Stanford

Kevin Chuen Wing Chan

Associate Professor of Ophthalmology (Research/Clinical Trials) and, by courtesy, of Bioengineering

Bio

BIO

Kevin C. Chan, Ph.D. is an Associate Professor of Ophthalmology and the Director of the Neuroimaging and Visual Science Laboratory at Stanford University School of Medicine. His laboratory focuses on developing and applying new, non-invasive methods for imaging neurodegeneration, neurodevelopment, neuroprotection, neuroplasticity, and neuroregeneration in vision-related diseases and injuries to guide vision preservation and restoration. Dr. Chan has been leading federally funded and foundation grant projects in structural, metabolic, physiological, and functional magnetic resonance imaging (MRI) research on the eye and brain of human and animal models of glaucoma and other visual impairments. His team combines the use of optical coherence tomography, MRI, neuromodulation, and psychophysical assessments to determine the processes underlying the interplay among eye, brain, and behavior in health and disease.

ACADEMIC APPOINTMENTS

- Associate Professor, Ophthalmology
- Associate Professor (By courtesy), Bioengineering
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Faculty Affiliate, Center for Artificial Intelligence in Medicine and Imaging (AIMI), (2026- present)
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI), (2025- present)

HONORS AND AWARDS

- Editor of Distinction Award, Springer Nature (2025)
- ARVO Gold Fellow, Association for Research in Vision and Ophthalmology (ARVO) (2024)
- Senior Achievement Award, Asia-Pacific Academy of Ophthalmology (APAO) (2024)
- Shaffer Grants for Innovative Glaucoma Research, Glaucoma Research Foundation (2024)
- ARVO Silver Fellow, Association for Research in Vision and Ophthalmology (ARVO) (2023)
- ARVO Press Releases for top 0.5% abstracts, Association for Research in Vision and Ophthalmology (ARVO) (2021 and 2023)
- Basic Science Research Award, Feldstein Medical Foundation (2020)
- Thomas R. Lee Award for Glaucoma Research, BrightFocus Foundation (2019)
- International Research Collaborators Award, Research to Prevent Blindness/Stavros Niarchos Foundation (2018)

- Emerging Vision Scientist, Alliance for Eye and Vision Research (AEVR) (2015)
- Young Investigator Award, Alcon Research Institute (2014)
- Fulbright Fellowship, US Department of State (2010)
- Junior Fellow Award, International Society for Magnetic Resonance in Medicine (ISMRM) (2010)
- Li Ka Shing Prize for the best PhD thesis, The University of Hong Kong (2010)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board Member, Investigative Ophthalmology & Visual Science (2026 - present)
- Member (2024-27), Neuro Education Chair (2026-27), Annual Meeting Program Committee, International Society for Magnetic Resonance in Medicine (ISMRM) (2024 - present)
- Secretary (2023-24), Vice-Chair (2024-25), Chair (2025-26), and Past-Chair (2026-27), Metabolomics and Metabolomic Imaging Study Group, Int'l Society for Magnetic Resonance in Medicine (2023 - present)
- Member, Career Development Brain Sciences committee, American Heart Association (2023 - 2023)
- Executive Committee Member, International Society for Low Vision Research and Rehabilitation (ISLRR) (2022 - present)
- Member (2021-22), Chair-elect (2022-23), and Chair (2023-24), Advocacy and Outreach Committee (AOC), Association for Research in Vision and Ophthalmology (ARVO) (2021 - 2024)
- Member (2021-22) and Chair (2022-23), Publication Financial Assistance Program Sub-Committee, Association for Research in Vision and Ophthalmology (ARVO) (2021 - 2023)
- Member, Publications Committee (PUBS), Association for Research in Vision and Ophthalmology (ARVO) (2020 - 2023)
- Member (2018-20) and Chair (2020-21), Multidisciplinary Ophthalmic Imaging (MOI) Cross-sectional Group, Annual Meeting Program Committee (AMPC), Association for Research in Vision and Ophthalmology (ARVO) (2018 - 2021)
- Vice-Chair, Publications Committee, International Society for Magnetic Resonance in Medicine (ISMRM) (2018 - 2021)
- Associate Editor, Biomedical Imaging and Image Processing section, IEEE Engineering in Medicine and Biology Society (2015 - present)
- Deputy Editor, Neuroimaging section, Journal of Magnetic Resonance Imaging (2012 - present)

