Instruction in medicine is provided during all three phases of the new Gateway Curriculum. This begins with immersive experiences and clinical skills that are introduced in Phase 1, bringing immediate clinical context to the foundational sciences. It continues during the Phase 2 Internal Medicine clerkship, where students directly apply knowledge and care to patients in a supervised setting, and it extends into the required Internal Medicine advanced clinical rotation and elective courses in Phase 3.

Website: https://internalmedicine.wustl.edu

Faculty

The Department of Medicine’s general medicine teaching services at Barnes-Jewish Hospital and the Veterans Administration Medical Center (St. Louis) are under the following directors:

Victoria J. Fraser, MD (https://infectiousdiseases.wustl.edu/faculty-staff/victoria-j-fraser/)  
Adolphus Busch Professor of Medicine and Chair

Jeffrey S. Crippin, MD (https://profiles.wustl.edu/en/persons/jeffrey-crippin/)  
Marilyn E. Bornefeld Chair in Gastrointestinal Research and Treatment  
Professor of Medicine  
Vice Chair of Clinical Programs

Nancy K. Sweitzer, MD, PhD (https://cardiology.wustl.edu/faculty/nancy-k-sweitzer-md-phd/)  
Professor of Medicine  
Vice Chair of Clinical Research

Abby L. Spencer, MD (https://profiles.wustl.edu/en/persons/abby-spencer/)  
Professor of Medicine  
Vice Chair of Education

Angela L. Brown, MD (https://profiles.wustl.edu/en/persons/angela-brown/)  
Professor of Medicine  
Vice Chair of Education

Thomas Ciesielski, MD (https://profiles.wustl.edu/en/persons/thomas-ciesielski/)  
Associate Professor of Medicine  
Vice Chair of Patient Safety

Peggy L. Kendall, MD (https://allergy.wustl.edu/peggy-kendall-md/)  
Virginia Minnich Distinguished Professor of Medicine  
Chief, Division of Allergy and Immunology

Richard W. Gross, MD, PhD (https://profiles.wustl.edu/en/persons/richard-gross/)  
Professor of Medicine  
Chief, Division of Bioorganic Chemistry and Pharmacology

Roberto Civitelli, MD (https://profiles.wustl.edu/en/persons/roberto-civitelli/)  
Sydney M. & Stella H. Schoenberg Professor of Medicine  
Chief, Division of Bone and Mineral Diseases

Sumanth Prabhu, MD (https://cardiology.wustl.edu/faculty/sumanth-d-prabhu-md/)  
Lewin Distinguished Professor of Cardiovascular Diseases  
Chief, Division of Cardiology/Cardiology Diseases

Lynn A. Cornelius, MD (https://profiles.wustl.edu/en/persons/lynn-cornelius/)  
Winfred A. and Emma R. Showman Professor of Dermatology in Medicine  
Chief, Division of Dermatology

Clay F. Semenkovich, MD (https://profiles.wustl.edu/en/persons/clay-semenkovich/)  
Irene E. and Michael M. Karl Professor of Endocrinology and Metabolism in Medicine  
Chief, Division of Endocrinology, Metabolism and Lipid Research

Nicholas O. Davidson, MD (https://profiles.wustl.edu/en/persons/nicholas-davidson/)  
John E. and Adaline Simon Professor of Medicine  
Chief, Division of Gastroenterology

Richard A. and Elizabeth Henby Sutter Chair in Occupational, Industrial, and Environmental Medicine  
Chief, Division of General Medical Sciences

Thomas M. De Fer, MD (https://profiles.wustl.edu/en/persons/tom-de-fer/)  
Carol & Jerome T. Loeb Professor of Medicine  
Associate Dean for Medical Student Education  
Chief, Division of General Medicine

Samuel Klein, MD (https://profiles.wustl.edu/en/persons/samuel-klein/)  
William H. Danforth Professor of Medicine and Nutritional Science  
Chief, Division of Geriatrics and Nutritional Sciences

Elaine M. Majerus, MD, PhD (https://profiles.wustl.edu/en/persons/elaine-majerus/)  
Professor of Medicine  
Co-Chief, Division of Hematology

Stephen Oh, MD, PhD (https://oncology.wustl.edu/people/faculty/Oh/Oh_Bio.html)  
Associate Professor of Medicine  
Co-Chief, Division of Hematology
Mark Williams, MD (https://hospitalist.wustl.edu/people/mark-williams-md-facp-mhm/)
Professor of Medicine
Chief, Division of Hospital Medicine

Jennifer A. Philips, MD, PhD (https://profiles.wustl.edu/en/persons/jennifer-philips/)
Theodore and Bertha Bryan Professorship in Environmental Medicine
Professor of Molecular Microbiology
Co-Chief, Division of Infectious Diseases

Dr. J. William Campbell Professor of Medicine
Co-Chief, Division of Infectious Diseases

Benjamin D. Humphreys, MD, PhD (https://profiles.wustl.edu/en/persons/benjamin-humphreys/)
Joseph P. Friedman Professor of Renal Diseases in Medicine
Chief, Division of Nephrology

John F. DiPersio, MD, PhD (https://profiles.wustl.edu/en/persons/john-dipersio/)
Virginia E. and Sam J. Golman Professor of Medicine
Chief, Division of Oncology

Patrick H. White, MD (https://profiles.wustl.edu/en/persons/patrick-white/)
The Stokes Family Endowed Chair in Palliative Medicine and Supportive Care Chair and Associate Professor of Medicine
Chief, Division of Palliative Care Medicine

Michael J. Holtzman, MD (https://profiles.wustl.edu/en/persons/michael-holtzman/)
Selma and Herman Seldin Professor of Medicine
Chief, Division of Pulmonary and Critical Care Medicine

Christine Pham, MD (https://profiles.wustl.edu/en/persons/christine-pham/)
Guy and Ella Mae Magness Professor of Medicine
Chief, Division of Rheumatology

Carlos Bernal-Mizrachi, MD (https://endocrinology.wustl.edu/people/carlos-bernal-mizrachi-md/)
Philip E. & Carolyn E. Cryer Professor of Medicine
Chief, Veteran’s Administration
Visit our website for more information about our faculty (https://internalmedicine.wustl.edu/divisions/) and their appointments.

Elliot Efrem Abbey, M.D.
Professor of Clinical Medicine
Bachelor of Arts, Cornell University, 1971
Doctor of Medicine, New York University, 1975

Basem Abdeen, M.D.
Instructor in Clinical Medicine
Bachelor of Medicine, University of Jordan, 2001

Regina A. Abel, Ph.D.
Instructor in Medicine
Bachelor of Science, Missouri State University (Formerly Southwest Missouri State), 1992
Doctor of Philosophy, Indiana University Bloomington, 2000

Barry K Abramson, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Johns Hopkins University, 1981
Doctor of Medicine, University of Miami, 1985

Susan R Adams, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Carleton College, 1985
Doctor of Medicine, University of Missouri Columbia, 1989

Gail G Ahumada, M.A., M.D.
Associate Professor Emerita of Clinical Medicine
Bachelor of Arts, Stanford University, 1961
Master of Arts, Stanford University, 1962
Doctor of Medicine, University of California, 1972

Abdulla Akfaly, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Aleppo University, 1991

Bassam Albarcha
Instructor in Clinical Medicine

Jorge M Alegre, M.D.
Instructor in Clinical Medicine

Scott J Anderson, Ph.D., M.D.
Instructor in Clinical Medicine

Muhammad A Ali, M.D.
Instructor in Clinical Medicine

Florence Michelle Almiron-Torralba
Instructor in Clinical Medicine

Jamaluddin Faisal Amanullah
Instructor in Clinical Medicine

Muhammad Jaffer Ansari
Assistant Professor of Clinical Medicine

Saira M Asadullah, M.D.
Instructor in Clinical Medicine

James G Avery, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1986
Doctor of Medicine, University of Tennessee, 1990
Om Parkash Bahl, M.S.
Assistant Professor of Clinical Medicine
Master of Science, Punjab University, 1957

Gregory Eden Baker, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Mayo Clinic (Duplicate of Mayo Clinic College of Medicine and Science), 2001

Fred J Balis, M.S., M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, University of Vermont, 1981
Master of Science, Cornell University, 1985
Doctor of Medicine, Washington University in St Louis, 1989

David Ban, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Kalamazoo College, 1976
Doctor of Medicine, University of Oregon, 1980

James William Banks, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Marshall University, 1984

Abraham Barake, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Baroda, 1976
Doctor of Medicine, School Not Found, 1983

Thomas Joseph Bartholet, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Georgetown University, 1990
Doctor of Medicine, Brown University, 1994

Robert W Barton, Ph.D., M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, University of Chicago, 1962
Doctor of Philosophy, University of Chicago, 1967
Doctor of Medicine, University of Chicago, 1967

Michael D Bavlsik, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Seton Hall University, 1987
New Brunswick, 1991

C. Elliott Bell, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Tulane University, 1960
Doctor of Medicine, Tulane University, 1964

William Waite Benedict, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Champaign, 1971
Doctor of Medicine, Washington University in St Louis, 1975

Susan Berdy, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Brown University, 1980
Doctor of Medicine, Saint Louis University, 1984

Daniel Ralph Berg, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Brown University, 1994
Doctor of Medicine, Washington University in St Louis, 2000

Michael A Berk, M.D.
Voluntary Clinical Professor of Medicine
Bachelor of Arts, Northwestern University, 1974
Doctor of Medicine, Indiana University Bloomington, 1979

Keith A Bernstein, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Kansas City, 1987
Doctor of Medicine, University of Missouri Columbia, 1987

Marc Jordan Bernstein, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Haverford College, 1988
Doctor of Medicine, Washington University in St Louis, 1992

Douglas R Berson, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Rockford College, 1974
Champaign, 1978

William D Birenbaum, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1978
Doctor of Medicine, University of Missouri Columbia, 1983

Clifford Allen Birge, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Amherst College, 1956
Doctor of Medicine, Washington University in St Louis, 1961

Stanley J Birge, M.D.
Emeritus Associate Professor of Medicine
Bachelor of Arts, Amherst College, 1959
Doctor of Medicine, Washington University in St Louis, 1963

Donald Allen Blum
Assistant Professor of Clinical Medicine

Michael Bolger
Instructor in Clinical Medicine

Matthew James Bonzelet, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 2009

Jamie Marie Borgmann
Instructor in Clinical Medicine

Benjamin A Borowsky, M.D.
Professor of Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1958
Jonathan D Bortz, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of the Witwatersrand, 1979

Matthew S Bosner, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Muhlenberg College, 1979
Doctor of Medicine, University of Texas Austin, 1983

William G Bowen, M.D.
Professor of Clinical Medicine
Bachelor of Science, Davidson College, 1970
Doctor of Medicine, University of North Carolina at Chapel Hill, 1974

Lyndsey Jean Bowman, Ph.D.
Adjunct Instructor in Medicine
Doctor of Philosophy, Saint Louis College of Pharmacy, 2005

Robert M Bruce, M.D.
Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1964
Bachelor of Science, University of Minnesota, 1968
Doctor of Medicine, University of Minnesota, 1968

Kathleen S Brunts, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Western Michigan University, 1977
Doctor of Medicine, Saint Louis University, 1981

Larry Cayce Buck, M.D.
Instructor in Clinical Medicine
Bachelor of Science, McKendree University, 2009
Doctor of Medicine, A T Still University of Health Sciences, 2016

Stanley Buck, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Princeton University, 1973
Doctor of Medicine, Washington University in St Louis, 1977

Donald F Busiek, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1974
Doctor of Medicine, University of Missouri Columbia, 1983

Melvin J Butler
Instructor in Clinical Medicine

Rosemary L Cannistraro, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 1992

Stephanie Solomon Cargill, Ph.D.
Voluntary Clinical Assistant Professor of Medicine
Main Campus, 2001
Doctor of Philosophy, Emory University, 2008

Lilith Maria Cayabyab-Loe, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Saint Louis University, 1986
Doctor of Medicine, University of Missouri Columbia, 1990

Kae Pyng Chang, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1991
Doctor of Medicine, University of Missouri Columbia, 1995

Siroth Charnond, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Kansas City, 1995
Doctor of Medicine, University of Missouri Kansas City, 1995

Lewis Robert Chase
Professor Emeritus of Medicine

Edward C. Chen, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 2005

Phyllis Chen, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Northwestern University Medical (Duplicate of Northwestern University), 1992

Qing Chen, M.S., M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Nanjing Medical University (Duplicate of Nanjing Medical University (###)), 1983
Master of Science, Nanjing Medical University (Duplicate of Nanjing Medical University (###)), 1988

Phillip Ruben Chisholm
Instructor in Clinical Medicine

Philip Chu Pak-Yu, M.D.
Instructor in Clinical Medicine
Fresno), 1986
Doctor of Medicine, University of California Los Angeles, 1992

Duck Sung Chun, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Seoul National University, 1900

