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

The John F. Hardesty, MD, Department of Ophthalmology and Visual Sciences has a strong legacy and is a national leader in clinical ophthalmology and research. It is ranked among the top ten best overall programs in the United States, and it is also considered one of the top ten best research programs by U.S. News & World Report. Our ophthalmology department is fourth in National Institutes of Health funding for research and has one of the nation's largest ophthalmology research faculty. The department's mission is as follows: "As world leaders in patient care, teaching and research, we strive to touch lives and preserve and restore vision through innovation and compassionate service." We hope that students will join us to enrich their medical education and to experience the collaborative culture of ophthalmology.

Although only a small percentage of physicians in the United States specialize in ophthalmology, there is no doubt that all physicians need a basic understanding of the eye and what it can reveal about a patient's condition. In a recent article published in the journal Ophthalmology, it was stated that "ophthalmology-related issues arise in the diagnosis and treatment of inpatients and outpatients on internal medicine, pediatrics, trauma surgery, neurology, endocrinology, neurosurgery, otolaryngology, dermatology, oncology, and rheumatology services."[1]

The article went on to state that "[m]ost primary care program directors believe fewer than 50% of incoming residents have sufficient ophthalmology skills when entering the internship period of medical education. Ophthalmoscopy is one of many ophthalmic skills in which there seems to be a gap in the training of medical students. [A study] demonstrated that emergency medicine physicians often do not perform an ophthalmoscopic examination when it is indicated, and when they do, they are unlikely to detect abnormal findings. This presents a serious issue, because patients with visual impairments are more likely to be hospitalized, and from 2006 through 2011, there were 12 million eye-related emergency department visits nationwide. If they are unable to view or interpret fundus findings with either an ophthalmoscope or fundus photography, the students must know when it is necessary to refer their patients to an ophthalmologist for further evaluation." In other words, even if a physician does not plan to make ophthalmology their career, deepening their knowledge of this field will enhance their skills as a physician in any field.

At Washington University School of Medicine, medical students under the Legacy Curriculum begin ophthalmology-based instruction during the first year with examination of the eye and a lecture on various aspects of ocular disease. During the second year, students receive a refresher lecture and lab on direct ophthalmoscopy as well as a lecture on ophthalmic manifestations of systemic disease and primary ocular disease. During the third year, students are given the opportunity during the surgery clerkship to spend four weeks on the ophthalmology services; in addition, there are lectures given to students during the Internal Medicine rotations. During the fourth year, a four-week intensive clinical rotation is tailored to students interested in pursuing ophthalmology as a career. Research electives are available under the guidance of numerous ophthalmology faculty members for fourth-year students. Newer medical students under the Gateway Curriculum have the option of choosing ophthalmology for a three-week-long clinical experience during their first-year Procedural Immersion. More intensive clinical rotations will be available in later phases of the new curriculum.

Faculty

Our staff includes full-time university attending physicians for all subspecialties in ophthalmology, including ocular tumors, oculoplastics and uveitis. We have a very healthy mix of senior established faculty and junior members.

Todd Margolis, MD, PhD (http://ophthalmology.wustl.edu/people/todd-margolis-md-phd/)
Alan A. and Edith Wolff Distinguished Professor and Chairman

R. Lawrence Tychsen, MD (https://wuphysicians.wustl.edu/for-patients/find-a-physician/lawrence-tychsen/)
Pediatric Ophthalmology Director

P. Kumar Rao, MD (https://profiles.wustl.edu/en/persons/kumar-rao/)
Adult Ophthalmology Clinical Director

Peter Lukasiewicz, PhD (https://profiles.wustl.edu/en/persons/peter-lukasiewicz/)
Ophthalmology Research Director

Rajendra Apte, MD, PhD (https://profiles.wustl.edu/en/persons/rajendra-apt/e)
Ophthalmology Director of Translational Research

Visit our website for more information about our faculty (http://ophthalmology.wustl.edu/Faculty/) and their appointments.
A

