

CURRICULUM VITAE

The Johns Hopkins University School of Medicine

Albert S. Jun, M.D., Ph.D.

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointment

Associate Professor of Ophthalmology

The Johns Hopkins University School of Medicine, February 2009-present

Active Staff, Full-time

The Johns Hopkins Hospital, July 2003-present

Courtesy Staff

The Johns Hopkins Bayview Medical Center, July 2002-present

Personal Data

Wilmer/Woods 474, Wilmer Eye Institute

The Johns Hopkins Medical Institutions

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EDUCATION AND TRAINING

1986-1990 A.B. Harvard University, Cambridge, MA
Concentration: Biochemistry

1990-1997 M.D. Emory University School of Medicine, Atlanta, GA
Ph.D. Emory University Graduate School of Arts and Sciences, Atlanta, GA
Concentration: Genetics and Molecular Biology

1997-1998 Internal Medicine Internship, The Johns Hopkins University/Sinai Hospital of Baltimore

1998-2001 Ophthalmology Residency, The Johns Hopkins Medical Institutions

2001-2002 Cornea and External Disease Fellowship, Moorfields Eye Hospital, London, United Kingdom

2002 Corneal Gene Therapy Research Fellowship, Imperial College School of Medicine, London, United Kingdom

2002-2003 Maumenee Clinician-Scientist Fellowship, The Johns Hopkins Medical Institutions

PROFESSIONAL EXPERIENCE

- 2001-2002 Assistant, Wilmer Eye Institute
- 2002-2004 Instructor, Wilmer Eye Institute
- 2003-2004 Assistant Chief of Service and Associate Director of Ocular Trauma, Wilmer Eye Institute
- 2004-2009 Assistant Professor of Ophthalmology, Wilmer Eye Institute
- 2009-present Associate Professor of Ophthalmology, Wilmer Eye Institute

RESEARCH ACTIVITIES

Publications

1. **Jun AS**, Brown MD, Wallace DC. A mitochondrial DNA mutation at np 14459 of the ND6 gene associated with maternally inherited Leber hereditary optic neuropathy and dystonia. *Proc natl Acad Sci* 1994;91:6206-6210.
2. Shoffner JM, Brown MD, Stugard CE, **Jun AS**, Pollok S, Haas RH, Kaufman AE, Koontz DA, Kim Y, Graham JR, Smith E, Dixon D, Wallace DC. Leber's hereditary optic neuropathy plus dystonia is caused by a mitochondrial DNA point mutation. *Ann Neurol* 1995;38:163-169.
3. Brown MD, Shoffner JM, Kim YL, **Jun AS**, Graham BH, Cabell MF, Gurley DS, Wallace DC. Mitochondrial DNA sequence analysis of four Alzheimer's and Parkinson's disease patients. *Am J Med Genet* 1995;61:283-289.
4. **Jun AS**, Trounce IA, Brown MD, Shoffner JM, Wallace DC. Use of transmitochondrial cybrids to assign a complex I defect to the mitochondrial DNA-encoded NADH dehydrogenase subunit 6 gene mutation at nucleotide pair 14459 that causes Leber hereditary optic neuropathy and dystonia. *Mol Cell Biol* 1996;16:771-777.
5. Melov S, Coskun P, Patel M, Tuinstra R, Cottrell B, **Jun AS**, Zastawny TH, Dizdaroglu M, Goodman SI, Huang T-T, Miziorko H, Epstein CJ, Wallace DC. Mitochondrial disease in superoxide dismutase 2 mutant mice. *Proc natl Acad Sci* 1999;96:846-851.
6. Brown MD, Trounce IA, **Jun AS**, Allen JC, Wallace DC. Functional analysis of lymphoblast and cybrid mitochondria containing the 3460, 11778, or 14484 Leber's hereditary optic neuropathy mitochondrial DNA mutation. *J Biol Chem* 2000;275:39831-39836.
7. **Jun AS**, Liu S, Koo E, Van Do D, Stark WJ, Gottsch JD. Microarray analysis of gene expression in human donor corneas. *Arch Ophthalmol* 2001;119:1629-1634.
8. Akpek EK, **Jun AS**, Goodman D, Green WR, Gottsch JD. Clinical and ultrastructural features of a novel, autosomal dominant, anterior segment dysgenesis. *Ophthalmology* 2002;109:513-519.