Jeffrey Peter Ciaramita
Instructor in Clinical Medicine

Angela K Clark
Voluntary Research Professor of Medicine

Nathan Andrew Cobb
Voluntary Clinical Instructor in Medicine

Shari J Cohen, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, University of Missouri Kansas City, 1986
Doctor of Medicine, University of Missouri Columbia, 1987

Danita L Cole, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Kansas City, 1990
Doctor of Medicine, University of Missouri Kansas City, 1991

Patricia L Cole, M.A., M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Mount Holyoke College, 1972
Master of Arts, Brown University, 1975
Doctor of Medicine, Harvard University, 1981

Roger Barto Cole, M.S., Ph.D., M.D.
Instructor in Clinical Medicine
Bachelor of Science, Rice University, 1997
Master of Science, Yale University, 2001
Doctor of Philosophy, Yale University, 2004
Doctor of Medicine, Washington University in St Louis, 2008

Kim David Colter, M.S., M.D.
Instructor in Clinical Medicine
Bachelor of Science, Missouri University of Science and Technology
(Formerly University of Missouri at Rolla), 1973
Master of Science, University of California Berkeley, 1974
Doctor of Medicine, Washington University in St Louis, 1978

Arthur Hamilton Combs, M.D.
Associate Professor of Clinical Medicine
Doctor of Medicine, New York Medical College, 1975

Matthew Cooper, Ph.D.
Adjunct Assistant Professor of Medicine
Bachelor of Science, University of Surrey, 2004
Doctor of Philosophy, University of Surrey, 2008

John Bernard Costello, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1974
Doctor of Medicine, Saint Louis University, 1977

Johnetta M Craig, M.B.A., M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Missouri Columbia, 1980
Doctor of Medicine, University of Iowa, 1986
Master of Business Administration, University of Pennsylvania, 1994

Charles Crecelius, Ph.D., M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Carleton University, 1976
Doctor of Philosophy, Saint Louis University, 1984
Doctor of Medicine, Saint Louis University, 1984

Stephen R Crespin, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Harvard University, 1960
Doctor of Medicine, Harvard University, 1965

Robert B Cusworth, M.D.
Instructor in Clinical Medicine

Doctor of Medicine, University of Rochester, 1974

D

Erik D. Daniels, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Howard University, 1985
Doctor of Medicine, Howard University, 1989

Rand E Dankner, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, University of Pennsylvania, 1974
Doctor of Medicine, Baylor University, 1978

Bhajan Shewaldas Dara, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Sindh Medical College, 1987

Sundeep Das, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University College of Med Sci (Duplicate of University College of Medical Sciences (UCMS)), 1986

John D Davidson, M.D.
Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1948
Doctor of Medicine, Washington University in St Louis, 1952

Andrea Jill Davis, M.S.N., M.D.
Instructor in Clinical Medicine
Macon College), 1997
Master of Science in Nursing, Arizona State University, 2000
Doctor of Medicine, Saint George’s University, 2004

Caroline Elizabeth Day, M.P.H., M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Colorado Boulder, 1990
Doctor of Medicine, Washington University in St Louis, 1995
Master of Public Health, San Diego State University, 2005

Anne V Dean, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Bowdoin College, 1986
Doctor of Medicine, Loyola University (Duplicate of Loyola University New Orleans), 1995

Jennifer A. Delaney, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Georgetown University, 1992
Doctor of Medicine, Washington University in St Louis, 1997

James Albert Delmez, M.D.
Emeritus Professor of Medicine
Bachelor of Arts, Washington University in St Louis, 1969
Doctor of Medicine, University of Rochester, 1973

Sunny Desai, M.S.
Instructor in Clinical Medicine
Master of Science, School Not Found, 1991

Judith A Dibble, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1986

Richard M Divalerio, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Notre Dame, 1984
Doctor of Medicine, Washington University in St Louis, 1988

Irl Joseph Don, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1969
Doctor of Medicine, Washington University in St Louis, 1972

Michael Fitzgerald Donovan
Assistant Professor of Clinical Medicine

Maria C Dumadag-Sabio, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Columbia, 1988
Doctor of Medicine, University of Missouri Columbia, 1988

Edward Harry DuMontier
Instructor in Clinical Medicine

Julia Passyn Dunn, M.S., M.D.
Adjunct Assistant Professor of Medicine
Bachelor of Science, Auburn University (Duplicate of Auburn University Main Campus), 1998
Doctor of Medicine, University of South Alabama, 2002
Master of Science, Vanderbilt University, 2010

Royal J Eaton, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Columbia, 1960
Doctor of Medicine, University of Missouri Columbia, 1964

Charmaine E. Edwards, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Alcorn State University, 1987
Doctor of Medicine, Howard University, 1992

Russell E Eggebrecht, M.D.
Associate Professor of Clinical Medicine
Champaign), 1967
Doctor of Medicine, Washington University in St Louis, 1971

Zamir Eidelman, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Southern Illinois University (Duplicate of Southern Illinois University Carbondale), 1980
Doctor of Medicine, Southern Illinois University (Duplicate of Southern Illinois University Carbondale), 1983
Charlene Ann Ellsworth, Ph.D., M.D.

Instructor in Clinical Medicine
Doctor of Philosophy, Massachusetts Institute of Technology, 2004
Doctor of Medicine, Washington University in St Louis, 2008

James Michael Epstein, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Notre Dame, 1965
Doctor of Medicine, Washington University in St Louis, 1969

Neil A Ettinger, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Vanderbilt University, 1979
Doctor of Medicine, Washington University in St Louis, 1983

Carol Jane Evers, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Brown University, 1973
Doctor of Medicine, Brown University, 1977

Akinrinola Fatoki, M.S.
Instructor in Clinical Medicine
Bachelor of Science, School Not Found, 1982
Master of Science, School Not Found, 1989

David Feldman, M.D.
Instructor Emeritus in Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1943

Herman L Ferrell, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Arkansas (Duplicate of University of Arkansas Main Campus), 1973
Doctor of Medicine, University of Arkansas (Duplicate of University of Arkansas Main Campus), 1975

Lewis Conrad Fischbein, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, University of Rochester, 1970
Doctor of Medicine, Washington University in St Louis, 1974

Norman Fishman, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, School Not Found, 1970
Doctor of Medicine, School Not Found, 1974

Glennon Joseph Fox, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Missouri Columbia, 1984

Judy Ann Frair, M.S.N., Ph.D.
Adjunct Assistant Professor of Medicine
Master of Science in Nursing, Saint Louis University, 2004
Doctor of Philosophy, University of Missouri in St Louis, 2013

Victoria J Fraser, M.D.
Professor of Medicine (primary appointment)
Head of the Department of Medicine
Adolphus Busch Professor of Medicine
Bachelor of Science, William Woods University, 1978
Doctor of Medicine, University of Missouri Columbia, 1983
Deborah Frenchie, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1984
Doctor of Medicine, Washington University in St Louis, 1993

Michael Paul Fuller, M.D.
Voluntary Clinical Professor of Medicine
Bachelor of Arts, Brigham Young University, 1990
Doctor of Medicine, University of Utah, 1994

Suzanne Furesz
Instructor in Clinical Medicine

Daniel Gaitan, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, University of Alabama in Birmingham, 1980
Doctor of Medicine, University of Mississippi, 1986

Arthur H Gale, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Washington University in St Louis, 1955
Doctor of Medicine, University of Missouri Columbia, 1959

John A Garcia, M.B.A., M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Carleton College, 1985
Champaign, 1990
Master of Business Administration, University of Missouri in St Louis, 1998

Francisco J Garriga, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Puerto Rico (Duplicate of University of Puerto Rico), 1966
Doctor of Medicine, Washington University in St Louis, 1970

Felicitas Z Gatachalian, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Santo Tomas, 1970
Doctor of Medicine, University of Santo Tomas, 1976

William M Gee, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Cornell College, 1977
Doctor of Medicine, Washington University in St Louis, 1981

Richard A Geisman, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Saint Louis University, 1979
Doctor of Medicine, Tulane University, 1983

Matthew John Gibfried, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Missouri Columbia, 2003

Ralph V Gieselman, M.D.
Professor Emeritus of Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1947

Andrew S Gold, M.D.
Instructor in Clinical Medicine

Champaign), 1985
Doctor of Medicine, University of Iowa, 1989

Benjamin M Goldstein, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1960
Doctor of Medicine, Washington University in St Louis, 1964

Mary Jo Gorman, M.B.A., M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1981
Doctor of Medicine, Southern Illinois University (Duplicate of Southern Illinois University Carbondale), 1984
Master of Business Administration, Washington University in St Louis, 1996

Siddhesh Gowda, M.D.
Associate Professor of Clinical Medicine

Aaron Greenspan
Instructor in Clinical Medicine

Mark H Gregory, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, University of Vermont, 1982
Doctor of Medicine, University of Vermont, 1986

Scott D. Groesch, M.D.
Assistant Professor of Clinical Medicine

John R Groll, M.D.
Instructor in Clinical Medicine

Mark Cobb Gunby, D.O.
Assistant Professor of Clinical Medicine

Vyjanthanath R. Gunasingham, M.D.
Instructor in Clinical Medicine

Jitendra K Gupta, M.S.
Instructor Emeritus in Clinical Medicine

Maria Gurrieri, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Catholic University, 1989

Matthew D Hageman, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 1996

Jennifer Christine Hagopian
Adjunct Instructor in Medicine

Ashfaq H Hakim, M.D., MBBS
Instructor in Clinical Medicine
Foreign MD equivalent, RNT Medical College, 1968
Doctor of Medicine, RNT Medical College, 1973

Stephanie M Hammer, M.D.
Voluntary Clinical Instructor in Medicine
Bachelor of Arts, Smith College, 1990
Doctor of Medicine, Rosalind Franklin University of Medicine and Science (Formerly Finch University of Health Sciences), 1995

Anisa Hassan, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Dow Medical College Karachi, 1976

Thomas F Hastings, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Rockhurst College (Duplicate of Rockhurst University), 1981
Doctor of Medicine, University of Missouri Columbia, 1986

James N Heins
Professor of Clinical Pediatrics

Katherine Eileen Henderson, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, University of Wisconsin Madison, 1993
Doctor of Medicine, University of Minnesota, 1998

Kristina Louise Henderson, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1982
Doctor of Medicine, Saint Louis University, 1991

Rochelle Rene’ Henderson, Ph.D.
Adjunct Assistant Professor of Medicine
Doctor of Philosophy, University of Missouri Columbia, 2010

Catherine Hermann, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Truman State University (Duplicate of Truman State University (Formerly Northeast Missouri State University)), 1992
Doctor of Medicine, Washington University in St Louis, 2000

Stuart T. Higano, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Massachusetts (Duplicate of University of Massachusetts Amherst), 1984

Aunita M Hill-Jones
Instructor in Clinical Medicine

Jennifer B Hillman, M.S., M.D.
Assistant Professor of Medicine
Bachelor of Science, University of Missouri Columbia, 1996
Doctor of Medicine, University of Missouri Columbia, 2001
Main Campus, 2008

Paul Flack Hintze, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Brigham Young University, 1974
Doctor of Medicine, University of Utah, 1978

Grant S. Hoekzema, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1992

J. Langston Hoffman, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Wisconsin Madison, 1994
Doctor of Medicine, Washington University in St Louis, 1999

Sandra S Hoffmann, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Kansas, 1972
Doctor of Medicine, University of Kansas, 1976

Melissa Louise Hollie
Instructor in Clinical Medicine

Neal Holzum
Instructor in Clinical Medicine

Hitoshi Honda
Adjunct Assistant Professor of Medicine

Barbra A Horn, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Clark University, 1975
Doctor of Medicine, Washington University in St Louis, 1982

Timothy Adam Horwedel, Ph.D.
Adjunct Instructor in Medicine
Doctor of Philosophy, Northeastern University, 2008

Jacqueline Howard
Instructor in Clinical Medicine

Raymond J Hu, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1977
Doctor of Medicine, University of Missouri Columbia, 1982

John W Hubert, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Wabash College, 1971
Doctor of Medicine, Washington University in St Louis, 1975

Elaine Joyce Hutchison, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Cornell College, 2011
Doctor of Medicine, University of Arizona, 2016

Richard G. Ihnat, M.D.
Instructor in Clinical Medicine
New Brunswick), 1987  
Doctor of Medicine, Yale University, 1991  

Belinda K. Ireland, M.D.  
Adjunct Assistant Professor of Medicine  
Doctor of Medicine, University of Missouri Columbia, 1976

Daryl Jacobs, M.Eng., M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, Washington University in St Louis, 1977  
Master of Engineering, Carnegie Mellon University, 1979  
Doctor of Medicine, Washington University in St Louis, 1983

Myron H Jacobs, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, Vanderbilt University, 1965  
Doctor of Medicine, Louisiana State University Health Sciences (Duplicate of Louisiana State University Health Sciences Center at New Orleans), 1969