Henry W Allhoff, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1981
BA University of Missouri 1976

Navinkumar J Amin, MS, UNKNOWN, MBBS
Professor of Ophthalmology and Visual Sciences (Pending Executive Faculty Approval) (primary appointment)
MS University of Bombay 1966
UNKNOWN University of Bombay 1960
MBBS Bombay University Medical Scho 1965

Shilpa S Amin, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA University of MO Kansas City 1994
MD University of MO Kansas City 1994

Usha P Andley, PHD, MS
Professor of Ophthalmology and Visual Sciences (primary appointment)
Assistant Professor of Biochemistry and Molecular Biophysics
PHD Jawaharlal Nehru University 1977
MS Delhi University 1972
BS Delhi University 1970

Rajendra Apte, PHD, MD
Paul A. Cibis Distinguished Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Developmental Biology
Professor of Medicine
Vice Chair of Translation and Innovation Department of Ophthalmology
PHD University of Texas Southwest 1997
MD University of Bombay 1993

B

Alexander Steven Barsam, MBA, MD
Instructor in Ophthalmology and Visual Sciences (primary appointment)
MBA University of Miami 2015
BS University of California 2010
MD University of Miami 2016

Steven Bassnett, PHD
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Cell Biology and Physiology
PHD University of East Anglia 1987
BS University of Wales 1982

Paul Douglas Becherer, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD School Not Listed 1975

BA Southern Illinois University 1971
Stanley C Becker, MA, MD, PHD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MA Washington Univ in St. Louis 1950
MD University of Chicago 1955
PHD Washington Univ in St. Louis 1951
BA Washington Univ in St. Louis 1948

William L Becker, MD, MA
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Earlham College 1982
MD Washington Univ in St. Louis 1987
MA Washington Univ in St. Louis 1987

Gregg Jonathan Berdy, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Saint Louis University 1983
BA Duke University 1979

Paul M Bernier, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1987
BS Indiana State University 1983

Anjali Maruti Bhorade, MD
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)
Associate Professor of Occupational Therapy
MD University of Chicago 1999

Frank Joseph Bier, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS University of Missouri 1979
OD University of MO St Louis 1984

Ronald C Bilchik, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BS University of Toledo 1963
MD Washington Univ in St. Louis 1967

Mark Gerald Birkmann, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1992
BA University of Missouri 1988

Andrew N Blatt, MA, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MA Washington Univ in St. Louis 1991
BA Duke University 1987
MD Washington Univ in St. Louis 1992
Kevin Jay Blinder, MD
Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of MO Kansas City 1985

James C Bobrow, MD
Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Yale University 1966
MD Johns Hopkns University Medic 1970

George M Bohigian, MD
Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Washington Univ in St. Louis 1961
MD Saint Louis University 1965

Bernita Born-Wolf, OD, BN
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of MO St Louis 1987
BN Saint Louis University 1978

Paul J Botelho, MD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BA Holy Cross College 1988
MD Boston University 1992

Rebekah Arletta Braslow, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Yale University 1987
BS Stanford University 1981

Sean Michael Breit, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Ohio State University 2002

Larry G Brokering, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1972

Marc Richard Brown, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BA University of Missouri 1974
OD School Not Listed 1980

Nancy M Buchser, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of Miami 2007

Dean B Burgess, MD
Professor Emeritus of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of California 1967

Shiming Chen, MS, PHD
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Developmental Biology
MS Beijing Medical University 1984
BS Beijing University 1981
PHD State University of New York 1992

Brian Stewart Clark, PHD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
Assistant Professor of Developmental Biology
PHD Medical College of Wisconsin 2013

Bruce H Cohen, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Johns Hopkins University 1980
BA Harvard University 1976

Nicholas J Colosi, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA La Salle University 1964
MD Saint Louis University 1968

Pamela Ann Coslick-Fada, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1987

Steven Michael Couch, MD
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)
MD University of MO Kansas City 2006

John Bruce Crane II, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of MO St Louis 1991
BA William Jewell College 1987

