

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

Irene C. Kuo, M.D.

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DEMOGRAPHIC INFORMATION

Current Appointments

Associate professor, Cornea and External Diseases Service, Refractive Surgery Service, Department of Ophthalmology, **Wilmer Eye Institute**, Johns Hopkins University School of Medicine, Baltimore, MD.

Division Chief, First Medical Director and Anchor Physician of **Wilmer Eye Institute at White Marsh**, Baltimore, MD, August 2000 to present.

Personal Data

Business Address Wilmer Eye Institute at White Marsh
4924 Campbell Blvd. #100
Baltimore, MD 21236

Education and Training

Massachusetts Institute of Technology

B.S. in chemistry, minor in economics

University of California, San Francisco, School of Medicine

M.D.

Huntington Memorial Hospital, Pasadena, CA

Intern in medicine

L.A. County-University of Southern California/Doheny Eye Institute

Resident in ophthalmology

Proctor Foundation-University of California, San Francisco

Clinical fellow in cornea, refractive surgery, and uveitis

Clinical Instructor, Department of Ophthalmology, UCSF

RESEARCH ACTIVITIES

Publications

Peer-reviewed articles

1. Chen J, Pal J, Petryshyn R, **Kuo IC**, Yang J, Throop M, Gehrke L, London IM. Amino acid microsequencing of internal tryptic peptides of heme-regulated eIF-2 subunit kinase: homology to protein kinases. *Proceedings of the National Academy of Sciences* 1991;88:315-319.
2. Chen J, Throop M, Gehrke L, **Kuo IC**, Pal J, Brodsky M, London IM. Cloning of the cDNA of the heme-regulated eukaryotic initiation factor 2 alpha (eIF-2 α) kinase of rabbit reticulocytes: homology to yeast GCN2 protein kinase and human double-stranded RNA-dependent eIF-2 α kinase. *PNAS* 1991;88:7729-7733.
3. **Kuo IC**, Seitz B, LaBree L, McDonnell P. Can zinc prevent apoptosis of anterior keratocytes after superficial keratectomy? *Cornea* 1997;16(5):550-555.
4. **Kuo IC**, Kapusta MA, Rao NA. Vitritis as the primary manifestation of syphilis in HIV patients. *American Journal of Ophthalmology* 1998;125(3):306-311.
5. Grossniklaus H, Martin DF, Avery R, Shields JA, Shields CL, **Kuo IC**, Green RL, Rao NA. Uveal lymphoid infiltration: Report of four cases and clinicopathologic review. *Ophthalmology* 1998;105(7):1265-1273.
6. **Kuo IC**, Cunningham ET. Ocular neovascularization in patients with uveitis. *International Ophthalmology Clinics* 2000;40(2):111-26.
7. **Kuo IC**, Rechdouni A, Rao NA, Johnston RH, Margolis TP, Cunningham ET. Subretinal fibrosis in patients with Vogt-Koyanagi-Harada syndrome. *Ophthalmology* 2000;107:1721-1728.
8. **Kuo IC**,* Cunningham ET, Fan J. Ophthalmic manifestations of NOMID syndrome. *American Journal of Ophthalmology* 2000;130(6):856-858. (* corresponding author)
9. **Kuo IC**, Ou R, Hwang DG. Flap haze after epithelial debridement and flap hydration for treatment of post-LASIK striae. *Cornea* 2001;20(3):339-341.
10. **Kuo IC**, Hwang DG. *Aspergillus fumigatus* keratitis following laser in situ keratomileusis. *Cornea* 2001;20(3):342-344.
11. **Kuo IC**, Liu WQ, Kuppermann B, Martin D, Margolis TP. Genotypic analysis of cytomegalovirus retinitis poorly responsive to intravenous ganciclovir but responsive to the ganciclovir implant. *American Journal of Ophthalmology* 2003;135(1):20-25.
12. **Kuo IC**, Cevallos V, Troyer R, Lietman T, McLeod SD. Efficacy of transport media use vs. direct inoculation of blood agar plates in the microbiologic evaluation of experimental *Streptococcus pneumoniae* keratitis. *Cornea* 2003;22(3):249-53.
13. **Kuo IC**,* Lee SM, Soya K, Holsclaw DS, Hwang, DG. Late onset haze and myopic regression after PRK. *Cornea* 2004;23:350-5. (* corresponding author)