PROFESSIONAL EDUCATION

- Fulbright Scholar, University of Pittsburgh , Radiology and Neurobiology (2010)
- PhD, The University of Hong Kong , Biomedical Engineering (Neuroimaging) (2010)
- BEng, The University of Hong Kong , Biomedical Engineering (1st Class Honors) (2006)

LINKS

- Lab Site: https://www.nivs-lab.org/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our lab focuses on the following interdisciplinary directions across Ophthalmology, Radiology, Neuroscience, and Bioengineering research fields:

(1) Glaucoma Neuroimaging and Neurotherapeutics in Humans and Experimental Animal Models:

Glaucoma is the leading cause of irreversible blindness in the world. Although elevated eye pressure is a major risk factor, recent evidence suggests the involvement of the brain’s visual system, apart from the eye, in the early degenerative mechanisms of the disease. However, the pathogenesis of glaucoma in the visual system remains largely undetermined. Our lab's research goal is to develop and apply novel and useful imaging techniques for whole-brain, non-invasive, and longitudinal measurements of damage and disease progression in glaucoma patients. Our recent research has demonstrated structural, metabolic, and functional relationships between eye, brain, and vision loss in patients across disease stages when brain MRI

findings are compared with clinical ophthalmic assessments. We also combine ocular imaging, neuroimaging and neurotherapeutic approaches to guide vision preservation and restoration in humans and experimental animal models of acute/chronic intraocular pressure elevation, genetic mutations/ knockouts, central insulin resistance, and glymphatic dysfunction with relevance to glaucoma. The characterization and monitoring of glaucoma in both the eye and brain can lead to more timely intervention and targeted treatments to reduce the prevalence of this irreversible but preventable neurodegenerative disease.

(2) The Neural Basis of Sensory Substitution in the Blind:

Vision loss is a major health problem worldwide. Although sensory substitution devices can assist patients to 'see' with their remaining sensory modalities by converting live visual information into patterns of sound or touch, little is known about how these new, alternative sensory patterns interact with the brain to influence perception and behavior in the blind. Our lab aims to investigate sensory substitution technologies and improve visual neurorehabilitation strategies, by identifying the structural, metabolic, and functional brain circuits involved in sensory substitution, and by examining the plastic brain changes resulting from multisensory training through the combined use of advanced neuroimaging and neuromodulation techniques as well as artificial intelligence.

(3) Ocular Structures and Physiology:

To date, the regulatory mechanisms of ocular fluid circulation and their contributions to the pathogenesis of ocular hypertension and glaucoma remain unclear. Our lab studies the aqueous humor dynamics, retinal pathophysiology, and microstructures and macromolecules in the sclera and cornea to understand the basics of ocular biomechanics and guide controlled ocular drug delivery. We also study the efficacy of novel ocular reconstruction approaches such as whole-eye transplantation, osteo-odonto-keratoprosthesis, and cataract surgery for vision restoration.

(4) Imaging Methods Development for Examining the Visual System:

Understanding the mechanisms of vision in health and disease requires knowledge of the anatomy and physiology of the eye and the neural pathways relevant to visual perception. As such, developing imaging techniques for the visual system is crucial for unveiling the neural basis of visual function or impairment. In our laboratory, we develop and refine advanced MR imaging and spectroscopic methods to improve the sensitivity and specificity for evaluating the visual system in health and disease. These techniques include contrast-enhanced MRI (using manganese, gadolinium, iron oxide nanoparticles, and chromium, for example), diffusion MRI, task-based and task-free functional MRI, optogenetic fMRI, cerebrovascular reactivity, magnetic resonance spectroscopy, susceptibility-weighted MRI, and magic angle–enhanced MRI of the eye and the brain.