Philip L Custer, MD
John F. Hardesty, MD, Department of Ophthalmology and Visual Sciences (08/29/21)

Professor of Ophthalmology and Visual Sciences (primary appointment)
BS Vanderbilt University 1974
MD Vanderbilt University 1978

D

David L Davidson, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD School Not Listed 1964

Alicia Beatriz De Maria Leiva, PHD
Instructor in Ophthalmology and Visual Sciences (primary appointment)
PHD Universidad de la Republica 2002

John James Deguire, MD
Instructor in Ophthalmology and Visual Sciences (primary appointment)
MD University of Illinois 1988
BA Washington Univ in St. Louis 1983

Paul E Diehl, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1959

Kyle Dohrman
Instructor in Ophthalmology and Visual Sciences (primary appointment)

E

John Robert Eigenbrodt, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1988
BS Southern Ill Univ Edwardsville 1985

Lawrence W Ernst, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1990

F

Raymond F Fada Jr, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1989
BS University of Michigan 1984

Adam Ross Fedyk
Instructor in Clinical of Ophthalmology & Visual Sciences (primary appointment)

Robert M Feibel, MD
Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Johns Hopkins University 1965

MD Harvard University 1969

Thomas A Ferguson, MS, PHD
Professor of Ophthalmology and Visual Sciences (primary appointment)
Associate Professor of Pathology and Immunology
BA Kent St University 1974
MS Kent St University 1976
PHD University of Cincinnati 1982

Kurt W Finklang, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD State University of New York 1981
BS University of Missouri 1977

Frank Donald Fontana, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1950

Bruce S Frank, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BS Mass Inst of Technology (MIT) 1972
MD Washington Univ in St. Louis 1976

G

Carrie S Gaines, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1988
BS University of Missouri 1984

Lawrence A Gans, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Columbia University 1972
MD Case Western Reserve Univ 1977

Stephen M Garnett, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Indiana University Bloomington 1978
OD Indiana University Bloomington 1980

James M Gordon, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of Minnesota 1966
BA University of Minnesota 1962

Mae Etsuko Gordon, PHD, MS
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Biostatistics
BA Portland St University 1967
PHD Univ of Wisconsin Madison 1979
Kenneth O Green, MD  
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)  
BS Saint Louis University 1956  
MD University of Missouri 1960

Kevin William Greuloch, MD  
Instructor in Ophthalmology and Visual Sciences (primary appointment)  
MD University of Michigan 1999  
BS University of Notre Dame 1995

Steven J Grondalski, OD  
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)  
BA Saint Louis University 1983  
OD Penn College of Optometry 1987

George J Harocopos, MD  
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)  
Assistant Professor of Pathology and Immunology  
BA Harvard University 1995  
MD University of Virginia 2000

Alexander D Harris, OD, MA  
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)  
OD University of Missouri 1986  
MA Washington Univ in St. Louis 1972  
BA University of Evansville 1969

Charles R Harris, PHD  
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)  
PHD University of MO Columbia 1971  
BS University of Missouri 1970

Lynn M Hassman, MD, PHD  
Assistant Professor of Ophthalmology & Visual Science (primary appointment)  
BS Evangel University 2002  
MD University of Virginia 2012  
PHD University of Virginia 2010

William L Herbold, OD  
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)  
OD School Not Listed 1967  
BS School Not Listed 1967

James R Hoekel, OD  
Instructor in Ophthalmology and Visual Sciences (primary appointment)  
BS University of MO Columbia 1990
Professor of Neuroscience
PHD Boston University 1999

Deborah Lynn Kerber, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1992
BS Southeast Missouri St Univers 1986

Daniel Kerschensteiner, MD
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Biomedical Engineering (Courtesy)
Professor of Neuroscience
MD Georg August University 2004

Sangeeta Khanna
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)

William F Kiefer Jr, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1975
BS Illinois College of Optometry 1973
BA Princeton University 1967

