

Medical Resident Investigator Track (MeRIT) Program



MENTOR CATALOG (a partial list)

Baylor
College of
Medicine

MARGARET M. & ALBERT B. ALKEK
DEPARTMENT OF
MEDICINE

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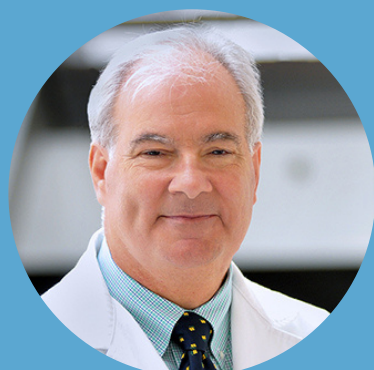
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PROGRAM SUMMARY



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Director, MeRIT Program,
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**Richard J. Hamill,
MD**

Director, Medicine
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Medicine

The Department of Medicine at Baylor College of Medicine has a long-standing commitment to the career development of the next generation of academic physician-scientists. Baylor provides an exceptional environment for clinical and research training. Our physician-scientist training program (PSTP) is named the MeRIT (Medical Resident Investigator Track) program. The MeRIT program fulfills the requirements of the **American Board of Internal Medicine (ABIM) research pathway**.

The depth and breadth of opportunities for MeRIT Program training with preeminent investigators are truly remarkable, with opportunities in basic science, clinical, translational, and health services research. The MeRIT program allows residents to pursue their research interests with faculty from Baylor and affiliated academic institutions. This brochure provides a very small sampling of the many faculty members committed to serve as primary mentors for MeRIT trainees. A broader listing of the extensive research opportunities and potential mentors available for MeRIT trainees can be found by browsing through the list of the many interdisciplinary **research centers** at Baylor College of Medicine.

The curriculum involves two years of clinical training (instead of the usual three years) and three uninterrupted years of research training. The three years of research training can be performed at the end of the two years of clinical residency, or they can be performed at the end of subspecialty training at Baylor. Thus, each MeRIT scholar has the ability to tailor their research training experience to maximize career development. During the three research years, the primary clinical experiences will consist of at least one half-day per week in a continuity clinic. Furthermore, one of the research years can be used to fulfill the research requirement for subspecialty board certification. In addition to the primary research mentor, each trainee will have a defined mentoring committee. Research training is integrated with Baylor's **Clinical Scientist Training Program** and interested trainees have the option of pursuing an advanced graduate degree.

Internal medicine residents selected for the MeRIT Program are expected to be among the top applicants, not only on the basis of extraordinary clinical competence but also on commitment to pursuing academic careers as physician-scientists. MeRIT scholars are assured funding for the entire five years of the program, and are anticipated (though not required) to pursue subspecialty training at Baylor. As you make plans for residency training, we encourage you to consider the MeRIT Program and think about collaborating with its distinguished group of faculty.



CHRISTIE BALLANTYNE, MD

PRIMARY DEPT. AND SECTION

Medicine - Cardiology and Cardiovascular Research

RESEARCH INTERESTS

- Atherosclerosis
- Inflammation
- Leukocyte-endothelial adhesion molecules
- Biomarkers for atherosclerosis and cardiovascular disease
- Preventive cardiology and atherosclerosis imaging
- Precision medicine
- Lipids
- Obesity, metabolic syndrome, and diabetes
- Genetics of lipid disorders, atherosclerosis, and cardiovascular disease
- Coronary artery disease

RESEARCH OPPORTUNITIES FOR TRAINEES

- Ongoing clinical trials in the area of lipids and atherosclerosis
- Genomic studies related to personalized medicine with the Human Genome Center at Baylor
- Population health and biomarker research involving the NIH-funded Atherosclerosis Risk in Communities cohort with a focus on cardiovascular disease in the elderly and healthy aging

RELEVANT PUBLICATIONS

Bhatt DL, Steg PG, ... Ballantyne CM; REDUCE-IT Investigators. **Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia.** N Engl J Med. 2019 Jan 3;380(1):11-22. PMID: 30415628.

