

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF OPHTHALMOLOGY AND VISUAL SCIENCES

Kanishka T. Jayasundera, M.D., assistant professor of ophthalmology and visual sciences, Department of Ophthalmology and Visual Sciences, Medical School, is recommended for promotion to associate professor of ophthalmology and visual sciences, without tenure, Department of Ophthalmology and Visual Sciences, Medical School.

Academic Degrees:

M.B.Ch.B./M.D.	2000	University of Auckland, Faculty of Medical and Health Sciences, Auckland, New Zealand
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Professional Record:

2011-present	Assistant Professor of Ophthalmology and Visual Sciences, University of Michigan
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Summary of Evaluation:

Teaching: Dr. Jayasundera has a passion for teaching and has a particular talent for sharing his knowledge with others. He teaches health care providers throughout the region as well as nationally and internationally through lectures and skills transfer courses. He is routinely invited to major conferences to give lectures on specific topics at various national and international organizations such as the European Society of Retina Specialists (EURETINA) and the Retina Society. For example, he organized and led an international symposium here at Michigan of all the surgeons who implant the Argus II retinal implant (“bionic eye”). Dr. Jayasundera has trained a number of graduate and medical students as well as fellows in his lab. The work performed by these trainees has led to their authorship on 13 peer-reviewed papers, 14 poster presentations and two platform (oral) presentations at national meetings (posters and papers presented by the trainees). One of the medical students and one of the fellows have written peer-reviewed grant applications to support their work that were accepted for a total of \$67,100 in research funding.

On the clinical side, Dr. Jayasundera organized an international fellowship program for retinal dystrophies at the Kellogg Eye Center. He developed an official collaboration with the Saudi Arabian Cultural Mission to bring fellows from Saudi Arabia to be trained in the field of inherited retinal degenerations. To date, he has had one fellow from Saudi Arabia (one year), Brazil (one year) and Canada (six months) that have trained under his supervision on diagnosis and management of these diseases. Dr. Jayasundera teaches, guides and supervises the fellows in clinic and the OR. He also helps to facilitate and supervise their clinical research projects, and provides career mentoring. He also spends time with residents in wet lab, didactic and operating room teaching.

Research: Since being appointed as assistant professor in 2011, Dr. Jayasundera has focused his research on an ambitious inherited and inflammatory retinal degenerative disease program. His laboratory research has focused on scientific goals that are based on contributing major scientific advances to 1) accurately diagnose, 2) perform quantifiable phenotypic characterization of, and 3) identify the optimal clinical endpoints for patients with autoimmune and inherited retinal degenerations. Since his appointment, he has published 28 peer-reviewed papers, participating in the kinds of “team science” that is required for making significant contributions in this field. Dr. Jayasundera has a number of significant grant-funded projects, including one investigating the success post-FDA approval of the Argus II Retinal Prosthesis System by Second Sight, one as a co-investigator on a gene therapy product for patients with X-linked retinoschisis, a diabetic macular edema project, a clinical trial of eSight eyewear on quality of life, as well as an EDI-OCT evaluation of patients with Choroideremia funded by Foundation Fighting Blindness. Dr. Jayasundera is a leader in the field with his science. Even while a busy clinician, Dr. Jayasundera has been very successful in winning grants and his research lab is funded by private foundations. Notably, he has recently been awarded a K23 NIH grant to further his goal of quantifying phenotypic characteristics to identify the best clinical endpoints for patients with specific retinal conditions – the very essence of personalized or precision medicine. As such, his work will make him a leader in this critical area of endeavor.

Recent and Significant Publications:

Zahid S, Khan N, Branham K, Othman M, Karoukis AJ, Sharma N, Moncrief A, Mahmood MN, Sieving PA, Swaroop A, Heckenlively JR, Jayasundera T: Phenotypic conservation in patients with x-linked retinitis pigmentosa caused by rpgp mutations *JAMA Ophthalmol* 131:1016-1025, 2013.

Schachar IH, Zahid S, Comer GM, Stem M, Schachar AG, Saxe SJ, Gardner TW, Elner VM, Jayasundera T: Quantification of fundus autofluorescence to detect disease severity in nonexudative age-related macular degeneration *JAMA Ophthalmol* 131:1009-1015, 2013.

Albertus DL, Schachar IH, Zahid S, Elner VM, Demirci H, Jayasundera T: Autofluorescence quantification of benign and malignant choroidal nevi/melanocytic tumors *JAMA Ophthalmol* 131:1004-1008, 2013.

Fahim AT, Khan NW, Zahid S, Schachar IH, Branham K, Kohl S, Wissinger B, Elner VM, Heckenlively JR, Jayasundera T: Diagnostic fundus autofluorescence patterns in achromatopsia *Am. J. Ophthalmol.* 156:1211-1219.e2, 2013.

Ghodesra DH, Chen A, Arevalo JF, Birch DG, Branham K, Coley B, Dagnelie G, de Juan E, Devenyi RG, Dorn JD, Fisher A, Geruschat DR, Gregori NZ, Greenberg RJ, Hahn P, Ho AC, Howson A, Huang SS, Iezzi R, Khan N, Lam BL, Lim JI, Locke KG, Markowitz M, Ripley AM, Rankin M, Schimitzek H, Tripp F, Weiland JD, Yan J, Zacks DN, Jayasundera KT: Worldwide Argus II implantation: recommendations to optimize patient outcomes. *BMC Ophthalmol* 16:52, 2016.

