John F. Hardesty, MD, Department of Ophthalmology and Visual Sciences

Website: http://ophthalmology.wustl.edu

Research Electives

Ophthalmology and Visual Sciences Research Electives

During the fourth year, opportunities exist for many varieties of advanced clinical or research experiences. Below is a list of faculty that have ongoing research projects that involve medical students. If a student is interested in working with a faculty member that is not listed below, they can contact the faculty directly to see if there are any research opportunities in their lab.

All residents are encouraged to pursue projects in laboratory or clinical investigation. Research familiarizes the resident with the limitations of laboratory methodology, provides a background for evaluating the literature, helps to develop critical thinking, and allows for a better informed choice for career goals. The type of project is the choice of the resident, and a wide range of opportunities are available. An annual Rosenbaum Research Award of $1,000 is presented to the resident who performs the most exciting research. The department emphasizes basic science research as well as clinical research. Basic science research currently involves five principal areas: Neurobiology, Immunology, Molecular Biology, Pharmacology/Physiology, and Clinical Studies and Outcomes Research. There are many opportunities for research in clinical areas as well.

Further descriptions of our research labs can be found on the Research Opportunities page (https://ophthalmology.wustl.edu/research-opportunities/) of the Department of Ophthalmology & Visual Sciences website.

Basic Science Research

- Dr. Steven Bassnett (https://ophthalmology.wustl.edu/items/bassnett-lab/): Pseudoexfoliation syndrome and glaucoma; refractive development; mouse models of ectopia lentis
- Dr. Shiming Chen (https://ophthalmology.wustl.edu/items/chen-lab/): Bedside to bench: phenotype-genotype correlations of CRX retinopathies
- Dr. Mae Gordon (https://ophthalmology.wustl.edu/items/gordon-lab/) and Dr. Philip Ruzycki (https://ophthalmology.wustl.edu/people/philip-ruzycki-phd/): Microbiome assays of normal eyes and eyes presenting with conjunctivitis
- Dr. Lynn Hassman (https://physicians.wustl.edu/people/lynn-m-hassman-md-phd/): Single-cell transcriptomics of ocular inflammatory cells in uveitis
- Dr. Todd Margolis (https://ophthalmology.wustl.edu/items/margolis-lab/): Regulation of latent infection with herpes simplex virus
- Dr. Joshua Morgan (https://sites.wustl.edu/morganlab/): Downstream circuit degeneration in a mouse glaucoma model
- Dr. Philip Williams (https://sites.wustl.edu/williams/home/): Retinal ganglion cell degeneration and axon regeneration in mouse glaucoma
- Dr. Alan Shiels (https://ophthalmology.wustl.edu/people/alan-shiels-phd/): Molecular genetics of pediatric cataracts and associated eye disorders
- Dr. Carla Siegfried (https://ophthalmology.wustl.edu/people/carla-siegfried-md/): Differential gene expression and mitochondrial function studies of trabecular meshwork cells; racial disparities of open-angle glaucoma
- Dr. Margaret Reynolds (https://ophthalmology.wustl.edu/people/margaret-reynolds-md/): Occupational therapy interventions for patients with low vision; inherited eye diseases; retinopathy of prematurity; refractive surgery; autism spectrum disorder

Clinical Research

- Dr. Steven Couch (https://ophthalmology.wustl.edu/people/steven-couch-md/): Genetic correlates of extrascleral extension in intraocular melanomas
- Dr. Andrew Lee (https://physicians.wustl.edu/people/andrew-r-lee-md/): Strabismus outcomes; retinopathy of prematurity; health care disparities in pediatric ophthalmology
- Dr. Todd Margolis (https://ophthalmology.wustl.edu/people/todd-margolis-md-phd/): Clinical studies of patients with ocular graft-versus-host disease and superior limbic keratoconjunctivitis, including role of the ocular surface microbiome; pathology studies of autonomic innervation of corneal buttons from patients with herpes simplex virus and herpes zoster ophthalmicus
- Dr. P. Kumar Rao (https://physicians.wustl.edu/people/p-kumar-rao-md/): Vitreous proteomics
- Dr. Lawrence Tychsen (https://ophthalmology.wustl.edu/items/tychsen-lab/): Amblyopia; eye movements; pediatric refractive surgery
- Dr. Gregory P. Van Stavern (https://ophthalmology.wustl.edu/people/gregory-van-stavern-md/): Opportunities in neuro-ophthalmology
- Dr. Carla Siegfried (https://ophthalmology.wustl.edu/people/carla-siegfried-md/): Ethical issues in patient care; outcomes in glaucoma care
- Dr. Leanne Stunkel (https://ophthalmology.wustl.edu/people/leanne-stunkel-md/): Opportunities in neuro-ophthalmology; diagnostic errors in medicine

Quality Improvement Research

- Dr. Phil Custer (https://ophthalmology.wustl.edu/people/philip-custer-md-facs/): Resident-initiated patient safety and quality improvement projects

Translational Research

- Dr. Robi Maamari (https://ophthalmology.wustl.edu/people/robi-maamari-md/): Translational research opportunities for those interested in the development of ophthalmic diagnostic devices (i.e., image-based diagnostics)