9. **Jun AS**, Broman KW, Do DV, Akpek EK, Stark WJ, Gottsch JD. Endothelial Dystrophy, Iris Hypoplasia, Congenital Cataract, and Stromal Thinning (EDICT) Syndrome Maps to Chromosome 15q22.1-q25.3. *Am J Ophthalmol* 2002;134:172-176.
10. Gottsch JD, Bowers AL, Margulies EH, Seitzman GD, Kim SW, Saha S, **Jun AS**, Stark WJ, Liu SH. Serial analysis of gene expression in the corneal endothelium of Fuchs' dystrophy. *Invest Ophthalmol Vis Sci* 2003;44:594-599.
11. Gottsch JD, Seitzman GD, Margulies EH, Bowers AL, Michels AJ, Saha S, **Jun AS**, Stark WJ, Liu SH. Gene Expression in donor corneal endothelium. *Arch Ophthalmol* 2003;121:252-258.
12. Garibaldi DC, Schein OD, **Jun AS**. Features of the iridocorneal endothelial syndrome on confocal microscopy. *Cornea* 2005;24:349-351.
13. Reyes JM, Herretes S, Pirouzmanesh A, Wang D-A, Elisseeff JH, **Jun A**, McDonnell PJ, RS Chuck, A Behrens. A modified chondroitin sulfate aldehyde adhesive for sealing corneal incisions. *Invest Ophthalmol Vis Sci* 2005;46:1247-1250.
14. Gottsch JD, Sundin OH, Liu SH, **Jun AS**, Broman KW, Stark WJ, Vito ECL, Narang A, Thompson JM, Magovern M. Inheritance of a novel COL8A2 mutation defines a distinct subtype of Fuchs corneal dystrophy. *Invest Ophthalmol Vis Sci* 2005;46:1934-1939.
15. Sundin OH, **Jun AS**, Broman KW, Liu SH, Sheehan SE, Vito ECL, Stark WJ, Gottsch JD. Linkage of late-onset Fuchs corneal dystrophy to a novel locus at 13ptel-13q12.13. *Invest Ophthalmol Vis Sci* 2006;47:140-145.
16. **Jun AS**, Chakravarti S, Edelhauser HF, Kimos M. Aging changes of mouse corneal endothelium and Descemet membrane. *Exp Eye Res* 2006;83:890-6.
17. Henry C, Navarro V, **Jun A**, Annaberdyev S. Measuring the “fifth vital sign” in cataract surgery patients—is it necessary? *Insight* 2006;31:7-9.
18. Wang Z, Handa JT, Green WR, Stark WJ, Weinberg RS, **Jun AS**. Advanced glycation end products and receptors in Fuchs' dystrophy corneas undergoing Descemet's stripping with endothelial keratoplasty. *Ophthalmology* 2007;114:1453-60.
19. Hindman HB, McCally RL, Myrowitz E, Terry MA, Stark WJ, Weinberg RS, **Jun AS**. Evaluation of deep lamellar endothelial keratoplasty surgery using scatterometry and wavefront analyses. *Ophthalmology* 2007;114:2006-12.
20. Suh LH, Zhang C, Chuck RS, Stark WJ, Naylor S, Binley K, Chakravarti S, **Jun AS**. Cryopreservation and lentiviral mediated genetic modification of human primary cultured corneal endothelial cells. *Invest Ophthalmol Vis Sci* 2007;48:3056-61.
21. Rose L, Briceno CA, Stark WJ, Gloria DG, **Jun AS**. Assessment of eye bank prepared

posterior lamellar corneal tissue for endothelial keratoplasty. *Ophthalmology* 2008;115:279-86.

