Real-World Evidence Meets Artificial Intelligence

A Meeting of the
Collaborative Community on Ophthalmic Imaging (CCOI)

CONFERENCE PROGRAM

January 28, 2022

7:00 AM–3:30 PM Pacific Time | 10:00 AM–6:30 PM Eastern
USA/Canada/Mexico

Hosted virtually by CCOI

7:00 AM–7:30 AM **NETWORKING EVENT**
(LIMITED ACCESS, INVITATION REQUIRED)

7:30 AM–7:45 AM **INTRODUCTIONS**

Introductory Remarks by CCOI President
Mark Blumenkranz, MD, MMS
HJ Smead Professor Emeritus Co-Director, Ophthalmic Innovation Program
Byers Eye Institute at Stanford

7:45 AM–8:45 AM **SESSION 1: ARTIFICIAL INTELLIGENCE IN THE REAL WORLD**
Session Chair: **Mark Blumenkranz, MD, MMS**

7:45 AM–8:00 AM **Expediting Real-World Implementation with Regulation**
Malvina Eydelman, MD
Director, Office of Health Technology 1
Ophthalmic, Anesthesia, Respiratory, ENT, & Dental Devices Center
for Devices and Radiological Health, US Food and Drug Administration

8:00 AM–8:10 AM **Trust and Ethics**
Michael Abramoff, MD, PhD
Robert Watzke Professor in Retina Research and Electrical and Computer
Engineering
University of Iowa
Founder and Executive Chairman, Digital Diagnostics

8:10 AM–8:20 AM **Real-World Data Use and AI in Health Policy and Health Equity**
David W. Parke II, MD
CEO, American Academy of Ophthalmology
Executive Chairman, Verana Health

8:20 AM–8:35 AM **Coverage and Reimbursement**
Michael X. Repka, MD, MBA
David L. Guyton MD and Feduniak Family Professor of Ophthalmology,
Johns Hopkins University
Medical Director for Government Affairs, American Academy
of Ophthalmology

8:35 AM–8:45 AM **Artificial Intelligence in the Real World: Panel Discussion
and Q&A**
Moderator: *Mark Blumenkranz, MD, MMS*
Malvina Eydelman, MD
Michael Abramoff, MD, PhD
Flora Lum, MD (Vice President, Quality and Data Science, American
Academy of Ophthalmology)
Matthew Roe, MD, MHS (Chief Medical Officer, Verana Health)
David B. Glasser, MD (Secretary for Federal Affairs, American Academy
of Ophthalmology, Wilmer Eye Institute, Johns Hopkins University of
Medicine)

SESSION 2: DIABETIC EYE EXAMS WITH AI: IMPLEMENTATION, WORKFLOW, AND BENEFIT

Session Chair: **Dimitri Azar, MD, MBA**
President and CEO, Twenty/Twenty Therapeutics
Distinguished University Professor, BA Field Chair of Ophthalmological Research, Former Executive Dean, University of Illinois College of Medicine

8:45 AM–8:55 AM	**AI for Diabetic Retinopathy in an Academic Primary Health Care Network**

David Myung, MD, PhD
Assistant Professor of Ophthalmology and, by courtesy, of Chemical Engineering
Director, Ophthalmic Innovation Program
Director, Stanford Teleophthalmology Autonomous Testing and Universal Screening (STATUS) Program
Byers Eye Institute at Stanford
VA Palo Alto Health Care System

8:55 AM–9:10 AM	**AI for Diabetic Retinopathy in Federally Qualified Health Centers (FQHCs)**

Fred D. Rachman, MD
Chief Executive Officer
AllianceChicago

9:10 AM–9:20 AM	**US and International Adoption and Implementation of EyeArt Autonomous AI Technology**

Frank Cheng, MBA
President & CCO, Eyenuk, Inc.

9:20 AM–9:30 AM	**Diabetic Eye Exams with AI: Implementation, Workflow, and Benefit Panel Discussion and Q&A**

Moderator: *Dimitri Azar, MD, MBA*
David Myung, MD, PhD
Fred D. Rachman, MD
Frank Cheng, MBA
Theodore Leng, MD, MS (Associate Professor, Director of Clinical and Translational Research, Byers Eye Institute at Stanford, Stanford University School of Medicine, Palo Alto, CA; Medical Advisor, Verana Health)
April Maa, MD (Associate Professor, Emory University School of Medicine, Tele-eye Co-lead, National VA Office of Connected care, Tele-specialty care director, VISN 7 CRH)

9:30 AM–10:15 AM   **SESSION 3: OCULAR IMAGING: PHI AND PII?**

Session Chairs:
Emily Y. Chew, MD
Director Division of Epidemiology and Clinical Applications
National Eye Institute (NEI)/National Institutes of Health (NIH)

Joel S. Schuman, MD
Elaine Langone Professor of Ophthalmology
Professor of Neuroscience and Physiology, Neural Science, Biomedical Engineering and Electrical and Computer Engineering
NYU Langone Health
NYU Grossman School of Medicine
NYU Tandon School of Engineering

9:30 AM–9:33 AM   **Definition of Biometrics & Risks Associated with Use of Ocular Images**
Emily Y. Chew, MD
Director Division of Epidemiology and Clinical Applications
National Eye Institute (NEI)/National Institutes of Health (NIH)

9:33 AM–9:41 AM   **Bioethics Perspective: Biometrics and PII**
Christine Grady, MSN, PhD
Chief Department of Bioethics
National Institutes of Health Clinical Center

9:41 AM–9:49 AM   **Definition of PII/PHI and the Intersection with HIPAA**
Kathryn Marchesini, JD
Chief Privacy Officer
The Office of the National Coordinator for Health Information Technology (ONC)

9:49 AM–9:57 AM   **Cyber Security and Biometrics**
Bradley Malin, PhD
Vice Chair for Research
Department of Biomedical Informatics
Vanderbilt University Medical Center
Accenture Professor of Biomedical Informatics, Biostatistics, and Computer Science
Vanderbilt University

9:57 AM–10:05 AM   **Patient Perspective on Personal Information for Research and Care**
Camron King, MPPA
President of Oakwood Strategic, LLC

10:05 AM–10:15 AM	**Ocular Imaging: PHI and PII?: Panel Discussion and Q&A**
	Moderators: Emily Y. Chew, MD and
	Joel S. Schuman, MD
	Michael Boland, MD, PhD (Associate Professor of Ophthalmology Harvard Medical School, Medical Director of Practice Innovation Massachusetts Eye and Ear)
	Camron King, MS
	Kathryn Marchesini, JD
	Bradley Malin, PhD
	Minerva Hughes, JD, PhD (Regulatory Counsel, Office of Clinical Evidence and Analysis, Center for Devices and Radiological Health, US Food and Drug Administration)

10:15 AM–10:30 AM   BREAK

10:30 AM–11:15 AM   **SESSION 4: FOUNDATIONAL PRINCIPLES OF OPHTHALMIC IMAGING AND ALGORITHMIC INTERPRETATION**

Session Chair: **Michael Abramoff, MD, PhD**

10:30 AM–10:35 AM	**FPOAI Workgroup Update**
	Michael Abramoff, MD, PhD
	Robert Watzke Professor in Retina Research and Electrical and Computer Engineering
	University of Iowa
	Founder and Executive Chairman, Digital Diagnostics

10:35 AM–10:45 AM	**Ethics for AI**
	Danton S. Char, MD
	Assistant Professor of Anesthesiology
	Stanford University

10:45 AM–10:55 AM	**Considerations for Addressing Bias in Artificial Intelligence for Health Equity**
	Michelle Tarver, MD, PhD
	Deputy Director, Office of Strategic Partnerships and Technology Innovation
	Program Director for Patient Science, Digital Health Center of Excellence
	US Food and Drug Administration