Jia X, Sun W, Hoogeveen RC, ... Ballantyne CM. **High-sensitivity troponin I and incident coronary events, stroke, heart failure hospitalization, and mortality in the ARIC Study.** Circulation. 2019;139:2642-2653. PMID: 31030544.

Saeed A, Nambi V, ... Ballantyne CM. (2018). **Short-Term Global Cardiovascular Disease Risk Prediction in Older Adults.** J Am Coll Cardiol. 71(22):2527-36. PMID 29535064.

ACADEMIC APPOINTMENTS

Professor and Section Chief,
Atherosclerosis and Lipid
Metabolism,
Department of Medicine

Professor,
Department of Molecular and
Human Genetics

Professor,
Department of Molecular
Physiology and Biophysics



ADDITIONAL TITLES

Director,
The Maria and Alando J.
Ballantyne, MD Atherosclerosis
Clinical Research Laboratory

Director,
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Disease Prevention



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VIJAY NAMBI, MD

PRIMARY DEPT. AND SECTION

Medicine - Cardiology and Cardiovascular Research

RESEARCH INTERESTS

- Atherosclerosis imaging
- Biomarkers
- Cardiovascular disease prevention

RESEARCH OPPORTUNITIES FOR TRAINEES

- Biomarkers and value in cardiovascular risk prediction
- Ultrasound based cardiovascular imaging
- Epidemiology of cardiovascular disease (the ARIC study)

RELEVANT PUBLICATIONS

Trang A, Kampangkaew J, ... Nambi V. (2019). Understanding by General Providers of the Echocardiogram Report. *Am J Cardiol.* 124 (2):296-302. PMID 31104774.

Jaspers NEM, Blaha MJ, Matsushita K, et al. (2019). Prediction of Individualized Lifetime Benefit from Cholesterol Lowering, Blood Pressure Lowering, Antithrombotic Therapy, and Smoking Cessation in Apparently Healthy People. *Eur Heart J.* pii: ehz239. PMID 31102402.

Saeed A, Nambi V, Sun W, et al. (2018). Short-Term Global Cardiovascular Disease Risk Prediction in Older Adults. *J Am Coll Cardiol.* 71(22):2527-2536. PMID 29535064.

ACADEMIC APPOINTMENT

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Atherosclerosis and Lipid
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ADDITIONAL TITLES

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SALIM S. VIRANI, MD, PHD

PRIMARY DEPT. AND SECTION

Medicine - Cardiology and Cardiovascular Research

RESEARCH INTERESTS

- Cardiovascular disease prevention
- Big data
- Cardiovascular outcomes

RESEARCH OPPORTUNITIES FOR TRAINEES

- Epidemiology of cardiovascular disease using large datasets
- Improving quality of care for cardiovascular disease

RELEVANT PUBLICATIONS

Mahtta D, Ramsey DJ, ... Virani SS. (2020). **Evaluation of Aspirin and Statin Therapy Use and Adherence in Patients With Premature Atherosclerotic Cardiovascular Disease.** JAMA Netw Open. 3 (8):e2011051. PMID 32816031.

Mahtta D, Gupta A, ... Virani SS (2020). **Autoimmune Rheumatic Diseases and Premature Atherosclerotic Cardiovascular Disease: An Analysis From the VITAL Registry.** Am J Med. S0002-9343(20)30524-6 . PMID 32598903.

Al Rifai M, Merchant AT, ... Virani SS (2020). **Temporal Trends in E-Cigarette Use Among U.S. Adults: Behavioral Risk Factor Surveillance System.** 133(9):e508-e511. PMID 32222250.