Mark Alan Kleindorfer, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Indiana University Bloomington 1977
OD Indiana University Bloomington 1979

Vivian Marie Kloke, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Mckendree College 1986
OD University of Missouri 1990

Harry L Knopf, MD
Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Harvard University 1967
BA Harvard University 1963

Ronald Joseph Knox, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD School Not Listed 1956

Thomas Errol Kraemer, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Indiana University Bloomington 1970
OD Indiana University Bloomington 1972
BA Millikin University 1968

Robert Louis Lamberg, MD

Associate Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BS University of MO St Louis 1972
MD Washington Univ in St. Louis 1976

Paul Arthur Lapoint, OD, AA
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS School Not Listed 1963
OD School Not Listed 1963
AA Harris Stowe St College 1959

Andrew R. Lee, MD
Assistant Professor of Ophthalmology & Visual Sciences (Pending Executive Faculty Approval) (primary appointment)
MD Washington Univ in St. Louis 2013

Steven F Lee, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of Maryland 1987
BS University of Maryland 1983

Scott W Lewis, BS1, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS1 So Cal College of Optometry 1975
BS University of Illinois 1968
OD So Cal College of Optometry 1977

James Walter Lieber, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Wayne State University 1976
OD Illinois College of Optometry 1981

Anthony J Lubniewski, MD
Professor of Ophthalmology and Visual Sciences (primary appointment)
MD University of Florida 1985
BS University of Florida 1980

Gregg T Lueder, MD
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Pediatrics
MD University of Iowa 1985
BS Iowa State University 1981

Peter David Lukasiewicz, PHD
Janet and Bernard Becker Professor of Ophthalmology (primary appointment)
Professor of Neuroscience
BS Brown University 1977
PHD University of Michigan 1984

Robi N Maamari, MD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
MD University of CA Irvine 2014

Lisa Marie Mackey, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1993
BA University of Kansas 1989

Todd P Margolis, PhD, MD
Alan A and Edith L Wolff Distinguished Professor (primary appointment)
Head of the Department of Ophthalmology and Visual Sciences
BS Stanford University 1977
PHD University of CA San Francisco 1983
MD University of CA San Francisco 1984

Mary Kay Migneco, BS1, OD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
BS1 University of Missouri 1986
BS University of Missouri 1986
OD University of MO St Louis 1991

Barry David Milder, MD
Associate Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Washington Univ in St. Louis 1973
BS Mass Inst of Technology (MIT) 1969

Duane L Mitzel, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BS University of California 2000
MD Washington Univ in St. Louis 1977

Eugene James Mobley, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Northern Illinois University 1950

Robert L Moby, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1958

Cynthia L. Montana, PhD, MD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
BS University of Virginia 2005
PHD Washington Univ in St. Louis 2014
MD Washington Univ in St. Louis 2014

Joshua L. Morgan, PhD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
Assistant Professor of Neuroscience
PHD Washington Univ in St. Louis 2007

BA Florida Southern College 2001

Robert F Munsch, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Saint Louis University 1977
BA University of Colorado Boulder 1974

Raymond I Myers, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Indiana University Bloomington 1970
BS University of Notre Dame 1966

Randall Earl Nacke
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)

Matthew Newman, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Columbia University 1959
BA Vanderbilt University 1956

Paul F Nichols III, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA University of California 1978
MD University of California 1982

Judith Mosinger Ogilvie, PhD1, MA, PhD
Adjunct Research Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
PHD1 Harvard University 1983
BS Brown University 1976
MA Harvard University 1978
PHD Harvard University 1983

Jeffrey Robert Padousis, MD
Instructor in Clinical Ophthalmology and Visual Science (primary appointment)
MD Saint Louis University 2000
BA Vanderbilt University 1995

Anjali K Pathak, MD, MD1
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)
BA West Virginia University 1993
BS West Virginia University 1993
MD West Virginia University 1997
MD1 West Virginia University 1997

John Craig Perlmutter, MD
Associate Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Queens College 1967
MD Cornell University 1971