10:55 AM–11:05 AM	**Considerations for Revalidation of AI from a Statistical Perspective**
	Arjun K. Manrai, PhD
	Assistant Professor of Biomedical Informatics, Harvard Medical School

11:05 AM–11:15 AM	**Foundational Principles of Ophthalmic Imaging and Algorithmic Interpretation: Panel Discussion and Q&A**
	Moderator: *Michael Abramoff, MD, PhD*
	Danton S. Char, MD
	Michelle Tarver, MD, PhD
	Andy Beck, MD, PhD (CEO and Co-Founder PathAI)
	Arjun K. Manrai, PhD

11:15 AM–12:00 PM   ## SESSION 5: MACULAR DEGENERATION

Session Chair: **Emily Y. Chew, MD**

11:15 AM–11:18 AM   **Introduction of Development of Software as Medical Device (SaMD) for AMD**
Emily Y. Chew, MD
Director Division of Epidemiology and Clinical Applications
National Eye Institute (NEI)/National Institutes of Health (NIH)

11:18 AM–11:26 AM   **Addressing Clinical Needs in Age-Related Macular Degeneration with AI**
Eliot Dow, MD, PhD
Byers Family Ophthalmic Innovation Fellow
Department of Ophthalmology
Stanford University School of Medicine
VA Palo Alto Health Care System

11:26 AM–11:34 AM   **Clinical Applications and Challenges of Implementation of AI for AMD, Screening, Detecting, Diagnosis, and Prediction**
Jennifer I. Lim, MD
Marion H. Schenk Esq., Chair in Ophthalmology for Research in the Aging
Eye Professor of Ophthalmology, University of Illinois at Chicago

11:34 AM–11:42 AM   **Sharing Data without Moving Data: Transfer and Federated Learning**
Aaron Lee, MD, MSc
Assistant Professor of Ophthalmology Department of Ophthalmology, University of Washington

11:42 AM–11:50 AM   **INSIGHT Health Data Research Hub for Eye Health**
Pearse Keane, MD, FRCOpht
Consultant Moorfields Eye Hospital, Institute of Ophthalmology at University College London (UCL)

11:50 AM–12:00 PM   **Macular Degeneration: Panel Discussion and Q&A**
Moderator: *Emily Y. Chew, MD*
Eleonora Lad, MD, PhD (Associate Professor of Ophthalmology, Vitreoretinal Diseases, Director of Grading, Duke Reading Center Duke University Medical Center)
Tiarnan Keenan, BM BCh, PhD (Staff Clinician, National Eye Institute/National Institutes of Health)
Jennifer Lim, MD
Eliot Dow, MD, PhD
Pearse Keane, MD, FRCOpht
Cecilia Lee, MD, MS (Assistant Professor of Ophthalmology, Department of Ophthalmology, University of Washington)
Anat Loewenstein, MD (Professor of Ophthalmology, Vice Dean of the Faculty of Medicine, Sidney Fox Chair of Ophthalmology, Tel Aviv University)

12:00 PM–12:30 PM   ## NETWORKING EVENT

(LIMITED ACCESS, INVITATION REQUIRED)

12:30 PM–1:15 PM   ## SESSION 6: RETINOPATHY OF PREMATURITY

Session Chair: **Antonio Capone Jr., MD**
Associated Retinal Consultants
Professor of Biomedical Sciences
Oakland University

12:30 PM–12:40 PM   **Addressing Real-World Diagnostic Accuracy: Validation of a Deep Learning-Derived Vascular Severity Scale for ROP against International Expert Consensus**
R.V. Paul Chan, MD, MBA
Chair, Department of Ophthalmology and Visual Sciences The John H. Panton, MD Professor of Ophthalmology The Illinois Eye and Ear Infirmary at the University of Illinois at Chicago

12:40 PM–12:50 PM   **Addressing Real-World Privacy Concerns: Feasibility of Training Deep Learning Systems for ROP Diagnosis using Synthetic Retinal Images**
J. Peter Campbell, MD, MPH
Assistant Professor of Ophthalmology
OHSU Casey Eye Institute

12:50 PM–1:00 PM   **Addressing Real-World Business Concerns: Developing a Target Product Profile for ROP Imaging Devices in Resource-Limited Settings**
Rebecca Kirby, MBA
Research Assistant Professor
Northwestern University's Kellogg School of Management in Sustainability and Social Impact Program
NEST360 Market Access Director

1:00 PM–1:15 PM   **Retinopathy of Prematurity: Panel Discussion and Q&A**
Moderator: *Antonio Capone Jr., MD*
R.V. Paul Chan, MD, MSc, MBA
Michael Chiang, MD
J. Peter Campbell, MD, MPH
Rebecca Kirby, MBA

1:15 PM–2:00 PM   ## SESSION 7: OCULAR ONCOLOGY

Session Chair: **Carol Shields, MD**

1:15 PM–1:24 PM   **Post-Pandemic Surge of Ocular Tumors**
Carol Shields, MD
Chief, Ocular Oncology
The Wills Eye Hospital at Thomas Jefferson University

1:24 PM–1:33 PM   **AI in India for Retinoblastoma Detection**
Swathi Kaliki, MD
Head, OEU Institute for Eye Cancer
LV Prasad Eye Institute

1:33 PM–1:42 PM	**AI at Moorfields for Ocular Oncology, Especially Choroid Nevus** *Mandeep S. Sagoo, MB, PhD, FRCS (Ed.), FRCOphth* Professor of Ophthalmology and Ocular Oncology CL Institute of Ophthalmology Consultant Ophthalmic Surgeon Moorfields Eye Hospital & Barts Health NHS Trust
1:42 PM–1:51 PM	**Patient Perspective on AI for Ocular Melanoma** *Sara Selig, MD, MPH* Co-Founder and Director CURE OM Washington DC
1:51 PM–2:00 PM	**Ocular Oncology: Panel Discussion and Q&A** Moderator: *Carol Shields, MD* *Swathi Kaliki, MD* *Mandeep Sagoo, MB, BChir, PhD (Cantab.), FRCS (Ed.), FRCOphth* *Sara Selig, MD*

2:00 PM–3:15 PM

SESSION 8: GLAUCOMA

Session Chair: **Joel S. Schuman, MD**
Elaine Langone Professor of Ophthalmology
Professor of Neuroscience and Physiology, Neural Science, Biomedical Engineering and Electrical and Computer Engineering
NYU Langone Health
NYU Grossman School of Medicine
NYU Tandon School of Engineering

2:00 PM–2:10 PM	**2020 CCOI Meeting—AI in Glaucoma: White Papers and Consensus on Glaucoma Definitions, Imaging Parameters for Glaucoma Detection, Visual Fields** *Felipe Medeiros, MD, PhD* Professor of Ophthalmology Joseph A.C. Wadsworth Distinguished Professor of Ophthalmology Duke University School of Medicine
2:10 PM–2:20 PM	**Best Initial Target Populations for AI Glaucoma Detection—2020 CCOI Consensus: Identifying People with Perimetric Glaucoma versus Healthy People (Not Glaucoma Suspects) using AI** *David (Ted) Garway-Heath, MD* IGA Professor of Ophthalmology for Glaucoma & Allied Studies University College London Institute of Ophthalmology Faculty of Brain Sciences Honorary Consultant Ophthalmic Surgeon Moorfields Eye Hospital, NHS Foundation Trust

2:20 PM–2:30 PM	**AI Models for Detecting Glaucoma** *Donald Hood, PhD* James F. Bender Professor in Psychology Professor of Ophthalmic Science Columbia University
2:30 PM–2:40 PM	**Identification of Angle Closure with AI** *David S. Friedman, MD, PhD, MPH* Alfred and Diane Kaneb Professor of Ophthalmology at Massachusetts Eye and Ear Harvard School of Medicine
2:40 PM–2:50 PM	**AI, Glaucoma, and Global Equity** *Louis R. Pasquale, MD, FARVO* Shelley and Steven Einhorn Professor of Ophthalmology Site Chair, Department of Ophthalmology, Mount Sinai Hospital Director, Mount Sinai/NYEE Eye and Vision Research Institute
2:50 PM–3:00 PM	**Federated AI—Glaucoma and Beyond** *Lama Al-Aswad, MD, MPH* Professor of Ophthalmology NYU Langone Health NYU Grossman School of Medicine
3:00 PM–3:15 PM	**Glaucoma: Panel Discussion and Q&A** Moderator: *Joel S. Schuman, MD* *Felipe Medeiros, MD, PhD* *David (Ted) Garway-Heath, MD, FRCOphth, FARVO* *Don Hood, PhD* *Lama Al-Aswad, MD, MPH* *Louis R. Pasquale, MD, FARVO*

3:15 PM–3:30 PM

CLOSING REMARKS—THE FUTURE OF AI AND REAL-WORLD EVIDENCE IN OPHTHALMOLOGY: WHAT'S NEXT?