Steven Jacobson, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, Rhodes College, 1981  
Doctor of Medicine, Saint Louis University, 1985

Daniel Ragin Jasper, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, University of Texas Austin, 1990  
Doctor of Medicine, Saint Louis University, 1994

Morris Joftus, M.D.  
Assistant Professor of Clinical Medicine  
Champaign), 1967

Lea Johnson  
Voluntary Clinical Instructor in Medicine

Allison Jordan, M.D.  
Assistant Professor of Clinical Medicine  
Doctor of Medicine, University of Texas Southwest, 2008

Barbara Jost, M.S., M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, University of Missouri Columbia, 1993  
Master of Science, Northwestern University, 1995  
Doctor of Medicine, Saint Louis University, 1997

Sona Sharad Kamat  
Instructor in Clinical Medicine

Vinay Gopal Kamat, M.D.  
Voluntary Clinical Assistant Professor of Medicine  
Doctor of Medicine, University of Pennsylvania, 1994

Robert S Karsh, M.D.  
Professor of Clinical Medicine  
Bachelor of Arts, Washington University in St Louis, 1951  
Doctor of Medicine, Washington University in St Louis, 1952

David A Katzman, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, Brown University, 1986  
Doctor of Medicine, Saint Louis University, 1991

Robert L Kaufman, M.D.  
Assistant Professor of Clinical Medicine  
Bachelor of Arts, Washington University in St Louis, 1959  
Doctor of Medicine, Washington University in St Louis, 1963

Dalius Kedainis, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, Kaunas University of Medicine (Duplicate of Lithuanian University of Health Sciences), 1998

Charlotte J Kennedy, Ph.D., M.D.  
Assistant Professor of Clinical Medicine  
Bachelor of Arts, Agnes Scott College, 1984  
Doctor of Philosophy, Washington University in St Louis, 1992  
Doctor of Medicine, Washington University in St Louis, 1992

George Kichura, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, Saint Louis University, 1993

Mary Kiehl, M.D.  
Assistant Professor of Clinical Medicine  
Associate of Science, Long Beach City College, 1976  
Bachelor of Arts, University of California, 1985  
Doctor of Medicine, University of California, 1990

Kenneth Richard Kliian, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, Saint Louis University, 1980  
Doctor of Medicine, Saint Louis University, 1984

Charles John Kilo, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, University of Kansas, 1987  
Doctor of Medicine, Washington University in St Louis, 1991

Rosa Anne Kincaid, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, City College, 1970  
Doctor of Medicine, Temple University, 1984

Donald Kevin King, M.D.  
Assistant Professor of Clinical Medicine  
Bachelor of Arts, Fairfield University, 1966  
Doctor of Medicine, Johns Hopkins University Medical (Duplicate of Johns Hopkins University), 1970

Kevin Patrick King, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, Saint Louis University, 2006

Tinna P King  
Instructor in Clinical Medicine  
Bachelor of Arts, University of Missouri Columbia, 1988

Sameer M. Kirtane, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, Jefferson Medical College, 2008
Linda Marie Klutho, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1980
Doctor of Medicine, University of Missouri Columbia, 1984

Norman P Knowlton, M.D.
Professor Emeritus of Clinical Medicine
Bachelor of Science, Harvard University, 1942
Doctor of Medicine, Harvard University, 1945

Carolyn Koenig, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 2002

Ismail Kola, Ph.D.
Adjunct Professor of Medicine
Bachelor of Science, Rhodes College, 1982
Doctor of Philosophy, School Not Found, 1985

Sri Devi Kolli, MBBS
Instructor in Clinical Medicine
Foreign MD equivalent, Guntur Medical College, 1989

Mary E. Koly, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Kansas City, 1995
Doctor of Medicine, University of Missouri Kansas City, 1995

Kevin L Konzen, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, University of Notre Dame, 1980
Champaign, 1984

Robert G Kopitsky, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Emory University, 1978
Doctor of Medicine, Duke University, 1982

Phillip E Korenblat, M.D.
Professor of Clinical Medicine
Bachelor of Arts, University of Arkansas (Duplicate of University of Arkansas Main Campus), 1957
Doctor of Medicine, University of Arkansas (Duplicate of University of Arkansas Main Campus), 1960

Alex H Kosloff, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Washington University in St Louis, 1975
Doctor of Medicine, Saint Louis University, 1980

Mark S Krasnoff, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Amherst College, 1987
Doctor of Medicine, Johns Hopkins University Medical (Duplicate of Johns Hopkins University), 1991

Elaine Susan Krul, Ph.D.
Adjunct Associate Professor of Medicine
Bachelor of Science, McGill University, 1977
Doctor of Philosophy, McGill University, 1982

Thomas Kuciejczyk-Kernan, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Mongolian National University of Medical Sciences, 1988
Doctor of Philosophy, Loyola University Chicago, 1998

David M Lieberman, M.D.
Associate Professor Emeritus of Clinical Medicine
Doctor of Medicine, Vanderbilt University, 1949

Charles H Lieu, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Health Sciences College of Osteopathic Medicine, 1970

Stephen Bradley Lillard, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Health Sciences College of Osteopathic Medicine, 1970

Jianmei Liu, M.S., M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Mongolian National University of Medical Sciences, 1984
Master of Science, Mongolian National University of Medical Sciences, 1987

Beverly A Logan-Morrison, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Webster University, 1976
Doctor of Medicine, Washington University in St Louis, 1982

Jane Loitman, M.S., M.D.
Instructor in Clinical Medicine
Assistant Professor of Clinical Neurology
Bachelor of Arts, Tufts University, 1982
Master of Science, Georgetown University, 1988
Doctor of Medicine, University of Minnesota, 1992

Herbert Lubowitz, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Clark University, 1954
Doctor of Medicine, Washington University in St Louis, 1958

Philip A Ludbrook, MBBS
Professor Emeritus of Medicine
Professor Emeritus of Psychiatry
Foreign MD equivalent, University of Adelaide, 1963

Lauren Michelle Ludwig Lee, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Missouri Kansas City, 2008

Susan L Luedke, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Rochester, 1972

Christopher Raymond Lynch
Voluntary Clinical Assistant Professor of Medicine

Alan P Lyss, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1972
Doctor of Medicine, Washington University in St Louis, 1976

Julie Kathleen MacPhee, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Trinity College, 2003
Doctor of Medicine, Albert Einstein College of Medicine, 2008

William Edwin Magee, M.D.
Associate Professor of Clinical Medicine
Doctor of Medicine, Duke University, 1950

Jambunathan Mahadevan
Instructor in Clinical Medicine

Mohsin Ilyas Malik, MBBS
Instructor in Clinical Medicine
Foreign MD equivalent, Army Medical College, 1999

Shivaprasad Gowda Manjappa, M.D., MBBS
Instructor in Clinical Medicine
Foreign MD equivalent, Medical College of India, 2004
Champaign), 2011

Sarah K Margolis, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Barnard College, 1984
Doctor of Medicine, State University of New York, 1989

Jay Phillips Marshall, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, De Paul University, 1968
Doctor of Medicine, University of Missouri Columbia, 1972

Thomas F Martin, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Saint Louis University, 1961
Doctor of Medicine, Saint Louis University, 1965

Jerald Arthur Maslanko, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Emory University, 1975

Joan Alice Mass, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1971
Doctor of Medicine, Temple University, 1977

Stanley Mathew, MBBS
Instructor in Clinical Medicine
Foreign MD equivalent, Kerala University, 1991

Henry E Mattis, M.D.
Instructor in Clinical Medicine
Champaign), 1971
Doctor of Medicine, Washington University in St Louis, 1975

Timothy Joseph McCann, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Saint Louis University, 1980
Doctor of Medicine, American University of the Caribbean, 1984

Donte D McClary, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Xavier University, 1993  
John T. Milliken Department of Medicine (07/18/23)  
Doctor of Medicine, Meharry Medical College, 1998

Leslie Rose McCrary-Etuk, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, New York Medical College, 2001

Clark R McKenzie, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, University of Missouri Columbia, 1989  
Doctor of Medicine, University of Missouri Columbia, 1989

Robert M McMahon, J.D., M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, University of California, 1971  
Juris Doctor, University of California, 1974  
Doctor of Medicine, Washington University in St Louis, 1989

Anibal G Melo, M.D.  
Instructor in Clinical Medicine  
Doctor of Medicine, Washington University in St Louis, 1991

Gary Jay Meltz, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, University of Missouri Columbia, 1972  
Doctor of Medicine, University of Miami, 1977

Ronald L Mera, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, School Not Found, 1970  
Doctor of Medicine, School Not Found, 1976

Rabia Mian, MBBS  
instructor in Clinical Medicine  
Foreign MD equivalent, King Edward Medical College (Duplicate of King Edward Medical University), 1999

Scott Micek, M.D.  
Adjunct Instructor in Medicine  
Doctor of Medicine, University of Iowa, 1999

Gina Michael, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, University of Missouri Columbia, 1978  
Doctor of Medicine, Duke University, 1982

William Samuel Micka, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, Saint Louis University, 1999  
Doctor of Medicine, Saint Louis University, 2003

Heidi B Miller, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, Yale University, 1994  
Doctor of Medicine, Harvard University, 2000

Lara Elizabeth Miller, D.O.  
Instructor in Clinical Medicine  
Bachelor of Science, Carleton College, 1996  
Doctor of Osteopathic Medicine, Midwestern University, 2000

Graeme Mindel, M.S., MB.BCh.  
Instructor in Clinical Medicine  
Master of Science, University of the Witwatersrand, 1992

Foreign MD equivalent, University of the Witwatersrand, 1992

C. Scott Molden, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, De Paul University, 1968  
Doctor of Medicine, Case Western Reserve University, 1972

Steven M Mondschein, M.D.  
Instructor in Medicine (primary appointment)  
Bachelor of Arts, Grinnell College, 1981  
Main Campus, 1988

Austin F Montgomery, M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, Washington University in St Louis, 1950  
Bachelor of Science, University of Missouri Columbia, 1952  
Doctor of Medicine, University of Pittsburgh, 1954

Timothy D Moore  
Instructor in Clinical Medicine

Donald G Morris, M.S., M.D.  
Instructor in Clinical Medicine  
Bachelor of Arts, Benedictine College, 1987  
Master of Science, Saint Louis University, 1989  
Doctor of Medicine, University of Missouri Columbia, 1993

Richard Gerard Mrad  
Instructor in Clinical Medicine  
Bachelor of Arts, University of Missouri Columbia, 1981

Faquir Muhammad  
Instructor in Clinical Medicine

Umadevi Muthyala  
Instructor in Clinical Medicine

Otha Myles, M.D.  
Instructor in Clinical Medicine  
College Park, 1998

N

Devika Nagaraj  
Instructor in Clinical Medicine

Jyotirmaya Nanda  
Instructor in Clinical Medicine

Burton M Needles, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, City College, 1970  
Doctor of Medicine, Loyola University Chicago, 1974

J. Roger Nelson, M.D.  
Assistant Professor Emeritus of Clinical Medicine  
Bachelor of Arts, Washington University in St Louis, 1949  
Doctor of Medicine, Washington University in St Louis, 1953

Tracy Wynette Norfleet, M.D.  
Instructor in Clinical Medicine  
Bachelor of Science, Xavier University Louisana (Duplicate of Xavier University of Louisiana), 1998
Charles C Norland, M.D.
Professor Emeritus of Clinical Medicine
Bachelor of Science, Washington State University, 1955
Doctor of Medicine, Washington University in St Louis, 1959

Muhammad Akram Nyaze
Instructor in Clinical Medicine

G Patrick O'Donnell, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Kansas, 1972
Doctor of Medicine, School Not Found, 1977

George Charles Oliver, M.D.
Professor Emeritus of Clinical Medicine
Bachelor of Arts, Harvard University, 1953
Doctor of Medicine, Harvard University, 1957

Robert F Onder, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1983
Doctor of Medicine, Washington University in St Louis, 1987

S. Michael Orgel, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1960
Doctor of Medicine, Saint Louis University, 1965

Matthew J Orland, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Yale University, 1975
Doctor of Medicine, University of Miami, 1979

David William Ortbals, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, Saint Louis University, 1966
Doctor of Medicine, Washington University in St Louis, 1970

Theodore Otti
Instructor in Clinical Medicine

Robert F Owen, M.D.
Instructor Emeritus in Clinical Medicine
Bachelor of Arts, Princeton University, 1948
Doctor of Medicine, Yale University, 1952

Vani Pachalla, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, School Not Found, 1990

Robert C Packman, M.D.
Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1953
Bachelor of Science, University of Missouri Columbia, 1954

Ross Ian Palis, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Duke University, 1998
Doctor of Medicine, Vanderbilt University, 2002

Kerry Will Pantelis, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Missouri Kansas City, 2004