ACADEMIC APPOINTMENT

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MARK L. ENTMAN, MD

ACADEMIC APPOINTMENTS

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Biochemistry & Molecular
Biology,
Molecular Physiology &
Biophysics, and
Pathology & Immunology



ADDITIONAL TITLES

William J. Osher Chair in
Cardiovascular Research

Scientific Director,
The DeBakey Heart Center



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PRIMARY DEPT., SECTION, & DIVISION

Medicine - Cardiovascular Research: Cardiovascular
Sciences

RESEARCH INTERESTS

- Molecular mechanisms of cardiac injury and repair
- Molecular and cellular dysregulation in the aging heart
- Role of inflammatory and metabolic cycles in heart failure
- Molecular and cellular intervention into heart failure in the aging heart

RESEARCH OPPORTUNITIES FOR TRAINEES

- Cell biology of mesenchymal cell plasticity in heart failure
- Cellular and therapeutic strategies
- Monitoring and quantitating cardiac function over time in awake mice

RELEVANT PUBLICATIONS

Haudek SB, Xia Y, ... Entman ML. **Bone marrow-derived fibroblast precursors mediate ischemic cardiomyopathy in mice.** Proc Natl Acad Sci U S A. 2006 Nov 28;103(48):18284-9. PMID: 17114286.

Cieslik KA, Trial J, Entman ML. **Mesenchymal stem cell-derived inflammatory fibroblasts promote monocyte transition into myeloid fibroblasts via an IL-6-dependent mechanism in the aging mouse heart.** FASEB J. 2015 Aug;29(8):3160-70. PMID: 25888601.

Trial J, ... Entman ML, Cieslik KA. **Treatment with a DC-SIGN ligand reduces macrophage polarization and diastolic dysfunction in the aging female but not male mouse hearts.** Geroscience. 2021 Apr;43(2):881-899. PMID: 32851570.



XANDER WEHRENS, MD, PHD

ACADEMIC APPOINTMENTS

Professor,
Departments of Molecular
Physiology & Biophysics and
Medicine



ADDITIONAL TITLES

Director,
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Chair in Cardiology



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PRIMARY AND SECONDARY DEPT.

Molecular Physiology & Biophysics

Medicine - Cardiovascular Research: Cardiovascular
Sciences

RESEARCH INTERESTS

- Electrophysiology
- Gene therapy and genome editing of CV disease
- Mouse models of heart disease
- Induced pluripotent stem cells

RESEARCH OPPORTUNITIES FOR TRAINEES

- Patient-derived induced pluripotent stem cells to uncover mechanisms of inherited arrhythmias and cardiomyopathies
- Elucidating mechanisms of post-operative atrial fibrillation in patient biopsies and mouse models
- Genome editing in vivo to cure inherited and acquired arrhythmia syndromes

RELEVANT PUBLICATIONS

Hulsurkar MM, Lahiri SK, ... Wehrens XHT. **Atrial-Specific LKB1 Knockdown Represents a Novel Mouse Model of Atrial Cardiomyopathy With Spontaneous Atrial Fibrillation.** *Circulation.* 2021 Sep 14;144(11):909-912. PMID: 34516304.

Moreira LM, ... Wehrens XHT, Nattel S, Reilly S. **Paracrine signalling by cardiac calcitonin controls atrial fibrogenesis and arrhythmia.** *Nature.* 2020 Nov;587(7834):460-465. PMID: 33149301.

Campbell HM, Quick AP, ... Wehrens XHT. **Loss of SPEG Inhibitory Phosphorylation of Ryanodine Receptor Type-2 Promotes Atrial Fibrillation.** *Circulation.* 2020 Sep 22;142(12):1159-1172. PMID: 32683896.



MIGUEL A. CRUZ, PHD

ACADEMIC APPOINTMENTS

Professor,
Departments of Medicine,
Pediatrics,
Molecular Physiology &
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ADDITIONAL TITLES

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Michael E. DeBakey VA Medical
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Co-Director, Center for
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Inflammatory Diseases (CTRID)



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PRIMARY DEPT., SECTION, & DIVISION

Medicine - Cardiovascular Research: Thrombosis
Research

RESEARCH INTERESTS

- Thrombosis
- Inflammation
- Von Willebrand factor
- Vimentin
- Platelet adhesion
- Extracellular hemoglobin and thrombosis

RESEARCH OPPORTUNITIES FOR TRAINEES

- Role of free hemoglobin in thrombosis in ECMO/LVAD
- Molecular mechanisms of thrombo-inflammatory diseases

RELEVANT PUBLICATIONS

Da Q, Teruya M, ...Cruz MA. (2015). Free Hemoglobin Increases von Willebrand Factor-Mediated Platelet Adhesion in Vitro: Implications for Circulatory Devices. *Blood*. 126(20):2338-41. PMID 26307534.