Michael Chiang, MD
Director of the National Eye Institute
National Institutes of Health

Mark S. Blumenkranz, MD, MMS

HJ Smead Professor Emeritus, Co-Director of the Ophthalmic Innovation Program, Byers Eye Institute, Stanford University School of Medicine

Dr. Blumenkranz is also the Managing Director of Lagunita Biosciences, an early stage healthcare incubator and CEO of Kedalion Therapeutics. He has a long-standing interest in the area of university industry technology transfer as well as ophthalmic laser delivery systems, ocular pharmacology, gene therapy and health information technology. He is the recipient of multiple distinguished awards in the field including the and AAO and AJO's Edward Jackson Award Lecture and most recently Stanford's Albion Walter Hewlett Award, and the author of more than 160 scientific papers and multiple patents in the field. He served as the Chairman of the Department of Ophthalmology at Stanford from 1997 until 2015 and played a leading role in the planning, fundraising and construction of the Byers Eye Institute there.

Malvina Eydelman, MD

Director, Office of Health Technology 1, Ophthalmic, Anesthesia, Respiratory, ENT, & Dental Devices, Center for Devices and Radiological Health (CDRH), US Food and Drug Administration (FDA)
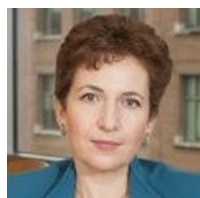
Dr. Eydelman guided development of more than 50 international and national standards, oversaw development of numerous regulations and guidance; and convened over 30 public meetings of US FDA Medical Device Committees. She originated numerous symposia and workshops to facilitate device innovation and has been instrumental in expediting development of novel endpoints for clinical trials of pioneering technologies. Dr. Eydelman has organized multi-stakeholder public-private partnerships and spearheaded many clinical and laboratory studies designed to improve the safety of medical devices. Dr. Eydelman received her MD degree from Harvard Medical School and a Doctorate in Health Sciences and Technology from Massachusetts Institute of Technology (M.I.T.). Dr. Eydelman has been granted a US patent, published nearly 100 peer-reviewed articles, book chapters, and monographs and presented over 200 lectures worldwide.

Michael Abramoff, MD, PhD

Robert Watzke Professor in Retina Research and Electrical and Computer Engineering, University of Iowa School of Medicine, Founder and Executive Chairman, Digital Diagnostics (formerly IDx)

Dr. Abramoff is an American ophthalmologist, computer scientist and entrepreneur. He is Founder and CEO of Digital Diagnostics (formerly IDx), the first company ever to receive US FDA clearance for an autonomous AI system. In this capacity, as an expert on AI in healthcare, he has been invited to brief the US Congress, the White House, and the Federal Trade Commission. Dr. Abramoff has published over 250 peer reviewed journal papers (h-index 54) on AI, image analysis, and retinal diseases, and many book chapters. In 2010, Dr. Abramoff's research findings led him to found IDx to bring to patients more accessible, affordable and higher quality healthcare.

Emily Chew, MD

Director, Division of Epidemiology and Clinical Applications, National Eye Institute (NEI)/National Institutes of Health (NIH)

Dr. Chew is the director of the Division of Epidemiology and Clinical Applications at the National Eye Institute/National Institutes of Health in Bethesda, Maryland. As the Chief of Clinical Trials Branch, she designs clinical trials and epidemiologic studies in chronic retinovascular diseases such as age-related macular degeneration and diabetic retinopathy and rare diseases, such as macular telangiectasia type 2. She also collaborates with colleagues at the National Library of Medicine/National Institutes of Health, utilizing artificial intelligence/deep learning for the detection and progression of age-related macular degeneration.

Michael Chiang, MD

Director, National Eye Institute, National Institutes of Health

Dr. Chiang is director of the National Eye Institute, at the National Institutes of Health in Bethesda, Maryland. His clinical practice focuses on pediatric ophthalmology and strabismus, and he is board-certified in clinical informatics. His research develops and applies biomedical informatics methods to clinical ophthalmology in areas such as retinopathy of prematurity (ROP), telehealth, artificial intelligence, clinical information systems, genotype-phenotype correlation, and data analytics. His group has published over 200 peer-reviewed papers, and has developed an assistive artificial intelligence system for ROP that received Breakthrough Status from the US Food and Drug Administration.

Aaron Lee, MD

Assistant Professor of Ophthalmology, Department of Ophthalmology, University of Washington
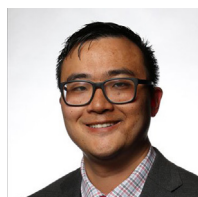
Dr. Lee co-chairs the American Academy of Ophthalmology Medical Information Technology Committee. He currently serves as an Associate Editor for *Translational Vision Science and Technology* and on the Editorial Board for the *American Journal of Ophthalmology* and *Nature Scientific Reports*. He has published 78 peer reviewed manuscripts and is known as a leader in the field of artificial intelligence and ophthalmology. Aaron Lee's research is focused on the translation of novel computation techniques in machine learning to uncover new disease associations and mechanisms from routine clinical data including electronic health records and imaging.

David Myung, MD, PhD

Assistant Professor of Ophthalmology and, by courtesy, Chemical Engineering, Director—Ophthalmic Innovation Program, Director—STATUS program, Byers Eye Institute at Stanford and VA Palo Alto Health Care System

Dr. Myung is a clinician-scientist specializing in cataract and corneal surgery and external diseases of the eye. He serves as the Director of the Ophthalmic Innovation Program at the Byers Eye Institute at Stanford which includes a project-based fellowship in the development and regulatory science of new eye care technologies. Dr. Myung leads an NIH-funded translational research laboratory focused on two areas of clinical need: (1) ophthalmic regenerative medicine and (2) telemedicine through ophthalmic imaging and digital health technologies. As Director of the Stanford Teleophthalmology Autonomous Testing and Universal Screening (STATUS) program at Stanford, he organized and leads an AI-powered remote screening network for diabetic retinopathy based out of primary care clinics throughout the Bay Area and also led the development of a smartphone-based ophthalmic imaging system which has been studied in numerous clinical settings both in the US and abroad.

Michael X. Repka, MD, MBA

David L. Guyton MD and Feduniak Family Professor of Ophthalmology, Johns Hopkins University Medical Director for Government Affairs, American Academy of Ophthalmology

Dr. Repka is the David L. Guyton, MD, and Feduniak Family Professor of Ophthalmology and a professor of pediatrics at the Johns Hopkins University School of Medicine. He has been at the Johns Hopkins University School of Medicine since 1983. He received his medical degree from the Jefferson Medical College of Thomas Jefferson University in 1979 and completed his ophthalmology residency at Wills Eye Hospital. He completed his MBA at Johns Hopkins University in 2010. Dr. Repka led the Pediatric Eye Disease Investigator Group funded by the National Eye Institute from 1997 to 2009 as chair and currently serves as past chair for and member of the operations committee.