22. Wu F, Lee S, Schumacher M, **Jun A**, Chakravarti S. Differential gene expression patterns of the developing and adult cornea compared to the lens and tendon. *Exp Eye Res* 2008;87:214-25.
23. Oster SF, Ebrahimi KB, Eberhart CG, Schein OD, Stark WJ, **Jun AS**. A clinicopathologic series of primary graft failure after Descemet's stripping and endothelial keratoplasty (DSAEK). *Ophthalmology* 2009;116:609-14.
24. Kelliher C, Engler C, Speck C, Ward D, Farazdaghi S, **Jun AS**. A comprehensive analysis of eye bank-prepared posterior lamellar corneal tissue for use in endothelial keratoplasty. *Cornea* 2009; *In press*.
25. Shin YJ, Nishi Y, Engler C, Kang J, Hashmi S, Jun A, Gehlbach P, Chuck R. The effect of phacoemulsification energy on the redox state of cultured human corneal endothelial cells. *Arch Ophthalmol* 2009;127:435-41.
26. Engler C, Kelliher C, Speck CL, **Jun AS**. Assessment of attachment factors for primary cultured human corneal endothelial cells. *Cornea* 2009; *In press*.
27. Engler C, Kelliher C, Wahlin K, Speck C, and **Jun AS**. Comparison on non-viral methods to genetically modify and enrich populations of primary human corneal endothelial cells. *Mol Vis* 2009;15:629-37.

Inventions, Patents, Copyrights

9/05/08 Clear, rigid, intra-corneal implant to alter and stabilize the shape of the cornea. (Pending, provisional patent application number 61094470)

Extramural Funding

- 7/04-6/09 Role of Alpha 2 collagen VIII in Fuchs Corneal Dystrophy, 1 KO8EY015523, National Eye Institute, Total Direct Costs: \$875,242, PI: Albert S. Jun, M.D., Ph.D., 80% effort.
- 1/05-12/08 Role of Alpha 2 collagen VIII in Fuchs Corneal Dystrophy, Career Development Award, Research to Prevent Blindness, Total Direct Costs: \$200,000, PI: Albert S. Jun, M.D., Ph.D. No salary support, funds used for technician salary and supplies.
- 9/06-8/09 Phenotypic and Genotypic Analysis of Keratoconus, Grant from the Openshaw Keratoconus Research Fund, Total Direct Costs: \$800,000, PI: Albert S. Jun, M.D., Ph.D., 10% effort.
- 7/00-6/01 Identification of Genes Associated with Corneal Graft Failure, Grant from the Eyebank Association of America, Total Direct Costs: \$10,000, PI: Albert S. Jun, M.D., Ph.D. No salary support, funds used for services and supplies.

Intramural Funding

- 2007 Inaugural Wilmer Scholars Research Fund Award, Total Direct Costs: \$100,000, PI: Albert S. Jun, M.D., Ph.D. Awarded to the most promising Wilmer assistant professor.
- 2004 Clinical Confocal Microscopy for the Evaluation of Corneal Diseases, Grant from the Women's Board of the Johns Hopkins Hospital, Total Direct Costs: \$46,000, PI: Albert S. Jun, M.D., Ph.D. No salary support, funds used for the purchase of an *in vivo* corneal confocal microscope.

EDUCATIONAL ACTIVITIES

Publications

Peer Reviewed Publications (Expert Opinion)

1. Hindman HB, Patel SB, **Jun AS**. Rationale for adjunctive topical corticosteroids in bacterial keratitis. *Arch Ophthalmol* 2009;127:97-102.
2. Rose L, Kelliher C, **Jun AS**. Endothelial keratoplasty; historical perspectives, current techniques, future directions. *Can J Ophthalmol* 2009; *In press*.