Kisha Deslee Piggott, MD, PHD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
BS Spelman College 2003
MD Emory University 2011
PHD Emory University 2009

R
Rithwick Rajagopal, MD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
MD New York University 2007

Mark S Rallo, OD
Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Saint Louis University 1986
OD University of Missouri 1990

Prabakar Kumar Rao, MD
Professor of Ophthalmology and Visual Sciences (primary appointment)
MD University of Southern Calif 1995
BA University of CA San Diego 1991

V. Nathan Ravi, PHD, MD, MS
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Energy, Environmental and Chemical Engineering
PHD Virginia Tech 1980
BS University of Bombay 1972
MD University of Miami 1988
MS University of Bombay 1975

Margaret Mary McGlynn Reynolds, MD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
BS Creighton University 2010
MD Cornell University 2014

Michael Dennis Rohde, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1987
BS Valparaiso University 1983

Louis J Rosenbaum, MD
Associate Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Washington Univ in St. Louis 1963
BA University of Michigan 1959

Mark A Rothstein, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of Utah 1991
BA Williams College 1986

Michael B Rumelt, MD
Assistant Professor Emeritus of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Washington Univ in St. Louis 1966
BS Lamar University 1962

Philip A Ruzycki, PHD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
PHD Washington University in St. L 2018
BS Davidson College 2008

S
Scott Geoffrey Sagett
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)

Jonathan C Schell, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
BS Saint Louis University 2001
MD Saint Louis University 2005

Frederick W Schwagger, OD, BS1
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Illinois College of Optometry 1957
OD Illinois College of Optometry 1957
BS1 Washington Univ in St. Louis 2000

Christopher G Seep, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BA University of Missouri 1971
OD University of MO St Louis 1984

David Brian Seibel, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD University of Missouri 1987

James Banks Shepherd III, MD
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)
MD Columbia University 1997
BA Amherst College 1992

Priya Saigal Shetty, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD University of Michigan 2007

Arsham Sheybani, MD
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)
MD Washington Univ in St. Louis 2008

Steven M Shields, MD
Assistant Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
BS Washington Univ in St. Louis 1981
MD Washington Univ in St. Louis 1986

Alan Shiels, PHD
Professor of Ophthalmology and Visual Sciences (primary appointment)
Professor of Genetics
BS School Not Listed 1979
PHD University of London 1983

Howard Newton Short, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Saint Louis University 1978
BA Washington Univ in St. Louis 1974

Erin Gwen Sieck, MD
Assistant Professor of Ophthalmology and Visual Sciences (primary appointment)
MD Washington Univ in St. Louis 2015
BA University of MO Kansas City 2013

Charles D Signorelli, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS School Not Listed 1979
OD School Not Listed 1979

Claud Randall Snowden, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BS Illinois College of Optometry 1972
OD Illinois College of Optometry 1974

Craig H Sorce, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
BA Southern Illinois University 1988
OD University of Missouri 1992

Florentina Soto Lucas, PHD
Associate Professor of Ophthalmology and Visual Sciences (primary appointment)
PHD University of Alicante 1992

Mark H Spurrier, MD
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)
BA Kansas State University 1976
MD Washington Univ in St. Louis 1980

Joseph Steska, OD

Instructor in Ophthalmology and Visual Science (primary appointment)
OD Illinois College of Optometry 2009

Michael Vincent Stock, BE, BE1, MD
Instructor in Ophthalmology and Visual Sciences (primary appointment)
BE Vanderbilt University 2008
BE1 Vanderbilt University 2008
MD Washington Univ in St. Louis 2012

James F Strieter, OD, MBA
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD School Not Listed 1954
BS School Not Listed 1953
MBA Southern Ill Univ Edwardsville 1988

Leanne Denise Stunkel, MD
Assistant Professor of Ophthalmology & Visual Science (primary appointment)
Assistant Professor of Neurology
BA Johns Hopkins University 2008
MD Cornell University 2014
BA Johns Hopkins University 2008

