATHER! After a kickoff where the sun was shining and sundresses and summer suits were out on the veranda, we rapidly transitioned to several feet of fresh powder, down vests, and snow boots! Wise were those who packed with broad bandwidth!

Peter Netland (who has served spectacularly as Chair of our Program Committee) and I were particularly thrilled to welcome our keynote symposia speakers. Never has the impact of scientific advances in genetics been more front and center, and Friday's Knapp Symposium featured leaders in our field elaborating on recent work and translating this research into clinical learnings. And how exciting to feature **Michael Chiang MD**, our AOS colleague, who delivered the Marilyn Miller Lecture from his new leadership position at the helm of the National Eye Institute! We were also so fortunate to have **Edward Stone, MD, PhD** speaking on Gene Therapy, **Bradley D. Gelfand, PhD** on Gene-Based Approaches to AMD, **John H. Fingert, MD, PhD, FARVO** on Gene-Directed Therapy, **Janey Wiggs, MD, PhD** on Genetics in Glaucoma, **Cheryl Gregory-Evans, PhD** speak on Epigenetic Therapy, and **J. William Harbour, MD** on Gene-Based Prognosis and Beyond in Ocular Oncology.

Our Saturday Symposium explored the cutting edge of Artificial Intelligence, bringing in speakers of enormous stature, including our Verhoeff Lecturer, **Kristen Lauter**, renowned American mathematician and cryptographer, now heading up the Facebook AI Research (FAIR) Labs, and **Lily Peng, MD, PhD** from Google Health, as well as

a stellar lineup of distinguished colleagues from around the globe, including the FDA's **Malvina Eydelman, MD** on Reimagined Regulatory Paradigm for High-Quality Digital Health Innovation, **Joel S. Schuman, MD, FACS** on Autonomous Glaucoma Detection – News from the Collaborative Community for Ophthalmic Imaging, and **Pearse A. Keane, MD, FRCOphth** on The Moorfields-Google Deepmind Collaboration – Going from Code to Clinic.

COUNCIL ACTIVITY

Members of the Council met virtually to review: 1) petitions for AOS membership; 2) recommendations of various committees (e.g., New Member Committee, Thesis Committee, Program Committee [for the upcoming meeting], Communications Committee); 3) possible venues for future meetings; 4) petitions from AOS members (e.g., excused absences, requests for emeritus status); and 5) the financial status of the organization. The organization's finances remain quite strong and are reviewed biannually with representatives from Vanguard Assets Management. **Hans Grossniklaus's** retirement was celebrated at our gala, and throughout our meeting. **Hans'** wise counsel and dedication to the AOS will be sorely missed. We are so fortunate to have **David Wilson** picking up the baton and carrying it so beautifully already. It is a testimony to the strength of our organization that we have had such sterling individuals of the caliber and commitment of these two iconic figures at our helm.

MEMBERSHIP

Due to the superb recruitment efforts of the AOS members, applications to join the Society remain robust. Applications from ophthalmologists based outside the United States are welcome. Please recall that the deadline for nomination letters for new members is April 30th. Nominees are expected to have made substantial contributions to the field. The primary nominator should assemble the information packet and solicit a seconding letter. If the primary nominator is a mentor of the nominee or works at the same department/organization, then two additional nominating letters are required. Council members vote on the nominees at the spring meeting. If the Council votes to approve a nominee, that individual

is asked to submit an application for membership. When their application is approved by the Committee on Membership and the Council, they are invited to prepare a thesis, which must be completed within three years. Once a thesis is accepted, the candidate becomes a member of the AOS. The AOS theses are published (online and in monthly issues) in the American Journal of Ophthalmology (AJO). In addition, the AJO publishes an annual supplement that contains all the theses accepted during the past year. **Dr. Rich Parrish**, Editor of the AJO, established this relationship with the AOS, and it has worked out beautifully. The intellectual discipline required to complete the thesis may underlie the fact that the AOS comprises some of the most distinguished, intellectually ambitious ophthalmologists in the world.

THANKS

Serving the AOS has been an honor and privilege. It was a special thrill to serve this year with **Dr. Anne Coleman**, the 2021-22 AOS President. It is the first time in AOS history that both our Council Chair and our President were women — a landmark moment that I was so proud to share! Sincerest thanks to **Dr. Hans Grossniklaus**, the EVP and the AOS Council members for their unflagging support. In addition, a warm thanks to all of the many Council members who make the many needed contributions that result in this organization being so great and unique. A special thanks to Amber Mendez and Tim Losch for the AOS organizational support. They are true professionals, and we couldn't find better partners.

And now — on to our AOS 2023 Meeting and seeing each of you then. Thank you for your support of this outstanding organization.

REPORT FROM THE COMMITTEE ON THESES

MARTINE J. JAGER, MD, PHD

This year the Committee on Theses continued to review theses through the online AJO editorial platform. For thesis resubmissions, efforts were made to solicit re-review from the same reviewers providing initial comments. Help was solicited from AJO editorial board members or AOS members if expertise was needed for a thesis outside the field of expertise of the thesis committee members. More extensive comments on proposals were provided to help to obtain a more likely acceptance of the theses themselves.

At the time of the 2022 annual meeting, decisions were made on 12 new thesis submission and 15 thesis revisions. Fifteen thesis proposals were reviewed.

Sincere thanks go to the reviewers and especially to fellow committee members, **Stephen H. Tsang** and **Fredericus (Erik) van Kuijk** for their insightful comments and reviews as well as **Hans Grossniklaus**, Amber Mendez, Alissa Evans and Sarah Duncan (Managing Editor, AJO) for their guidance and administrative support.

REPORT FROM THE COMMITTEE ON PROGRAMS

PETER A. NETLAND, MD, PHD

The 158th Annual Meeting of the AOS was held at The Broadmoor in Colorado Springs, Colorado from May 19 to 21, 2022. **Dr. Anne L. Coleman** presided over the meeting. Program Committee members included **Drs. Peter Netland** (Chair), **Sean Donahue**, **Jennifer Lim**, and **Carol Karp**. The AOS Council, **Dr. Julia Haller** (Council Chair), and Amber Mendez (AOS Association Manager) provided important contributions to the Program Committee.

Dr. Michael F. Chiang presented the 2022 Marilyn T. Miller Lecture, titled “NEI: Past, Present, and Future.” This was followed by the Knapp Symposium moderated by **Dr. Peter Netland** about “The New Normal of Genetics in Ophthalmology,” which featured talks by **Drs. Edwin M. Stone**, Bradley D. Gelfand, **John H. Fingert**, **Janey L. Wiggs**, Cheryl Gregory-Evans, and **J. William Harbor**. The speakers discussed the present and future impact of genetic evaluation and treatment in the field of ophthalmology.

On Saturday, the 2022 Verhoeff Lecture was presented by Dr. Kristin E. Lauter, on “From Academia to Social Media: My Journey into Artificial Intelligence and Machine Learning.” This named lecture was followed by the Symposium moderated by **Dr. Julia A. Haller**, titled: “Code to Clinic: An Insiders’ Update on the Promise and Challenge of Artificial Intelligence and Machine Learning.” In the Symposium, Drs. Lily Peng, Malvina Eydelman, **Joel S. Schuman**, and Pearse A. Keene described the impact of artificial intelligence and machine learning in ophthalmology and medicine.

A record 51 qualified abstracts were submitted for the 2022 Meeting. Of these high-quality submissions, 21 abstracts were accepted as podium presentations and 30 abstracts were invited for poster presentations, with 22 of the invited abstracts presented as electronic posters. Moderators provided support for attendees at the poster sessions. The symposia, paper presentations, and poster sessions all included lively discussion sessions. Abstracts for papers and posters were available online before, during, and after the meeting.

Additional features of the program included the new member spotlight presentations and a lunch session about “The 1918 Flu Pandemic, 2020 COVID Pandemic and the AOS,” presented by **Drs. Daniel N. Albert** and **Hans E.**

Grossniklaus. The 8th Annual Artistic Soiree, orchestrated by **Dr. Bradley C. Black**, featured performances by AOS members. The Emeritus Luncheon, organized by **Dr. Thomas D. France**, included a lecture presented by Mr. Eric Metzger regarding “Colonization of Colorado.” The spouse lecture was titled “Visioning Art – Connecting with Disturbed minds,” presented by Elizabeth Dax (spouse of **Dr. Hugh R. Taylor**). The inaugural Women’s Leadership Afternoon Tea was moderated by **Drs. Julia Haller**, Kristin Lauter, and Lily Peng.