Invited Review Articles

1. Wallace DC, Shoffner JM, Trounce IA, Brown MD, Ballinger SW, Corral-Debrinski M, Horton TM, **Jun AS**, Lott MT. Mitochondrial DNA mutations in human degenerative diseases and aging. *Biochem Biophys Acta* 1995;1271:141-151.
2. **Jun AS**, Larkin DF. Prospects for Corneal Gene Therapy. *Eye* 2003;17:906-911.
3. Ansari H, Qureshi JA, Rafiei N, **Jun AS**. Dystrophies of the corneal epithelium, Bowman layer, and stroma. *Contemporary Ophthalmology* 2005;4:1-12.

Case Reports

1. **Jun AS**, Bridges WZ, Pieramici DJ. Clear cornea cataract wound dehiscence during pneumatic retinopexy: a report of two cases. *Arch Ophthalmol* 2000;118:847-848.
2. Chang MA, Rizen M, **Jun AS**. Bilateral endogenous endophthalmitis in a patient with hemoglobin SC disease. *Can J Ophthalmol* 2005;40:768-771.
3. Suh LH, Sweeney DA, **Jun AS**. 33 year old man with a white pupil. *Clin Infect Dis* 2006;43:1043-1044.
4. Ansari H, Garibaldi DC, **Jun AS**. Anesthetic Abuse Keratopathy as a Manifestation of Ocular Munchausen's Syndrome. *Clin Experiment Ophthalmol* 2006;34:81-83.
5. Kedhar SR, Belair M-L, **Jun A**, Sulkowski M, Thorne JE. Necrotizing Scleritis and Peripheral Ulcerative Keratitis associated with Hepatitis C Virus-Related Cryoglobulinemia. *Arch Ophthalmol* 2007;125:852-3.

6. Walker BM, Hindman HB, Ebrahimi KB, Green WR, Eberhart CG, Garcia I, **Jun AS**. Epithelial downgrowth following Descemet's stripping automated endothelial keratoplasty. *Arch Ophthalmol* 2008;126:278-80.
7. Ebrahimi KB, Oster SF, Green WR, Grebe R, Schein OD, **Jun AS**. Calcareous degeneration of host-donor interface after Descemet's membrane stripping with automated endothelial keratoplasty (DSAEK). *Cornea* 2009;28:342-4.
8. Ebrahimi KB, Green WR, Grebe R, **Jun AS**. Acanthamoeba sclerokeratitis. *Graefes Arch Clin Exp Ophthalmol* 2009;247:283-6.
9. Ebrahimi KB, Oster SF, Green WR, **Jun AS**. Donor corneal stroma and host-interface vascularization after Descemet's membrane stripping with automated endothelial keratoplasty (DSAEK). *Acta Ophthalmol* 2009; *In press*.

Book Chapters and Monographs

1. Trounce IA, Kim YL, **Jun AS**, Wallace DC. Assessment of mitochondrial oxidative phosphorylation in patient muscle biopsies, lymphoblasts, and transmitochondrial cybrid cell lines. *Methods in Enzymology* 1996;264:484-509.
2. Bhykovskaya I, **Jun AS**. Pterygium Surgery. In *Manual of Resident Surgery*. American Academy of Ophthalmology. JP Dunn and P Langer, eds. 2009; *In press*.
3. **Jun AS**, Vito ECL, Haller JA, Stark WJ. Epithelial downgrowth, pearl tumors, and fibrous ingrowth. In *Corneal Surgery: Theory, Technique, and Tissue*. Mosby-Yearbook. FS Brightbill, PJ McDonnell, CNJ McGhee, eds. 2008.
4. Suh LH, Emerson MV, **Jun AS**. Fuchs' Endothelial Dystrophy. In *Essentials in Ophthalmology – Cornea and External Eye Disease*. Springer. T Reinhard, DF Larkin, eds. 2009; *In press*.

Other Media

2000-2002 Founder and Curator, CorneaNet, The Cornea Information Network, www.corneanet.net. This website is a searchable database of global corneal gene expression.