Stephanie Sun-Young Park
Instructor in Clinical Medicine

David A Parks, M.B.A., M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Missouri University of Science and Technology (Formerly University of Missouri at Rolla), 1979
Master of Business Administration, Southern Illinois University (Duplicate of Southern Illinois University Carbondale), 1985
Doctor of Medicine, Saint Louis University, 1994

Dilip H. Patel
Instructor in Clinical Medicine

Rajiv Nanu Patel, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Saba University School of Medicine, 2001

Amanullah Pathan, M.S.
Instructor in Clinical Medicine
Bachelor of Science, University of Missouri Kansas City, 2004

Laurence F Perlstein, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Swarthmore College, 1973
Doctor of Medicine, University of California, 1978

Marybeth Pereira, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, University of California, 1978

Laurence F Perlstein, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Tulane University, 1967
Doctor of Medicine, University of Louisville, 1974

William J Phillips, M.D.
Assistant Professor of Clinical Medicine
Main Campus), 1959
Doctor of Medicine, Washington University in St Louis, 1963

Stephen J Pieper, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1983
Doctor of Medicine, Washington University in St Louis, 1988

Bryan Douglas Piotrowski, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 2004
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doug Pogue, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Doctor of Medicine, Washington University in St Louis, 1996</td>
</tr>
<tr>
<td>Donovan Polack, M.D.</td>
<td>Assistant Professor of Clinical Medicine</td>
<td>Doctor of Medicine, Cornell University, 1979</td>
</tr>
<tr>
<td>Kenneth S Polonsky, MB.BCh.</td>
<td>Adjunct Professor of Medicine</td>
<td>Foreign MD equivalent, University of the Witwatersand, 1973</td>
</tr>
<tr>
<td>Makhawadee Pongruangporn, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Doctor of Medicine, Chiang Mai University, 2001</td>
</tr>
<tr>
<td>Harish Ponnuru, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Bachelor of Arts, University of Missouri Kansas City, 1995</td>
</tr>
<tr>
<td>Yogitha S. Potini, M.S., M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Bachelor of Science, Washington University in St Louis, 2009</td>
</tr>
<tr>
<td>Daniel E Potts, M.D.</td>
<td>Associate Professor of Clinical Medicine</td>
<td>Bachelor of Science, Beaufort Technical College (Duplicate of Technical College of the Lowcountry), 1968</td>
</tr>
<tr>
<td>Diana A Prablek, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Bachelor of Arts, Texas Christian University, 1984</td>
</tr>
<tr>
<td>Lawrence Prablek, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Bachelor of Science, Southern Methodist University, 1984</td>
</tr>
<tr>
<td>Simeon Prager, M.D.</td>
<td>Assistant Professor of Clinical Medicine</td>
<td>Bachelor of Arts, Yale University, 1981</td>
</tr>
<tr>
<td>David J Prelutsky, M.D.</td>
<td>Associate Professor of Clinical Medicine</td>
<td>Bachelor of Arts, Northwestern University, 1975</td>
</tr>
<tr>
<td>Mabel Louise Purkerson, M.D.</td>
<td>Professor Emerita of Medicine</td>
<td>Bachelor of Arts, Erskine College and Seminary, 1951</td>
</tr>
<tr>
<td>Edward Puro, M.S., Ph.D., M.D.</td>
<td>Assistant Professor of Clinical Medicine</td>
<td>Bachelor of Science, University of Toronto, 1962</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Master of Science, University of Toronto, 1966</td>
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<td>Q</td>
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<td>Doctor of Philosophy, University of Toronto, 1970</td>
</tr>
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<td></td>
<td></td>
<td>Doctor of Medicine, Washington University in St Louis, 1975</td>
</tr>
<tr>
<td>Usman Qayyum</td>
<td>Instructor in Clinical Medicine</td>
<td></td>
</tr>
<tr>
<td>Patricia M Quinley, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Master of Science, School Not Found, 1992</td>
</tr>
<tr>
<td>R</td>
<td></td>
<td>Doctor of Philosophy, University of Iowa, 2007</td>
</tr>
<tr>
<td>Srinivasan Raghavan</td>
<td>Instructor in Clinical Medicine</td>
<td></td>
</tr>
<tr>
<td>Keith M Ratcliff</td>
<td>Instructor in Clinical Medicine</td>
<td></td>
</tr>
<tr>
<td>Gary A Ratkin, M.D.</td>
<td>Associate Professor of Clinical Medicine</td>
<td>Bachelor of Arts, Rice University, 1963</td>
</tr>
<tr>
<td></td>
<td>Instructor in Clinical Medicine</td>
<td>Doctor of Medicine, Washington University in St Louis, 1967</td>
</tr>
<tr>
<td>Arhaanth D Reddy</td>
<td>Instructor in Clinical Medicine</td>
<td></td>
</tr>
<tr>
<td>Katherine Marie Reeder, Ph.D.</td>
<td>Adjunct Assistant Professor of Medicine</td>
<td>Doctor of Philosophy, University of Iowa, 2007</td>
</tr>
<tr>
<td>Margaret Reiker, Ph.D., M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Doctor of Medicine, Saint Louis University, 1991</td>
</tr>
<tr>
<td></td>
<td>Doctor of Medicine, Saint Louis University, 1993</td>
<td></td>
</tr>
<tr>
<td>Craig K Reiss, M.D.</td>
<td>Professor of Clinical Medicine</td>
<td>Doctor of Medicine, University of Missouri Columbia, 1979</td>
</tr>
<tr>
<td>Jacqueline Levy Reiss, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Doctor of Medicine, University of Missouri Columbia, 1983</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenneth Eugene Remy, M.D.</td>
<td>Associate Professor of Medicine</td>
<td>Doctor of Medicine, Jefferson Medical College, 2004</td>
</tr>
<tr>
<td>Tracy Marie Riordan, M.D.</td>
<td>Instructor in Clinical Medicine</td>
<td>Doctor of Medicine, Saint Louis University, 1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paul Arthur Robiolio, M.Phil., M.D.</td>
<td>Assistant Professor of Clinical Medicine</td>
<td>Bachelor of Arts, Saint Louis University, 1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Doctor of Medicine, Saint Louis University, 2000</td>
</tr>
</tbody>
</table>
M. Reza Rofougaran, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Haverford College, 1983
Master of Philosophy, Cambridge University (Duplicate of University of Cambridge), 1985
Doctor of Medicine, Washington University in St Louis, 1989

H. Bryan Rogers, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1965

Felice A Rolnick, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Union College New York, 1982
Doctor of Medicine, School Not Found, 1987

Ernest Tuttle Rouse, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Princeton University, 1967
Doctor of Medicine, Washington University in St Louis, 1971

Jeremy Rower, M.D.
Instructor in Clinical Medicine
Main Campus), 1993
Main Campus), 1997

Priya Shravan Roy
Instructor in Clinical Medicine

Joseph F Ruwitch, M.D.
Professor of Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1966

Mehrdad Saeed-Vafa, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, School Not Found, 2000

Sonny Satnam Saggar
Instructor in Clinical Medicine

Christine Joan Salter, D.C., M.D.
Instructor in Clinical Medicine
Bachelor of Science, Reading University (Duplicate of University of Reading), 1982
Doctor of Chiropractic, Logan College of Chiropractic, 1991
Doctor of Medicine, Saint Louis University, 1998

Robert J Saltman, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Yale University, 1976
Doctor of Medicine, Washington University in St Louis, 1980

John Mark Samet, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Washington and Lee University, 1964
Doctor of Medicine, University of Missouri Columbia, 1968

Evelio E. Sardina, M.S., Ph.D., M.D.
Instructor in Clinical Medicine

New Brunswick), 1985
Master of Science, University of South Florida, 1988
Doctor of Philosophy, University of South Florida, 1990
Doctor of Medicine, University of South Florida, 1994

Lawrence R Schacht, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University Wyoming, 1971
Doctor of Medicine, Oregon Health Science University (Duplicate of Oregon Health & Science University), 1975

Richard O. Schamp, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Emporia State University, 1974
Doctor of Medicine, University of Kansas, 1978

Jennifer Lynn Scheer, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1994

Mark Scheperle, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Missouri Columbia, 1989
Doctor of Medicine, University of Missouri Columbia, 1989

Alvin K Schergen, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1976
Doctor of Medicine, Saint Louis University, 1980

Tania L Schmid, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, University of Mississippi, 1981
Doctor of Medicine, University of Mississippi, 1985

Robert Jay Schneider, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Johns Hopkins University, 1973
Doctor of Medicine, Johns Hopkins University, 1976

Alexander E Schuetz, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1991
Doctor of Medicine, Saint Louis University, 1996

Stephen Schuman, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 1973

Benjamin D Schwartz, Ph.D., M.D.
Professor of Clinical Medicine
Bachelor of Arts, Columbia College (Inactive), 1965
Doctor of Philosophy, School Not Found, 1971
Doctor of Medicine, School Not Found, 1972

Kristen Ann Scullin-Hartman, M.D.
Assistant Professor of Clinical Medicine
Doctor of Medicine, University of Missouri Kansas City, 1988

Jay R Seltzer, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, University of Missouri Columbia, 1987
Doctor of Medicine, University of Missouri Columbia, 1987
Robert M Senior, M.L.A., M.D.
Professor Emeritus of Medicine
Bachelor of Arts, Oberlin College, 1957
Doctor of Medicine, George Washington University, 1961
Master of Liberal Arts, Washington University in St Louis, 1997

Joseph Michael Seria, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Saint Vincent College, 1964
Doctor of Medicine, Saint Louis University, 1968

Harvey Serota, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Johns Hopkins University, 1976
Doctor of Medicine, Johns Hopkins University, 1982

James F Sertl, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1962
Doctor of Medicine, Saint Louis University, 1966

Krista Seymour
Voluntary Clinical Instructor in Medicine

William D Shannon, M.S., Ph.D.
Professor Emeritus of Biostatistics in Medicine
Bachelor of Science, School Not Found, 1985
Master of Science, University of Massachusetts (Duplicate of University of Massachusetts Amherst), 1989
Doctor of Philosophy, University of Pittsburgh, 1995

Gerald Stephen Shatz, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Northwestern University, 1970
Doctor of Medicine, Washington University in St Louis, 1974

Nidal Shawain, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Jordan, 1988

Mounir M Shenouda
Instructor in Clinical Medicine

Bernard L Shore, M.D.
Professor of Clinical Medicine
Bachelor of Science, Washington University in St Louis, 1972
Doctor of Medicine, Washington University in St Louis, 1977

Robert B Shuman, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Brandeis University, 1977
Doctor of Medicine, University of Missouri Columbia, 1981

Sherry E Shuman, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, University of Michigan (Duplicate of University of Michigan Ann Arbor), 1978
Doctor of Medicine, Wayne State University, 1982

Christine A Sigman, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Saint Louis University, 1991
Doctor of Medicine, Saint Louis University, 1996

Randy B Silverstein, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Missouri Columbia, 1900

Robert W Sindel, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1969
Doctor of Medicine, Washington University in St Louis, 1975

Gary Singer, M.D.
Assistant Professor of Clinical Medicine
Doctor of Medicine, University of Toronto, 1987

Gurcharan J Singh, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Delhi University, 1968
Doctor of Medicine, Delhi University, 1975

Raymond P Smith, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Vassar College, 1980
Doctor of Medicine, University of Virginia, 1984

Timothy Robert Smith, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Mississippi, 1983
Doctor of Medicine, University of Mississippi, 1989

Allen D Soffer, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Emory University, 1900
Doctor of Medicine, University of Missouri Columbia, 1983

Rand Washburn Sommer, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Davidson College, 1976
Doctor of Medicine, Washington University in St Louis, 1980

Hani Charles Soudah, Ph.D., M.D.
Associate Professor of Clinical Medicine
Doctor of Medicine, School Not Found, 1983
Doctor of Philosophy, School Not Found, 1988

William F Southworth, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1969
Doctor of Medicine, Washington University in St Louis, 1975

James Joseph Spadaro, M.D.
Assistant Professor of Clinical Medicine
Doctor of Medicine, Louisiana State University, 1976

Michael L Spearman, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Kansas State University, 1978
Doctor of Medicine, University of Kansas Medical (Duplicate of University of Kansas Medical Center), 1982

Erik Christian Stabell, M.D.
Instructor in Clinical Medicine
Bachelor of Science, New College California, 1976
Doctor of Medicine, School Not Found, 1983

Paul M Stein, M.D.
Professor of Clinical Medicine
Bachelor of Arts, University of Rochester, 1967
Doctor of Medicine, Saint Louis University, 1971

Barbara B Sterkel
Adjunct Associate Professor of Medicine

James Andrew Stokes, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Stanford University, 1976
Doctor of Medicine, University of Missouri Columbia, 1984

Michael Gary Stone, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Kansas City University of Medicine and Biosciences, 2008

Hamsa Subramanian
Instructor in Clinical Medicine
Trichy, 1986

William Craig Summers, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Alabama (Duplicate of University of Alabama in Tuscaloosa), 1994
Doctor of Medicine, University of Alabama in Birmingham, 1999