According to ACGME guidelines, the presenting author is required to disclose financial interests with commercial companies in medicine that are relevant to the presentation. New members of the AOS are encouraged to submit their thesis (or a portion thereof) as an abstract for consideration each year. There were 14.0 CME hours offered in the program for the AOS Annual Meeting in 2022. While the surprise late spring snowstorm during the meeting disrupted athletic events and travel plans, the program was not affected, providing abundant opportunities for enlightenment, engagement, and interaction for attendees at the Annual Meeting.



Drs. Chiang and Lauter were the named lecturers



Snow, AOS Annual Meeting, 2022

The 159th Annual AOS Meeting will be held from May 18-20 2023 at the Omni Grove Park Inn in Asheville, North Carolina. This magnificent venue in the Blue Ridge Mountains has welcomed visitors for over a century, with activities for everyone, including a classic Donald Ross-designed golf course, a spa, and much more. The program should be rich in content, providing a strong reason to attend and participate in the meeting. The Program Committee consists of fellow members **Sean P. Donahue (Chair)**, **Jennifer I. Lim**, **Carol L. Karp**, and **M. Roy Wilson**. The Program Committee receives outstanding support from the AOS Council, and especially **William F. Mieler** (Council Chair), and Amber Mendez (AOS Association Manager).

Program sessions will begin on Thursday afternoon, continue on Friday and Saturday mornings, and the meeting will finish with the banquet on Saturday evening, allowing for travel home on Sunday. This efficient 3-day format has been adopted in recent years and has been popular with members. The new member presentations and reception are scheduled for Thursday afternoon/evening, the popular 9th Annual Artistic Soiree is scheduled for Friday evening, and there are several Lunchtime sessions with speakers planned during the meeting.



More snow

The Program Committee encourages submission of abstracts and makes every effort to be as inclusive as possible. AOS Members provide outstanding scientific content for the meeting, members serve as expert discussants, and members engage in active discussion during the sessions. There has been a steadily growing submission rate in recent years, with a record number of abstracts submitted last year. All members (including you!) can contribute abstracts, which enriches and strengthens the content of the meeting.

In recent years the poster sessions have included excellent scientific work and opportunity for engagement and interaction. The poster sessions have grown and improved, with published abstracts and active discussion at the digital poster sessions. In fact, there is no need to carry a poster to the meeting, because posters are now digital presentations in a poster format. We hope members will participate in these sessions, which have become bigger and better in recent years.

Make plans now to submit material for the meeting, and schedule May 18-20, 2023 to join your fellow member colleagues in a stimulating and informative program at the spectacular Omni Grove Park Inn in Asheville, North Carolina.

REPORT FROM THE COMMITTEE ON MEMBERSHIP

NATALIE C. KERR, MD

This year the Committee on Membership (**R.V. Paul Chan, Nicholas Volpe, Judy Kim** and myself) reviewed 16 complete applications, and unanimously recommended that all nominees be invited to prepare a thesis. The strength of the individual candidates' application was determined by the criteria as outlined below.

- National/International reputation
- Academic rank
- Peer-reviewed publications in last 5 years
- Ability to write thesis
- Boards or directorships
- Specialty(ies)
- Comments
- Sponsors
- Recommendations

Additional criteria discussed included:

- Grants (funding agencies)
- Teaching responsibilities
- Presentations within 5 years
- Scholarship
- Leadership
- Ethics
- Professionalism
- Communication skills
- Diversity

We utilized the online application for review. To evaluate potential for thesis completion, the committee encourages sponsors to outline the commitment of and resources available to the applicant for completion of their thesis, particularly for candidates who do not have an extensive history of publications. This non-binding statement could address access to research data, availability of statistical expertise, and time to complete the project.

The future of the organization, as well as leadership in our profession, is dependent upon the continued growth of the AOS. All members are encouraged to identify potential candidates with robust records in teaching, research, clinical/surgical care, and service, and nominate them for membership in the Society. The deadline to submit membership nominations each year is April 30th.

REPORT OF THE ARCHIVIST PHOTOGRAPHER

RALPH C. EAGLE, JR, MD

I took hundreds of digital photographs at the One Hundred Fifty-Eighth Annual Meeting of the American Ophthalmological Society held at the Broadmoor in Colorado Springs on May 19-21, 2022. The photos were taken with my Nikon D850 DSLR camera.

This was an extremely busy meeting for me. Due to COVID-19, a large number of new members attended for the first time and needed photos. I took photos of 25 new members signing the AOS membership book and photos of some of them with their partners. I prepared a photo show comprising more than 290 captioned photos in PDF format for the members-only meeting photo section of the AOS website. These include photos of the 2020 AOS President and 2022 AOS Medal recipient **Emily Chew**, 2021 AOS President **Woodford Van Meter** and 2022 AOS President **Anne L. Coleman**. I sent 8 x 10 color prints of

selected photos to the officers, council members, new members and a few other members of the Society. An unusual feature of the 2022 show documents the weather. I included a number of photos taken before and after the May snowstorm that blanketed the Broadmoor with a foot of heavy wet snow causing extensive damage to the trees.

The 2022 photo show has been posted on-line. The member's-only area of the AOS website now includes 26 downloadable photo shows beginning with the 1996 AOS meeting at the Grove Park Inn in Asheville, North Carolina. The show of the 2021 virtual meeting is composed of computer screen-grabs. The digital archives of the AOS comprise thousands of high-resolution digital photographs and 1400 digital images prepared from scanned transparencies.



2022 AOS Council. From left: Preston H. Blomquist, MD, Stephen D. McLeod, MD, Anne L. Coleman, MD, PhD, Julia A. Haller, MD, Hans E. Grossniklaus, MD, MBA, David K. Wallace, MD, MPH, William F. Mieler, MD

REPORT FROM THE COMMITTEE ON EMERITI

THOMAS D. FRANCE, MD

The Annual Emeritus Luncheon during the AOS Annual Meeting was held on Saturday, May 21st from 12:30pm-2:00pm at The Broadmoor in Colorado Springs. We were happy to welcome a guest speaker for this luncheon, Mr. Eric Metzger, who is the Executive Director of the McAllister House Museum, which is a National Historic Landmark that has been owned and operated by The National Society of the Colonial Dames of America in the State of Colorado (NSCDA in CO) since 1961. Mr. Metzger gave a talk on “The Colonization Era of Colorado: The Early Development of the Fountain Colony (Colorado Springs) and How it Developed Differently Than the Other Colorado Colonies.” Thank you to all who attended. It was wonderful to see everyone in-person again.

I regret to inform you of the passing of the following AOS members since my last *AOS Transactions* report in 2021:

| | | |
|-------------------------|--------------------|-------------------|
| Jules L. Baum, MD* | Bethesda, MD | Member since 1982 |
| David L. Knox, MD | Baltimore, MD | Member since 1973 |
| Alan M. Laties, MD | N. Fort Meyers, FL | Member since 1974 |
| Alan B. Scott, MD | Mill Valley, CA | Member since 1981 |
| Stanley M. Trulsen, MD* | Omaha, NE | Member since 1965 |
| Thomas O. Wood, MD | Memphis, TN | Member since 1984 |

*Obituaries for Dr. Jules Baum and Dr. Stanley Trulsen were published in the 2021 TAOS.

REPORT FROM THE COMMITTEE ON NEW MEMBERS

CHRISTINA FLAXEL, MD

THE FOLLOWING NEW MEMBERS WERE WELCOMED TO THE AOS THIS YEAR

Renato Ambrósio, Jr., MD, PhD

- Federal University of São Paulo, Federal University of the State of Rio de Janeiro
- **Specialty:** Refractive Surgery, Cornea/External Disease
- **Thesis:** *Optimized Artificial Intelligence for Enhanced Ectasia Detection Using Scheimpflug-Based Corneal Tomography and Biomechanical Data*

Winston D. Chamberlain, MD, PhD

- Casey Eye Institute, Oregon Health & Science University
- **Specialty:** Cornea/External Disease, Refractive Surgery
- **Thesis:** *Changes in Corneal Power up to 2 Years After Endothelial Keratoplasty: Results from the Randomized Controlled Descemet Endothelial Thickness Comparison Trial*

Ta Chen Peter Chang, MD

- Bascom Palmer Eye Institute
- **Specialty:** Glaucoma, Pediatric Ophthalmology & Strabismus
- **Thesis:** *LGBTQ+ Identity and Ophthalmologist Burnout*

Karl A. Csaky, MD

- Duke University Medical Center
- **Specialty:** Retina-medical only, Retina/Vitreous
- **Thesis:** *Cross-Sectional Study of Cone Function in Age-Related Macular Degeneration Subjects with Non-Foveal Nascent Geographic Atrophy*

William J. Foster, MD, PhD, FRCSC, ING

- William J. Foster Retinal Diseases & Surgery
- **Specialty:** Retina/Vitreous
- **Thesis:** *Computational Modeling of Ophthalmic Procedures*