Da Q, Behymer M, ... Cruz MA. (2014). Platelet Adhesion Involves a Novel Interaction between Vimentin and von Willebrand Factor under High Shear Stress. *Blood*. 123(17):2715-21. PMID 24642750.

Valladolid C, Yee A, Cruz MA. (2018). von Willebrand Factor, Free Hemoglobin and Thrombosis in ECMO. *Front Med (Lausanne)*. 5:228. PMID 30175099.



K. VINOD VIJAYAN, PHD

ACADEMIC APPOINTMENTS

Associate Professor,
Departments of Medicine,
Molecular Physiology &
Biophysics, and
Pediatrics



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PRIMARY DEPT., SECTION, & DIVISION

Medicine - Cardiovascular Research: Thrombosis
Research

RESEARCH INTERESTS

- Platelets and thrombosis
- Lung cancer and platelets
- Platelets and sepsis
- Endothelial biology

RESEARCH OPPORTUNITIES FOR TRAINEES

- Role of platelet signaling in lung cancer metastasis
- Platelet phosphatases in inflammation

RELEVANT PUBLICATIONS

Lichtenberger LM, Vijayan KV. **Are Platelets the Primary Target of Aspirin's Remarkable Anticancer Activity?** Cancer Res. 2019 Aug 1;79(15):3820-3823. PMID: 31300475.

Da Q, Han H, Valladolid C, Fernández M, Khatlani T, Pradhan S, Nolasco J, Matsunami RK, Engler DA, Cruz MA, Vijayan KV. **In vitro phosphorylation of von Willebrand factor by FAM20c enhances its ability to support platelet adhesion.** J Thromb Haemost. 2019 Jun;17(6):866-877. PMID: 30864273.

Pradhan S, Khatlani T, Nairn AC, Vijayan KV. **The heterotrimeric G protein G β 1 interacts with the catalytic subunit of protein phosphatase 1 and modulates G protein-coupled receptor signaling in platelets.** J Biol Chem. 2017 Aug 11;292(32):13133-13142. PMID: 28615442.



SEAN M. HARTIG, PHD

PRIMARY DEPT. AND SECTION

Medicine - Endocrinology, Diabetes and Metabolism

RESEARCH INTERESTS

- Cell biology of obesity and fatty liver diseases
- Mechanisms of energy balance disorders

RESEARCH OPPORTUNITIES FOR TRAINEES

- Fundamentals of metabolism in the periphery
- Development biology of adipose tissue
- Immune cell contributions to obesity

RELEVANT PUBLICATIONS

Felix JB, Cox AR, Hartig SM. **Acetyl-CoA and Metabolite Fluxes Regulate White Adipose Tissue Expansion.** Trends Endocrinol Metab. 2021 May;32(5):320-332. PMID: 33712368.

Cox AR, Chernis N, ... Hartig SM. **STAT1 Dissociates Adipose Tissue Inflammation From Insulin Sensitivity in Obesity.** Diabetes. 2020 Dec;69(12):2630-2641. PMID: 32994273.

Bader DA, Hartig SM, ... McGuire SE. **Mitochondrial pyruvate import is a metabolic vulnerability in androgen receptor-driven prostate cancer.** Nat Metab. 2019 Jan;1(1):70-85. PMID: 31198906.

ACADEMIC APPOINTMENT

Assistant Professor,
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RAJAGOPAL V. SEKHAR, MD

PRIMARY DEPT. AND SECTION

Medicine - Endocrinology, Diabetes and Metabolism

RESEARCH INTERESTS

- Bioenergetics and mitochondrial metabolism
- Aging
- Strength, sarcopenia and sarcopenic obesity in aging and HIV
- Insulin resistance and beta cell function
- Diabetic complications
- Metabolic syndrome
- Metabolic complications of HIV
- Obesity
- Cognitive impairment in Alzheimer's disease, HIV and diabetes
- Inflammation and endothelial dysfunction
- Non-Alcoholic Fatty Liver Disease

RESEARCH OPPORTUNITIES FOR TRAINEES

- Human clinical trials in aging, cognition, diabetes and HIV
- Rodent and cellular studies to complement human trials to investigate mechanisms

RELEVANT PUBLICATIONS

Sekhar RV, Patel SG, Guthikonda AP, et al. (2011). **Deficient Synthesis of Glutathione Underlies Oxidative Stress in Aging and Can Be Corrected By Dietary Cysteine and Glycine Supplementation.** Am J Clin Nutr. 94(3):847-53. PMID 21795440.