CLINICAL TRIALS

- Sensory Substitution and Brain Plasticity Following Vision Loss, Not Specified

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Neurosciences (Phd Program)

Publications

PUBLICATIONS

- **Stimulus-driven cerebrospinal fluid dynamics is impaired in glaucoma patients** *npj Aging*
  Bang, J., Parra, C., Yu, K., Lee, H., Wollstein, G., Schuman, J. S., Chan, K. C.
  2026

- **GABA decrease is associated with degraded neural specificity in the visual cortex of glaucoma patients.** *Communications biology*
  Bang, J. W., Parra, C., Yu, K., Wollstein, G., Schuman, J. S., Chan, K. C.
  2023; 6 (1): 679

- **Citicoline Modulates Glaucomatous Neurodegeneration Through Intraocular Pressure-Independent Control.** *Neurotherapeutics : the journal of the American Society for Experimental NeuroTherapeutics*
  van der Merwe, Y., Murphy, M. C., Sims, J. R., Faiq, M. A., Yang, X. L., Ho, L. C., Conner, I. P., Yu, Y., Leung, C. K., Wollstein, G., Schuman, J. S., Chan, K. C.
  2021; 18 (2): 1339-1359

- **Cholinergic nervous system and glaucoma: From basic science to clinical applications.** *Progress in retinal and eye research*
  Faiq, M. A., Wollstein, G., Schuman, J. S., Chan, K. C.
  2019; 72: 100767

- **Intracameral injection of a chemically cross-linked hydrogel to study chronic neurodegeneration in glaucoma.** *Acta biomaterialia*
  Chan, K. C., Yu, Y., Ng, S. H., Mak, H. K., Yip, Y. W., van der Merwe, Y., Ren, T., Yung, J. S., Biswas, S., Cao, X., Chau, Y., Leung, C. K.
  2019; 94: 219-231

- **Visual Restoration after Cataract Surgery Promotes Functional and Structural Brain Recovery.** *EBioMedicine*
  Lin, H., Zhang, L., Lin, D., Chen, W., Zhu, Y., Chen, C., Chan, K. C., Liu, Y., Chen, W.
  2018; 30: 52-61

- **Predicting Intraocular Pressure From Glaucoma Patients Receiving Medication Treatment Using Explainable Machine Learning.** *BioMed research international*
  James, R. T., Liu, W., Wollstein, G., Schuman, J. S., Fenyo, D., Chan, K. C.
  2026; 2026 (1): e9930837

- **Optogenetic Functional Neuroimaging**
  Chan, K. C., Kim, S.
  2026

- **Editorial for "Assessment of Intraocular Pressure Using Three-Dimensional MR Elastography in Ophthalmologically Normal Individuals".** *Journal of magnetic resonance imaging : JMRI*
  Bang, J. W., Murphy, M. C., Chan, K. C.
  2025

- **Surgical techniques and outcome assessment of a novel vascularized orthotopic rodent whole eye transplantation model.** *PloS one*
  Li, Y., Komatsu, C., He, L., Miller, M. R., Noori, J., van der Merwe, Y., Ho, L. C., Rosner, I. A., Barnett, J. M., Jabbari, K., Wollstein, G., Bilonick, R. A., Fu, et al
  2025; 20 (5): e0311392

- **Functional genomics of primary congenital glaucoma by pathway analysis and functional characterization of CYP1B1 mutations.** *Vision research*
  Faiq, M. A., Singh, H. N., Ali, M., Dada, R., Chan, K. C., Dada, T., Saluja, D.
  2025; 227: 108534

- **Imaging methods for monitoring optic nerve regeneration** *Proteomics, Multi-Omics and Systems Biology in Optic Nerve Regeneration*
  Yu, K., Kasi, A., James, R., Xue, Y., Chan, K. C.
  2025: 15-35

- **Cerebellar dysfunction in glaucoma patients** *Brain Communications*
  Kasi, A., Bang, J., Trivedi, V., Au, J. M., Conner, I. P., Wollstein, G. C., Schuman, J. S., Cham, R., Chan, K. C.

2025; 7 (6)

- **Training Indoor and Scene-Specific Semantic Segmentation Models to Assist Blind and Low Vision Users in Activities of Daily Living** *IEEE Open Journal of Engineering in Medicine and Biology*
  Sun, R., Hamilton-Fletcher, G., Faizal, S., Feng, C., Hudson, T. E., Rizzo, J., Chan, K. C.
  2025; 6: 533 - 539

- **Age-related effects of optineurin deficiency in the mouse eye.** *Vision research*
  Su, C. C., Liu, C., Adi, V., Chan, K. C., Tseng, H. C.
  2024; 224: 108463

- **Editorial for "Rich Club Reorganization in Nurses Before and After the Onset of Occupational Burnout: A Longitudinal MRI Study".** *Journal of magnetic resonance imaging : JMRI*
  Cheung, M. M., Chan, K. C.
  2024; 60 (5): 1932-1933