Jeffrey L. Goldberg, MD, PhD

- Byers Eye Institute, Stanford Health Care
- **Specialty:** Glaucoma
- **Thesis:** *Corrigendum to Phase 1b Randomized Controlled Study of Short Course Topical Recombinant Human Nerve Growth Factor (rhNGF) For Neuroenhancement in Glaucoma: Safety, Tolerability, and Efficacy Measure Outcomes*

K. Thiran Jayasundera, MD, FRANZCO, FRCSC

- Kellogg Eye Center, University of Michigan
- **Specialty:** Retina/Vitreous, Ophthalmic Genetics
- **Thesis:** *Construct Validity of Inherited Retinal Disease-specific Patient-reported Outcome Measures*

Ula V. Jurkunas, MD

- Massachusetts Eye and Ear
- **Specialty:** Cornea/External Disease, Refractive Surgery
- **Thesis:** *Cultivated Autologous Limbal Epithelial Cell Transplantation: New Frontier in the Treatment of Limbal Stem Cell Deficiency*

Victor L. Perez, MD

- Duke Eye Center
- **Specialty:** Cornea/External Disease, Uveitis/Immunology
- **Thesis:** *Meibomian Gland Dysfunction: A Route of Ocular Graft-Versus-Host Disease Progression that Drives a Vicious Cycle of Ocular Surface Inflammatory Damage*

Robert H. Rosa, Jr., MD

- Baylor Scott & White Eye Institute
- **Specialty:** Retina – medical only
- **Thesis:** *Intravitreal Administration of Stanniocalcin-1 Rescues Photoreceptor Degeneration with Reduced Oxidative Stress and Inflammation in a Porcine Model of Retinitis Pigmentosa*

Ryan B. Rush, MD

- Panhandle Eye Group
- **Specialty:** Retina/Vitreous, International Ophthalmology
- **Thesis:** *Gas Tamponade for the Prevention of Postoperative Vitreous Hemorrhaging After Diabetic Vitrectomy: A Randomized Clinical Trial*

Ingrid U. Scott, MD, MPH

- Penn State College of Medicine, Department of Ophthalmology
- **Specialty:** Retina/Vitreous
- **Thesis:** *Month 60 Outcomes After Treatment Initiation with Anti-Vascular Endothelial Growth Factor Therapy for Macular Edema Due to Central Retinal or Hemiretinal Vein Occlusion*

Bhavna P. Sheth, MD

- Medical College of Wisconsin Eye Institute
- **Specialty:** Comprehensive Ophthalmology, Cataract/Anterior Segment
- **Thesis:** *Relationship Between the American Board of Ophthalmology Maintenance of Certification Program and Actions Against the Medical License*

Arun D. Singh, MD

- Cole Eye Institute
- **Specialty:** Ocular Oncology
- **Thesis:** *Small Choroidal Melanoma: Outcomes After Surveillance Versus Immediate Treatment*

Gregory L. Skuta, MD

- Dean McGee Eye Institute
- **Specialty:** Glaucoma, Administration/Organization Leadership
- **Thesis:** *An IRIS Registry-Based Assessment of Primary Open-Angle Glaucoma Practice Patterns in Academic Versus Nonacademic Settings*

Deborah K. VanderVeen, MD

- Children's Hospital Ophthalmology Foundation
- **Specialty:** Pediatric Ophthalmology & Strabismus
- **Thesis:** *Deviations from Age-adjusted Normative Biometry Measures in Children Undergoing Cataract Surgery: Implications for Postoperative Target Refraction and IOL Power Selection*

REPORT FROM THE COMMITTEE ON ATHLETICS

WOODFORD VAN METER

2022 BROADMOOR MEETING

We arrived at the Broadmoor Hotel for the start of the 157th Annual Meeting on Wednesday, May 18th, 2022 on a glorious warm sunny day in Colorado Springs, CO. The beautiful views of the Rocky Mountains in the distance and on the back side of the property made everyone excited to be “back in the saddle” again after two years of COVID shutdown. We had not seen each other as a group since the 2019 meeting at the Greenbrier Resort in White Sulphur Springs, WV. The AOS annual meetings in 2020 and 2021 (virtual) were effectively scotched due to COVID precautions that the Council, after much deliberation, reluctantly decided on as an abundance of caution in the best interest of the health and well-being of the AOS membership. It was an enthusiastic first day when we reunited with old friends, met new members and settled in for our first in person meeting in three years. What could possibly go wrong?

On Friday morning, we awoke to eleven inches of heavy wet snow covering the property. Homes on the mountain above the Broadmoor resort had 15 inches of snow. So, your athletics committee, instead of handing out trophies for golf and tennis, handed out snow shovels so the fastest, fittest and freshest could shovel the walks to get to the meeting. We had 11" of snow covering the golf course, tennis courts, roads and sidewalks to deal with! There were downed trees, snow drifts up to four feet and most members bringing clothes for 60-70 degree weather. The task before the athletics director was not handicapping golf but getting activities fees refunded for the membership (which the hotel graciously decided to do – eventually). The weather made for a close and enjoyable meeting, with lots of comradery, conversation and social intercourse, but little golf or tennis. It was a perfect ski lodge environment to visit with friends and recount all the good shots you would have made had you been “out there”. In the past 50 years, tennis has been cancelled maybe once and golf maybe once, but this is the first time the entire athletics slate was 86ed.*

So. All the more reason to stay in shape, practice your putting (Peter) and your backhand (Rick), and get ready

for the resumption AOS athletics after the first ever now four year hiatus when the AOS returns to the Grove Park Inn for the 159th meeting in May 2023. Remember, the AOS athletics are above all fun and a social environment where members can compete in an informal venue with other members, more to get to know your fellow members than to strut your stuff (although both are fun). The golf and tennis are a way to socialize with the illustrious membership of the AOS in a casual setting that leads to making new friends and getting reacquainted with old ones. So, we are deferring all fun and games that we would have enjoyed in 2022 to the 2023 meeting at the Grove Park Inn. And I hope to see you there.

*Wait a minute. Not everyone it seems got the message about golf being cancelled in eleven inches of snow.

Jeremiah Tao, Ronald Mancini, Pete Setabutr, and Genevieve Konopka assumed that we always played rain or snow, and so they completed (maybe) 18 holes of golf with colored balls in Mount Everest like conditions. They were somewhat chilled by the time they got to the 18th green but were all smiles, nonetheless. They were recognized at the banquet for their golf skill intelligence ingenuity AOS spirit. Imagine what they will do in nice weather at the Grove Park Inn next year!





REPORT FROM THE COMMITTEE ON PRIZES

ALFRED SOMMER, MD, MHS

The Committee on Prizes is charged with selecting the Awardee of the AOS Medal and presenting the Award at the Annual Meeting banquet. The Committee selected a recipient for 2022. The 2021/22 Committee was comprised of **Hugh Taylor Chair, George Spaeth, and Joan Miller.**

The AOS Medal is awarded to recognize one or more of the following accomplishments: a discovery or innovation that suddenly advances the progress of ophthalmology in all parts of the world; outstanding original investigations in ophthalmology; significant contributions as an ophthalmic educator; or meritorious and remarkable service to ophthalmology.

Repeated E-mail communications were sent to AOS membership requesting nominations for the Medal. This year nominations were received from 11 AOS members; two individuals received two nominations each. The Committee reviewed the nominations of the 9 individuals who received one or more nominations; in addition, the Committee considered all members of the AOS, in addition to outstanding individuals not members, in an attempt to ensure the recipient would best represent the attributes for which the Medal is bestowed, regardless of whether they had been nominated or were a member, or not.

The committee did much of its business by email, leading up to a conference call in December. The committee unanimously selected **Dr. Emily Chew** to receive the 2022 AOS Medal.

Emily was born in China and migrated to Vancouver with her family where she grew up. She went to medical school at the University of Toronto where she also undertook her ophthalmology residency. She took fellowships in medical retina at The Wilmer Institute and at the University of Nijmegen, the Netherlands. She joined the National Eye Institute, first as a Visiting Fellow in 1987 and two years later became a Medical Officer. She was the Deputy Director of the Division of Epidemiology and Clinical Applications from 2000 and in 2020 became the Director. Since 2009 she has been the Chief of the Clinical Trials Branch. She has published more than 470 papers (at the time of nomination!) and had received more than 40 honors and awards. She is widely known and revered for the work she has done on the AREDS studies about AMD and the ACCORD study diabetic retinopathy.

The AOS Medal was presented in person to **Dr. Chew** at the Annual Meeting, at the Broadmoor, Hotel. She is the 88th recipient of the Award. We were delighted that her husband, Dr. Robert Murphy, could join in the celebration.