Rudee Suwannasri, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Chiang Mai University, 1971
Doctor of Medicine, Chiang Mai University, 1973

Mohammad Tahir, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Dow Medical College Karachi, 1976

Kongsak Tanphaichitr, M.D.
Professor of Clinical Medicine
Doctor of Medicine, Siriraj Medical School, 1970

Arnold S Tepper, M.D.
Instructor in Clinical Medicine
Bachelor of Science, School Not Found, 1966
Doctor of Medicine, University of Missouri Columbia, 1970

Wanda T Terrell, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Washington University in St Louis, 1975
Doctor of Medicine, Washington University in St Louis, 1979

George K. Thampy, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Kerala University, 1977

Shaukat Thanawalla
Instructor in Clinical Medicine

J. Allen Thiel, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, Rockhurst College (Duplicate of Rockhurst University), 1956

Doctor of Medicine, Saint Louis University, 1960

Erik P Thyssen, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, University of Copenhagen, 1980
Doctor of Medicine, University of Copenhagen, 1984

Lawrence S Tierney, M.D.
Associate Professor of Clinical Medicine
Champaign, 1984
Champaign, 1988

Jeffrey P Tillinghast, M.D.
Associate Professor of Clinical Medicine
Bachelor of Science, State University of New York, 1976
Doctor of Medicine, Washington University in St Louis, 1980

Elizabeth A Tracy, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Marquette University, 1982
Doctor of Medicine, University of Wisconsin Milwaukee, 1986

Thomas F Tse, M.D.
Instructor in Clinical Medicine
Bachelor of Science, University of Nebraska, 1972
Doctor of Medicine, University of Nebraska at Omaha, 1976

David J Tucker, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Science, University of Notre Dame, 1977
Doctor of Medicine, Saint Louis University, 1981

Peter G Tuteur, M.D.
Associate Professor Emeritus of Medicine
Bachelor of Science, Johns Hopkins University Medical (Duplicate of Johns Hopkins University), 1962
Champaign), 1966

Robert C. Uchiyama, M.D.
Instructor in Uchiyama
Bachelor of Science, Stanford University, 1976
Doctor of Medicine, Saint Louis University, 1980

Albert Lee Van Amburg, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1968
Doctor of Medicine, Washington University in St Louis, 1972

Gil M Vardi, M.D.
Assistant Professor of Clinical Medicine
Aviv University (Duplicate of Tel Aviv University), 1988

Emmanuel A Venkatesan, MBBS
Associate Professor of Clinical Medicine
Foreign MD equivalent, Christian Medical College, 1990

Dennis T Villareal, M.D.
Adjunct Associate Professor of Medicine
Benjamin Allen Voss, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Saint Louis University, 2003
Doctor of Medicine, Creighton University, 2007

Benjamin Allen Voss, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Saint Louis University, 2003
Doctor of Medicine, Creighton University, 2007

Stacy G Vriezeelaar, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Simpson College, 1977
Doctor of Medicine, University of Iowa, 1981

Harry Lee Wadsworth, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Texas Tech University, 1978
Doctor of Medicine, Texas Tech University, 1983

Stanley M Wald, M.D.
Associate Professor of Clinical Medicine
Doctor of Medicine, Washington University in St Louis, 1946

David A Walls, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Southern Illinois University (Duplicate of Southern Illinois University Carbondale), 1979
Doctor of Medicine, Southern Illinois University (Duplicate of Southern Illinois University Carbondale), 1982

Corinna Hendrell Warren, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Southern Illinois University Edwardsville, 1990
Doctor of Medicine, University of Illinois Chicago (Duplicate of University of Illinois at Chicago), 1994

Scott P Wasserstrom, M.A., M.D.
Instructor in Clinical Medicine
Champaign, 1990
Master of Arts, Washington University in St Louis, 1995
Doctor of Medicine, Washington University in St Louis, 1995

Kevin D Weikart, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, American University of the Caribbean, 1979

Leonard B Weinstock, M.D.
Associate Professor of Clinical Medicine
Assistant Professor of Clinical Surgery (General Surgery)
Bachelor of Arts, University of Vermont, 1977
Doctor of Medicine, University of Rochester, 1981

Peter Douglas Weiss, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Harvard University, 1975
Doctor of Medicine, Case Western Reserve University, 1980

Lynn Ellis Welling, M.D.
Adjunct Associate Professor of Medicine

Doctor of Medicine, Uniformed Services University of the Health Sciences, 1989

Alvin S Wenneker, M.D.
Professor of Clinical Medicine
Bachelor of Arts, Washington University in St Louis, 1949
Doctor of Medicine, Washington University in St Louis, 1953

Jennifer Marie Wessels, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, Saint Louis University, 2009

John F Wiedner, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Knox College, 1982
Doctor of Medicine, School Not Found, 1985

Deborah A Wienski, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Smith College, 1979
Doctor of Medicine, Tufts University, 1983

George A Williams, M.A., M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, University of Notre Dame, 1967
Master of Arts, Columbia University, 1968
Doctor of Medicine, University of Wisconsin Madison, 1972

Nancy J Williams, M.D.
Instructor in Clinical Medicine
Bachelor of Arts, Dartmouth College, 1982
Doctor of Medicine, University of Kansas, 1987

R. Jerome Williams, M.D.
Associate Professor of Clinical Medicine
Bachelor of Arts, Harvard University, 1973
Doctor of Medicine, Duke University, 1977

Patrick H Win
Instructor in Clinical Medicine

Gerald Wolff, M.D.
Assistant Professor of Clinical Medicine
Bachelor of Arts, Harvard University, 1955
Doctor of Medicine, Washington University in St Louis, 1961

John A Wood, M.D.
Associate Professor of Clinical Medicine
Doctor of Medicine, University of Oklahoma, 1968

Jeffrey M Wright, M.D.
Assistant Professor of Clinical Medicine
Assistant Professor of Clinical Pediatrics
Bachelor of Science, Vanderbilt University, 1975
Doctor of Medicine, Washington University in St Louis, 1979

Simon Yu, M.D.
Instructor in Clinical Medicine
Doctor of Medicine, University of Missouri Columbia, 1984
John F. Zalewski, M.D.
Instructor in Clinical Medicine
Bachelor of Science, Clarkson University, 1973
Doctor of Medicine, State University of New York at Buffalo, 1980

Jian Zhu, Ph.D.
Instructor in Medicine
Main Campus, 2004

Research Electives

Medicine Research Electives

During the fourth year, opportunities exist for many varieties of advanced clinical or research experiences.

For information about Primary Care Summer Preceptorships (p. 22), please refer to the information at the bottom of this section.

John P. Atkinson, MD
Clinical Sciences Research Building, 10th Floor
Phone: 314-362-8391

A clinical research elective is offered in the evaluation of patients with complement deficiency or overactivity states and with undiagnosed rheumatic disease syndromes.

Roberto Civitelli, MD
BJC Institute of Health, 11th Floor, Musculoskeletal Research Center
Phone: 314-454-8408

Biology of cell-cell interactions and communication in bone via gap junctions and cell adhesion molecules; function of connexins and cadherins in transcriptional control of osteoblast differentiation, osteoclastogenesis, and mechanotransduction; modulation of mesenchymal lineage allocation and osteogenic differentiation by cadherins and beta-catenin signaling.

Nicholas O. Davidson, MD
910 Clinical Sciences Research Building, North Tower
Phone: 314-362-2027

Our focus is on the genetic pathways of nonalcoholic fatty liver disease (NAFLD) and colorectal cancer development. We have two major areas of research interest. Our laboratory is interested, first, in the molecular mechanisms of hepatic steatosis and the pathogenesis of NAFLD. This is the most prevalent liver disease in the United States, likely affecting a quarter of the population. We have generated genetically manipulated mouse strains that offer insights into the mechanisms of hepatic steatosis. The student would work as part of a team, designing and conducting experiments that will test hypotheses concerning the mechanisms and consequences of hepatic steatosis. These studies will primarily involve mouse genetics, examining the expression of candidate genes under a variety of nutritional and pharmacologic settings that modulate hepatic lipid metabolism. In addition, we are using microarrays to study the spectrum of genetic changes that may predict the extent of hepatic lipid accumulation in patients with steatohepatitis. Our goal is to test hypotheses using mouse genetics and to extend these studies to examine the same pathways in humans with NAFLD. Our second area of interest concerns the genetic pathways involved in colorectal cancer, the second leading cause of cancer-related deaths. We have developed a novel strain of mice in which the dominant effects of mutations in the APC tumor suppressor gene have been abrogated through deletion of an RNA binding protein, apobec-1. This deletion has a major effect on the expression of cox-2, apobec-1, abrogating the increase in expression seen in human colonic adenomas and wild-type mouse intestinal adenomas. These findings suggest that apobec-1 is a genetic modifier of colon cancer development. We will study the importance of apobec-1 expression in human colon cancer specimens and continue our murine genetic studies of this novel pathway for modulating colon cancer development and progression.

Bradley Evanoff, MD, MPH
Phone: 314-454-8638

Our primary interest is on occupational medicine epidemiology and intervention research. Our research involves the use of epidemiology methods to characterize associations between diseases and work-related exposures. We are also doing workplace intervention studies to prevent injuries and illnesses and to improve healthy diet and physical activity among working populations. During an elective in occupational medicine epidemiology research, students will learn how to use epidemiologic methods to investigate disease processes by working on a mutually agreed-on topic of interest related to occupational diseases. Other activities can include worksite visits and intervention projects as well as involvement with worksite health promotion and policy making. Elective length is variable, depending on individual circumstances. Please contact Dr. Evanoff to discuss this research.

Gregory I. Goldberg, PhD
Wohl Clinic, 4th Floor
Phone: 314-362-8172

Role of secreted extracellular matrix metalloproteases in tissue remodeling; structure and function of the metalloproteases.

Richard W. Gross, MD, PhD
4525 Scott Avenue, East Building
Phone: 314-362-2690

Lipid mediators of signal transduction in the cardiovascular system; characterization of regulatory mechanisms responsible for the liberation of lipid second messengers during cellular activation; roles of phospholipases in mediating the metabolic syndrome and end-organ tissue damage.

Stacey House, MD, PhD
Phone: 314-362-8070
houses@wustl.edu
Lisa Hayes  
Phone: 314-362-4362  
hayles@wustl.edu  
Emergency medicine clinical research is the primary focus of this lab. This type of research involves the gamut of research designs, from retrospective cohort studies (“The Use of B Hydroxy Butyrate Point-of-Care Testing in Diabetic Ketoacidosis”) to prospective clinical trials (“Biomarkers in Traumatic Brain Injury”) to the analysis of health policy issues (“Rate of Follow-up to a Primary Care Clinic and Subsequent Emergency Department Utilization among an Urban ED Population”). Students will learn the basic clinical research designs and will be able to articulate the benefits and drawbacks of each. They will be involved in hypothesis generation and study design for projects that are at that stage. For ongoing projects, they will learn about the informed consent process and be involved in screening for study subjects and subject selection and enrollment. They will be allowed to consent for studies judged to be of minimal risk. Students will be taught important rules regarding data acquisition and entry, particularly as these relate to standards that have been set forth in the medical literature. They will learn about bias and inter-rater reliability. Students will participate in data entry, data analysis, and subsequent abstract/manuscript preparation based on their level of interest and time commitment. Students will meet weekly with one of the course directors to discuss study progress and to identify any roadblocks to study completion. These meetings will also serve as a forum for one-on-one education of the student regarding study methodology, ethical issues in research, and various resources available to the clinical researcher at Washington University.

Sándor J. Kovács, MD, PhD  
9965 Clinical Sciences Research Building  
Phone: 314-362-8901  
This experience is geared toward students with math, physics and engineering backgrounds. The cardiovascular biophysics research elective concentrates on physiologic modeling and the comparison of model predictions to in vivo human data. The minimum elective time is eight weeks.

Marc S. Levin, MD, and Deborah C. Rubin, MD  
922/924 Clinical Sciences Research Building  
Phone: 314-362-8933 or 314-362-8935  
Students will be members of a collaborative research team headed by Drs. Levin and Rubin (Department of Medicine) investigating the mechanisms underlying the intestinal adaptive response that occurs to compensate for the loss of functional small intestine. A second project focuses on epithelial-mesenchymal interactions and their role in regulating gut epithelial proliferation carcinogenesis and the normal and cancer stem cell niche. Specific mechanisms under investigation include the function of an immediate early gene Tis7 on gut adaptation after resection or injury. The role of myofibroblast protein epimorphin in regulating cell proliferation and colon carcinogenesis is being explored. The student will have the opportunity to learn basic molecular biology and physiology as they relate to small intestinal growth and function. Examples of techniques that are used in these studies include small animal surgery and colitis and cancer models (mice and rats), molecular biological techniques including PCR, Northern blotting, vector construction for the production of transgenic and knockout mouse models, in situ hybridization and immunohistochemistry.