- **NOise Reduction with DIstribution Corrected (NORDIC) principal component analysis improves brain activity detection across rodent and human functional MRI contexts.** *Imaging neuroscience (Cambridge, Mass.)*
  Chan, R. W., Hamilton-Fletcher, G., Edelman, B. J., Faiq, M. A., Sajitha, T. A., Moeller, S., Chan, K. C.
  2024; 2: 1-18

- **Contributions of Brain Microstructures and Metabolism to Visual Field Loss Patterns in Glaucoma Using Archetypal and Information Gain Analyses.** *Investigative ophthalmology & visual science*
  Pang, Y., Bang, J. W., Kasi, A., Li, J., Parra, C., Fieremans, E., Wollstein, G., Schuman, J. S., Wang, M., Chan, K. C.
  2024; 65 (8): 15

- **Using Transfer Learning to Refine Object Detection Models for Blind and Low Vision Users.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Bhandari, A., Batutis, G. S., Jain, A., Sico, M. C., Hamilton-Fletcher, G., Feng, C., Hudson, T. E., Rizzo, J. R., Chan, K. C.
  2024; 2024: 1-4

- **Early inner plexiform layer thinning and retinal nerve fiber layer thickening in excitotoxic retinal injury using deep learning-assisted optical coherence tomography.** *Acta neuropathologica communications*
  Ma, D., Deng, W., Khera, Z., Sajitha, T. A., Wang, X., Wollstein, G., Schuman, J. S., Lee, S., Shi, H., Ju, M. J., Matsubara, J., Beg, M. F., Sarunic, et al
  2024; 12 (1): 19

- **Accuracy and Usability of Smartphone-Based Distance Estimation Approaches for Visual Assistive Technology Development.** *IEEE open journal of engineering in medicine and biology*
  Hamilton-Fletcher, G., Liu, M., Sheng, D., Feng, C., Hudson, T. E., Rizzo, J. R., Chan, K. C.
  2024; 5: 54-58

- **Editorial: Translational opportunities for AI in glaucoma.** *Frontiers in ophthalmology*
  Chan, K. C., Sappington, R. M.
  2023; 3: 1299582

- **Improved reconstruction of crossing fibers in the mouse optic pathways with orientation distribution function fingerprinting.** *Magnetic resonance in medicine*
  Filipiak, P., Sajitha, T. A., Shepherd, T. M., Clarke, K., Goldman, H., Placantonakis, D. G., Zhang, J., Chan, K. C., Boada, F. E., Baete, S. H.
  2023

- **Training AI to Recognize Objects of Interest to the Blind and Low Vision Community.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Sankarnarayanan, T., Paciorkowski, L., Parikh, K., Hamilton-Fletcher, G., Feng, C., Sheng, D., Hudson, T. E., Rizzo, J. R., Chan, K. C.
  2023; 2023: 1-4

- **Ocular manifestations of central insulin resistance.** *Neural regeneration research*
  Faiq, M. A., Sengupta, T., Nath, M., Velpandian, T., Saluja, D., Dada, R., Dada, T., Chan, K. C.
  2023; 18 (5): 1139-1146

- **Diverging patterns of plasticity in the nucleus basalis of Meynert in early- and late-onset blindness.** *Brain communications*
  Bang, J. W., Chan, R. W., Parra, C., Murphy, M. C., Schuman, J. S., Nau, A. C., Chan, K. C.