REPORT FROM THE COMMITTEE ON AUDITS

MARCO ZARBIN, MD, PHD

MINUTES

I. WELCOME AND CALL TO ORDER

Dr. Timothy Olsen, AOS Audit Committee Chair, called the meeting to order at 9:30 a.m. PDT on Thursday, July 14, 2022. The following Committee members, staff and guests were present:

Committee

Timothy Olsen, MD – Audit Committee Chair

Edward Buckley, MD – Audit Committee Member

Hans Grossniklaus, MD – Outgoing Executive Vice President

David Wilson, MD – Executive Vice President

Staff

Amber J. Mendez – AOS, Client Services Manager

Alice Paw – Accounting Manager, American Academy of Ophthalmology

Audit Partners

Rianne Suico – Senior Manager, Moss Adams

Gordon Lam – Senior Manager, Moss Adams

II. REVIEW OF FISCAL YEAR 2021 AUDITED FINANCIAL STATEMENTS

Ms. Alice Paw provided an overview of the 2021 fiscal year end audited financial statements. Ms. Paw explained that since the financials are reported on a comparative basis, statements where amounts were reported included current and prior year balances. A summary of the data is reported below in tabulated form.

| Item | 2020 | 2021 |
|--------------------------------------|--------------|--------------|
| Change in net assets from operations | (\$217,892) | (\$232,520) |
| Net investment income | \$170,116 | \$204,218 |
| Net gain on investments | \$1,150,030 | \$864,828 |
| Change in net assets | \$1,102,254 | \$1,102,254 |
| Net assets beginning of year | \$9,985,611 | \$10,798,900 |
| Net assets end of year | \$11,087,865 | \$11,635,426 |

Management expenses had a slight increase in the 2021 year, and the annual meeting and Council meeting expenses were minimal due to both events being held virtually.

ACTION: The Committee accepted Ms. Paw's report as presented.

III. AUDIT PRESENTATION

Ms. Rianne Suico of Moss Adams presented the Report of Independent Auditors, which covered internal procedures, controls, accounts payable processes, and recognition of revenue. She reported that the consolidated financial statements were fairly presented in accordance with generally accepted accounting principles. She shared that no issues were discussed prior to their retention as auditors for the AOS, and that they had no disagreements with AOS management during the process.

ACTION: The Committee accepted the auditor's report as presented.

IV. EXECUTIVE SESSION

Dr. Olsen excused SF AMS and AAO staff, and the Committee met in an executive session with Ms. Suico and Mr. Lam of Moss Adams. The Committee did not identify any irregularities. **Dr. Olsen** confirmed that processes did not warrant further investigation and that a separate audit on internal controls was not necessary.

V. ADJOURNMENT

Dr. Olsen adjourned the meeting of the Audit Committee at 10:00 a.m. PDT on Thursday, July 14, 2022.

AOS COUNCIL APPOINTMENTS

2022-2023

AOS President – **Marco A. Zarbin**

AOS Council – **Mary Elizabeth Hartnett**

Executive Vice President – **David J. Wilson**

Editor – **David J. Wilson**

Member, Committee on Theses –

Janey L. Wiggs to join

Stephen H. Tsang, Chair

Fredericus van Kuijk

Member, Committee on Programs –

M. Roy Wilson to join

Sean P. Donahue, Chair

Jennifer I. Lim

Carol L. Karp

Member, Committee on Membership –

Michele C. Lim to join

Judy E. Kim, Chair

R.V. Paul Chan

Nicholas J. Volpe

Members, Committee on Communications –

Ron A. Adelman and **Anat Galor** to join

R.V. Paul Chan, Chair

Bennie H. Jeng

H. Nida Sen

Committee on New Members –

Amani Fawzi to join

Edward. J. Wladis, Chair

William J. Dupps

Member, Committee on Prizes –

Richard L. Abbott to join

George L. Spaeth, Chair

Joan W. Miller

Chair, Committee on Emeriti –

Thomas D. France to continue

Committee on Athletics –

Frederick W. Fraunfelder and

Woodford S. Van Meter to cont.

Chair, Audit Committee –

Julia A. Haller and **David J. Wilson** to join

Edward G. Buckley

Investment Committee –

David J. Wilson, **Marco A. Zarbin**, and

William F. Mieler to join

Archivist/Photographer – **Ralph C. Eagle, Jr.** to cont.

Representative to American Academy of

Ophthalmology Council –

Sophie J. Bakri and alt.

Esen K. Akpek to cont.

Representative to the International Council of

Ophthalmology – **Neeru Gupta** to cont.

Representative to the American College of Surgeons –

Robert A. Goldberg; and alt.

George L. Spaeth to cont.

Representative to the Pan American Association of

Ophthalmology – **Eduardo C. Alfonso** to cont.

Representatives to the American Orthoptic Council –

James D. Reynolds;

Steven M. Archer; and

Kanwal Nischal to cont.

Representative to IJCAHPO – **Teresa C. Chen** to cont.

Representatives to the Heed Ophthalmic Foundation –

David J. Wilson;

Eduardo C. Alfonso; and alt.

Julia A. Haller to cont.

Parliamentarian – **Peter A. Netland** to cont.

REPORT FROM THE REPRESENTATIVE TO THE COUNCIL OF THE AMERICAN ACADEMY OF OPHTHALMOLOGY

SOPHIE J. BAKRI, MD

This year the AAO Council meeting was held in person at the American Academy of Ophthalmology in Chicago in October 2022. I attended as AOS Councilor to the AAO.

One of the major topics was the shortage in allied health staffing especially in regards ophthalmic technicians. This is a nationwide problem, initiated and made worse by the COVID-19 pandemic. Strategies were discussed for recruiting, retaining and training allied health staff, both in the main council meeting as well as some of the regional meetings. In addition, the anticipated shortage of ophthalmologists was discussed, and the need for a team approach to healthcare. The shortage is particularly worse in neuro-ophthalmology and pediatric ophthalmology.

Billing and coding was discussed as well as the need for balancing the healthcare budget. In addition, physician medicare fee schedule outlook was discussed, as well as the need to decrease pre-authorizations. The medicare cuts are particularly worse in some subspecialties such as pediatric ophthalmology surgery.

The issue of physician misinformation was discussed by the Ethics Committee Chair.

The importance of the Surgical Scope fund was emphasized and the relationship between ophthalmology and optometry was again discussed. The State and Subspecialty sections also met to discuss any local issues.

REPORT FROM THE REPRESENTATIVE TO THE AMERICAN COLLEGE OF SURGEONS

ROBERT A. GOLDBERG, MD

The American College of Surgeons is dedicated to improving the care of the surgical patient and to safeguarding standards of care in an optimal and ethical practice environment. The College carries out its mission through a wide scope of activities, including physician education, public education, development of safety and quality programs, and advocacy.

The Ophthalmology Advisory Council meets annually (virtually again this year). Activities include education (we sponsored a teaching course featuring Oculoplastic surgery at this year's annual meeting in Washington, DC), advocacy (the ACS stands by Ophthalmology in the

Surgery by Surgeons scope of practice issue, as well as appropriate valuation of surgical global fee), quality (we participated in trauma guidelines and Stop the Bleed this year), and physician health.

Although Ophthalmologists comprise only 2% of the ACS membership, our voice and our input are important. In a bounty year, we initiated 57 Ophthalmologists this year including 32 domestic Initiates. ACS participation fosters our connection to the greater House of Surgery and optimizes the opportunities to achieve our common goals.

REPORT FROM THE REPRESENTATIVE TO THE AMERICAN ORTHOPTIC COUNCIL

JAMES D. REYNOLDS, MD

The 2021-2022 year has been eventful for the AOC.

I. AOS REPRESENTATION ON THE AOC

The American Orthoptic Council is an organization supported by 7 entities:

- American Association for Pediatric Ophthalmology and Strabismus (AAPOS)
- American Ophthalmological Society (AOS)
- American Academy of Ophthalmology (AAO)
- American Academy of Pediatrics Section of Ophthalmology (AAP)
- American Association of Certified Orthoptists (AACO)
- Canadian Orthoptic Council (COC)
- The Canadian Orthoptic Society (TCOS)

Current AOS representatives to the AOC include:

- **James Reynolds, MD**
- **Steve Archer, MD**
- **Kanwal Nischal, MD**

The input of these members is greatly appreciated as they have provided valuable input and leadership to the organization. We continue to value the AOS as a sponsoring organization.

James Reynolds, Ken Nischal and **Steve Archer** are actively involved in committees. **Steve Archer** is currently Treasurer.

Both **Steve Archer** and **James Reynolds** are heavily involved in the Orthoptic Fellowship Programs at their institutions.

James Reynolds and **Ken Nischal** sit on the Editorial Board of the Journal of Binocular Vision and Ocular Motility; the journal which is now published online by Taylor and Francis and replaced the American Orthoptic Journal. **Steve Archer** serves as a reviewer.