Teaching

Classroom Instruction

- 2002-2004 Clinical Elective in Ophthalmology, Lecturer, "Penetrating Keratoplasty," and Corneal Surgery Wet-lab Organizer, JHUSOM
- 2003-present Wilmer Resident Orientation, Lecturer, "Introduction to Cornea and External Disease"
- 2003-present Basic Ophthalmology Clerkship, Lecturer, "Red Eye, Cataract, and Refractive Surgery," JHUSOM
- 2004 Year 2 Clinical Skills Course, Lecturer, "The Eye," JHUSOM

- 2004-2005 Wilmer Resident Lecture Series, Lecturer, “Hereditary Corneal Dystrophies,” “Disorders of Corneal Size, Shape, and Thickness”
- 2006 Wilmer Resident Lecture Series, Lecturer, “Phaco Harangue”
- 2008 Wilmer Resident Lecture Series, Lecturer, “Introduction to External Disease, Cornea, and Corneal Imaging” (2 hours)

Clinical Instruction

- 2003-2004 Assistant Chief of Service, Residency Service Attending Ophthalmologist (In-patient/Out-patient Clinic and Surgery, Wilmer Emergency Room). Conducted ward rounds 7 days per week for 1 year, surgical attending for over 500 resident cases.
- 2003-present Basic Ophthalmology Clerkship Clinic Preceptor
- 2004-present Elective Ophthalmology Clerkship Clinic Preceptor

CME Instruction (Lecturer)

- 2002 Ophthalmology for the Primary Care Physician, “Conjunctivitis,” Baltimore, MD
- 2002 Current Concepts in Ophthalmology, “Posterior Lamellar Endothelial Keratoplasty,” Baltimore, MD
- 2003 Wilmer Residents Association Annual Meeting, “Genetic Manipulation of Human Corneal Endothelium,” Baltimore, MD
- 2004 Current Concepts in Ophthalmology, “Lamellar Keratoplasty,” Baltimore, MD
- 2004 Korean American Medical Association Scientific Meeting, “Update on Cataract and Refractive Surgery,” Easton, MD
- 2004 Wilmer Residents Association Annual Meeting, “Deep Lamellar Endothelial Keratoplasty,” Baltimore, MD
- 2005 Wilmer Nursing Conference, “Toxic Anterior Segment Syndrome,” Baltimore, MD
- 2005 Wilmer Residents Association Annual Meeting, “Non-invasive imaging of corneal infections,” Baltimore, MD
- 2005 Current Concepts in Ophthalmology, “Prevention of Posterior Capsule Opacification,” Baltimore, MD
- 2005 Current Concepts in Ophthalmology, “New Techniques in Endothelial Keratoplasty,” Baltimore, MD

- 2006 Current Concepts in Ophthalmology, “My Epilift/PRK Experience: Physician as Patient,” Baltimore, MD
- 2006 Current Concepts in Ophthalmology, “Advances in Endothelial Keratoplasty,” Baltimore, MD
- 2007 Current Concepts in Ophthalmology, “Update on Endothelial Keratoplasty,” Baltimore, MD
- 2008 Continuing Physician Education Course, “Challenging Cornea Cases,” Alcon Laboratories, Fort Worth, TX
- 2008 Current Concepts in Ophthalmology, “Corneal Ectasia Screening Using the Pentacam™,” Vail, CO
- 2008 Current Concepts in Ophthalmology, “Expanded Anterior Segment Applications of the Pentacam™,” Vail, CO
- 2008 Fuchs Corneal Dystrophy Symposium sponsored by Tissue Banks International and Wilmer Eye Institute, “What are the Cellular Causes of Fuchs Dystrophy?,” Baltimore, MD
- 2008 Fuchs Corneal Dystrophy Symposium, “How to Avoid Dislocations in DSEK,” Baltimore, MD
- 2008 Fuchs Corneal Dystrophy Symposium, “Assessment of Corneal Clarity After Endothelial Keratoplasty,” Baltimore, MD
- 2008 Fuchs Corneal Dystrophy Symposium, “Future Therapies for Fuchs Dystrophy,” Baltimore, MD
- 2009 Current Concepts in Ophthalmology, “Assessment of corneal clarity after endothelial keratoplasty,” Vail, CO
- 2009 Current Concepts in Ophthalmology, “Descemet stripping endothelial keratoplasty,” Vail, CO
- 2009 Current Concepts in Ophthalmology, “Genetics and pathophysiology of Fuchs dystrophy,” Vail, CO
- 2009 Maryland Optometric Society Annual Meeting, “Etiology of keratoconus: a review of the evidence,” Baltimore, MD