2023; 5 (2): fcad119

- **Visual Plasticity in Adulthood: Perspectives from Hebbian and Homeostatic Plasticity.** *The Neuroscientist : a review journal bringing neurobiology, neurology and psychiatry*
  Bang, J. W., Hamilton-Fletcher, G., Chan, K. C.
  2023; 29 (1): 117-138
- **Reverse translation of artificial intelligence in glaucoma: Connecting basic science with clinical applications.** *Frontiers in ophthalmology*
  Ma, D., Pasquale, L. R., Girard, M. J., Leung, C. K., Jia, Y., Sarunic, M. V., Sappington, R. M., Chan, K. C.
  2023; 2
- **Glymphatic imaging and modulation of the optic nerve.** *Neural regeneration research*
  Kasi, A., Liu, C., Faiq, M. A., Chan, K. C.
  2022; 17 (5): 937-947
- **In vivo MRI evaluation of anterograde manganese transport along the visual pathway following whole eye transplantation.** *Journal of neuroscience methods*
  Komatsu, C., van der Merwe, Y., He, L., Kasi, A., Sims, J. R., Miller, M. R., Rosner, I. A., Khatter, N. J., Su, A. A., Schuman, J. S., Washington, K. M., Chan, K. C.
  2022; 372: 109534
- **Advanced Diffusion MRI of the Visual System in Glaucoma: From Experimental Animal Models to Humans.** *Biology*
  Mendoza, M., Shotbolt, M., Faiq, M. A., Parra, C., Chan, K. C.
  2022; 11 (3)
- **Role of Structural, Metabolic, and Functional MRI in Monitoring Visual System Impairment and Recovery.** *Journal of magnetic resonance imaging : JMRI*
  Sims, J. R., Chen, A. M., Sun, Z., Deng, W., Colwell, N. A., Colbert, M. K., Zhu, J., Sainulabdeen, A., Faiq, M. A., Bang, J. W., Chan, K. C.
  2021; 54 (6): 1706-1729
- **Sensory integration abilities for balance in glaucoma, a preliminary study.** *Scientific reports*
  O'Connell, C., Redfern, M., Chan, K. C., Wollstein, G., Conner, I. P., Cham, R.
  2021; 11 (1): 19691
- **Oral Scutellarin Treatment Ameliorates Retinal Thinning and Visual Deficits in Experimental Glaucoma.** *Frontiers in medicine*
  Zhu, J., Sainulabdeen, A., Akers, K., Adi, V., Sims, J. R., Yarsky, E., Yan, Y., Yu, Y., Ishikawa, H., Leung, C. K., Wollstein, G., Schuman, J. S., Wei, et al
  2021; 8: 681169
- **Diffusion Tensor Imaging of Visual Pathway Abnormalities in Five Glaucoma Animal Models.** *Investigative ophthalmology & visual science*
  Colbert, M. K., Ho, L. C., van der Merwe, Y., Yang, X., McLellan, G. J., Hurley, S. A., Field, A. S., Yun, H., Du, Y., Conner, I. P., Parra, C., Faiq, M. A., Fingert, et al
  2021; 62 (10): 21
- **In vivo MRI evaluation of early postnatal development in normal and impaired rat eyes.** *Scientific reports*
  Au, J. M., Kancherla, S., Hamade, M., Mendoza, M., Chan, K. C.
  2021; 11 (1): 15513
- **Quantitative imaging of the clearance systems in the eye and the brain.** *Quantitative imaging in medicine and surgery*
  Deng, W., Liu, C., Parra, C., Sims, J. R., Faiq, M. A., Sainulabdeen, A., Song, H., Chan, K. C.
  2020; 10 (1): 1-14
- **Author Correction: Matrix-bound nanovesicles prevent ischemia-induced retinal ganglion cell axon degeneration and death and preserve visual function.** *Scientific reports*
  van der Merwe, Y., Faust, A. E., Sakalli, E. T., Westrick, C. C., Hussey, G., Chan, K. C., Conner, I. P., Fu, V. L., Badylak, S. F., Steketee, M. B.
  2019; 9 (1): 15799
- **Widespread brain reorganization perturbs visuomotor coordination in early glaucoma.** *Scientific reports*
  Trivedi, V., Bang, J. W., Parra, C., Colbert, M. K., O'Connell, C., Arshad, A., Faiq, M. A., Conner, I. P., Redfern, M. S., Wollstein, G., Schuman, J. S., Cham, R., Chan, et al
  2019; 9 (1): 14168