II. 2022 NEWLY CERTIFIED ORTHOPTISTS

In September, the AOC oral practical exams to certify orthoptists was again carried out virtually via zoom format. A total of 17 candidates sat for the oral/practical exam and 15 passed, achieving certification.

III. ORTHOPTIC FELLOWSHIP PROGRAMS

There are currently sixteen AOC accredited orthoptic fellowship programs in the U.S.

IV. JOURNAL OF BINOCULAR VISION AND OCULAR MOTILITY (BVOM)

AOJ, Inc, has successfully transitioned to the new publisher, Taylor & Francis. All members of AOC sit on the board which governs the publication together with the publisher. The BVOM is being published online 4 times a year with one yearly print version encompassing all 4 online publications. The journal was successful in maintaining the Medline status obtained by the AOJ and subscribers have access to all AOJ back-issues. The founding co-editors guiding this publication are Kyle Arnoldi, CO, and Burt Kushner, MD.

V. 2022 AAPOS WORKSHOP – SUBMITTED BY THE AOC PROGRAM CHAIR AND MODERATORS, MARCH, 2022

Let's count the vote. Searching for truth in the desert.

Workshop Chairs: Douglas Fredrick, MD; Sarah Whitecross, CO

Speakers were Certified Orthoptists and ophthalmologists

VI. 2022 AAO/AOC/AACO SUNDAY SYMPOSIUM, SUNDAY, OCTOBER 2, 2022

Title: Managing Pediatric Cataract Patients

Chairs/moderators: Alex Christoff, CO [President of AACO]; Alejandra de Alba Campomanes, MD

VII. ACCREDITATION

The AOC application to the Commission on Accreditation of Allied Health Education Programs (CAAHEP) for the creation of the Committee on Accreditation of Orthoptic Fellowship Programs (CoA-OFP) was formally accepted in April of 2018. Through external accreditation and a formal process of continuous quality review by CAAHEP, the quality and reputation of the orthoptic profession will become stronger. This continues to be a work in progress until such time as the transition from AOC to CAAHEP accreditation.

CAAHEP Accreditation [Commission on Accreditation of Allied Health Education Programs]

CAAHEP approved the formation of the Committee of Accreditation of Orthoptic Fellowship Programs [CoA-OFP] under its jurisdiction. CAAHEP has approved the CoA-OFP Standards document. Virtual site visits are pending. The process of accrediting and re-accrediting Orthoptic Fellowship Programs will be transitioned from an activity of the American Orthoptic Council to this third-party organization. This has been a long process that is coming to fruition and was felt to be a good step towards separating the oversight of accrediting programs and certifying orthoptist candidates who study in the Orthoptic programs.

The Council will continue to be in charge of the certifying exams and certification and re-certification of certified orthoptists.

VIII. CORE COMPETENCY DOCUMENT

The AOC has finalized a core competency document, outlining the clinical skill expectations for orthoptists. This will be used for training programs to better guide and set standards for the education of their students. This will also be available for international applicants requesting certification by the AOC. This document is available for a nominal fee from the home office.

IX. ANNUAL BUSINESS MEETING

We held our annual business meeting of all Council members on Wednesday, October 19, 2022 by Zoom conferencing. The annual meeting contained annual officer reports as well as committee reports. New members were welcomed (Megan Evans, CO; Rachael Jenkins, CO; Amanda Yonkers, CO).

Highlights included candidate exam results; an update on the evolution and near completion of our new accreditation procedure; and various committee reports.

REPORT FROM THE REPRESENTATIVE TO THE INTERNATIONAL JOINT COMMISSION ON ALLIED HEALTH PERSONNEL IN OPHTHALMOLOGY

TERESA C. CHEN

1. GOVERNANCE INITIATIVES

- Appointed IJCAHPO Alternate representative to AAO Council: Cristos Ifantides, MD.
- Revised IJCAHPO Affiliate Council representation.
- Awarded the 2021 Statesmanship Award to Mary Lynch, MD.

2. MAJOR INITIATIVES FOR THE YEAR

- Published a new IJCAHPO Web Site.
- Development of the Veterans Administration TECs program and implemented pilot program.
- Received a significant Legacy Gift from Donor's Estate to support IJCAHPO's Foundation initiatives to recognize technicians.

3. GOVERNMENTAL AND PUBLIC AFFAIRS INITIATIVES

- Presented AAO CAR on the Workforce Shortage with 24 Co-Sponsors that received AAO Council support.
- Successfully worked with the Oregon Academy of Ophthalmology to achieve inclusive language to recognize IJCAHPO's Surgical Assisting education and certification in the State of Oregon regulations.
- IJCAHPO representative invited to join the Oregon Advisory Committee.
- Achieved Ambassador status with NEI and promote the NEI initiatives to technicians.
- Promoted AAO's EyeSmart monthly campaigns to certificants.

4. CERTIFICATION INITIATIVES

- Total number of certificants – over 34,000 worldwide.
- Initiated the Job Task Analyses for the Core Certifications' and Ophthalmic Surgical Assisting examinations.
- Received American College Credit accreditation for certification examinations: COA (12 semester hours), COT (18 hours) and COMT (12 hours).
- Received National Commission for Certifying Agencies (NCCA) accreditation of COA & OSA.

5. EDUCATION & E-LEARNING INITIATIVES

- IJCAHPO hosted its second annual hybrid program, a Virtual Broadcast and On-Site *49th Annual Continuing Education Program* with Capstone Lecture Series: Innovations in Ophthalmology by leading ophthalmologists.
- Provided complementary/free CE Credits to certificants.
- Presented 4 Virtual Programs and 35 Webinars.
- Conducted live, on-site Certification Examination Prep Courses for the COA, the COT, COMT.
- Partnered with AAOE on offering a Coding Camp program.
- Publishing a Clinical Reference Guide – out in September 2022.
- Updating JCAT Independent Study Program.

6. FOUNDATION INITIATIVES

- Awarded 111 Training Program Scholarships for more than \$10,000 to ophthalmic technicians' academic education.
- Awarded 7 certification and continuing education grants for more than \$1,800.
- Awarded 21 scholarships to 2021 ACE Program to AOP adversely and economically impacted.

7. INTERNATIONAL INITIATIVES

- Launched partnership between IJCAHPO and the Singapore National Eye Center on AOP training in SE Asia.
- Certified over 30 international candidates.

8. CAREER ADVANCEMENT INITIATIVES

- Presented 5th year at virtual HOSA – Health Occupations Students of America and Chapter meetings with over 5,000 students attending.

REPORT FROM THE REPRESENTATIVE TO THE PAN-AMERICAN ASSOCIATION OF OPHTHALMOLOGY

EDUARDO C. ALFONSO, MD

1. PAN-AMERICAN COUNCIL OF UNIVERSITY PROFESSORS (PACUPO)

Jorge E. Valdez MD (Mexico) chairs **PACUPO**. The purpose of this program is to unite and standardize university training programs throughout Latin America through exchange programs and other means. Towards this end, Dr. Valdez has been working with Eduardo Mayorga MD, as Chair of the PAAO eLearning Committee. Dr. Mayorga created “Campus PAAO” to offer PAAO webinars and over the years many PACUPO members have given more than 150 educational courses free of charge. Dr. Mayorga has created asynchronous courses students to take for a modest fee. The complete list of archived webinars and the schedule of upcoming webinars and asynchronous courses are available on the PAAO’s website www.paa.org.

2. FELLOWSHIPS COMMITTEE

Lihteh Wu MD (Costa Rica) chairs the **Fellowships Committee**. Scholarships are funded from a variety of sources. Because of COVID-19, most training programs were put on hold. In 2021 approximately \$30,000 in scholarships and other awards were given. In addition to using its Pan-American Foundation unrestricted resources, funding for these programs is provided by personal donations to the Pan-American Foundation, from donations from industry partners and private or family foundations, such as the Retina Research Foundation and the David & Molly Foundation. In 2022, training programs began to reopen.

3. VISITING PROFESSORS COMMITTEE

José Antonio Roca MD (Peru) chairs the **Visiting Professors Committee**. The Visiting Professors Program sends Visiting Professors to present the “Pan-American Lecture” at national ophthalmological meetings in the Americas. Because of COVID-19, this program was put on hold in 2020-2021. In 2022 the PAAO sponsored five visiting professors: Dra. Adriana Solano (Puerto Rico)

lectured at the Dominican Congress in June, Dr. Eduardo Chávez Mondragón (Mexico) lectured at the Colombian Congress in August, Dr. Jasbeth Ledesma (Mexico) lectured at the Costa Rican Congress in October, Dr. Ernesto Otero (Colombia) will lecture at the Uruguayan Congress in November, and Dr. Fernando Gómez Goyeneche (Colombia) will lecture at the Salvadorian Congress in November.