CME Instruction (Organizer)

- 2007 Organizer/Director, Endothelial Keratoplasty Workshop, offered as part of Current Concepts in Ophthalmology: a Forum for Global Ophthalmic Innovators. Baltimore, MD. Workshop attended by 45 U.S. and international ophthalmologists.

2008 Co-chair, Fuchs Corneal Dystrophy Symposium, Baltimore, MD

Scientific Meeting Organizer/Moderator

2009 Discussion Leader, 5th Annual Association for Research in Vision and Ophthalmology (ARVO)/Pfizer Ophthalmics Research Institute, Ft. Lauderdale, FL

2009 Moderator, Corneal Wound Healing and Cell Biology Paper Session, ARVO Annual Meeting, Ft. Lauderdale, FL

2009 Moderator, Keratoconus Poster Session, ARVO Annual Meeting, Ft. Lauderdale, FL

Workshops

2006 Inaugural Heed Ophthalmic Foundation Resident and Faculty Retreat, Panelist. A two day retreat for 20 ophthalmology residents and faculty members from the U.S. and Canada intended to foster career mentorship and guidance for promising academic ophthalmologists. Airlie, VA

2007 Second Annual Heed Ophthalmic Foundation Resident and Faculty Retreat, Panelist, Chicago, IL

2008 Descemet's Stripping Endothelial Keratoplasty Training Workshop, sponsored by Tissue Banks International and Wilmer Eye Institute. Co-organizer/Instructor, Baltimore, MD

2008 Third Annual Heed Ophthalmic Foundation Resident and Faculty Retreat, Panelist, Denver, CO

2009 Descemet's Stripping Endothelial Keratoplasty Training Workshop, sponsored by Tissue Banks International and Wilmer Eye Institute. Co-organizer/Instructor, Baltimore, MD

Educational Program Building/Leadership

2004-present Basic Ophthalmology (Required) Clerkship, Course Director.

Directed the following major innovations/improvements:

- 1) Development of formal objectives for each clerkship activity
- 2) Development of quantitative patient criteria
- 3) Development of a student evaluation tool focusing on core competencies and formative feedback
- 4) Implementation of Standardized Patient involvement
- 5) Implementation of Patient Tracker on-line software to record student-patient encounters standardized across all clinical clerkships at JHMI
- 6) Implementation of E-value course evaluation system standardized across all clinical clerkships JHMI
- 7) Statistical analysis and validation of test questions on internal clerkship final exam
- 8) Implementation of on-line examination format

- 7/04-present Elective Ophthalmology Clerkship, Course Director. This is a one month, clinical elective offered 5 times per year to medical students with particular interest in ophthalmology. Each student is assigned an individualized schedule of 20 full day assignments with a clinic or OR preceptor which covers the spectrum of clinical settings and sub-specialties in ophthalmology. Small group discussion sessions covering a variety of topics are also included. Approximately 20-25 students per year enroll in this course.
- 2006-present Genes to Society Special Sensory and Motor Planning Committee (Co-Director for planning the new ophthalmology course content in the new medical school curriculum)
- 2007 Co-author, Ashley Cole case (pseudotumor cerebri), Johns Hopkins School of Medicine Comprehensive Clinical Skills Exam.
- 2008 Author, Terry Henry case (narrow angle glaucoma), Johns Hopkins School of Medicine Comprehensive Clinical Skills Exam.
- 2009 Co-author, angle closure glaucoma case, Team Based Learning exercise, Year 1 anatomy course, Johns Hopkins School of Medicine.

Extramural Funding

- 2008-present Alcon Education Grant, Alcon Laboratories, \$2000. Course Director. Funding provided to support medical student ophthalmology education initiatives including equipment purchases, educational publications, and student travel expenses.