Jason C. Mills, MD, PhD  
Clinical Sciences Research Building, North Tower, Room 1030  
Phone: 314-362-4213  
We investigate the differentiation of epithelial stem cells in the upper gastrointestinal tract. We study how genes regulate differentiation in mouse models and in vitro in tissue culture, and we correlate our findings with human tissue specimens. Specific projects include the following: (1) understanding how inflammation leads to aberrant differentiation (metaplasia), which is a precursor for cancer; (2) elucidating how master regulatory transcription factors like Xbp1 and Mist1 coordinate the massive cytoskeletal and organellar expansion of specialized secretory cells as they differentiate from stem cells; and (3) understanding the mechanisms that regulate how differentiated cells can be reprogrammed into stem cells in gastrointestinal organs like the stomach and the pancreas.

Richard E. Ostlund, MD  
8804 Wohl Hospital  
Phone: 314-362-8286  
Our laboratory focuses on the prevention and treatment of coronary heart disease by studying cholesterol absorption, detoxification and elimination from the body. Direct patient studies that use new stable isotopic cholesterol tracers and mass spectrometry techniques complement in vitro work on the biochemistry of cholesterol transport in cultured cells.

Russell Pachynski, MD  
BJC Institute of Health, 7th Floor  
Phone: 314-286-2341  
Our lab focuses on several aspects of tumor immunology and translational immunotherapy. We utilize mouse tumor models, human tissues and samples, and advanced molecular and immunologic techniques to study leukocyte trafficking in the setting of tumor development and progression. We also have projects focusing on developing novel immunotherapeutics aimed at augmenting the recruitment of beneficial leukocyte subsets into the tumor microenvironment in order to suppress tumor growth. We are utilizing several approaches, such as nanoparticles, fusion proteins and viruses.

Katherine Ponder, MD  
8818 Cancer Science Research Building  
Phone: 314-362-5188  
kponder@wustl.edu
The focus of this lab is on gene therapy for lysosomal storage diseases such as mucopolysaccharidosis (MPS). We have developed a retroviral vector that can be efficiently delivered to the liver of mice and dogs and that results in expression sufficient to reduce many of the clinical manifestations of these genetic diseases. Current studies focus on assessing the therapeutic effect of gene therapy on sites that are affected in MPS (e.g., heart, aorta, bones, joints) and on developing vectors that might be translated into human patients. In addition, we are evaluating the pathogenesis of disease in MPS, which appears to involve the upregulation of destructive proteases in the aorta and possibly other sites. A better understanding of the pathogenesis of disease might result in additional therapies for MPS.

**Clay F. Semenkovich, MD**
Southwest Tower, 8th Floor
Phone: 314-362-4454

Fatty acid metabolism and its role in atherosclerosis, diabetes, hypertension and obesity; modulation of respiratory uncoupling for the treatment of aging, obesity and vascular disease.

**Phyllis K. Stein, PhD**
Northwest Tower, Room 13116
Phone: 314-286-1350
pstein@wustl.edu

This lab’s main focus is on the clinical significance of heart rate variability and ECG-derived waveform parameters obtained from continuous ambulatory monitoring. This elective affords the student the opportunity to perform research in heart rate variability or in other measurements, like QT variability or T-wave alternans that can be derived from continuous ECG monitoring or polysonmography recordings in the sleep lab. One area of active research is the identification of heart rate patterns associated with obstructive and central sleep apneas and hypopneas and the relationship of previously unappreciated cycling heart rate patterns and outcomes. Data are also available from mice. Many possible projects are available using our many large existing datasets, using the thousands of stored studies in the sleep lab, or using de novo data collection in a clinical or animal population and in infants. Also, many possible directions for this research are available, from applying traditional and nonlinear HRV to different populations to developing methods to quantify ultradian heart rate variability patterns to developing novel ECG analysis techniques, among others. Also, we are involved with the Cardiovascular Health Study (CHS), a large population-based longitudinal study of risk factors for heart disease and stroke among community-dwelling people more than 65 years old. There is a subset of this population who had Holter recordings (~1400 at baseline, ~800 of the same people five years later, and ~370 minority subjects recorded at the same time as the second CHS recording). These recordings have already been analyzed by us, so there is a large amount of heart rate variability and heart rate pattern data available. There are also subsets of patients from the CHS and from another study (EPHESUS) who are known to have died suddenly, and we have developed a matched control group in order to examine ECG-based differences in those who died suddenly. We also have electronic sleep studies at two time points for about 300 of the CHS Holter participants who also participated in the Sleep Heart Health Study. We have analyzed an additional ~1500 sleep studies from CHS participants who did not have Holter recordings. Thus, there is also an opportunity in the CHS dataset for studies of the relationship of heart rate variability with changes in heart rate variability over time and with a huge number of clinical and demographic factors among the elderly. We also have data on the relationship of Holter-based HRV and sleep apnea patterns to the development of atrial fibrillation after cardiac surgery as well as data from a study of the treatment of depression in treatment-resistant depressed post-MI patients, a study of sickle cell patients, and a study of heart rate variability and echo parameters in elderly African Americans. Currently, we are also analyzing HRV in premature infants as they mature and HRV as a predictor of response to treatment in babies in the NICU and PICU, using stored 24-hour bedside ECGs.

**Heart rate variability and clinical outcomes:** The student will be learning about HRV methods and will investigate the relationship of HRV and outcomes in one of our datasets. Because we have clinical and demographic data for about 20,000 subjects for whom continuous ECGs from Holter recordings, sleep studies, and ICU studies are available, as well as some mouse data, the student will be able to choose a project that may lead to a publishable result in an area of interest. The HRV Lab has enough computers and software to accommodate the needs of any interested students.

**John Turk, MD, PhD**
Southwest Tower, 8th Floor
Phone: 314-362-8190

Phospholipid signaling mechanisms in pancreatic islets is the main focus of this lab. Experience with the mass spectrometric analysis of complex lipids is available.

**H.J. Wedner, MD**
5002 Steinberg Pavilion, Barnes-Jewish Hospital, North Campus
Phone: 314-454-7377 or 314-454-7377

**Asthma care in the inner city:** Students will participate in ongoing studies of the delivery of asthma care to inner-city children and adults. The emphasis will be on direct contact between the asthmatic patients and the student, along with an asthma counselor.

**Biology of pollen and fungal allergens:** Our laboratory has been characterizing the important allergenic proteins from molds and pollen. The allergens are identified using skin-test–sensitive individuals, and the proteins are isolated and characterized by a combination of physicochemical and molecular biological techniques. These studies should lead to better forms of allergy immunotherapy. Students will participate in the isolation, characterization and modification of major allergens from a number of molds, including *Stachybotrys atrana* and *Epiconium nigrum*, and from several pollens, including those from white oak and *Parthenium hysterophorus*, a newly recognized allergen.
Primary Care Summer Preceptorships

Since 1996, the School of Medicine has sponsored a primary care preceptorship program for medical students during the summer between their first and second years of classes. Students select a preceptor in internal medicine, pediatrics or family practice and spend up to eight weeks observing that physician’s clinical practice. A stipend is provided to the student. Although many of the preceptors are in St. Louis, others — particularly alumni — are located in cities throughout the country.

Courses

Courses include the following:

- M25 Medicine (p. 22)
- M27 Emergency Medicine (p. 26)

M25 Medicine


M25 Medicine 805 Rheumatology (Clinical Elective)

Students will participate in the diagnostic work-up and management of patients with conditions such as: systemic lupus erythematosus, rheumatoid arthritis, scleroderma, vasculitis, spondyloarthropathies, and gout. There is less exposure to osteoarthritis and regional musculoskeletal problems. By working closely with faculty members, fellows, and medical residents, students actively contribute to the care of rheumatology patients through inpatient consultations and outpatient clinics at Barnes-Jewish Hospital. An emphasis is placed on the physical examination of joints and the musculoskeletal system, synovial fluid analysis, and interpretation of diagnostic tests and radiographs. Students attend rheumatology conferences. This elective enrolls students in the inpatient rheumatology consult service. Please contact the elective Course Director if you prefer a predominantly outpatient rotation, a mixed (inpatient and outpatient) learning experience, or exposure to a specific interest (i.e. adult-pediatric rheumatology, autoimmune eye disease, dermatology-rheumatology, etc).

M25 Medicine 810 Geriatric Medicine (Clinical Elective)

The primary goal of this rotation is for students to gain proficiency in the principles of geriatric evaluation and management, including the medical, psychological, social, and functional assessments of older adults. Students are expected to participate in the evaluation of two to six patients per day, in a variety of settings including the outpatient Geriatric Assessment Clinics and Geriatric Medicine Primary Care Clinics, inpatient Geriatric Medicine Consult service, Park Provence Nursing Home, and The Rehabilitation Institute of St. Louis. Students will also have the opportunity to participate in hospice and home care visits, interdisciplinary team meetings, and observe assessments at the WU Memory Diagnostic Center (in Neurology). Students are expected to attend weekly conferences while on the rotation. The day normally begins at 8:30 am and is usually finished by 5:30 pm. There is no night or weekend call. Time is provided to read the detailed syllabus/bibliography. Many clinical activities are off-site from the medical campus; students will be required to coordinate transportation to and from such sites. Students will be expected to attend weekly educational conferences and give an oral presentation on a topic or journal article of their choice once during the rotation.

M25 Medicine 821 Inpatient Cardiology (Clinical Elective)

Students will participate as members of the Barnes-Jewish Cardiology at Washington University Consultative Team. They will be part of a team composed of faculty members, fellows, residents, and nurse practitioners that sees a large population of cardiac patients and follows them through all aspects of their in-hospital care. Emphasis will be placed on physical examination and the interpretation of modern cardiac diagnostic tests including electrocardiograms, echocardiograms and coronary angiograms and their role in clinical decision making.

M25 Medicine 823 Clinical Cardiology (Clinical Elective - VA)

The major purpose of this elective in clinical cardiology at the John Cochran VA Hospital is to improve evaluation and management skills for diagnosis and treatment of important cardiovascular conditions such as coronary artery disease including acute myocardial infarction, congestive heart failure, hypertension, and valvular heart disease. The rotation is designed to be flexible enough to accommodate a wide variety of course objectives but includes the opportunity to participate in 1-3 outpatient clinics per week; 1-4 weeks of inpatient intensive care, telemetry, or cardiology consultation rounds; and ECG, stress testing, nuclear imaging, or echocardiographic reading sessions, cardiac catheterization and electrophysiologic procedures. The emphasis will be on improvement of the ability to diagnose and treat cardiovascular disease on the basis of information obtained from a thorough history and physical examination that is integrated with data from appropriate highly targeted laboratory studies in a manner that optimizes patient outcome and minimizes risk and costs.

M25 Medicine 825 Cardiac Arrhythmias and Electrophysiology (Clinical Elective)

Students will be members of the Cardiac Electrophysiology Consultation Team, which includes faculty members, fellows, residents, and nurse practitioners. The student will serve at the primary assessor for consultations and will, in concert with the rest of the team, complete the patient’s assessment and initiation recommendations and plan, as well as follow up. There is an emphasis on ECG evaluation and gaining familiarity with indications and details of arrhythmia therapeutics, including catheter ablation procedures, implantable device procedures, assessment, and programming, as well as antiarrhythmic drug therapy.

M25 Medicine 823 Heart Failure and Cardiac Transplantation (Clinical Elective)

This rotation is intended to provide trainees with a comprehensive experience managing patients with advanced heart failure. In addition to daily inpatient rounds, trainees are invited to attend both heart failure and transplant clinics. Further, the curriculum is supplemented by a syllabus that contains the critical literature pertinent to this patient population. The trainees will also have experience with the evaluation of patients for operative heart failure therapies and will have the opportunity to observe these surgical procedures.

M25 Medicine 830 Dermatology (Clinical Elective)

The aim of this elective is to provide a guide for students so they are able to appreciate dermatology within the broader perspectives of medicine and biology. Emphasis will be placed on the dermatologic variations encountered in a normal physical examination of the skin, the identification of common skin diseases, dermatologic clues to systemic disease, as well as those dermatologic conditions that are
life-threatening. The student will participate in outpatient care in the Barnes-Jewish Hospital, VA, and affiliated clinics. Students will attend all clinical teaching rounds and conferences in addition to the basic science and cutaneous histopathology conferences.

M25 Medicine 831 Pediatric Dermatology (Clinical Elective)
This clinical rotation will be available to students interested in dermatology, pediatrics or both. Students will follow the dermatology rotation (M25 830) with an emphasis on pediatric dermatology by attending pediatric dermatology clinics, seeing consults, etc.

M25 Medicine 836 Clinical Gastroenterology and Hepatology (Clinical Elective)
The GI Hepatology elective is integrated into a very active inpatient and endoscopy service at Barnes-Jewish Hospital. Students will participate in the evaluation of inpatients with a spectrum of gastrointestinal and liver disorders, make patient rounds with the faculty and fellows, and have responsibility for patients on whom consultations have been requested. In addition, they will observe general endoscopic techniques and participate in GI conferences.