14. **Kuo IC.** Corneal wound healing. *Current Opinion of Ophthalmology* 2004;15(4):311-5.
15. **Kuo IC.** Bernice Zimmer Brown. *Archives of Ophthalmology* 2004;122:939.
16. Jabbur NS, Chicani CF, **Kuo IC,** O'Brien TP. Risk factors in interface epithelialization after laser in situ keratomileusis. *Journal of Refractive Surgery* 2004;20(4):343-348.
17. **Kuo IC,*** Kempen JH, Jabs DA. Clinical characteristics and outcomes of cytomegalovirus retinitis in persons without human immunodeficiency virus infection. *American Journal of Ophthalmology* 2004;138:338-346. (* corresponding author)
18. **Kuo IC,*** Ghajarnia M, O'Brien TP, Jabbur NS. Excimer laser surgery for correction of ametropia after cataract surgery. *J Cataract Refract Surg* 2005;31(11):2104-10. (* corresponding author)
19. **Kuo IC,*** Broman AT, Pirouzmanesh A, Melia M. Is there an association between diabetes and keratoconus? *Ophthalmology* 2006; 113(2):184-90. (* corresponding author)
20. **Kuo IC,*** O'Brien TP, Haller JA, Jabbur NS. Complications of sequential keratorefractive and vitreoretinal surgery. *J Cataract Refract Surg* 2006;32:2146-8. (* corresponding author)
21. Reviglio VE, **Kuo IC,** Gramajo L, Olmedo MA, Falco M, Juarez CP. Acute rhegmatogenous retinal detachment immediately following laser in situ keratomileusis. *J Cataract Refract Surg* 2007; 33:536-9.
22. **Kuo IC.** Response to Letter to the Editor, "Is There an Association between Diabetes and Keratoconus." *Ophthalmology* 2007; 114:1034-5.
23. Ramulu P, Green WR, **Kuo IC.** * Conjunctival lymphoid hyperplasia. *Cornea* 2007;26:484-6 (* corresponding author).
24. **Kuo IC,*** Jabbur NS, O'Brien TP. Photorefractive keratectomy for refractory LASIK flap striae *J Cataract Refract Surg*; 2006;32:2146-8. (* corresponding author)
25. Reviglio VE, Sambuelli R, Olmedo A, Falco M, Echenique, O'Brien TP, **Kuo IC.** Secretory leukocyte protease inhibitor is an inducible antimicrobial peptide expressed in *Staphylococcus aureus* endophthalmitis, *Mediators of Inflamm* 2007; 2007:93857.
26. **Kuo IC,** Falco M, Olmedo A, Misani L, O'Brien TP, Reviglio VE. Corneal tattoo with tea infusion. *Food Chem Toxicol* 2008; 46:2303-5.