Brian Patrick Sumner, OD
Adjunct Instructor in Ophthalmology and Visual Sciences (primary appointment)
OD Illinois College of Optometry 1978

Kenneth V Swanson
Instructor in Clinical Ophthalmology and Visual Sciences (primary appointment)

Paul M Tesser, MD, PHD
Associate Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD State Univ of NY Stonybrook 1991
BS Mass Inst of Technology (MIT) 1981
PHD State Univ of NY Stonybrook 1990

Matthew A Thomas, MD
Professor of Clinical Ophthalmology and Visual Sciences (primary appointment)
MD Harvard University 1991
BS Harvard University 1977

Linda Mei-Lin Tsai, MD
Professor of Ophthalmology and Visual Sciences (primary appointment)
MD Northwestern University 1995
BA Northwestern University 1990

Robert Lawrence Tychsen, MD
Professor of Ophthalmology and Visual Sciences (primary appointment)
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.

Further descriptions of our research labs can be found on the Vision Core Researchers webpage (http://vrcore.wustl.edu/residentstudentresearchopportunities/RSROHome/).

Usha P. Andley, PhD
1114-C McMillan
Phone: 314-362-7167
Molecular basis of cataract; the function of molecular chaperones in cataract; proteomics, imaging and biochemical studies on cell culture and mouse models for crystallin gene mutations linked with cataract; testing drugs to inhibit cataract.

Rajendra S. Apte, MD, PhD
apte@vision.wustl.edu
Innate immunity and immune effector mechanisms in the retina; oxidative stress and cell death; models of developmental angiogenesis and neovascularization; inflammation and photoreceptor survival; macular degeneration.

Steven Bassnett, PhD
1114 McMillan
Phone: 314-362-1604
Eye development; stochastic models of lens growth; stem cell biology; age-related cataract; UV-induced somatic mutation; ocular manifestations of Marfan syndrome; cell death suppression on the optic axis; cell biology of transparent tissues.

Anjali Bhorade, MD
Phone: 314-362-5343
Evaluating the effect of glaucoma on visual function in older adults in the home; understanding the relationship between vision and driving in older adults with glaucoma.

Shiming Chen, PhD
618 McMillan
Phone: 314-747-4350
Our primary interests are molecular mechanisms regulating photoreceptor gene expression and the implications in understanding photoreceptor development and disease. We are focusing on three transcription factors (CRX, NRL and NR2E3) linked to photoreceptor degenerative diseases. Molecular genetics and biochemical approaches are used to identify the regulatory pathways associated with each factor. Mouse models are used to understand why mutations in these factors cause disease and to develop therapeutic strategies, including AAV gene therapy.

Steven M. Couch, MD
couch@vision.wustl.edu
Orbital inflammatory diseases; surgical techniques and novel treatments of periocular/orbital disease.

Phillip L. Custer, MD
custer@vision.wustl.edu
Enucleation and anophthalmic socket disorders; orbital fractures and implants; hemorrhagic complications during oculoplastic procedures.

Thomas A. Ferguson, PhD
1207 McMillan
Phone: 314-362-3745
Molecular basis of immune tolerance and how apoptotic cells tolerize the immune response; role of immune privilege in the pathogenesis of eye diseases such as age-related macular degeneration; role of basal autophagy in the cells of the eye by using the cre-loxP system to delete essential autophagy genes from specific cell types in the eye.

Mae Gordon, PhD
Phone: 314-362-3716
Ocular hypertension; glaucoma; keratoconus; adenoviral conjunctivitis; randomized clinical trial methodology; patient-reported outcome measures and measurement reliability.

George J. Harocopos, MD
harocopos@vision.wustl.edu
Age-related cataract; ophthalmic pathology.

Andrew Huang, MD, MPH
106 McMillan
Phone: 314-362-0403
Ocular surface stem cell biology; molecular therapy for corneal dystrophies and corneal neovascularization; oxidative stress of corneal endothelium; clinical research on dry eye and ocular surface disease.