M25 Medicine 836A Management of Inflammatory Bowel Disease (Clinical Elective)
This elective will allow students to spend an intensive period of time learning about all aspects of the care of patients with IBD (surgical, endoscopic, and medical management). Although a predetermined schedule has been developed, it can be modified based on the student's interest. Alternative options include: - inpatient IBD care (Barnes-Jewish Hospital and Barnes West County) - wound clinic / stoma care - specialized endoscopy (chromoendoscopy, ERCP) - IBD / colorectal surgery - pathology

M25 Medicine 838 Medicine Consult Service (Clinical Elective)
The focus of the Medicine Consult Service elective is the evaluation and management of medically complex patients admitted to the hospital on non-medicine services. The issues involved with perioperative management are particularly stressed. The student will function as a member of the consult service team. Duties will include performing initial consultations and follow-up care under the supervision of a Hospital Medicine attending and a senior medical resident. Attendance at Department of Medicine and division conferences is encouraged.

M25 Medicine 844 Hematology and Hemostasis (Clinical Elective)
Activities include work-up of patients at Barnes-Jewish Hospital under the supervision of the hematology fellow and faculty, attendance at daily clinical rounds for 1 - 1.5 hours per day. These are staffed by a senior faculty in the Division of Hematology. In addition to evaluation of patients with hematologic disorders, the student will gain additional analytic skills including: 1. Interpret and integrate laboratory data in the diagnosis of anemia and other cytopenias 2. Review peripheral blood and bone marrow morphology 3. Analyze laboratory data for the diagnosis of thrombophilia and bleeding 4. Discern the principles of blood banking and pheresis The students will have the opportunity to follow patients with sickle cell disease and understand the treatment of this disorder. The student is expected to attend and participate in the weekly hematology conference.

M25 Medicine 847 Bone and Mineral Diseases (Clinical Elective)
This course is designed to acquaint the student with the clinical, radiological and pathological manifestations and treatment of disorders of bone and mineral metabolism, including osteoporosis, Paget’s disease of bone, hyperparathyroidism, osteomalacia, and more rare disorders of bone development and mineral homeostasis. During the pediatrics rotations, students will follow patients at the Center for Advanced Medicine, Barnes-Jewish West County Hospital, Center for Advanced Medicine South, and St. Louis Children’s Hospital, under the guidance of Division faculty. The student will also learn the principles and best use of bone densitometry in clinical practice, and participate in the histological assessment of bone biopsies, based on case availability. Medical students will present interesting cases or a pertinent topic related to bone metabolism at the Metabolic Bone Disease Case Conference.

M25 Medicine 849 SPOTS: Sun Protection Outreach Teaching by Students (Non-Clinical Elective)
Students will teach public and private middle school and/or high school students in the St. Louis area about skin cancer and sun protection. SPOTS courses are taught in 60- to 90-minute sessions. The program involves delivering a PowerPoint presentation with a pre-written script, interactive games, a video, and hands-on demonstrations. Students are required to attend two evening training sessions (2.5 hours each) to learn the content of the program, as well as teaching strategies. Training sessions for all enrolled students occur in the fall. A winter training session can be added if needed. Students will teach 4 SPOTS session per week of elective credit. Students participating in the elective need to arrange for their own transportation to teaching sessions. Sessions are typically taught by students in pairs. Learning objectives: 1. Demonstrate knowledge of basic principles of skin cancer, including how to detect skin cancer and how to decrease risk with photoprotection. 2. Effectively communicate this knowledge to children/adolescents.

M25 Medicine 853 Inpatient Bone and Joint Infectious Disease Consult (Clinical Elective)
Study of infectious diseases of the bones and joints, including infections in both native and prosthetic joints. The elective is designed to teach students the fundamentals of evaluating clinical orthopedic infections and formulating plans for workup and therapy. Students see consultations in infectious diseases in every part of Barnes-Jewish Hospital under the supervision of a faculty member who rounds with them every day. They work closely with the infectious diseases attending and nurse practitioner, follow their own patients and play an important role in their management. They are expected to read the literature about their patients and participate in clinical conferences. They attend teaching rounds and conferences and lectures in infectious diseases. They also learn appropriate use of antibiotics and antifungal agents. The role of surgical and medical management is discussed, and the students will interact with surgical staff in understanding the risks and outcomes of these common infections.

M25 Medicine 854 Transplant Infectious Disease (Clinical Elective)
Study of infectious diseases in patients who have had bone marrow or solid organ transplants, or who have a hematologic malignancy. The elective is designed to teach students the fundamentals of evaluating clinical infections in these complex and interesting patients and formulating plans for workup and therapy. Students see consultations in every part of Barnes-Jewish Hospital under the supervision of a faculty member who rounds with them every day. They work closely with infectious disease fellows, follow their own patients and play an important role in their management. They are expected to read the literature about their patients and participate in clinical conferences. They attend teaching rounds and conferences and lectures in infectious diseases. They also learn appropriate use of antibiotics, antifungal and antiviral agents in this highly immune suppressed population. A wide distribution of infectious diseases is covered including management of neutropenic fever, invasive fungal infections in the transplant population, acute and chronic infections, infection prophylaxis and monitoring and interactions between immunosuppressive agents and antibiotics.
M25 Medicine 858 Ambulatory Infectious Disease (Clinical Elective)
The elective is designed to teach students the fundamentals of evaluating clinical infections in the outpatient setting. Students see patients under the supervision of a faculty member and interact with ID fellows and internal medicine residents. Students will participate in the care of HIV-infected or otherwise immunosuppressed patients as well as general infectious disease patients. The clinic is the primary provider for many HIV-infected patients, and students will learn the pathogenesis of HIV, become familiar with most antiretroviral medications, and have the opportunity to learn about opportunistic infections and their prophylaxis. They will also have the opportunity to see patients with bone and joint infections, endovascular infections, endemic and opportunistic mycoses, mycobacterial infections, sexually transmitted diseases, and many other infections. Patients seen will have a wide range of acute and chronic infections, and will include indigent and insured patients across a wide range of ages. The students will play an important role in the management of these patients and will present their assessments and plans to the supervising attending. They are expected to write clinic notes, read the literature about their patients, and participate in clinical conferences.

M25 Medicine 859 General Inpatient Infectious Disease (Clinical Elective)
The elective allows students to participate in the management of patients with a wide variety of infections in the inpatient setting. The elective is designed to teach students the fundamentals of evaluating clinical problems in infection and formulating plans for diagnosis and management. Students see consultations in infectious diseases in every part of Barnes-Jewish Hospital under the supervision of a faculty member who rounds with them every day. They work closely with medical residents and infectious disease fellows, follow their own patients, and play an important role in their management. They are expected to read the literature about their patients and participate in clinical conferences. They attend teaching rounds, conferences, and lectures in infectious diseases. They see a wide variety of infectious diseases including community-acquired acute and chronic infections, surgical infections, opportunistic infections in HIV-infected patients and other immunocompromised hosts, hospital-acquired infections, and basic infection control practices. They also learn appropriate use of antibacterics, antifungal and antiviral agents, and the principles of antimicrobial stewardship.

M25 Medicine 861 Inpatient Oncology Consult Service (Clinical Elective)
Medical Oncology is a complex subspecialty that is undergoing a rapid evolution as a result of new systemic treatment approaches that stem from biological insights into the nature of cancer. During the course of the elective, medical students will be able to interact with attending physicians and patients for bedside teaching and attend tumor boards and lectures focused on the care of patients with solid tumors. The student will function as a member of the consult service team. Duties will include performing initial consultations and follow-up care under the supervision of an Oncology attending and an Oncology fellow. At the end of the rotation, the students will appreciate the principles of our approach to cancer patients and should have gained insights into the evaluation and management of patients with newly diagnosed malignancies. The role of surgery, radiation, and systemic treatment will also be an important theme, as well as the conduct of clinical research in this patient population. Students will also learn to care for hospitalized patients suffering from complications from their cancer or from toxicities due to treatments. Oncologic emergencies will be covered. Issues such as palliative care treatment options and end-of-life decision making will be explored as well.

M25 Medicine 869 Hospice and Palliative Medicine (Clinical Elective)
The Palliative Medicine elective will focus on the care of patients with life-threatening or debilitating illness throughout the course of their care. Skills in symptom management, communication, and interdisciplinary team-based care will be the focus. Students will spend the majority of their time on the BJH Palliative Care Service. Based on the individual student’s interest, there may also be opportunities to work with the BJH Hospice Team and the St. Louis Children’s Hospital Pediatric Advance Care Team. Students wishing to work with either team should contact the Course Director and Administrative Contact, as well as the Instructors of the appropriate team, with as much advance notice as possible as trainee spots are very limited for both. While in the hospital, students will be responsible for seeing patients upon initial assessment as well as delivering follow-up care with the team. Patients will be seen for both end-of-life care as well as symptom management. Students will learn to assess and treat refractory symptoms and participate in complicated advanced care planning. Students will attend interdisciplinary team meetings, and may participate in conversations about goals of care and coping with bad news. They may also make home visits with hospice care providers, if desired. Emphasis will be placed on observing and understanding the psychosocial and spiritual needs of the patients, as well as the impact of the burden on caregivers. In addition, students will be expected to participate in bi-weekly presentations/group discussions on selected aspects of Palliative Medicine with the BJH Palliative Care team. Students will also be required to give a 20-minute presentation to the BJH Palliative Care team at the end of their rotation.

M25 Medicine 870 Endocrinology, Diabetes, and Metabolism (Clinical Elective)
In general, the rotation will be divided across general endocrinology and diabetes consultative services, as well as outpatient clinics. Students taking this elective will perform consultations with fellows and faculty on the inpatient services at Barnes-Jewish Hospital and will see patients with endocrine and metabolic diseases in outpatient faculty clinics. They will present cases daily on teaching rounds, and participate in case conferences and seminars on a weekly basis. Caring for patients with diabetes and gaining experience with the latest glycemic control technologies (continuous glucose monitoring, pump therapy, etc.) are important parts of the rotation, as is interacting with patients presenting for transgender care as well as patients with thyroid, pituitary, adrenal, gonadal, bone, and lipid disorders. A variety of outpatient clinics are offered in the division and students should speak with the fellows and faculty members to customize the learning experience to match their career goals. At the end of the rotation, it is expected that students will have the ability to approach inpatient and outpatient management of diabetes including insulin dosing and glucose monitoring, as well as evaluate and treat a variety of endocrine disorders.

M25 Medicine 871 Outpatient Oncology (Clinical Elective)
Students will gain experience in the initial treatment of newly-diagnosed malignancies and the outpatient management of oncology patients. Participation in multidisciplinary tumor conferences will stress a combined-modality approach to management, incorporating chemotherapy, radiotherapy and surgery. Students will see patients with a variety of malignancies, including lymphoma, myeloma, and tumors of the lung, breast, and colon. Management of hypercalcemia and other paraneoplastic syndromes, as well as cancer pain management, will be covered. Students will have the opportunity to see how most oncologists spend 90% of their workday. They will observe the different styles that oncologists use when presenting news about prognosis, treatment options, and other information to patients while they also learn about the molecular basis for cancer, the mechanisms of action for our therapies (particularly the newer agents which target specific molecular abnormalities), and the key studies that justify the
use of therapies (e.g., randomized studies showing that after surgery, chemotherapy will reduce the risk of recurrence from a particular cancer with a particular regimen). By spending time with clinicians, students will learn how to identify hereditary syndromes, use drugs for symptom relief, and also learn how radiographic and laboratory tests allow oncologists to care for patients.

M25 Medicine 879 Pulmonary Clinic for the Underserved (Clinical Elective)
Clinical setting: Outpatient Clinic dedicated to providing pulmonary specialty care to patients who are predominantly uninsured or who rely upon public assistance such as Medicaid. Student role: Students independently interview and examine patients and present findings to the attending, tests and imaging are reviewed, and provider and attending develop plan. Common problems/diseases: Asthma, COPD, sarcoidosis, lung cancer, and obstructive sleep apnea are commonly seen. Also, patients are referred for evaluation of abnormal x-rays and for symptoms such as dyspnea. Primary learning objectives: - to understand and practice important history and exam skills in pulmonary medicine: symptoms, smoking history, work and environmental exposures, and important pulmonary physical exam findings. - to understand the basics of pulmonary function tests, chest imaging, and methods for tissue sampling. - to understand the basis of treatment of common pulmonary disorders. - to understand some of the psychosocial barriers to care for this population. Conferences: There is no conference associated with this clinic, but students may attend the usual Thursday morning Medicine Grand Rounds at 8:00 am and the Pulmonary Grand Rounds at 11:00 am if the subject matter is appropriate.

M25 Medicine 880 Pulmonary Medicine (Clinical Elective)
Students will acquire skills in the evaluation and management of patients with pulmonary diseases and in the interpretation of pulmonary function tests. They will gain experience in outpatient Lung Center and attend regular pulmonary and critical care medicine conferences.