- **Applications of Manganese-Enhanced Magnetic Resonance Imaging in Ophthalmology and Visual Neuroscience.** *Frontiers in neural circuits*
  Deng, W., Faiq, M. A., Liu, C., Adi, V., Chan, K. C.
  2019; 13: 35
- **Matrix-bound nanovesicles prevent ischemia-induced retinal ganglion cell axon degeneration and death and preserve visual function.** *Scientific reports*
  van der Merwe, Y., Faust, A. E., Sakalli, E. T., Westrick, C. C., Hussey, G., Chan, K. C., Conner, I. P., Fu, V. L., Badylak, S. F., Steketee, M. B.
  2019; 9 (1): 3482
- **In vivo imaging of structural, metabolic and functional brain changes in glaucoma.** *Neural regeneration research*
  Kasi, A., Faiq, M. A., Chan, K. C.
  2019; 14 (3): 446-449
- **Spatial Patterns and Age-Related Changes of the Collagen Crimp in the Human Cornea and Sclera.** *Investigative ophthalmology & visual science*
  Gogola, A., Jan, N. J., Brazile, B., Lam, P., Lathrop, K. L., Chan, K. C., Sigal, I. A.
  2018; 59 (7): 2987-2998
- **Macroscale variation in resting-state neuronal activity and connectivity assessed by simultaneous calcium imaging, hemodynamic imaging and electrophysiology.** *NeuroImage*
  Murphy, M. C., Chan, K. C., Kim, S. G., Vazquez, A. L.
  2018; 169: 352-362
- **Age-related Changes in Eye, Brain and Visuomotor Behavior in the DBA/2J Mouse Model of Chronic Glaucoma.** *Scientific reports*
  Yang, X. L., van der Merwe, Y., Sims, J., Parra, C., Ho, L. C., Schuman, J. S., Wollstein, G., Lathrop, K. L., Chan, K. C.
  2018; 8 (1): 4643
- **Longitudinal Assessments of Normal and Perilesional Tissues in Focal Brain Ischemia and Partial Optic Nerve Injury with Manganese-enhanced MRI.** *Scientific reports*
  Chan, K. C., Zhou, I. Y., Liu, S. S., van der Merwe, Y., Fan, S. J., Hung, V. K., Chung, S. K., Wu, W. T., So, K. F., Wu, E. X.
  2017; 7: 43124
- **Structural and functional correlates of visual field asymmetry in the human brain by diffusion kurtosis MRI and functional MRI.** *Neuroreport*
  O'Connell, C., Ho, L. C., Murphy, M. C., Conner, I. P., Wollstein, G., Cham, R., Chan, K. C.
  2016; 27 (16): 1225-31
- **In Vivo Evaluation of the Visual Pathway in Streptozotocin-Induced Diabetes by Diffusion Tensor MRI and Contrast Enhanced MRI.** *PloS one*
  Kancherla, S., Kohler, W. J., van der Merwe, Y., Chan, K. C.
  2016; 11 (10): e0165169
- **Non-invasive MRI Assessments of Tissue Microstructures and Macromolecules in the Eye upon Biomechanical or Biochemical Modulation.** *Scientific reports*
  Ho, L. C., Sigal, I. A., Jan, N. J., Yang, X., van der Merwe, Y., Yu, Y., Chau, Y., Leung, C. K., Conner, I. P., Jin, T., Wu, E. X., Kim, S. G., Wollstein, et al
  2016; 6: 32080
- **Improved spatial accuracy of functional maps in the rat olfactory bulb using supervised machine learning approach.** *NeuroImage*
  Murphy, M. C., Poplawsky, A. J., Vazquez, A. L., Chan, K. C., Kim, S. G., Fukuda, M.
  2016; 137: 1-8
- **Retinal Structures and Visual Cortex Activity are Impaired Prior to Clinical Vision Loss in Glaucoma.** *Scientific reports*
  Murphy, M. C., Conner, I. P., Teng, C. Y., Lawrence, J. D., Safiullah, Z., Wang, B., Bilonick, R. A., Kim, S. G., Wollstein, G., Schuman, J. S., Chan, K. C.
  2016; 6: 31464
- **Distribution of Triamcinolone Acetonide after Intravitreal Injection into Silicone Oil-Filled Eye.** *BioMed research international*
  Da, M., Li, K. K., Chan, K. C., Wu, E. X., Wong, D. S.
  2016; 2016: 5485467
- **MAPS - a Magic Angle Positioning System for Enhanced Imaging in High-Field Small-Bore MRI.** *Journal of medical robotics research*