CLINICAL ACTIVITIES

Certification

Medical Licensure

- 5/02-present Maryland Medical License #D58677

Board Certification

- 10/03-present Diplomate, American Board of Ophthalmology

Clinical Service Responsibilities

- 2003-2004 Clinical Attending and Assistant Chief of Service, Wilmer Ophthalmology Residency
- 2004-present Cornea Service Attending (Clinic and Operating Room)

Extramural Funding

- 9/06-8/09 Phenotypic and Genotypic Analysis of Keratoconus, Grant from the Openshaw Keratoconus Research Fund, (See Research Activities, Extramural Funding)

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

- 2000-2004 Member, Residency Education Committee, Wilmer Eye Institute.
2003 Member, Residency Strategic Planning Committee, Wilmer Eye Institute.
2004-present Member, Education Policy and Curriculum Committee (EPCC), JHUSOM
2004-present Member, Clinical Clerkship Directors Sub-committee of the EPCC, JHUSOM
2004-present Member, Medical Student Promotions Committee, JHUSOM
2004-2007 Member, Liaison Committee for Medical Education Accreditation Review Committee, JHUSOM
2006 Member, Wilmer Emergency Room Review Committee
2006-2007 Member, Wilmer Eye Institute New Building Planning Committee
2006-2007 Member, Wilmer Eye Institute General Eye Service Planning Group
2007 Member, Wilmer at Columbia Physician Search Committee
2007-present Co-Director, The Johns Hopkins Marfan Eye Center
2007-2008 Wilmer Retreat Planning Committee
2007-present Fourth floor co-captain, Wilmer New Building Transition Team
2008-present Member, Wilmer Uveitis Faculty Search Committee
2009-present Member, Wilmer Refractive Surgery Director Search Committee

Editorial Activities

Editorial Board

- 2003-2004 Assistant Editor, Contemporary Ophthalmology (CME review journal)

Journal Peer Review Activities

- 2002-present Investigative Ophthalmology and Visual Science
2003-2004 American Journal of Ophthalmology
2003-present Cornea
2005-present Experimental Eye Research
2006 British Journal of Ophthalmology
2006 Journal of the Peripheral Nervous System
2006 Stem Cells
2007 Ophthalmic Epidemiology
2008-present Ophthalmology
2008 Molecular Vision

Review Groups/Study Sections

- 2008 Cole Foundation (American College of Surgeons), Grant Reviewer
2008 Cochrane Eyes and Vision Group, Protocol Reviewer

Professional Societies

- 1998-present Member, American Academy of Ophthalmology
1998-present Member, Association for Research in Vision and Ophthalmology
2000-2002 Member, American Society of Cataract and Refractive Surgery Young Physicians and Residents Special Interest Group
2000-2003 Member, American Society of Cataract and Refractive Surgery
2004-present Member, American Society of Matrix Biology

RECOGNITION

Awards and Honors

- 1990 Honors Thesis *magna cum laude* in Biochemistry, Harvard University
- 1990 A.B. *cum laude* in Biochemistry, Harvard University
- 1990-1997 Pre-doctoral Fellowship, NIH Medical Scientist Training Program, Emory University School of Medicine
- 1997 Lange Achievement Award, Emory University School of Medicine
- 1999 A. Edward Maumenee Research Grant Award, Wilmer Eye Institute. Project Title: "Identification of Genes Expressed in Human Corneas Using Microarray Technology"
- 2000 Walter J. Stark Research Grant Award, Wilmer Eye Institute. Project Title: "Identification of Genes Associated with Corneal Graft Failure Using DNA Microarray Technology"
- 2001 Finalist, Association of University Professors of Ophthalmology/Research to Prevent Blindness Resident and Fellow Research Forum. One of five ophthalmology residents and fellows chosen nationwide to participate.
- 2001 Pepose Association for Research in Vision and Ophthalmology Annual Meeting Travel Grant Award, Wilmer Eye Institute
- 2002-2003 Fellow, Society of Heed Fellows, Heed Ophthalmic Foundation. Recognized as the most distinguished among 14 Fellows inducted in 2002.
- 2008 Inaugural Wilmer Scholar Award. Selected by Wilmer Full Professors as the most promising Wilmer Assistant Professor. Award included a \$100,000 research grant.
- 2009 Neil Miller, M.D., Medical Student Teaching Award, JHUSOM