M25 Medicine 884 Bone Marrow Transplantation and Stem Cell Biology (Clinical Elective)
This elective is designed to introduce students to the general inpatient, intensive care, and outpatient management of patients with multiple hematologic malignancies including leukemia, lymphoma, marrow failure states and myeloma. These patients will be treated with chemotherapy, targeted therapies and cellular immunotherapies including chimeric receptor T cells (CART), natural killer cells, bispecific antibody treatments and stem cell transplant (both autologous and allogeneic). As the primary team, the BMT service is responsible for diagnosing and treating all medical problems including many critical care issues that may occur in these patients. These complex patients are often severely immunocompromised, coagulopathic, and at high-risk of multi-organ complications from both their disease and their therapy. Students work closely with residents, fellows, and faculty to develop treatment plans for patients. Students participate in daily rounds discussing general inpatient and intensive care BMT patients and attend outpatient clinic 1 day/wk to see how BMT physicians approach patients faced with difficult decisions to make regarding their care. In addition to multiple weekly conferences, students also attend daily teaching rounds led by faculty to learn the basic science of hematopoiesis, the genomics of leukemia, stem cell biology, gene therapy and cell therapy, transplantation immunology, graft vs host disease and infectious diseases seen in these immunocompromised patients. The average medical student will contribute to the care of inpatients (30-40 patients/day) and will be directly involved in the assessment and care of selected outpatients as well.

M25 Medicine 888 Outpatient Hematology (Clinical Elective)
Students will gain experience in the diagnostic workup of hematological conditions like low or high blood counts, thrombosis, bleeding, and paraproteinemia. They will get familiar with treatment strategies for a wide variety of benign hematological conditions (e.g., thrombotic microangiopathies, sickle cell disease, thrombosis, and hemophilia) and malignant hematological disorders (e.g., myeloproliferative neoplasms and myelodysplastic syndromes). Students will also learn about the role of procedures like blood/blood fraction exchange (apheresis) and bone marrow biopsy. Participation in hematology case conference will provide insight into approaching a case with evidence-based management strategies and hematology grand rounds will offer formal learning experience in hematology from experts in the area. Students will observe hematologists going through a typical workday and managing difficult conversations (e.g., breaking bad news). They will learn about gaps in the field of hematology, which generate rationale for future research.

M25 Medicine 890 Clinical Nephrology (Clinical Elective)
Students rotate through inpatient and outpatient experiences to gain exposure to all facets of nephrology. They will spend the majority of their time on an inpatient consult service, gaining exposure to acute and chronic renal failure, glomerulonephritis, and electrolyte disorders. During this time, they will serve as a fully integrated member of the consult team, evaluating underlying causes of kidney disease, performing diagnostic procedures, formulating management plans, and engaging in decision-making discussions with primary services and families. In addition, students will have the opportunity to experience ICU nephrology, transplant nephrology, the various CKD clinics, and all modalities of dialysis, including in-center, home, and peritoneal dialysis.

M25 Medicine 890A Kidney Transplantation (Clinical Elective)
Students participating in this elective will: - gain exposure to end-stage renal disease and the treatment options, - examine kidney transplantation as the most valuable option, - learn about immunosuppression, and - gain exposure to infectious diseases like CMV, BK, and adenovirus that are commonly seen inpatients that have had a kidney transplant (and not often seen otherwise).

M25 Medicine 893 Adult Allergy and Clinical Immunology (Clinical Elective)
Students will participate in the outpatient Allergy Clinics located in Barnes-Jewish Hospital Center for Advanced Medicine, Barnes-Jewish West County, and the Center for Advanced Medicine of South County. Students will participate in allergy skin testing, pulmonary function testing, and drug desensitization. They will have the opportunity to see patients with allergic rhinitis, asthma, hives, food allergy, immunodeficiency, eosinophilic esophagitis, hereditary angioedema, mastocytosis, contact allergic dermatitis, eczema, and more. They can attend allergy conferences on Thursday morning. Students have the option to follow a fellow and see inpatient consults at Barnes-Jewish Hospital.

M25 Medicine 897 Complex Primary Care (ComPACT)
ComPACT is an intensive primary care clinic. We work with veterans with multiple medical comorbidities and multiple hospitalizations. Frequently, they also have many social barriers to health care. Our goals are to reduce admissions and improve overall health and wellness. Students will be responsible for performing histories and physicals in the outpatient setting. In addition, when appropriate, students will round on hospitalized ComPACT patients with Drs. Rumora and McCarthy. Patient interactions will be face-to-face and electronic (phone, video). Students will gain experience with balancing the demands of competing medical issues. Many of our vets have heart failure, diabetes, kidney disease, COPD, and other conditions. Students
will also gain experience in identifying and working to mitigate social barriers to health. We have weekly staff “huddles” that we encourage students to attend. We also have a journal club approximately monthly. If this occurs during the student’s time with us, we may ask them to present an appropriate paper.

**M25 Medicine 910 Internal Medicine Advanced Clinical Rotation (ACR)**

This rotation is designed to imitate intern year as much as possible while working with adult hospitalized patients. It is a four-week rotation; three of those weeks will be on a daytime rotation and one of those weeks will be a night float rotation. You will be expected to put in discharge and admission orders, write notes on your patients, communicate with ancillary staff and consultants about patient care, and communicate updates to patients’ families. During the day you will be expected to take care of 4-6 patients. At night, you will be expected to provide cross-cover for existing patients and admit new patients. This rotation will take place at the John Cochran VA Hospital and at Barnes-Jewish Hospital on the medicine firm service, cardiology firm/service or hospitalist service. Hospitalist and medicine firm see patients admitted for a medical reason. Cardiology firm takes care of patients admitted primarily for a cardiac reason, but these patients often have many medical comorbidities reflective of a general medicine population. The team structure of cardiology and medicine firm services include one attending, one residents and two interns. The team structure of hospitalist will include working more one-on-one with a hospitalist attending. The John Cochran VA Hospital sees more common medical illnesses but is still a referral center. The VA teams consist of one attending, one resident, and one intern. Credit 140 units.

**M25 Medicine 915 Medicine Intensive Care Advanced Clinical Rotation (ACR)**

The Medical Intensive Care Unit ACR is designed to introduce medical students to critical care medicine. The rotation will provide the opportunity to care for critically ill medicine patients presenting with a wide variety of diagnoses including shock, respiratory failure, metabolic derangements, and acute gastrointestinal hemorrhage, amongst others. Students will be expected to learn the basic pathophysiology and treatment approaches of these common MICU disease processes. The MICU ACR will take place in the 8300 and 8400 Medical Intensive Care Units, and the medical students will work on a team comprised of internal medicine residents, pulmonary and critical care fellows, and attending physicians. The rotation will consist of three weeks of days and one week of nights. While on days, the students on the MICU ACR will be expected to follow 3-4 ICU patients, present these patients on rounds, and develop management plans. While on nights, the students will join the residents and fellows in cross covering established patients and admitting new patients to present on rounds the next morning. The management of critically ill patients is an essential skill for an intern in a variety of medical specialties, and the pathology seen in the Medical ICU will allow for students to gain experience in this environment prior to starting their residency. Credit 140 units.

**M27 Emergency Medicine**


**M27 EMED 800 Reading Elective - Emergency Medicine**

**M27 EMED 802 Emergency Medicine (Clinical Elective)**

This four-week elective will encompass all aspects of Emergency Medicine, with clinical time spent in the main urban trauma center as well as in a community setting. In addition, to seeing a wide range of pathology at the two sites, students will be given the opportunity for a 1:1 teaching shift, toxicology shift, and nursing shift, as well as a shift with ancillary departments such as social work and respiratory therapy. Students will be expected to attend grand rounds and teaching lectures as well as team-based learning and simulation sessions. Students will work in the trauma/critical care area and general medicine areas of the ED, and are expected to see patients independently, present to the team, perform basic procedures with guidance, call consults, and sign out patients to the oncoming team.

**M27 EMED 810 Medical Toxicology (Clinical Elective)**

This rotation offers practical experience in the evaluation and management of the acutely ill, poisoned, or intoxicated patient. Students will function as subinterns and either report to the senior resident, fellow, or directly to the toxicology attending. Students will gain familiarity and experience evaluating and treating patients who have intentionally and unintentionally overdosed on medications or illicit drugs or have substance use disorders, been envenomated (such as by spiders, snakes, or other reptiles), or been exposed to toxic substances or chemicals. Students will also gain experience in administering antidotes and learning to properly decontaminate someone after an ingestion or exposure. There are no overnight or weekend shifts. While not required, students are welcome to come in off hours to see new consults and enhance their experience and learning. Daily activities start in the morning and are generally concluded by the early afternoon. A core content of lectures will be provided. The students will also be assigned small projects during their rotation that will enhance their experience particularly in environmental and occupational toxicology. Students will also be asked to complete SAMHSA approved training which will allow them to apply for DEA buprenorphine waivers upon obtaining their permanent medical license. Opportunities to increase their experience with occupational toxicology and addiction medicine also exist during this rotation; students will be able to rotate in the outpatient toxicology and addiction medicine clinic. Students will also have the opportunity to go to the Missouri Poison Center. Students desiring a letter of recommendation from one of the toxicology attendings (who are also Emergency Medicine attendings) or interested in Emergency Medicine or Medical Toxicology should take this elective. Also, students considering other specialties such as Pediatrics, Psychiatry, Neurology, or Internal Medicine should consider this rotation as they will be responsible for evaluating these patients as part of their inpatient or outpatient practice. Please be advised that there is a limit of days off while on this rotation during interview season; otherwise, students should arrange to take the elective at a different time during the year. Days off should be requested from the Course Coordinator at least two weeks prior to the beginning of the rotation for scheduling purposes.

**M27 EMED 820 Emergency Ultrasound (Clinical Elective)**

Point-of-care ultrasound has become an integral diagnostic and procedural tool for nearly every clinical specialty. Ultrasound examination at the bedside is noninvasive, painless, and repeatable, unlike many other common diagnostic tests. However, like all procedures, developing ultrasound skills takes a significant amount of practice and experience. This rotation will focus on clinical ultrasound image acquisition and interpretation at the bedside. Students will participate in the performance of bedside ultrasound of patients in the Emergency Department. Common applications of emergency ultrasound include the FAST exam, pelvic ultrasound, abdominal aortic aneurysm (AAA), vascular access, renal, ocular, cardiac ultrasound, and DVT. Students will be involved in direct patient care during this rotation as part of the ultrasound team in the Emergency Department. In general, the student will be in the Emergency Department during weekdays to perform these exams. In addition, the student will meet
with the elective instructor approximately once per week to review images or for direct hands-on instruction. At the end of the rotation, the student should be able to obtain images for basic point-of-care ultrasound examinations and to interpret those images for diagnostic purposes. Students may also have opportunity to practice ultrasound-guided procedures during the rotation.

M27 EMED 830 Emergency Medical Services (Clinical Elective)
TBD

M27 EMED 910 Emergency Medicine Advanced Clinical Rotation (ACR)
This rotation offers practical experience in the evaluation and management of acutely sick and injured patients. Students will function as subinterns, initially evaluating their assigned patients, and developing a plan for further diagnostic studies and therapy. They will report to a senior level resident or an attending physician. The student can expect the opportunity to perform or assist with a wide variety of procedural skills such as suturing, splinting, peripheral and central venous access, ultrasound, and cardiopulmonary resuscitation. Shifts will be eight hours and students will rotate between day, evening, and night shifts (including weekend shifts) to gain maximum exposure to all types of emergencies. The majority of shifts will occur at Barnes-Jewish Hospital; however, additional shifts may be scheduled at St Louis Children's Hospital, Barnes-Jewish West County Hospital and Missouri Baptist hospital, community teaching hospitals approximately 14 miles away. If the student does not have transportation, other arrangements can be made. Students will also be expected to attend weekly grand rounds and student lectures covering aspects of the core content of Emergency Medicine as well as attend a departmental journal club and student simulation session. Students will gain an understanding of other disciplines closely associated with Emergency Medicine by doing rotations with either social work, nursing, or respiratory therapy. Students will also gain knowledge of the triage system during their time in the department. If schedules allow, students interested in EM will be doing 1:1 shifts with a single attending during their rotation as well as having a teaching shift with the education resident and fellow. Students desiring a Standard Letter of Evaluation (SLOE) should take the Emergency Medicine ACR. Students will be scheduled for required weekend and overnight shifts and changes will not be allowed to the schedule unless approved prior to the start of the rotation by the course coordinator. Please be advised that there is a limit of days off while on this rotation during interview season; otherwise, students should arrange to take the elective at a different time during the year. Days off during the rest of the year will conform to university policy. Days off should be requested from the Course Coordinator at least two weeks prior to the beginning of the rotation for scheduling purposes.

Credit 140 units.