Squires, A., Chan, K. C., Ho, L. C., Sigal, I. A., Jan, N. J., Tse, Z. T.
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- **Top-down influence on the visual cortex of the blind during sensory substitution.** *NeuroImage*
  Murphy, M. C., Nau, A. C., Fisher, C., Kim, S. G., Schuman, J. S., Chan, K. C.
  2016; 125: 932-940
- **Structural and Functional Brain Remodeling during Pregnancy with Diffusion Tensor MRI and Resting-State Functional MRI** *PLOS ONE*
  Chan, R. W., Ho, L. C., Zhou, I. Y., Gao, P. P., Chan, K. C., Wu, E. X.
  2015; 10 (12)
- **Use of sensory substitution devices as a model system for investigating cross-modal neuroplasticity in humans.** *Neural regeneration research*
  Nau, A. C., Murphy, M. C., Chan, K. C.
  2015; 10 (11): 1717-9
- **Selective astrocytic endothelin-1 overexpression contributes to dementia associated with ischemic stroke by exaggerating astrocyte-derived amyloid secretion.** *Journal of cerebral blood flow and metabolism : official journal of the International Society of Cerebral Blood Flow and Metabolism*
  Hung, V. K., Yeung, P. K., Lai, A. K., Ho, M. C., Lo, A. C., Chan, K. C., Wu, E. X., Chung, S. S., Cheung, C. W., Chung, S. K.
  2015; 35 (10): 1687-96
- **In Vivo Evaluation of White Matter Integrity and Anterograde Transport in Visual System After Excitotoxic Retinal Injury With Multimodal MRI and OCT.** *Investigative ophthalmology & visual science*
  Ho, L. C., Wang, B., Conner, I. P., van der Merwe, Y., Bilonick, R. A., Kim, S. G., Wu, E. X., Sigal, I. A., Wollstein, G., Schuman, J. S., Chan, K. C.
  2015; 56 (6): 3788-800
- **Long-term effects of neonatal hypoxia-ischemia on structural and physiological integrity of the eye and visual pathway by multimodal MRI.** *Investigative ophthalmology & visual science*
  Chan, K. C., Kancherla, S., Fan, S. J., Wu, E. X.
  2014; 56 (1): 1-9
- **Magic angle-enhanced MRI of fibrous microstructures in sclera and cornea with and without intraocular pressure loading.** *Investigative ophthalmology & visual science*
  Ho, L. C., Sigal, I. A., Jan, N. J., Squires, A., Tse, Z., Wu, E. X., Kim, S. G., Schuman, J. S., Chan, K. C.
  2014; 55 (9): 5662-72
- **Successful tactile based visual sensory substitution use functions independently of visual pathway integrity.** *Frontiers in human neuroscience*
  Lee, V. K., Nau, A. C., Laymon, C., Chan, K. C., Rosario, B. L., Fisher, C.
  2014; 8: 291
- **In vivo assessment of aqueous humor dynamics upon chronic ocular hypertension and hypotensive drug treatment using gadolinium-enhanced MRI.** *Investigative ophthalmology & visual science*
  Ho, L. C., Conner, I. P., Do, C. W., Kim, S. G., Wu, E. X., Wollstein, G., Schuman, J. S., Chan, K. C.
  2014; 55 (6): 3747-57
- **In vivo visuotopic brain mapping with manganese-enhanced MRI and resting-state functional connectivity MRI** *NEUROIMAGE*
  Chan, K. C., Fan, S., Chan, R. W., Cheng, J. S., Zhou, I. Y., Wu, E. X.
  2014; 90: 235-245
- **In vivo chromium-enhanced MRI of the retina.** *Magnetic resonance in medicine*
  Chan, K. C., Fan, S. J., Zhou, I. Y., Wu, E. X.
  2012; 68 (4): 1202-10
- **Effect of cerebrovascular changes on brain DTI quantitation: a hypercapnia study.** *Magnetic resonance imaging*
  Ding, A. Y., Chan, K. C., Wu, E. X.
  2012; 30 (7): 993-1001
- **High fidelity tonotopic mapping using swept source functional magnetic resonance imaging.** *NeuroImage*
  Cheung, M. M., Lau, C., Zhou, I. Y., Chan, K. C., Zhang, J. W., Fan, S. J., Wu, E. X.

2012; 61 (4): 978-86

- **Balanced steady-state free precession fMRI with intravascular susceptibility contrast agent.** *Magnetic resonance in medicine*
  Zhou, I. Y., Cheung, M. M., Lau, C., Chan, K. C., Wu, E. X.
  2012; 68 (1): 65-73
- **BOLD fMRI investigation of the rat auditory pathway and tonotopic organization.** *NeuroImage*
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