Nguyen D, Sanson SL, ... Sekhar RV. (2013). **Impaired Mitochondrial Fatty Acid Oxidation and Insulin Resistance in Aging: Novel Protective Role of Glutathione.** Aging Cell. 12(3):415-25. PMID 23534396.

Sekhar RV, McKay SV, Patel SG, et al. (2011). **Glutathione Synthesis is Diminished in Patients with Uncontrolled Diabetes and Restored By Dietary Supplementation with Cysteine and Glycine.** Diabetes Care. 34(1):162-7. PMID 20929994.

ACADEMIC APPOINTMENT

Associate Professor,
Department of Medicine



ADDITIONAL TITLE

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DENNIS T. VILLAREAL, MD

PRIMARY DEPT. AND SECTION

Medicine - Endocrinology, Diabetes and Metabolism

RESEARCH INTERESTS

- Sarcopenia
- Sarcopenic obesity
- Frailty

RESEARCH OPPORTUNITIES FOR TRAINEES

- Role of weight loss and exercise therapies in reversing sarcopenic obesity and frailty
- Mechanisms for the reversal of sarcopenic obesity and frailty by intensive lifestyle interventions
- Body composition and bone quality changes in response to intensive lifestyle intervention in older adults with obesity

RELEVANT PUBLICATIONS

Colleluori G, Aguirre L, ... Villareal DT. (2019). **Aerobic Plus Resistance Exercise in Obese Older Adults Improves Muscle Protein Synthesis and Preserves Myocellular Quality Despite Weight Loss.** *Cell Metabolism.* 30(2):261-273.e6. PMID 31279675.

Batsis JA, Villareal DT. (2018). **Sarcopenic Obesity in Older Adults: Aetiology, Epidemiology and Treatment Strategies.** *Nat Rev Endocrinol.* 14(9):513-537. PMID 30065268.

Villareal DT, Aguirre L, Gurney AB, et al. (2017). **Aerobic or Resistance Exercise, or Both, in Dieting Obese Older Adults.** *N Engl J Med.* 376(20):1943-1955. PMID 28514618.

ACADEMIC APPOINTMENT

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ADDITIONAL TITLE

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REINA VILLAREAL, MD

PRIMARY DEPT. AND SECTION

Medicine - Endocrinology, Diabetes and Metabolism

RESEARCH INTERESTS

- CYP450 enzyme genes in gonadal hormone and bone metabolism
- Effect of weight loss and inhibition of aromatase activity on hormonal profile obese men with hypogonadism
- Bone quality in patients with type 2 diabetes mellitus
- Bone metabolism in obese metabolically healthy and unhealthy adults

RESEARCH OPPORTUNITIES FOR TRAINEES

- Aromatase inhibitors and weight loss in severely obese men with hypogonadism
- Testosterone therapy and bone quality in men with diabetes mellitus and hypogonadism
- A comparison of bone health in metabolically healthy and metabolically unhealthy obese women

RELEVANT PUBLICATIONS

Colleluori G, Aguirre L, ... Armamento-Villareal R. Testosterone Therapy Effects on Bone Mass and Turnover in Hypogonadal Men with Type 2 Diabetes. J Clin Endocrinol Metab. 2021 Jul 13;106(8):e3058-e3068. PMID: 33735389.

Vigevano F, Gregori G, ... Armamento-Villareal R. In Men With Obesity, T2DM Is Associated With Poor Trabecular Microarchitecture and Bone Strength and Low Bone Turnover. J Clin Endocrinol Metab. 2021 Apr 23;106(5):1362-1376. PMID: 33537757.