4. PAAO-YO LAUNCHES ITS OWN WEBSITE

Camila Ventura MD (Brazil) and Jorge Fortun MD (USA) co-chair the PAAO-YO program. The purpose of this program is to offer education and networking opportunities to young ophthalmologists around the world. PAAO provided support for launching its own website <https://paaoyo.paa.org/>. The PAAO-YO organize webinars and are collaborating with the YO’s of the American Academy of Ophthalmology. The next chairs will be Eduardo Viteri Jr., MD (Ecuador) and Linda Cernichiaro MD (Mexico).

5. 2022 MEETINGS & EDUCATIONAL ACTIVITIES

Continuing education and prevention of blindness programs are the primary mission for the PAAO.

- **19th Pan-American Research Day**
Virtual meeting in collaboration with ARVO on Saturday, May 21, 2022.
- **36th Lo Mejor de la AAO en Español**
Virtual meeting on Saturday, October 8, 2022.
- **18th Curso de Liderazgo (2022-2024)**
Partnering with the American Academy of Ophthalmology.
- **26th Regional Pan-American Course and the XLIV Interamerican Course in Clinical Ophthalmology**
Joint course with the Bascom Palmer Eye Institute, Miami October 15-20, 2022.

REPORT FROM THE REPRESENTATIVE TO HEED

DAVID J. WILSON, MD

As you know the American Ophthalmological Society has provided sponsorship for the Heed Resident Retreat, a program designed to encourage resident participation in academic ophthalmology. This program addresses the important need of encouraging promising and accomplished ophthalmologists in training to pursue a path that will add to our profession, and ultimately make them candidates for the AOS. In addition, many young faculty members serve as mentors in this retreat, and the AOS sponsorship funds are used to support the travel and accommodation of these faculty members.

The 2022 Heed Resident Retreat was held in Denver, CO immediately following the AOS meeting in Colorado Springs. This arrangement proved convenient for the

many AOS members who serve as faculty at the Heed Resident Retreat. This year, 13 of the 24 Retreat faculty members were drawn from the AOS membership, and AOS members constituted over 50% of the total faculty. The format for the 2023 Retreat will be similar to 2022, with the Retreat following the AOS meeting in Asheville, NC. The Retreat will begin on Sunday and end Monday to avoid any conflict with AOS events.

The Heed Foundation greatly appreciates the AOS' sponsorship of the Heed Resident Retreat and believes it is a great partnership that allows both organizations to support the mission of advancing the art and science of vision through education of physicians.

NECROLOGY IN MEMORIUM

DAVID L. KNOX, MD



David Lalonde Knox, MD, FAOS, a cherished and long-lived member of the full-time faculty at the Wilmer Eye Institute and an emeritus member of the AOS, died unexpectedly, but peacefully, on February 1, 2022. He was 91. David joined the AOS in 1973; his thesis was entitled "Ocular Pressure Studies in the Diagnosis of Carotid Artery Disease."

At the time of his death, he had not lost a step cognitively nor socially. His buoyant personality, his friendliness, and his innate curiosity about people, the diseased eye, and events of the world all persisted for the entirety of his full, productive life.

Dr. Knox first came to Johns Hopkins as an intern in 1955, following medical school at Baylor. He then spent two years as an Army physician in Korea, where he met his wife, Linda Denny Knox. He returned to Wilmer for his

residency and then had a neuro-ophthalmology fellowship at Massachusetts Eye and Ear Infirmary. For the rest of his life, he remained a resident of Baltimore and a faculty member of Johns Hopkins University School of Medicine.

David initially took me under his wing in 1962 when he was a neuro-ophthalmology fellow at Harvard, and I was a very naïve 4th year medical student there. Both of us were there to learn from Professor David Cogan, a brilliant leader in the field of neuro-ophthalmology.

Having been educated and, yes, somewhat brain-washed, by the insular world of Harvard, I had truly and literally never even heard of Johns Hopkins, much less, the Wilmer Eye Institute. But **David** quickly indoctrinated me. When I first came to Baltimore for residency at Wilmer, at Dr. Cogan's suggestion, **David** invited me to stay in his house, with him and his young family of three children, while I searched for a place to live. At that time, I wrote to my parents that **David** was like a big brother. From then on, he regularly guided me . . . in intelligent and fruitful ways, offering totally unvarnished, honest advice that was always in my best interests. Years later, I wrote about him again, referring to him then as one of my father figures.

David's natural attributes were enviable and, in the aggregate, created in him an admirable role model for me and for many others. I will enumerate just some of these splendid traits: they included compassion and devotion for his patients; tremendous perseverance in their evaluation and in their therapy; extreme curiosity about all aspects of their health and lifestyle, not solely about their eyes; and also extraordinary friendship and generosity for many, many diverse people, especially for younger doctors in training, especially, but not limited to, those with a Wilmer connection. His advice to physicians in their early years of career evolution was to "Find a subject that is fascinating and keep at it, just always work at it, and always think about it, including when driving home".

David remained intensely loyal to Wilmer and to Hopkins as a senior faculty member. As just one example, he

served as the Dean of the Johns Hopkins Medical School Admissions Committee for 3 years, a notoriously time-consuming job, but an important one, managing about 3,000 applications annually from the best and the brightest, including our current Wilmer Director, Peter McDonnell, MD and the current President of the AOS, **Marco Zarbin, MD, PhD**.

Above all, **David** was impeccably honest and ethical, and as noted by his son, an orthopedic surgeon, he was “completely uncorrupted by careerism, inappropriate influences of Big Pharma, and questionable dollars”.

His hobbies included tennis, antique British automobiles, especially Rolls-Royces and Bentleys, reading from his large home library (especially history books and biographies), cultivating miniature roses, and birdwatching from his living-room window.

Regarding his evaluation and his care of patients, he was very much like Sherlock Holmes, the famous fictional detective. Sherlock Holmes was a sleuth, always searching for the truth . . . a sleuth for the truth . . . leaving no stone unturned. Sherlock Holmes was the invention of a real eye doctor, Sir Arthur Conan Doyle. Dr. Doyle patterned Sherlock Holmes after another real-life doctor who was his *own* mentor, a man named Dr. Joseph Bell. Dr. Bell was known, much like **David**, as a “master of observation, logic, deduction, and diagnoses.” Also, again like **David**, he was known to be compassionate and hard-working, and he was particularly noted for drawing important conclusions from minute clinical observations. His observational and deductive powers were phenomenal. Again, like **David**.

David treasured the traditional, close doctor-patient relationship, and exerted intense efforts to speak to his patients at length and repeatedly, in order to understand them completely. It helped him in making accurate and complete diagnoses, and he also had an uncanny memory for clinical details. He savored a complete past medical history and detailed review of systems. **David** once said, “If I’m going to be a doctor, I’m going to find out how patients live and work and ask questions”. He was compulsive about continuing their care. Many of his patients became his loyal friends for many years.

Many of **David’s** important clinical observations were completely original, especially in inflammatory diseases of the eye . . . uveitis . . . as well as in neuro-ophthalmology. These observations led to numerous key publications by **David** and changed the way medicine was practiced in

these two sub-specialties of ophthalmology. For example, he was the first to diagnose and describe the detailed ocular manifestations and therapy of a severe, but previously misunderstood, gastrointestinal inflammatory disorder called Whipple Disease. **David** also called attention to the direct relationship between abscessed upper teeth and their contiguous anatomic connection to the eye in its orbit. He also emphasized the dangers of smoking, especially in a potentially blinding inflammation in the inside of the eye; namely, pars planitis. He also described and published the ocular damage—also to the inside of the eye, especially the retina . . . caused by many different infectious agents, including fungi (Pneumocystis and also Histoplasma); by a type of amoeba (Toxoplasma); by bacteria (including syphilis); and by viruses (herpes simplex, varicella zoster, and cytomegalovirus). **David** was also the first person to understand and report the so-called ocular ischemic syndrome—now known as Knox’s Syndrome—which occurs in patients with inadequate blood supply to the entire eyeball, with high risk not only to vision, but also to life, itself.

An internationally important event occurred when **David**, as a young assistant professor at Hopkins, spent about 6 months in London, England, where the discipline of neuro-ophthalmology was then under-appreciated, only minimally understood, and poorly taught. He took it upon himself to teach clinical neuro-ophthalmology in a major London hospital (Queen Square). The local eye doctors had not thought too much about this relatively new, sophisticated field, and were surprised to learn that a young American could teach them so much about such a complex subject. **David** did this through frequent clinical case conferences that he patterned after the popular conferences at Wilmer. One of his English students was Dr. Roger Bannister, the young man who ran the first 4-minute mile. **David** was so successful as a teacher, and was such a convincing advocate for the Wilmer teaching system—which involved detailed clinical case conferences, with intense and honest debates about correct diagnoses and alternative treatments—that a steady stream of British ophthalmologists began visiting Wilmer to learn about best practices in all ophthalmic sub-specialties. **David’s** efforts had helped put Wilmer on the international map.