Dr. Repka currently is Vice-chair for Clinical Practice and Division Director of Pediatric Ophthalmology and Adult Strabismus at the Wilmer Institute. He serves as Medical Director for Governmental Affairs of the American Academy of Ophthalmology. He is currently AAO's CPT Advisor to the AMA's CPT Editorial Panel.

Joel S. Schuman, MD

Elaine Langone Professor of Ophthalmology, Professor of Neuroscience and Physiology, Neural Science, Biomedical Engineering and Electrical and Computer Engineering, NYU Langone Health, NYU Grossman School of Medicine, NYU Tandon School of Engineering
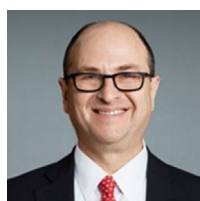
Dr. Schuman is the Elaine Langone Professor of Ophthalmology and Professor of Neuroscience & Physiology, Biomedical Engineering, Electrical & Computer Engineering and Neural Science at NYU. He chaired the ophthalmology department at NYU 2016–2020 and at University of Pittsburgh/UPMC 2003–2016. At Tufts University 1991–2003 he was Residency Director and Glaucoma and Cataract Service Chief. Dr. Schuman and his colleagues were first to identify a molecular marker for human glaucoma, published in *Nature Medicine* in 2001. Continuously funded by the National Eye Institute as a principal investigator since 1995, he is an inventor of optical coherence tomography (OCT), used world-wide for ocular diagnostics. Dr. Schuman has published more than 400 peer-reviewed scientific journal articles. Dr. Schuman has received numerous awards, and is a 2012 Champalimaud Award Laureate.

Carol Shields, MD

Chief, Ocular Oncology, The Wills Eye Hospital at Thomas Jefferson University

Dr. Shields is currently the Director of the Oncology Service, Wills Eye Hospital, and Professor of Ophthalmology at Thomas Jefferson University in Philadelphia. Dr. Shields has authored or coauthored 12 textbooks, over 1,800 articles in major peer-reviewed journals, over 330 textbook chapters, given over 900 lectureships, and has received numerous professional awards. Some of her awards include The Byron Kanaley Award (1979) given to the top student-athlete at the University of Notre Dame, (she was the first woman to receive this award) and The Donders Award (2003) given by the Netherlands Ophthalmological Society every five years to an ophthalmologist worldwide who has contributed extensively to the field of ophthalmology. She is a member of numerous ocular oncology, pathology, and retina societies and has delivered 60 named lectures in America and abroad.

Michelle Tarver, MD, PhD

Deputy Director, Office of Strategic Partnerships and Technology Innovation, Program Director for Patient Science, Digital Health Center of Excellence, US Food and Drug Administration
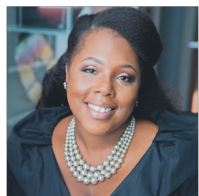
Dr. Tarver is the Director of the Patient Science and Engagement Program at CDRH at the US FDA. The Patient Science and Engagement Program fosters innovative approaches to collecting, analyzing and integrating the patient perspective in the development, evaluation and surveillance of medical devices, including digital health technologies. She also leads the CDRH Patient Engagement Advisory Committee efforts, an advisory panel comprised entirely of patients and caregivers providing their perspectives on general issues related to the regulation of medical devices. In addition to her experience in patient-focused efforts, Dr. Tarver has extensive experience in premarket and postmarket review of various medical devices, developing guidance documents and standards, and fostering external collaborations. As an epidemiologist and board-certified ophthalmologist, she has worked on longitudinal epidemiological studies, clinical trials, registries, developing patient-reported outcome measures as well as surveys to capture patient preferences with medical devices.

INVITED SPEAKERS AND PANELISTS

Lama A. Al-Aswad, MD, MPH

Professor of Ophthalmology, NYU Langone Health, NYU Grossman School of Medicine

Dr. Al-Aswad is ophthalmologist with subspecialty in glaucoma and cataract with a strong interest in disease prevention and population health management. She is the Vice Chair for Innovations and the Director of Teleophthalmology, Artificial Intelligence and Innovations and the Associate director of the glaucoma fellowship at NYU Langone Health. Dr. Al-Aswad is the past president of the NY Glaucoma Society and the Women in Ophthalmology. She also holds an appointment with the US FDA as a voting member on the ophthalmic device panel. Dr. Al-Aswad is a believer in prevention of blindness as evident from her large-scale glaucoma screening project in NYC where she screened more than 8,500 individuals for glaucoma.

Dimitri Azar, MD, MBA

President and CEO, Twenty/Twenty Therapeutics; Distinguished University Professor, BA Field Chair of Ophthalmological Research, Former Executive Dean, University of Illinois College of Medicine
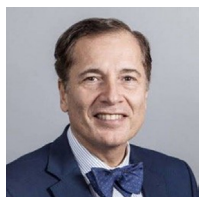
Dr. Azar is the Chief Executive Officer of Twenty/Twenty Therapeutics, a joint venture established by Google/Verily and Santen. He is Distinguished Professor and BA Field chair of ophthalmic research and former Dean at the University of Illinois College of Medicine, where he pioneered the convergence of engineering and data science/artificial intelligence with basic and clinical medicine. Dimitri sits on the board of the Tear Film and Ocular Surface Society, the board of the Himalayan Cataract Project and the Verily SAB board. He also served as a non-executive director on the Boards of Novartis (2012–2019) and Verb Surgical (2015–2019). Dr. Azar is the author of more than 500 scientific articles and book chapters. He is the editor of 23 books in ophthalmology and holds more than 45 patents in ophthalmic pharmacology and bioengineering.

Andrew Beck, MD, PhD

CEO and Co-Founder PathAI
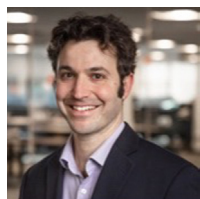
Dr. Beck earned his MD from Brown Medical School and completed residency and fellowship training in Anatomic Pathology and Molecular Genetic Pathology from Stanford University. He completed a PhD in Biomedical Informatics from Stanford University, where he developed one of the first machine-learning based systems for cancer pathology. He's been certified by the American Board of Pathology in Anatomic Pathology and Molecular Genetic Pathology. Prior to co-founding PathAI, he was on the faculty of Harvard Medical School in the Department of Pathology at Beth Israel Deaconess Medical Center. He has published over 110 papers in the fields of cancer biology, cancer pathology, and biomedical informatics.

Michael Boland, MD, PhD

Associate Professor of Ophthalmology, Harvard Medical School and Medical Director of Practice Innovation, Massachusetts Eye

Dr. Boland is a member of the Massachusetts Eye and Ear Glaucoma Center of Excellence. In addition to his extensive institutional work on medical information technology, he has served in various capacities on the Medical Information Technology Committee of the American Academy of Ophthalmology, including Co-Chairman of that committee. He has also worked on the development of DICOM standards for common ophthalmic testing devices (visual field, OCT), and collaborated with other institutions to create a database of almost one million visual fields for clinical research.

J. Peter Campbell, MD, MPh

### Assistant Professor of Ophthalmology, OHSU Casey Eye Institute

Dr. Campbell is Associate Professor of Ophthalmology at the Casey Eye Institute, Oregon Health & Science University (OHSU). As a clinician scientist with a clinical practice in adult and pediatric vitreoretinal surgery, Dr. Campbell's academic work focuses on the development of quantitative methods of diagnosing pediatric retinal diseases, including artificial intelligence, and optical coherence tomography. He is a member of the 3rd International Classification for ROP committee, and of the AAO AI Task Force.