Service: Dr. Jayasundera provides exceptional clinical care to his patients in the Retina and Uveitis Service at the Kellogg Eye Center. He is one of three ophthalmologists in the U.S. that have dual training in inherited retinal degenerations, electrophysiological testing of the visual system and the skill set to perform vitreoretinal surgery. No other ophthalmologist in this country has the above mentioned skills and additional training in uveitis in order to differentiate inherited retinal degenerations from autoimmune retinal degenerations and initiate and monitor treatment. Insurance companies are willing to pay for his services for patients out of network, from around the state and surrounding states, as there are no other specialists in this field. Dr. Jayasundera's practice often serves as the "last hope" for patients, when the efforts of other practitioners have not succeeded. Dr. Jayasundera was the first surgeon in the U.S. to implant the "bionic eye" (Argus II) for patients with retinitis pigmentosa after FDA approval. An advertisement equivalent metric for publicity brought to our eye center from interviews on CNN, FOX, ABC etc. from this work was estimated at \$16.5 million. In addition, he organized the first Argus II investigator meeting in March 2014 to bring together all providers involved in Argus II implantations worldwide to our eye center to discuss optimizing patient outcomes for this procedure. The recommendations of this meeting were published in May 2016.

Dr. Jayasundera serves as the director of strategic planning for the Kellogg Eye Center, where he initiated a program called Think Tank in 2016. This is where current issues relating to patient care/education/research are identified by faculty, novel solutions to these issues which are feasibility tested are proposed by faculty and faculty led teams (supported by leadership) will implement change at KEC after the Think Tank event in order for the strategic advancement of the eye center. He is also a member of the Retinal Fellow Selection Committee, has been the co-chair of Vision Walks (2015 and 2016) for the Foundation Fighting Blindness, Michigan Chapter, lectured at "Biomedical Breakthroughs" Lecture Series, Osher Lifelong Learning Institute, Ann Arbor, Michigan, on "The Bionic Eye and New Treatments for Blindness from Retinal Disease." Dr. Jayasundera is the associate editor of *BMC Ophthalmology*, as well as a reviewer for several peer-reviewed journals and has edited the Retinal Dystrophy Gene Atlas. He is on numerous committees in the Department, University and on the national level.

External Reviewers:

Reviewer A: "He has also collaborated with Michigan computer engineering scientists to develop a program that matches patients from automated phenotype recognition, and their likely retinal dystrophy-causing genetic mutation – a huge advance in this era of incipient gene therapy... Dr. Jayasundera has served on numerous institutional committees, is a member of the significant medical organizations in his field, and is a sought-after speaker both nationally and internationally on the topic of inherited retinal degenerations, their diagnosis and treatment... I have a very high opinion of the quality, focus and scholarly impact of his work, and would highlight in particular his elucidation of mechanisms and diagnostic autofluorescence patterns in retinal dystrophies, and his high level of work on the Argus II implant, including convening the first worldwide investigators meeting at Michigan."

Reviewer B: "His willingness to participate as an unfunded co-Investigator on the 'AFTX-RS1-1001: A Multiple –Site, Phase 1/2, Safety and Efficacy Trial of a Recombinant Adeno-associated Virus Vector Expressing Retinoschisin in Patients with X-linked Retinoschisis' is highly novel,

creative and particularly intriguing as is the trial itself. Dr. Jayasundera has an excellent grant and collaboration history suggesting that he will have a long academic career.”

Reviewer C: “I believe he is an asset to the University of Michigan who brings a unique specialty in vitreoretinal inherited diseases. He is involved with cutting-edge clinical research and has skills in the most advanced surgical techniques that may bring hope to these blind patients.”

Reviewer D: “He has participated as an instructor in several institutional, national and international programs. He directs a fellowship in inherited retinal degenerations and electrophysiology and has trained several international fellows. He holds two patents... I have been consistently impressed by the depth of his knowledge in the field of ophthalmic genetics and by his academic approach to medical problems. The impact of the work that he is currently involved in will be substantial.”

Reviewer E: “Recently in the last decade, research of autoimmune and inherited retinal disease has been increasing. Dr. Jayasundera’s expertise and contributions to current clinical trials in these fields are important and have long-term applicability. Furthermore, he has a broad clinical expertise in the field of retina, which will make him a versatile asset to your department.”

Summary of Recommendation:

Dr. Jayasundera has shown excellence and productivity in his clinical work, teaching, research and service and is already a recognized international authority in his field. He has a unique combination of clinical skills, academic insights, and the ability to apply innovative thinking to implement real solutions and approaches – and to share them with others in the best example of Michigan’s ability to educate globally to change the future. I am pleased to recommend Kanishka T. Jayasundera, M.D. for promotion to associate professor of ophthalmology and visual sciences, without tenure, Department of Ophthalmology and Visual Sciences, Medical School.



Marschall S. Runge, M.D., Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

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