27. **Kuo IC**, Haller JA, Reviglio VE. Regression of a subfoveal choroidal metastasis of colorectal carcinoma after intravitreal bevacizumab treatment. *Arch Ophthalmol* 2008;126(9):1311-3.
28. **Kuo IC**,* Reviglio VE. Wavefront-guided refractive surgery after multifocal lens implantation. *Current Opinion in Ophthalmology* 2009;20(4):255-9. (* corresponding author)
29. **Kuo IC**,* Myrowitz E, Chuck R, Schein O. Wavefront-guided photorefractive keratectomy to correct ametropia following aspheric ReSTOR implantation. *Jl Refract Surg* 2009;25(12):1111-5. (* corresponding author)
30. Reviglio VE, Grenat A, Pegoraro F, Sambuelli, Rana TS, **Kuo IC**. Secretory leukoprotease inhibitor: a native antimicrobial protein in the innate immune response in a rat model of *S. aureus* keratitis. *J Ophthalmol* 2009;2009:259393.
31. **Kuo IC**, Pellegrino F, Fornero P, Britos L, Pedetta G, Reviglio VE. H1N1 pandemic and ophthalmology. *Ophthalmology* 2010; 117(2):405.
32. **Kuo IC**. Trends in refractive surgery at an academic center: 2007 to 2009. *BMC Ophthalmol*. 2011 May 14;11(1):11.
33. **Kuo IC**,* Reviglio VE. Aggressive pterygium growth and corneal scarring after hyperopic photorefractive keratectomy. *Cornea*. 2011;30(7):832-4. (* corresponding author)
34. **Kuo IC**,* Broman AT, Massof R, Park W. The impact of cataract surgery on patients from a low vision clinic. *Can J Ophthalmol*. 2011; 46(5):391-398. (* corresponding author)
35. Smith RJ, **Kuo IC**, Reviglio VE. Multiple apocrine hidrocystomas of the eyelids. *Orbit*. 2012; 31(2):140-2.
36. Casparis H, Lindsley K, **Kuo IC**, Sikder S, Bressler NB. Surgery for cataracts in people with age-related macular degeneration. *Cochrane Database Syst Rev*. 2012 Jun 13;6:CD006757.
37. **Kuo IC**, Sambuelli RH, Bono J, Smith RJ, Reviglio VE. Progression of choroidal metastasis of ovarian serous cystadenocarcinoma after intravitreal bevacizumab treatment. *Rare Tumors* 2013; 4:5(1).
38. **Kuo IC**. [Satellite clinics in academic ophthalmology programs: an exploratory study of successes and challenges](#). *BMC Ophthalmol*. 2013; 13(1):79.
39. **Kuo IC**,* Espinosa C, Forman M, Pehar M, Maragakis LL, Valsamakis

A. Detection and prevalence of adenoviral conjunctivitis among hospital Employees using real-time polymerase chain reaction as an infection prevention tool. *Infect Control Hosp Epidemiol.* 2014;35(6):728-31. (*corresponding author)

40. Leung TG, Lindsley K, **Kuo IC**. Types of intraocular lenses for cataract surgery in eyes with uveitis. *Cochrane Database Syst Rev.* 2014;3:CD007284.

41 Muthappan V, Paskowitz D, Kazimierczak A, Jun AS, Ladas J, Kuo IC. * Measurement and utilization of postoperative anterior chamber depth of fellow eye in refractive outcomes. *J Cataract Refract Surg.* 2014 (*corresponding author) (in press).

42. **Kuo IC**, Muthappan V, Ervin AM. Conjunctival autograft for pterygia. *Cochrane Database Syst Rev* (in progress).

Current research projects:

new antibiotics in corneal storage medium

corneal wound-healing after laser refractive surgery

clinical outcomes of cataract, refractive surgery

Invited review

Kuo IC, Corneal wound healing after keratorefractive procedures. *European Ophthalmic Review*, 2009;6:64-66.

Kuo IC, Toric intraocular lens implants for astigmatism. *European Ophthalmic Review.* 2012;6:164-168.

Non peer-reviewed publication

Kuo IC, Cunningham, ETC. Vogt-Koyanagi-Harada syndrome. *Review of Ophthalmology.* August 1999: 192-194.

Tzu J, **Kuo IC**, Handa J. Morning Rounds case: Purtscher's retinopathy. *American Academy of Ophthalmology EyeNet.* June 2008; 53-54.

Hoffman RS, Kuo IC, Matossian C, Miller G, Ahmed IK. Complex Case Management: Dislocated Iris-Fixated PCIOL. *Cataract and Refractive Surgery Today.* April 2011.

Internet publication

Kuo IC, Irvine JA. A 39 year old Hispanic man who presents with decreased vision OS for one year. *Digital Journal of Ophthalmology Grand Rounds Case*. December 24, 1996 (<http://www.meei.harvard.edu/meei/DJOhome.html>).

Grant and other

Eye Bank Association of America Scientific Award, 2004-2005.

Johns Hopkins Medicine IRB-approved study. "Refractive Surgery Clinical Outcomes Assessment." Principal investigator 2005 to 2009.