Antonio Capone Jr., MD

Associated Retinal Consultants, Professor of Biomedical Sciences, Oakland University
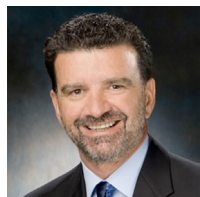
After completing his Fellowship in 1991, Dr. Capone joined the faculty at Emory University, where he was a tenured Associate Professor of Ophthalmology and Director of Emory's Vitreoretinal Fellowship Training Program. He joined Associated Retinal Consultants in Royal Oak, MI in 2000. He is a board-certified ophthalmologist whose special interests include pediatric vitreoretinal diseases, complicated retinal detachment, ocular oncology, and macular disease. Dr. Capone is an internationally recognized clinician, surgeon, and educator. He has authored or co-authored over 300 publications in peer-reviewed medical journals, book chapters, and publications from clinical trials. He is currently a Professor of Ophthalmology at Oakland University William Beaumont Hospital School of Medicine. He served as Co-President of ARC from 2015–2021, and currently serves as Chairman of the Medical Executive Board for EyeCare Partners and President of the Pediatric Retina Research Foundation. He has been dedicated to education throughout his career, has served as Director/Co-Director of the Associated Retinal Consultants Vitreoretinal Fellowship Training Program, and has trained many domestic and international thought leaders in adult and pediatric retinal diseases and surgery.

R.V. Paul Chan, MD, MSC, MBA

Chair, Department of Ophthalmology and Visual Sciences, The John H. Panton, MD Professor of Ophthalmology, The Illinois Eye and Ear Infirmary at the University of Illinois at Chicago

Dr. Chan is director of the Pediatric Retina and Retinopathy of Prematurity Service at UI Health and professor of ophthalmology at the University of Illinois College of Medicine. Dr. Chan is board certified in ophthalmology and a fellow of the American College of Surgeons. His clinical focus is in medical and surgical vitreoretinal disease, with a particular interest in the diagnosis and management of pediatric retinal disease and retinopathy of prematurity (ROP). His research interests include investigations into new methods to diagnose and manage pediatric retinal disease and ROP; identification of risk factors and genetic markers for pediatric retinal disease; telemedicine; computer-facilitated image analysis, and tele-education to improve the quality of care for pediatric retinal conditions and ROP. Dr. Chan is also the John H. Panton, MD Professor of Ophthalmology.

Danton S. Char, MD

Assistant Professor of Anesthesiology, Stanford University

Dr. Char is an Assistant Professor in the Department of Anesthesia, Perioperative and Pain Medicine at the Stanford University School of Medicine and a Pediatric Cardiac Anesthesiologist at Lucile Packard Children's Hospital. His research focuses on ethical issues arising with implementation of novel technologies to clinical care, particularly to the care of critically ill children. His research has appeared in publications ranging from the New England Journal of Medicine to the Wall Street Journal. His K-award is from the National Human Genome Research Institute.

Frank Cheng, MBA

President & CCO Eyenuk, Inc.

Frank Cheng is President & CCO, Eyenuk, Inc., a leading AI technology company with US FDA-cleared and Medicare-reimbursed EyeArt® autonomous AI diagnostic platform for detection of diabetic retinopathy (DR) and diabetic macular edema (DME). Earlier in his career, Frank held executive positions with multiple publicly-traded companies (GE, Roche, Hillrom, Stereotaxis and Cogstate) and led two venture-backed companies as CEO. Frank spearheaded digital health innovations related to robotic surgery, brain health digital diagnostics, artificial intelligence for hospital patient monitoring, and wearable continuous health monitoring. For each of these innovations, Frank built and led large global teams for product launch, regulatory approval, reimbursement justification and commercial growth.

Eliot Dow, MD, PhD

Byers Family Ophthalmic Innovation Fellow, Byers Eye Institute of Stanford University
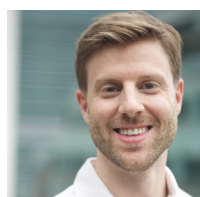
Dr. Dow is an MSTP-trained clinician-scientist in ophthalmology. As the 2021–2022 Byers Ophthalmic Innovation Fellow at Stanford University and a Heed Fellow he works on the development and regulation of artificial intelligence-based medical devices for retinal diseases. As Associate Director of the STATUS program he also oversees an AI-based teleophthalmology screening program for diabetic retinopathy at Byers Eye Institute. Dr. Dow seeks to integrate human-centered data science and machine learning into ophthalmology to improve patient outcomes and provider satisfaction.

David S. Friedman, MD, PhD, MPH

Alfred and Diane Kaneb Professor of Ophthalmology at Massachusetts Eye and Ear, Harvard School of Medicine

Dr. Friedman is the Alfred and Diane Kaneb Professor of Ophthalmology at Massachusetts Eye and Ear, Director of the Glaucoma Division, and the Medical Director of Clinical Research. Until May 2019, he was the Alfred Sommer Professor of Ophthalmology at the Wilmer Eye Institute of Johns Hopkins University School of Medicine with joint appointments as Professor in the Departments of Epidemiology and International Health at Johns Hopkins Bloomberg School of Public Health. As a clinician he has been a "Best Doctor" for many years and has been selected for the Power 100 list of leading ophthalmologists globally in 2016, 2018, and 2020. Dr. Friedman has made important contributions to the study of the mechanisms, epidemiology, prevention, and treatment of angle-closure glaucoma. He is a member of the Glaucoma Research Society (limited to the 100 leading glaucoma researchers) and the Alcon Research Institute (composed of the top six researchers in ophthalmology each year) and has over 300 peer-reviewed publications.

David (Ted) Garway-Heath, MD, FRCOphth, FARVO

Professor of Ophthalmology for Glaucoma & Allied Studies, Institute of Ophthalmology (University College London) and Moorfields Eye Hospital, London, UK

In addition to his clinical work, Professor Garway-Heath leads research in visual assessment and imaging at the Biomedical Research Centre of the UK National Institute for Health Research. His research focuses on the development and evaluation of the techniques for effective diagnosis and management of glaucoma, the identification of risk factors for glaucoma progression, and decision-support systems for healthcare delivery services. Professor Garway-Heath is currently President of the European Glaucoma Society, Vice President of the Imaging and Perimetry Society, and Chair of the Membership Committee of the Glaucoma Research Society. He has been recipient of several awards and has been consecutively voted onto The Ophthalmologist magazine's power list of the 100 most influential people in ophthalmology worldwide. He was recently voted in the top ten, and as "top mentor" worldwide, on this list. David Garway-Heath is also Workstream Lead for the design of the new building for Moorfields Eye Hospital and UCL Institute of Ophthalmology in London.

David B. Glasser, MD

Secretary for Federal Affairs, American Academy of Ophthalmology, Wilmer Eye Institute, Johns Hopkins University of Medicine
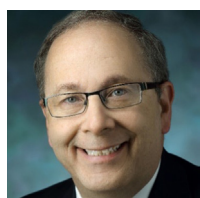
Dr. Glasser is the American Academy of Ophthalmology's Secretary for Federal Affairs and represents the Academy as an advisor before the RUC. He is a member of the Emeritus faculty at Johns Hopkins University School of Medicine.

Dr. Glasser has published and lectured widely on cornea and external ophthalmic disease and health policy. He is on the editorial board of the journal *Cornea* and is a consultant to the US FDA's Ophthalmic Device Panel. Dr. Glasser is past president of the Cornea Society and the Maryland Society of Eye Physicians and Surgeons and is past chairman of the board of the Eye Bank Association of America. He is a recipient of the Academy's Lifetime Achievement and Secretariat Awards, and of the Eye Bank Association of America's Paton Award.

Christine Grady, MSN, PhD

Chief Department of Bioethics, National Institutes of Health Clinical Center

Dr. Grady is a nurse-bioethicist, senior investigator, and Chief of the Department of Bioethics at the National Institutes of Health Clinical Center. Her research focuses on clinical research ethics, including informed consent, vulnerability, study design, and recruitment, international research ethics and on ethical issues faced by nurses and other healthcare providers. She is an elected fellow of the Hastings Center and the American Academy of Nursing, a research fellow at Kennedy Institute of Ethics and an elected member of the National Academy of Medicine. Dr. Grady holds a BS in nursing and biology from Georgetown University, a MSN in community health nursing from Boston College, and a PhD in philosophy from Georgetown University.