Michael A. Kass, MD
kass@vision.wustl.edu
Principal Investigator of the Ocular Hypertension Treatment Study; diagnosis, treatment and public health aspects of glaucoma.

Vladimir Kefalov, PhD
625 McMillan
Phone: 314-362-4376
Our primary interests are photoreceptor neurobiology and retinal degeneration. We are a sensory neurobiology lab interested in the function of mammalian rod and cone photoreceptors. In addition, we are interested in the mechanisms of neurodegeneration in the retina, and we are working on developing pharmacological and gene therapy tools for preventing photoreceptor cell death.

Daniel Kerschensteiner, MD
kerchensteinerd@vision.wustl.edu
(kerschensteinerd@vision.wustl.edu)
Our primary interest is in understanding the principles that guide the assembly of neural circuits and deciphering the way they process information. We hope to identify features of the retinal circuit architecture that perform particular computations and characterize how they arise during development. We will then probe underlying mechanisms of circuit assembly and function through genetically targeted manipulations of specific cells in the retina.

Gregg T. Lueder, MD
lueder@vision.wustl.edu
Retinoblastoma; eye misalignment (strabismus); retinopathy of prematurity; abnormal tearing; nasolacrimal disorders; cataracts; glaucoma.

**Peter Lukasiewicz, PhD**  
1003C McMillan  
Phone: 314-362-4284  
Neurotransmitters; synapses; retinal function in health and disease; retinal information processing.

**Todd P. Margolis, MD, PhD**  
margolist@vision.wustl.edu  
Cellular and molecular mechanisms that regulate herpes simplex infection neurons; inexpensive telemedicine for reducing blindness in underserved populations.

**Josh Morgan, PhD**  
jimorgan@wustl.edu  
Our primary interest is in the synaptic connectivity of visual circuits. Our goal is to understand the structure, development and pathology of the synaptic connectivity that gives rise to vision. Our core approach is to reconstruct neural circuits in the retina and visual thalamus using large-scale 3D electron microscopy.

**John R. Pruett Jr., MD, PhD**  
pruettj@wustl.edu  
We use fcMRI to study the development of large-scale functional brain networks in infants at risk for autism spectrum disorder. We are specifically interested in fcMRI correlates of visual joint attention. Our collaborative projects involve fcMRI studies of visual-motor integration.

**Kumar Rao, MD**  
rao@vision.wustl.edu  
Surgical and medical therapies for disorders of retina and choroid; novel intraocular markers in uveitis and lymphoma; ultrasound therapy for choroidal melanoma.

**Nathan Ravi, MD, PhD, MS, FAAO**  
ravi@vision.wustl.edu  
Our research is directed toward understanding the pathophysiology of presbyopia and developing medical or surgical treatments for this condition.

**Alan Shiels, PhD**  
1128 McMillan  
Phone: 314-362-1637  
shiels@vision.wustl.edu  
Our primary interest is in the molecular genetic mechanisms underlying cataract, glaucoma and associated eye disorders. Specifically, we are interested in the following: (1) genome-wide linkage analysis and targeted (exome, amplicon) sequencing for the discovery of causative or susceptibility genes; and (2) genotype-phenotype and functional expression studies of naturally occurring and gene-targeted mouse models to characterize pathogenic mechanisms.

**Carla J. Siegfried, MD**  
siegfried@vision.wustl.edu  
Our research is focused on ocular oxygen metabolism and the development of open-angle glaucoma. We are studying how the oxygen gradient in the eye is altered in disease states as well as noninvasive methods of measuring corneal oxygen consumption.

**Florentina Soto, PhD**  
sotolucasf@vision.wustl.edu  
Studies in our laboratory aim to identify the molecular basis of dendrite and axon lamination and synapse formation during development and in the adult retina. In addition, we investigate how these molecules could be involved in the development of retinal pathologies, including retinal degeneration.