EDUCATIONAL ACTIVITIES

Teaching

Classroom instruction

2000-present "The Red Eye" lectures to medical students (regular rotation)

2009-present "Conjunctival and Lid Infections" to ophthalmology residents and fellows

2002 "Allergic Eye Disease" lecture to ophthalmology residents

Clinical instruction

2000-present Proctor ophthalmology residents' surgical cases

Oversee medical students rotating to Wilmer at White Marsh

CME Instruction

10/00 Ophthalmology for the Medical Practitioner, lecturer, "Skin and eye problems: herpes simplex virus and varicella zoster virus," Johns Hopkins University School of Medicine

11/00 Wilmer Grand Rounds, lecturer, "Infectious keratitis after LASIK." Johns Hopkins

12/00 Current Concepts in Ophthalmology, lecturer, "Amniotic membrane and limbal graft transplantation," Johns Hopkins

1/01 Sixth Annual Continuing Education for Ophthalmic Technicians and Medical Personnel, "Refractive surgery: defining flap and zap," Johns Hopkins

1/01 Wilmer Update in Ophthalmology, lecturer, "Ocular allergic disease," Johns Hopkins

9/01 "Updates in Ophthalmology," lecturer and CME course organizer, Hilton Garden Inn, White Marsh, MD.

10/01 Breakfast with the Experts, American Academy of Ophthalmology Annual Meeting, lecturer, "Amniotic membrane and limbal graft transplantation," New Orleans

12/01 Current Concepts in Ophthalmology, lecturer, "Late-onset corneal haze and myopic regression after PRK," Johns Hopkins

- 12/01. Current Concepts in Ophthalmology, lecturer, “Refractive surgery in patients with uveitis,” Johns Hopkins
- 4/02 Wilmer Residents Association Clinical Meeting, lecturer, “Efficacy of transport media use vs. direct inoculation of blood agar plates in the microbiological evaluation of bacterial keratitis,.”Johns Hopkins
- 10/02 Ophthalmology for the Medical Practitioner, lecturer, “Herpetic eye diseases,” Johns Hopkins
- 10/02 Symposium on Skin and Eye disease, American Academy of Ophthalmology Annual Meeting, lecturer, “Herpes zoster and the eye,” Orlando
- 4/03 Wilmer Residents Association Clinical Meeting, lecturer, “Cytomegalovirus infection in adults without HIV infection.” Johns Hopkins
- 5/04 Wilmer Grand Rounds, lecturer, “Treatment of hyperopia in patient with consecutive hyperopia following Strabismus Surgery,” Johns Hopkins
- 5/04 Update on Ocular Infectious Diseases Symposium, lecturer, “Lyme and syphilitic keratitis”, Johns Hopkins
- 12/07 Current Concepts in Ophthalmology, lecturer, “Excimer laser surgery for correction of ametropia after cataract surgery” Johns Hopkins
- 12/08 Current Concepts in Ophthalmology, lecturer, “Wavefront-guided photorefractive keratectomy to correct ametropia following aspheric ReSTOR implantation,” Johns Hopkins
- 12/09 Current Concepts in Ophthalmology, lecturer, “Decreased vision after PRK,” Johns Hopkins
- 12/10 Current Concepts in Ophthalmology, lecturer, “Trends in refractive surgery at an academic center: 2007-2009,” Johns Hopkins
- 12/11 Current Concepts in Ophthalmology, lecturer, “The impact of cataract surgery on patients from a low vision clinic,” Johns Hopkins
- 12/12 Concepts in Ophthalmology, lecturer, “Intrastromal corneal ring segments and other surgical treatments for keratoconus.” Johns Hopkins
- 12/13 Current Concepts in Ophthalmology, lecturer, “Epithelial ingrowth,” Johns Hopkins

Mentoring

Work with medical students, residents, fellows, and interns has resulted in presentations at national meetings and in publications.

Editorial activities

Ophthalmology ad hoc reviewer, 2000 to present.

Journal of Cataract and Refractive Surgery ad hoc reviewer, 2003 to present.