Donald Hood, PhD

### James F. Bender Professor in Psychology, Professor of Ophthalmic Science, Columbia University

Dr. Hood has been a member of the Columbia faculty since 1969 and has won all three of its major teaching awards. He holds MSc and PhD (1970) degrees from Brown University and honorary degrees from Smith College (2000), Brown University (2017), and State University of New York College of Optometry (2019). He is an elected Fellow of the American Academy of Arts and Sciences and recipient of an Alcon Research Institute Award (2014). He currently serves as Editor-in-Chief of *IOVS*. While some of his over 350 publications deal with issues of the basic neuroscience of vision, most of his work over the last 30 years has concerned research on diseases of the retina and optic nerve. He has had continuous grant support from NIH/NEI for over 45 years.

Minerva Hughes, JD, PhD

Regulatory Counsel Office of Clinical Evidence and Analysis, Center for Devices and Radiological Health, US Food and Drug Administration (FDA)
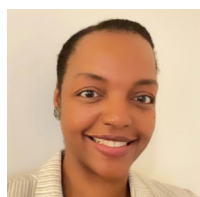
Dr. Hughes is the Regulatory Counsel for the Office of Clinical Evidence and Analysis (OCEA) in the Center for Devices and Radiological Health at US FDA. OCEA provides policy and program support regarding clinical trials, biostatistics, real-world evidence, epidemiological analysis and outreach and collaboration with hospitals and other external stakeholders. Dr. Hughes has over 15 years of experience in medical product development and US FDA regulatory matters and currently leads several initiatives at the US FDA to advance clinical trial innovation and expedite access to safe and effective devices. She received her doctorate degree from Johns Hopkins University and her law degree from the University of Maryland School of Law.

Swathi Kaliki, MD

Head, OEU Institute for Eye Cancer, LV Prasad Eye Institute, India
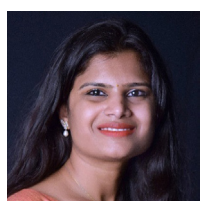
Dr. Kaliki is the Head of Ocular Oncology services at the Operation Eyesight Universal Institute for Eye Cancer, LV Prasad Eye Institute, India. She has delivered more than 150 lectures in various national and international forums, published more than 200 peer-reviewed articles, contributed to more than 10 textbooks, and is an Ocular Oncology Section Editor for 2 international journals.

She is a recipient of the prestigious Shakuntala Amir Chand Prize from the Indian Council of Medical Research and the IAPB Vision Excellence Award 2020 for her contribution to the field of ocular oncology. She is also the brain behind "Whitathon," an annual running event creating awareness about retinoblastoma and raising funds to support the treatment of children from financially distressed families with this deadly eye cancer.

Pearse Keane, MD, FRCOPHT

Consultant Ophthalmologist, Moorfields Eye Hospital NHS Foundation Trust, Associate Professor, University College London (UCL) Institute of Ophthalmology

In 2016, Dr. Keane initiated a formal collaboration between Moorfields Eye Hospital and Google DeepMind, with the aim of developing artificial intelligence (AI) algorithms for the earlier detection and treatment of retinal disease. In August 2018, the first results of this collaboration were published in the journal, Nature Medicine. In May 2020, he jointly led work, again published in Nature Medicine, to develop an early warning system for age-related macular degeneration (AMD).

Tiarnan Keenan, BM BCH, PHD

**Staff Clinician, National Eye Institute (NEI)/National Institutes of Health (NIH)**

Dr. Keenan's research is focused on adult retinal disease, particularly AMD. His experience and research span multiple disciplines, including epidemiology, genetics, biochemistry, clinical trials, and artificial intelligence, towards an integrated understanding of AMD pathophysiology. In the field of deep learning, he has published multiple papers based around detection, classification, phenotyping, and prognostic prediction tasks in AMD.

Camron King, MPPA

President of Oakwood Strategic, LLC
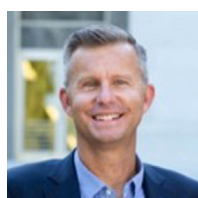
Camron King is President and Founder of Oakwood Strategic LLC—a boutique wine and food consultancy, President of the Association Resource Center—a full-service association management company and Chair of the Board for the VHL Alliance. Recognized for his dynamic leadership, effective management and forward-thinking approach to brand building and leadership development. He is a regularly invited presenter at conferences and events around the world.

As a VHL patient and parent to two children living with VHL, Camron is deeply passionate about supporting the VHL community, lending experiences to foster progress towards meeting the organizational mission of finding a cure for VHL, and to assisting in being a voice and advocate for our community.

Rebecca Kirby, MBA

Research Assistant Professor at Northwestern University's Kellogg School of Management in Sustainability and Social Impact Program and NEST360 Market Access Director
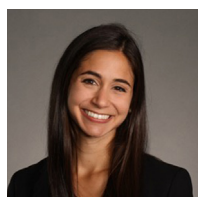
Rebecca (Becca) Kirby serves as a Research Assistant Professor at Kellogg and as Market Access Director for NEST360 (Newborn Essential Solutions and Technologies). NEST360 works to reduce preventable newborn deaths in sub-Saharan Africa through the development of innovative technologies and the scaling of these life-saving medical devices across health systems. Through her involvement in market shaping activities, Becca works to design solutions that help better connect both the supply and demand side who face high transaction costs, information gaps, or risk imbalances that contribute to market shortcomings. She has worked closely with UNICEF to develop Target Product Profiles (TPPs) for newborn technologies in resource-limited settings including a new TPP for a Retinopathy of Prematurity (ROP) imaging device.

Eleonora Lad, MD, PhD

Associate Professor of Ophthalmology, Duke University Medical Center; Director of Grading, Duke Reading Center; Faculty, Duke Institute for Brain Sciences

Dr. Lad is a clinician scientist and retinal ophthalmologist with the primary goal of developing novel strategies for early diagnosis and treatment of age-related macular degeneration (AMD). Dr. Lad's academic career goal is to translate her doctoral training in neuroscience into developing innovative diagnostic and therapeutic approaches for AMD. Dr. Lad has served as the primary investigator for investigator-initiated and phase 1 through 3 clinical trials at the Duke Eye Center, Director of Clinical Research at Duke Eye Center and as director of grading for retina clinical trials at Duke Reading Center. Dr. Lad was awarded the VA Clinical Science Research and Development I01 Merit Award, the Mentored Patient-Oriented Research Career Development (K23) Award from the National Eye Institute, the 2016 ARVO/Alcon Early Career Clinician-Scientist Research Award, Research to Prevent Blindness Ernest & Elizabeth Althouse Special Scholar Award, Duke Health Scholar, and a number of foundation grants.

Cecilia S. Lee, MD, MS

Associate Professor, Klorfine Family Endowed Chair in Ophthalmology University of Washington, Seattle, Washington
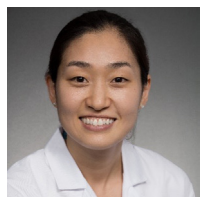
Dr. Lee is an Associate Professor and the Klorfine Family Endowed Chair in Ophthalmology at University of Washington, Seattle Washington. She specializes in medical retina and uveitis and serves as the Director of Clinical Research at the Department of Ophthalmology.

Dr. Lee received NIH/NEI K23 Career Development Award and has several NIH funded grants. She serves as the principal investigator of Eye Adult Changes in Thought (ACT) study. Her research interests include Big Data, ophthalmic imaging, retinal biomarkers of Alzheimer's disease, and clinical epidemiology. Dr. Lee is extensively published.

Dr. Lee is certified by the American Board of Ophthalmology and a fellow of the American Academy of Ophthalmology. Dr. Lee serves on the Editorial Board of the *American Journal of Ophthalmology, Ophthalmology Science,* the American Academy of Ophthalmology's *Eyenet,* and *Journal of Alzheimer's Disease*.