**Larry Tychsen, MD**  
2589 Eye Clinic, St. Louis Children's Hospital  
Phone: 314-454-6026  
Principal Investigator of NIH-funded studies of visual brain maldevelopment and repair in infant primates as well as of clinical studies of visuomotor abnormalities in cerebral palsy and pediatric refractive surgery.

**Gregory P. Van Stavern, MD**  
vanstaverng@vision.wustl.edu  
Neuroimaging of the visual pathways; idiopathic intracranial hypertension; evidence-based medicine and clinical decision making; using the visual system as a model to study neurologic disorders.

**Courses**

Curriculum courses (p. 13) for Ophthalmology and Visual Sciences are listed below.
Gateway Curriculum: First Year
Under the new Gateway Curriculum, medical students spend their four years split between three phases. Phase 1 involves the first 16 months of medical school. During Phase 1, students participate in three Procedural Immersions, which are three-week-long clinical and surgical experiences. The primary goals of the Procedural Immersions are to socialize the student to different clinical settings, to hone their clinical skills, and to allow them to explore the impact of society and health systems on an individual patient’s health. This 360-degree approach to early clinical exposure allows students to view practicing medicine through physician, patient, and systems lenses. In these rotations, medical students will often focus on longitudinal patient care by following a specific patient from the time they arrive until they leave and seeing how all health care team members are involved in that patient’s visit. During the Ophthalmology Procedural Immersion, students spend time in the University Eye Clinic and in the pediatric and adult subspecialty clinics and operating rooms, and they attend rounds with an inpatient consult team. This early exposure to clinical experience helps students to contextualize the classroom and clinical learning that they continue with over the next two phases.

Legacy Curriculum: Second Year
During the second year of the Legacy Curriculum, students will receive a refresher lecture and lab on direct ophthalmoscopy as well as a lecture on ophthalmic manifestations of systemic disease and primary ocular diseases.

Legacy Curriculum: Third Year
During the third year, students are given the opportunity to spend four weeks of their surgery clerkship on the ophthalmology service. The students work closely with the ophthalmology residents and review the differential diagnosis of the “red eye,” how to interpret an ophthalmologic consult note, and how to handle ocular emergencies. During this rotation, there is again emphasis on the use of the ophthalmoscope. Additional clinical skills introduced to rotating students include the use of the slit lamp and indirect ophthalmoscopy. All third-year students on the ophthalmology rotation meet weekly for case presentations with faculty and other medical students on the rotation. They also attend lectures periodically throughout their month in ophthalmology.

Legacy Curriculum: Fourth Year
The Ophthalmology Sub-Internship Rotation occurs during this time. During the month of June prior to their fourth year, students interested in pursuing a career in ophthalmology are encouraged to complete this intensive four-week rotation. Students will have personal indirect ophthalmoscopy lenses available for use on the rotation. Formal didactic sessions and workshops will be used to teach students how to perform a detailed ophthalmic history and exam, including the mastery of advanced slit lamp techniques and indirect fundoscopy. There will be an intense schedule of both live and recorded lectures delivered by ophthalmology faculty members, with post-lecture quizzes. Students will be expected to perform daily required reading. Retention and understanding of reading materials will be assessed by frequent quizzes. Students are strongly encouraged to present a case at the department’s grand rounds. By the end of the rotation, students will be expected to function at the level of a first-year ophthalmology resident.
the student's responsibilities range from observation (including observing surgery) to working at a resident level and completing full eye examinations. Didactics will include weekly case presentation sessions, weekly attendance at grand rounds, and a mix of medical student-oriented and resident-oriented conferences. Also, there will be medical student-oriented workshops to learn the basics of the slit lamp and indirect ophthalmoscopy. On day one, students will receive a schedule of conferences that they are expected to attend during the month. By the end of the four-week rotation, the student is expected to be proficient in taking an ocular history and performing a complete eye exam including slit lamp biomicroscopy and indirect ophthalmoscopy.

M50 Ophth 900 Research Elective - Ophthalmology
Research opportunities may be available. If interested, please contact the Department of Ophthalmology.