Journal of Refractive Surgery ad hoc reviewer, 2005 to present

American Journal of Ophthalmology ad hoc reviewer, 2010 to present

Cochrane Eyes and Vision Group editorial board, 2013-present

Cornea ad hoc reviewer, 2014 to present

Other

Certificate for “Critical Reading of Epidemiologic Literature,” 27th Annual Graduate Summer Institute of Epidemiology and Biostatistics, Johns Hopkins University Bloomberg School of Public Health, July 2009.

Certificate for “Introduction to Clinical Research,” an intensive 2-week course offered by Johns Hopkins Bloomberg School of Public Health and School of Medicine Institute for Clinical and Translational Research, July 2010.

CLINICAL ACTIVITIES

Certification

California State Medical License

Maryland State Medical License

diplomate of American Board of Ophthalmology

Service Responsibilities/Program Development

Division Chief, first medical director, and lead physician of new facility, Wilmer Eye Institute at White Marsh, which broke ground in early 2000.

Clinical Program Building/Leadership

2000-present development and leadership of clinic begun in 2000 from 4 patients the first day clinic opened in August 2014 to 9000 patient visits per annum.

Clinical/surgical responsibilities are comprised of leading the satellite in clinic and surgery volume; overseeing optometrists, other ophthalmologists, and staff; evaluating and treating cornea, refractive surgery, and cataract patients, as well as general ophthalmology and glaucoma patients; maintaining close relationships with referring doctors

Other Leadership

Johns Hopkins University School of Medicine Leadership Development Program
40 persons selected annually to meet and learn from the Dean of the School of Medicine as well as other leaders, develop leadership skills, 2013-2014.

Johns Hopkins University School of Medicine Committee on Clinical Excellence (invited by Dean of School of Medicine Paul Rothman, MD).

Wilmer Finance Committee membership based on division's financial performance.

Advisory Board of the Office of Women in Science and Medicine to increase representation of women in leadership roles in the School of Medicine.

Joint Oversight Committee on Faculty Development and Gender

Chief, Wilmer Infection Control, sit on Wilmer Quality Improvement Committee effective August 12, 2009; invited by Vice Chair of Safety Oliver D. Schein, MD, MBA and Wilmer Eye Institute director, Peter McDonnell, MD

Inaugural group of women faculty from School of Medicine selected by chairmen and Office of Women in Science and Medicine for Leadership Program for Women Faculty (coursework completed 2010).

Satellite Directors Committee to investigate the role of Wilmer's satellite clinics, to address issues unique to the satellite clinics, and to help implement aspects of successful satellite practices in the rest of Wilmer.

National Eye Institute Low Vision Traveling Exhibit at White Marsh, August 13 to September 13, 2005: one of 81 sites nationwide visited by 35 million people in a four-year tour sponsored by the NEI and locally by Wilmer Eye Institute, the Wilmer Eye Institute at White Marsh, and the Lions Club.

SYSTEM INNOVATION and QUALITY IMPROVEMENT ACTIVITIES

System Innovation and Quality Improvement Publications

Kuo IC,* Espinosa C, Forman M, Pehar M, Maragakis LL, Valsamakis A. Detection and prevalence of adenoviral conjunctivitis among hospital Employees using real-time polymerase chain reaction as an infection prevention tool. *Infect Control Hosp Epidemiol.* 2014;35(6):728-31. (*corresponding author)

System Innovation and Quality Improvement efforts within JHM

2009-present Chief, Wilmer Infection Control, sitting on Wilmer Quality Improvement Committee, 8% effort. Developed and implemented new Red Eye Policy for patients and employees by bringing together Hospital Epidemiology and Infection Control, Wilmer clinics, Occupational Health, and Hopkins Virology/Pathology. Purpose of new policy is to prevent healthcare-related transmission of viral conjunctivitis through swift and accurate triage, the development and use of a new diagnostic test (PCR) for adenovirus, and appropriate work furlough. In contrast with clinical diagnosis, the policy

has resulted in accurate diagnosis and containment of infectious red eye employees (thus preventing spread to patients and other employees) and in decreased loss of productivity. PCR allows determination of prevalence of adenoviral conjunctivitis in JHH employees and serotypes causing the epidemic form of viral conjunctivitis. In its first two and a half years, the new policy prevented about 500 furloughs lasting 2 weeks or longer in employees with clinical suspicion of adenoviral conjunctivitis. Starting year 3 of the policy, my suggestion that the work furlough be reduced from 2 weeks to 1 week for non-epidemic serotypes was implemented, further reducing loss of employee productivity. This policy has resulted in no outbreaks of healthcare-related viral conjunctivitis at JHM since the Red Eye room was closed at Wilmer and because of accurate diagnosis, has allowed work furloughs to be appropriately tailored for employees with red eye.