Theodore Leng, MD, FACS

Associate Professor, Director of Clinical and Translational Research, Byers Eye Institute at Stanford, Stanford University School of Medicine, Palo Alto, CA Medical Advisor, Verana Health

Dr. Leng is an internationally recognized specialist in vitreoretinal diseases and surgery and has been named one of the top 150 innovators in the field of retina. He serves as the Director of Clinical and Translational Research at the Byers Eye Institute at the Stanford University School of Medicine Department of Ophthalmology in Palo Alto, CA, where he oversees more than 50 research programs.

Dr. Leng attended the Stanford University School of Medicine for his MD and completed his ophthalmology residency at Bascom Palmer Eye Institute in Miami, FL. After a postdoctoral and clinical fellowship in vitreoretinal diseases and surgery at Stanford, Dr. Leng joined the faculty in the Department of Ophthalmology at Stanford and is an Associate Professor.

He has published over 120 peer-reviewed manuscripts and serves as the Associate Editor for *Ophthalmic Surgery Lasers and Imaging Retina*. His current research interests include computer-aided and machine learning analysis of retinal images, cell-based therapies, clinical trials, multimodal imaging and real-world evidence.

Dr. Leng is a founding member of the Collaborative Community on Ophthalmic Imaging and serves on the Horizontal Community on Foundational Principles of Ophthalmic Imaging and Algorithmic Interpretation.

Jennifer I. Lim, MD

Marion H. Schenk Esq., Chair in Ophthalmology for Research in the Aging Eye, Professor of Ophthalmology, Vice Chair for Diversity and Inclusion, and Director of the Retina Service, University of Illinois at Chicago
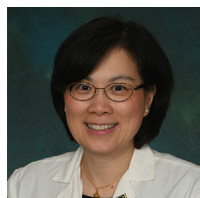
Dr. Jennifer I. Lim's areas of expertise include surgical and medical retinal diseases. Her research interests include clinical trials, translational research and retinal vascular disease. She has been principal investigator in over 60 clinical trials, serves on several Data and Monitoring Committees, Executive Committees of The Retina Society and Women in Retina (WinR). She previously served on the Boards of The Macula Society and the American Society of Retina Specialists (ASRS). She collaborates with basic scientists on angiogenesis and imaging research. She has received funding from the National Eye Institute, Macula Society Research Fund, American Cancer Society and numerous industry grants. She currently is a PI for an R01 grant on "Differential artery-vein analysis in OCT angiography for objective classification of diabetic retinopathy."

Anat Loewenstein, MD

Professor of Ophthalmology, Vice Dean of the Faculty of Medicine, and Sidney Fox Chair of Ophthalmology, Tel Aviv University; Chair of the Division of Ophthalmology, Tel Aviv Medical Center; President of the Israeli Ophthalmological Society

Dr. Loewenstein's main field of interest is the investigation of the drug administration, toxicity to the retina, and early detection and home monitoring of retinal disease. She was involved in the development of multiple innovations and was the leader behind the development of novel technology for early detection of AMD, automated technology for detection of disease activity, and augmented virtual reality to replace the operating microscope. Loewenstein has published 400 papers in peer reviewed journals, and contributed multiple chapters to ophthalmology textbooks. She serves on the International Committee of the Macular Society and is currently the general secretary of the EURETINA.

Flora Lum, MD

Vice President, Quality and Data Science, American Academy of Ophthalmology
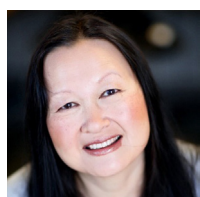
Dr. Lum is the Vice President of Quality and Data Science for the American Academy of Ophthalmology, and the Executive Director of the H. Dunbar Hoskins MD Center for Quality Eye Care, the Foundation of the American Academy of Ophthalmology. She has overseen the Academy's IRIS® Registry (Intelligent Research in Sight) since its initiation, which has collected over 397 million patient visits on over 70 million patients as of October 1, 2021, and reported on quality measures for over 10,000 NPI/TIN combinations since 2017. She served as co-Principal Investigator for the Agency for Healthcare Research and Quality (AHRQ)-funded grant, RiGOR, Registry in Glaucoma Outcomes Research, A Prospective Observational Study Comparing the Effectiveness of Treatment Strategies for Primary Open-Angle Glaucoma from 2011–2013.

She also served as consultant for an Intraocular Lens Registry funded by the US Food and Drug Administration. She oversees the quality of care and evidence-based activities of the Hoskins Center, including Preferred Practice Patterns, Ophthalmic Technology Assessments, Medicare data claims analyses, and the creation, stewardship and revision of performance measures which are incorporated into the Centers for Medicare and Medicaid Services' Merit-based Incentive Payment System. She has directed the Academy's health information technology activities, including development of Digital Imaging and Communications in Medicine (DICOM) standards, Systematized Nomenclature for Medicine (SNOMED) terminology, and Integrating the Healthcare Enterprise (IHE) Eye Care testing and demonstrations as well as development of criteria for ophthalmology-specific electronic health records.

April Maa, MD

Associate Professor, Emory University School of Medicine Tele-Eye Co-Lead, National VA Office of Connected Care Tele-Specialty Care Director, VISN 7 CRH

Dr. Maa is a comprehensive ophthalmologist who joined the Emory Eye Center and the Atlanta VA in 2008. She has a passion for population health management and prevention of disease through screening. She founded the VA eye telehealth program, Technology-based Eye Care Services in 2015, which is continuing to grow nationwide within the VA system as a means to provide eye care access and reduce healthcare disparities for rural and urban disadvantaged Veterans. Her research interests include clinical trials advancing telehealth modalities of care, artificial intelligence and big data, and implementation science. She currently serves as the Tele-specialty Care Director for the Veterans Integrated Service Network 7, Clinical Resource Hub. She is also one of the national tele-eye co-leads for the VA Office of Connected Care.

Bradley Malin, PhD

Vice Chair for Research, Department of Biomedical Informatics, Vanderbilt University Medical Center and the Accenture Professor of Biomedical Informatics, Biostatistics, and Computer Science, Vanderbilt University
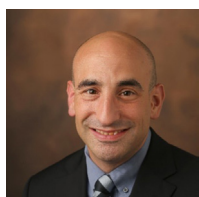
Dr. Malin is the Vice Chair for Research in the Department of Biomedical Informatics at Vanderbilt University Medical Center and the Accenture Professor of Biomedical Informatics, Biostatistics, and Computer Science at Vanderbilt University. He is an appointed member of the Board of Scientific Counselors of the National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC) and the Technical Anonymisation Group of the European Medicines Agency.

Among various honors, he received the prestigious Presidential Early Career Award for Scientists and Engineers (PECASE) is an elected fellow of the American College of Medical Informatics (ACMI), the International Academy of Health Sciences Informatics (IAHSI), the American Institute for Medical and Biological Engineering (AIMBE), and the National Academy of Medicine (NAM).

Arjun K. Manrai, PhD

Assistant Professor of Biomedical Informatics, Harvard Medical School
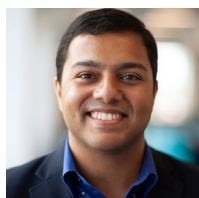
Dr. Manrai directs a research lab of machine learning scientists, clinicians, and biomedical data scientists working to improve medical decision making using computation. His group develops quantitative approaches to support physicians in making probabilistic and data-driven decisions using genomic and blood laboratory data, with attention to decision making across populations. Active projects in the group include improving genetic variant classification for inherited heart disease, disentangling demographic and clinical structure in blood laboratory biomarkers with a focus on kidney disease, developing semi and self-supervised learning approaches for both highly structured (e.g. imaging) and less structured (e.g. laboratory) data, and modeling fundamental reproducibility and adoption challenges associated with the clinical deployment of artificial intelligence. Manrai received an AB in Physics with Highest Honors from Harvard and earned his PhD in Bioinformatics and Integrative Genomics from the Harvard-MIT Division of Health Sciences and Technology.