In addition to all of these valuable contributions, the most important activities of **David’s** professional life (in his own mind) were his creation in 1969—and also his ongoing support—of the annual Frank Walsh Neuro-ophthalmology Conference (the Walsh Society Meeting). This international

conference honors Professor Frank Walsh of Wilmer, the father of the discipline of neuro-ophthalmology. He was **David's** own primary mentor, and one of my own heroes and role models, as well. The first conference attracted only 29 attendees, and now, decades later, thanks to **David's** continued nurturing, over 650 ophthalmologists attend annually, to learn the latest and best information about neuro-ophthalmology. So, the ripple effect . . . of teaching one generation by another . . . continues unabatedly.

In conclusion, we, his devoted friends, and students, remember **Dr. David L. Knox** as a superlative person . . .

an inherently good, kind, ethical physician, father, grandfather, and friend; a man who helped and befriended so many of us and so many of his patients with his unlimited wisdom, his warm friendship, and his great generosity. His six decades of continuous devotion to Wilmer and Johns Hopkins, and his happy, positive spirit, are highly appreciated. We treasure our memories of this wonderful person.

Written By,

MORTON F. GOLDBERG, MD, FAOS
Baltimore, MD

ALAN M. LATIES, MD



Alan Maley Laties was born in Beverly, Massachusetts, in 1931, to Simon C. Laties, who owned a leather tanning company, and Rima Kapnik Laties. At the time of his death at age 90 he was emeritus professor of ophthalmology at the University of Pennsylvania. He is preceded in death by his brothers, George G. Laties,

PhD, professor of molecular, cell and developmental biology at UCLA, and Victor Gregory Laties, PhD, professor of environmental medicine, psychology and pharmacology at the University of Rochester. His brother David Laties of Highland, New York, an entrepreneur specializing in numismatics, survives him.

Alan grew up in Boston and attended the Tilton School (New Hampshire), followed by Harvard University, where he majored in English. During his undergraduate years, he also studied in Dunedin, New Zealand, Paris, and Singapore, and he developed a broad international perspective which he kept throughout his life. He attended medical school at Baylor College of Medicine and was awarded the degree of doctor of medicine in 1959. He completed an internship in internal medicine at Mount Sinai Hospital in New York City and then moved to the University of Pennsylvania, first as a resident in Ophthalmology, and then as a USPHS Special Fellow at the Institute of Neurological Science at Penn. Indeed, he spent the rest of his career at Penn, where he was recognized for his eclectic interests that were not bounded by the eye or the visual system. He joined the faculty in 1964 and moved steadily through the academic ranks to achieve full professor in 1970, as the Irene Heinz Given and John LaPorte Given Research Professor of Ophthalmology. He was also subsequently Professor of Neurology. He was appointed emeritus professor in 2020.

Alan was a member of many scientific and medical societies, reflecting his broad academic interests: the Association for Research in Vision and Ophthalmology, the American Academy of Ophthalmology, the American Ophthalmological Society, the International Congress of Eye Research, the International Glaucoma Society, the International Pigment Cell Society, the International Retinitis Pigmentosa Association, and the International Society for Pharmacoepidemiology.

Alan was highly recognized during his lifetime for scientific achievement and for his humanitarian pursuits. Honors and recognition included election to membership in Alpha Omega Alpha, the national medical honor society; the Association for Research in Vision and Ophthalmology Friedenwald Award; the Retinitis Pigmentosa Foundation Humanitarian Award; the New York Lighthouse Pisart Vision Award; the Alcon Vision Research Award from the Alcon Research Institute; the Paul Kayser International Award of Merit in Retinal Research; and the inaugural Llura Liggett Gund Lifetime Achievement Award of the Foundation Fighting Blindness, renamed from the Retinitis Pigmentosa Foundation. Indeed, **Alan** served as the scientific advisor to and de facto Scientific Director for the RP Foundation shortly after its formation in 1971. Those were busy and formative years.

He published widely in scientific, ophthalmic, and other medical general and specialty journals. His 225 publications in both clinical and basic research included more than 25 that were cited more than 100 times, including two cited more than 300 times. He also published more than 23 books and book chapters that spanned topics of both clinical and basic research, and two YouTube videos. He held 17 patents, issued from 1981 to 2012. **Alan** served as the third editor-in-chief of *Investigative Ophthalmology and Visual Science*, from 1978 to 1982. He also served on the editorial boards of *Retina* and of *Clinical Vision Science*.

Alan was busy both in the clinic and his lab. He held research grants from the National Eye Institute/National Institutes of Health; from Research to Prevent Blindness, and from several companies, including Pfizer Inc., Allergan Inc., Wyeth-Ayerst Inc., Alcon Inc., and Ocular Therapeutics Inc. He was co-founder of Macusight and of Valley Forge Pharmaceuticals.

An annual report in 1973 to the recently created National Eye Institute of NIH provides a glimpse of the broad perspective that **Alan Laties** brought to retinal

disease studies. This project, titled: “Anatomy and Pathology of the Mammalian Retina,” laid out the goal of “. . . understanding the connections of the neurons of the mammalian retina and to understand where the principal site of pathology is in certain toxicities (chloroquine) or genetic defects (retinitis pigmentosa).” **Alan** was one of eight project investigators who collectively were at the forefront of retinal research for many years, including Helga Kolb, Brian Boycott, Peter Gouras, Edward Famiglietti, Ralph Rosenthal and others. Their international collaboration extended from Kings College, London, to the University of Pennsylvania, Walter Reed Medical Hospital and scientists within the NEI Intramural Program.

That 1973 annual report to NEI contains one of the earliest descriptions by electron microscopy (EM) of a human retina with dominantly inherited retinitis pigmentosa, with the comment that all the photoreceptors were missing except for the cones of the fovea. Other studies, with rhesus monkey, explored chloroquine retinopathy induced by daily IM injections; studies of squirrel monkey imaged dopaminergic retinal neurons; and EM studies in cat imaged the optic nerve from retina to lateral geniculate body. This eclectic approach to retinal science continued throughout his career and allowed him to make observations which had escaped the attention of others.

Within eight years of his appointment as an assistant professor at Penn, **Alan** received high recognition in receiving the Friedenwald Award from ARVO in 1972. That recognition reflected **Alan’s** passion for understanding how form follows function: how orderly retinal photoreceptor structure underlies visual processes. He developed improved histological methods for resolving fine anatomic structure, collaborating with Paul Liebman to probe the anatomic structure of photoreceptors, in both primate and amphibian.

His attention to photoreceptors soon crossed into inherited human diseases of photoreceptor degeneration. Under his early scientific leadership, the Retinitis Pigmentosa Foundation quickly oriented to disease gene discovery, using reverse genetics approaches that begin with identifying human RP patients in large families and unraveling the puzzle in reverse to identify causative mutations.

Alan steered the Foundation into disease gene identification discovery, and Foundation support of a series of investigators resulted in identification of

rhodopsin in 1989 as one of the genes responsible for autosomal dominant RP. Soon the genetics of retinal degenerative disease was recognized as crossing the human – animal divide, and therapeutic gene augmentation rescue in mice and dogs led to the first successful human *in vivo* gene therapy approved by the FDA, in 2017, for Leber Congenital Amaurosis from RPE65 gene mutations. Under **Alan's** leadership the Foundation supported the seminal studies that contributed greatly to this successful amelioration of RPE65 genetic childhood blindness.

Beginning early after the creation of the Retinitis Pigmentosa Foundation (now the Foundation Fighting Blindness) **Alan** worked to focus attention on inherited diseases of the retina, and he created support to establish academic centers studying these diseases throughout North America, England and Europe. Scientific progress requires money and people, and **Alan** took delight in finding fledgling investigators to receive Foundation support. The Foundation named its career development award program for **Alan**, to recognize his leadership in identifying, recruiting, mentoring, and supporting young clinical and research scientists as first they develop. I count myself fortunate to have had **Alan's** guidance early

in my own ophthalmic career; receiving the Foundation's "Career Development Award," now named for **Alan Laties**, opened opportunities to pursue my deep interest in the intersection of basic and applied science, which we now call translational research. He was similarly instrumental in identifying a number of others who have prospered due to his early support and guidance.

Alan and his first wife, Marguerite Leiken Laties, who predeceased him, had a daughter, Jane Laties, and a son, Nicholas P. Robin. He is survived by his wife Deena Gu Laties, an accomplished artist, and their son, Alex G. Laties.