Production of guidelines and/or protocols

2011-present Interdisciplinary Clinical Practice Manual, Infection Control, Prevention and Control of Conjunctivitis, IFC034, co-author, 3%, Johns Hopkins Medicine (Hospital and Community/Satellite Practices)

System Innovation and Quality Improvement Program Building/Leadership

2009-present (see above under **System Innovation and Quality Improvement efforts within JHM**)

ORGANIZATIONAL ACTIVITIES

Professional Societies

Association for Research and Vision in Ophthalmology Member

American Academy of Ophthalmology Fellow and Member

Women in Ophthalmology Member, ex-Board Member

Castroviejo Society Member (selection to this cornea society is based on thesis and publications)

American Society of Cataract and Refractive Surgery Member

RECOGNITION

Awards/Honors

American Academy of Achievement Award

National Merit Scholar

TRW Research Scholar

Honors Chemistry Society Phi Lambda Upsilon

Merck Index Award for Outstanding Scholarship

Pacific Coast Oto-Ophthalmological Society Resident Award

Nesburn Award for Resident Research, presented by the Los Angeles Society of Ophthalmology

Heed Fellowship Award in Ophthalmology, selected by Heed Ophthalmic Foundation, American Ophthalmological Society; nominated by department chairs and residency directors, \$15,000 merit award.

Eye Bank Association of America Scientific Award

Leadership Program for Women Faculty (selected by chairs and Office of Women in Science and Medicine at Johns Hopkins University)

Invited Talks

“Subretinal fibrosis in patients with VKH syndrome.” Paper presentation, ARVO Annual Meeting, Fort Lauderdale, 1999.

“Can zinc prevent apoptosis of anterior keratocytes after superficial keratectomy?” Pacific Coast Oto-Ophthalmological Society Meeting, Coronado, CA.

“Update in cornea and external disease.” Women in Ophthalmology Annual Retreat, Aspen, CO.

“Amniotic membrane and limbal graft transplantation.” Women in Ophthalmology Annual Retreat, Aspen, CO.

“Excimer laser surgery for correction of ametropia after cataract surgery.” American Society of Cataract and Refractive Surgery Annual Meeting, Washington D.C.

“Is there an association between diabetes and keratoconus?” Doheny Alumni Days, Doheny Eye Institute, Los Angeles, June 2006.

“Is there an association between diabetes and keratoconus?” Duke University Department of Ophthalmology Grand Rounds, October 2006

“Multifocal lenses.” Women in Ophthalmology Annual Retreat, San Diego, CA, August 2009.

“Diabetes and corneal biomechanics.” Stanford University Department of Ophthalmology Grand Rounds, October 2010.

“Balancing work/life and promotion to associate professor.” School of Medicine Office of Women in Science and Medicine, December 8, 2011.

“Measurement and utilization of postoperative anterior chamber depth of fellow eye in refractive outcomes.” Award for best paper in session, American Society of Cataract and Refractive Surgery Annual Meeting, San Francisco, CA, April 2013.

“A Spectacle for the Ages.” A Woman’s Journey, Baltimore, MD. November 2013. (“Johns Hopkins Medicine premiere annual women’s health conference”).

OTHER PROFESSIONAL ACCOMPLISHMENTS

Undergraduate Research Opportunities Program, MIT.

Teaching assistant in Expository Writing, Project Interphase for incoming minority students, MIT.

Assistant editor of text *Advanced Algebra* at Houghton Mifflin Co., Boston, MA.

Research assistant at Fujirebio, Inc., Hachioji, Tokyo, Japan