Invited Talks

- 2000 "Identification of genes expressed in human corneas using microarray technology." Third International Meeting on Cornea, External Disease, and Eyebanking, Istanbul, Turkey
- 2004 "Advances in cataract surgery." Bausch and Lomb Scientific Symposium, Baltimore, MD
- 2005 "Fuchs' corneal dystrophy: past perspectives, emerging concepts, future directions." Visiting Professor, Duke Eye Center, Durham, NC
- 2005 "Nuts and bolts of the NIH K grant application process." Visiting Professor, Duke Eye Center, Durham, NC

- 2005 “Fuchs’ corneal dystrophy: past perspectives, emerging concepts, future directions.” Institute of Ophthalmology, University College London, London, UK
- 2005 “Fuchs’ corneal dystrophy: when to transplant?” Moorfields Eye Hospital Bicentenary Scientific Meeting, London, UK
- 2005 “Fuchs’ corneal dystrophy: past perspectives, emerging concepts, future directions.” Oxford Biomedica plc, Oxford, UK
- 2005 “Fuchs’ corneal dystrophy: past perspectives, emerging concepts, future directions.” Ophthalmology Grand Rounds, Scheie Eye Institute, University of Pennsylvania, Philadelphia, PA
- 2005 “New techniques in lamellar keratoplasty.” Visiting Professor, Scheie Eye Institute, University of Pennsylvania, Philadelphia, PA
- 2005 “Fuchs’ corneal dystrophy: past perspectives, emerging concepts, future directions.” 39th Annual Congress of the Turkish Ophthalmological Society, Antalya, Turkey
- 2005 “Update on posterior capsule opacification.” 39th Annual Congress of the Turkish Ophthalmological Society, Antalya, Turkey
- 2005 “Update on cataract prevention.” 39th Annual Congress of the Turkish Ophthalmological Society, Antalya, Turkey
- 2006 “Descemet’s stripping endothelial keratoplasty.” Chesapeake Society of Ophthalmic Registered Nurses Annual Meeting, Baltimore, MD
- 2007 “Alternate Approaches to Corneal Transplant.” Wilmer Nursing Conference, Baltimore, MD
- 2007 “Lamellar Keratoplasty.” Eye-Q Vision Annual CME Series, Fresno, CA. Presented 3 hour lecture on the history, techniques, and future directions of lamellar keratoplasty.
- 2008 “New uses of corneal tissue.” Bill Anderson Memorial Lecture, American Association of Tissue Banking Annual Meeting, Savannah, GA
- 2008 “Fuchs corneal dystrophy: past perspectives, emerging concepts, future directions,” Visiting Professor, Department of Ophthalmology, University of Alberta, Edmonton, Canada
- 2008 “Challenging corneal cases,” Visiting Professor, Department of Ophthalmology, University of Alberta, Edmonton, Canada

- 2008 “Combined surgery including phacoemulsification in Descemet stripping endothelial keratoplasty, World Ophthalmology Congress, Hong Kong, China
- 2008 “Surgical treatment and gene therapy for Fuchs endothelial dystrophy,” World Ophthalmology Congress, Hong Kong, China
- 2008 “Keratoconus research project,” Allergan, Inc., Irvine, CA
- 2008 “Keratoconus and Fuchs dystrophy,” Advanced Medical Optics, Inc., Santa Ana, CA
- 2009 “Keratoconus Pathogenesis,” 5th Annual Association for Research in Vision and Ophthalmology (ARVO)/Pfizer Ophthalmics Research Institute, Ft. Lauderdale, FL.

OTHER PROFESSIONAL ACCOMPLISHMENTS