We shall miss **Alan's** dry wit, and his ability to find deep enjoyment in all things ophthalmic, and his passion to probe the fundamentals, both by discovery research and by astute clinical disease observation. His lifetime passion is already yielding therapies for RP patients who otherwise slowly lose vision from their inherited genetic maladies.

Written By,

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ALAN B. SCOTT, MD



Alan Scott died at the age of 89 on December 16th, 2021, leaving behind 5 children (Nathaniel, age 49, Ann, 55, Allison, 58, Heidi, 61, and Jennifer, 63). His first wife, Ruth, had passed away in 2009 after 53 years of marriage. He subsequently married Jackie, in 2014. He had 21 grandchildren from his 2 families, (Ruth, and Jackie's family), and 2 great grandchildren. His death came unexpectedly and suddenly, as he succumbed to an infection and its complications very quickly. He was able to spend time in the company of his family, though, and died peacefully in hospice care.

Born in Berkeley, California on July 13, 1932. **Alan** received his bachelor's degree from Berkeley in 1953, and his medical degree from the University of California, San Francisco, in 1956. He became medical co-director at Smith-Kettlewell alongside **Arthur Jampolsky**, and ultimately branched out to form his own institution from which he continued to experiment with various treatments for ophthalmology conditions, particularly strabismus and spastic conditions of the head and neck.

Arguably, he will be best known for his adaptation of botulinum toxin for therapeutic use, although he pioneered innumerable innovations in strabismus management. His research on botulism toxin began in the 1960's at the Smith-Kettlewell Eye Research Institute, and culminated, after many years, in FDA approval in

1989 for use in strabismus and blepharospasm. The rest of botulinum toxin's history is well-known. He sold the patent to Allergan, where it soon became the leading pharmaceutical in the world. The toxin assumed prominence in the management of wrinkles, migraine headaches, and spastic conditions (e.g., spastic cerebral palsy). The toxin continues to be an important intervention for strabismus. Its use for blepharospasm has helped thousands of patients cope with a condition that effectively causes blindness due to inability to open eyes.

He should also be remembered for other important advances he helped to develop in ophthalmology and strabismus. While these are too numerous to enumerate here, the interested reader may want to review his research on bupivacaine therapy for strabismus; the use of recession and resection on a single muscle, a therapy emulating posterior fixation surgery; numerous electromyography experiments on extraocular muscles; and research on the effects of inferior oblique and superior oblique transpositions. His pioneering work on all these topics led to his receiving the Lucien Howe Medal from the AOS in 1998, given to the most prominent leaders and researchers in ophthalmology at the annual AOS meeting.

Alan will also be remembered for his extraordinary kindness, friendship, and renaissance approach to life. He was an avid oenophile, self-taught piano and oboe player, outdoorsman, mushroom aficionado, and nature lover. No one was more fun to be with, let alone to travel with, as I had the pleasure on innumerable occasions. People around the world loved him. He was tolerant, even understanding of others' mistakes, and never had an unkind word about a colleague. He was mostly quiet at meetings, but when he spoke, you could hear a pin drop. Everyone wanted to know what he thought. He also was a brilliant science writer. His use of the English language served as a model for those of us who were involved in writing science papers and grants.

I'll remember him most for a trait that usually won't make it into any short biography such as this. *He never gave up*, both in his research and in patient care. Witness his methodical and persistent approach to the use of "toxins" for ophthalmology conditions. It took decades from start to finish to develop this treatment, with many

setbacks along the way. How fortunate the patient who came under his care. He had so many tools, and so much diligence in his work, that he virtually always succeeded in aligning eyes, alleviating symptoms, and helping patients when other excellent surgeons could offer nothing more. His use of in-office procedures is renowned and was extraordinarily effective.

Dr. Scott will be sorely missed. The next several years are sure to see the dissemination of many of his new and

creative ideas about strabismus. We are told that near his end he conveyed that no one should grieve for him; he had had a wonderful life. We who knew him beg to disagree., **Alan**, we miss you and wish we could thank you in person for everything you did for us, and for our field.

Written By,

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THOMAS O. WOOD, MD



Tom Wood, MD died peacefully on February 16th, 2022, surrounded by his family, after a long illness. He was 81 years old. Tom was born on September 16th, 1940 in Kansas City, MO, the first son of Wilford Wood and Gladys Britton Wood. Tom's family moved to Memphis when he was 8 years old, and in Memphis he enrolled in Vollentine School. He attended Snowden Junior High and then Central High School in Memphis, from which he graduated in 1958. He graduated from Memphis State University after three years in 1961 and spent a year working at International Harvester in Memphis before he enrolled in medical school at the University of Tennessee in Memphis in the spring of 1962. He graduated in 3 years with his MD degree in 1965, spent

a year interning at Memphis City Hospitals and then was a Resident in Ophthalmology at the University of Tennessee in Memphis 1966-1969. He became interested in Cornea and the AOS working with Ralph Hamilton (AOS 1966), who was on the faculty in the department. Tom went on to complete a cornea fellowship with Herb Kaufman at the University of Florida 1969-1970 and after which he started a cornea practice as Assistant Professor in the Ophthalmology Department at the University of Tennessee Memphis in July 1970. He never left Memphis, achieved the rank of Professor of Ophthalmology in 1979 and spent the rest of his career doing corneal transplants in Memphis until he retired in 2008. He spent the last 15 years of his career in private practice in Memphis, but worked closely with and offered encouragement to University faculty and residents throughout his practice years.

Tom mentored countless medical students, residents, and colleagues, freely sharing his knowledge and surgical experience, and was enthusiastically interested in their careers and practice. During his career, **Tom** published 83 articles in peer reviewed literature, authored or co-authored 26 book chapters, and gave approximately 300 national and international presentations on corneal disease and transplants from Budapest to Japan. He made 10 surgical teaching videos shown at meetings and discussed with his peers. Without fail, he presented regularly at AAO, ARVO, ASCRS and Midwest Cornea Society meetings as well as AOS annual meetings.

Tom is survived by his wife June Mitchell Wood, whom he met in college in Memphis, three daughters Ellen Wood

Williams of Atlanta, GA, Julie Wood Reagan of Collierville, TN, and Ann Wood Ray of California, MD, 9 grandchildren and one great grandson. He is also survived by a sister Betty Lou Hassell of Murray, KY and a brother James Owen Wood of Lecanto, FL. **Tom** spent most of his free time skiing and playing golf with his family and friends. He was an avid world traveler and spoke with authority about the culture and geography of many of the large cities in Europe that he explored on his own. June was a fixture at AOS meetings for 25 years, her name etched frequently on both the Ladies Doubles and Mixed Doubles tennis trophies.

Among his honors and recognitions, **Tom** was a Heed Fellow in Ophthalmology during his fellowship 1969-70, received the Senior Honor Award from the AAO in 1993, and won the Distinguished Alumni Award from the University of Tennessee Department of Ophthalmology in 1998. He was listed Best Doctors in America (Woodward and White) from 1994, when the award started, until his retirement in 2008. He was co-founder, Medical Director and President of the Mid-South Eye Bank in Memphis. Among his many honors, though, **Tom** was most proud of being a member of the AOS. **Tom** was inducted into the AOS in 1984, writing his thesis on Recurrent Erosion of the Cornea. Twenty-five years after his induction, his thesis was one of the most frequently cited articles from the Transactions of the AOS (TAOS).

Tom Wood had as much fun practicing ophthalmology as anyone. Several anecdotes bear out his sense of

humor. One day around 1990, the Memphis Commercial Appeal identified **Tom** as the highest paid faculty member of the University of Tennessee Memphis. When the paper called **Tom** to get his reaction to the story, he quipped “Good thing they didn’t get it all”. At a meeting of the Midwest Cornea Society in Deer Valley, **Tom**, an experienced downhill skier, was leading a pack of much younger colleagues racing down the slope when he hit a rough patch of ice and took a tumble with arms and legs askew down the hill. He shook himself off, skied two more hours, and only at dinner complained of pain in his chest refractory to his usual medication (Scotch). He decided to go home a day early and left the meeting the next morning. After a consult with one of his colleagues in Memphis, he consented to an X-ray which showed a fractured and dislocated clavicle, which he had skied with for half a day. Lastly, **Tom** credited Cyrus McCormick (1809-1884), whose grain harvester led to the founding of International Harvester, as being one of the persons responsible for **Tom** going to medical school. **Tom** worked on the line at the International Harvester plant in Memphis during college but got laid off his senior year. He said, “If Mr. McCormick had not laid me off, I would not have had to find something else to do and would never have applied to medical school”. **Tom** and his sense of humor will be missed.

Written By,

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