Kathryn Marchesini, JD

Chief Privacy Officer, The Office of the National Coordinator for Health Information Technology (ONC)
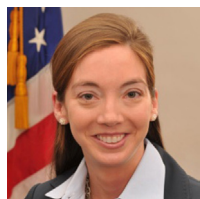
Kathryn Marchesini serves as the Chief Privacy Officer at the US Department of Health and Human Services (HHS) in the Office of the National Coordinator for Health Information Technology (ONC), where she advises the national coordinator on matters related to health information privacy, security, and data stewardship, especially as these issues impact IT design, development, and implementation. She works closely with the HHS Office for Civil Rights, National Institutes of Health, and other federal agencies, to provide strategic direction at the intersection of privacy and security law, technology, and healthcare. Kathryn participates in federal rulemaking, guidance development, and policy outreach initiatives focused on data access, sharing, and use. At HHS, she has helped shape national and international health information privacy policy, guidance, and education on topics including information exchange, consent, mobile technology, big data, and biomedical research. Kathryn works to maintain inspire confidence and trust in health IT and electronic health information exchange through appropriate, practical, and workable federal policies. She is also an Adjunct Professor in Health Privacy Law at the University of North Carolina at Chapel Hill School of Law.

Felipe Medeiros, MD, PhD

Professor of Ophthalmology, Joseph A.C. Wadsworth Distinguished Professor of Ophthalmology, Duke University School of Medicine

Dr. Medeiros is Vice-Chair for Technology and the Director of the Clinical Research Unit, where he leads clinical research efforts in the Department of Ophthalmology. Dr. Medeiros' research has been focused on the development of innovative methods and technologies for early diagnosis and detection of glaucoma progression, as well as investigation of functional impairment and quality of life in the disease. He has published over 300 peer-reviewed scientific articles and 6 books in ophthalmology. His publications have received over 18,000 citations, for an h-index of 75. His research has been funded by the National Institutes of Health (NIH) and through many other public and private institutions.

David W. Parke II, MD

### CEO, American Academy of Ophthalmology and Executive Chairman, Verana Health

Dr. Parke currently serves as the Chief Executive Officer of the American Academy of Ophthalmology. Previously, he was president and chief executive officer of the Dean McGee Eye Institute and Edward L. Gaylord Professor and Chair of the Department of Ophthalmology at the University of Oklahoma. He has been a member of the board of directors of the Ophthalmic Mutual Insurance Company, MedEncentive, Inc, Academic Physicians Insurance Company and of Medem, Inc. Dr. Parke's has also served terms as president of the American Academy of Ophthalmology, the Association of University Professors of Ophthalmology, the Council of Medical Specialty Societies, and as director of the American Board of Ophthalmology. He is currently Executive Chair of Verana Health, Inc.

Louis Pasquale, MD

Professor of Ophthalmology, New York Eye and Ear Infirmary of Mount Sinai
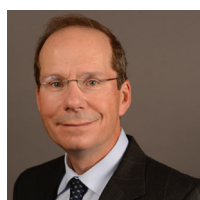
Dr. Pasquale is an NIH Principal Investigator with continuous support since 2006 whose research focuses on the pathogenesis of primary open-angle glaucoma. Dr. Pasquale serves on the editorial board of *Journal of Glaucoma, International Glaucoma Review, Asia Pacific Journal of Ophthalmology, Ophthalmology Glaucoma,* and *American Journal of Ophthalmology*. He is the Glaucoma Section Trustee for ARVO and a member of the AAO Artificial Intelligence Taskforce. He is also a participant in the Glaucoma Research Network, a consortium of investigators focused on using artificial intelligence to objectively interpret visual fields in order to provide an earlier glaucoma diagnosis and an efficient method to detect visual field progression.

Fred D. Rachman, MD

Chief Executive Officer, AllianceChicago

Dr. Rachman received his Bachelor of Arts degree in Biology from Johns Hopkins University and his Doctor of Medicine degree from Temple University. He has more than 30 years experience in primary health care delivery and administration, and extensive experience in Community Health Center leadership and in directing Community Health Center programs and research initiatives.

Dr. Rachman presently serves as Chief Executive Officer of the AllianceChicago, a HRSA funded network of primary care Community Health Centers whose mission is to improve personal, community and public health through innovative collaboration. AllianceChicago provides expertise, infrastructure, services and education in health information technology, practice transformation, data analytics, informatics and research.

Dr. Rachman is an Attending Physician in Pediatrics at Northwestern Memorial Hospital and Ann and Robert H. Lurie Children's Hospital of Chicago, and sees patients as a Pediatrician at Erie Family Health Center, an FQHC in Chicago. His voluntary leadership involvement has included among others the Board of the Health and Medicine Policy Research Group, the Illinois Health Information Exchange Advisory Board and Community Health Applied Research Network Steering Committee and Board of Directors of the Health Information Management Systems Society, National Collaborative of HIT for the Underserved and KLAS.

Matthew Roe, MD, MHS

Chief Medical Officer, Verana Health

Dr. Roe is Chief Medical Officer at Verana Health, where he leads the cross therapeutic medical team working to ensure the clinical validity and scientific integrity of the company's research. Additionally, Dr. Roe leads Verana's regulatory strategy, which focuses on determining how data curated by Verana can inform regulatory decision-making. A cardiologist and clinical researcher, Dr. Roe joined Verana Health in 2020 after spending two decades at the Duke University School of Medicine and the Duke Clinical Research Institute (DCRI), the world's largest academic research organization. At Duke, he focused on research initiatives leveraging real-world data for observational and prospective studies.

Mandeep S. Sagoo, MB, BChir, PhD (Cantab.), FRCS (Ed.), FRCOphth

Professor of Ophthalmology and Ocular Oncology, UCL Institute of Ophthalmology; Consultant Ophthalmic Surgeon, Moorfields Eye Hospital & Barts Health NHS Trust, London, UK

Dr. Sagoo is Professor of Ophthalmology and Ocular Oncology at UCL Institute of Ophthalmology and Consultant Ophthalmic Surgeon with subspecialist interest in adult and pediatric eye tumors at the London Ocular Oncology Service at Moorfields Eye Hospital and the London Retinoblastoma Service at Royal London Hospital. He is the Program Director for the MSc course in Ophthalmology at UCL/Moorfields.

His Fellowship training was in Ocular Oncology, as a Fulbright Scholar, under Dr. Jerry Shields and Dr. Carol Shields at Wills Eye Hospital and a Medical Retina Fellowship at Moorfields. He holds over 20 academic awards and prizes, including the Syme Medal and the King James IV Professorship of Royal College of Surgeons of Edinburgh. He has written multiple book chapters and academic papers. He has served as Honorary Secretary of the International Society of Ocular Oncology.

His research interests include imaging and technology in ocular oncology applications, from telemedicine to 3D printing of ocular prosthetics, as well as clinical and molecular studies in eye tumors.

Sara Selig, MD

Co-Founder and Director, CURE OM, Washington, DC

Dr. Selig is Co-Founder and Director of the Melanoma Research Foundation's (MRF) initiative focused specifically on ocular melanoma—CURE OM (Community United for Research and Education in Ocular Melanoma). Sara initially became involved with the ocular melanoma (OM) community when her husband, Dr. Gregg Stracks, was diagnosed with the disease in 2006, at the age of 34, when Sara was a fourth year medical student. At the time of Gregg's diagnosis, Gregg and Sara became fierce advocates for Gregg's care and the entire OM community as well. Sara continues to be a passionate advocate for the ocular melanoma field—working to accelerate research, promote collaboration, and support patients and caregivers through her leadership of the CURE OM initiative.

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