Colleluori G, Chen R, ... Armamento-Villareal R. Aromatase Inhibitors Plus Weight Loss Improves the Hormonal Profile of Obese Hypogonadal Men Without Causing Major Side Effects. Front Endocrinol (Lausanne). 2020 May 15;11:277. PMID: 32499757.

ACADEMIC APPOINTMENT

Professor,
Department of Medicine



ADDITIONAL TITLE

Staff Physician,
Medical Care Line,
Michael E. DeBakey VA Medical
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CHRIS AMOS, PHD

PRIMARY DEPT. AND SECTION

Medicine - Epidemiology and Population Sciences

RESEARCH INTERESTS

- Genetic epidemiology of cancer and autoimmune disease
- Machine learning tools in gene-environment interaction
- Liver diseases
- Evaluation of risk through family studies
- Integrative analysis for genomic risk modeling

RESEARCH OPPORTUNITIES FOR TRAINEES

- Genomics analysis of relapse from lung cancer
- Mendelian randomization for common cancers
- Longitudinal analysis of liver cancer development
- Machine learning tools for risk modeling in vasculopathies

RELEVANT PUBLICATIONS

Gorlov IP, Gorlova OY, Amos CI. (2019). **Untouchable Genes in the Human Genome: Identifying Ideal Targets for Cancer Treatment.** *Cancer Genet.* 231-232:67-79. PMID 30803560.

Kamal Y, Cheng C, Frost HR, Amos CI. (2018). **Predictors of Disease Aggressiveness Influence Outcome from Immunotherapy Treatment in Renal Clear Cell Carcinoma.** *Oncoimmunology.* 8(1):e1500106. PMID 30546942.

Frost HR, Amos CI. (2018). **A Multi-omics Approach for Identifying Important Pathways and Genes in Human Cancer.** *BMC Bioinformatics.* 19 (1):479. PMID 30541428.

ACADEMIC APPOINTMENTS

Professor and Interim Chief,
Department of Medicine



ADDITIONAL TITLES

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AARON P. THRIFT, PHD

PRIMARY DEPT. AND SECTION

Medicine - Epidemiology and Population Sciences

RESEARCH INTERESTS

- Epidemiology and outcomes of gastrointestinal cancers and pre-cancer conditions
- Genetic epidemiology
- Risk prediction
- Descriptive epidemiology

RESEARCH OPPORTUNITIES FOR TRAINEES

- Gut microbiome in cirrhosis and hepatocellular carcinoma
- Risk factors for neoplastic progression in patients with Barrett's esophagus
- Germline genetics of advanced liver disease in minority populations

RELEVANT PUBLICATIONS

Dong J, Buas MF, ... Thrift AP. (2018). **Determining Risk of Barrett's Esophagus and Esophageal Adenocarcinoma Based on Epidemiologic Factors and Genetic Variants.** *Gastroenterology*. 154(5):1273-1281.e3. PMID 29247777.

Dong J, Levine DM, ... Thrift AP. **Interactions Between Genetic Variants and Environmental Factors Affect Risk of Esophageal Adenocarcinoma and Barrett's Esophagus.** *Clin Gastroenterol Hepatol*. 16(10):1598-1606.e4. PMID 29551738.

Cotton CC, Haidry R, Thrift AP, et al. (2018). **Development of Evidence-Based Surveillance Intervals After Radiofrequency Ablation of Barrett's Esophagus.** *Gastroenterology*. 155(2):316-326.e6. PMID 29655833.

ACADEMIC APPOINTMENT

Assistant Professor,
Department of Medicine



ADDITIONAL TITLE

Investigator,
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HASHEM EL-SERAG, MD, MPH

PRIMARY DEPT. AND SECTION

Medicine - Gastroenterology and Hepatology

RESEARCH INTERESTS

- Barrett's esophagus
- Viral hepatitis
- Chronic liver disease
- Hepatocellular carcinoma
- Genetic epidemiology
- Dyspepsia and gastroesophageal reflux disease
- Screening and surveillance of GI and liver cancers
- Epidemiology and outcomes of digestive disorders

RESEARCH OPPORTUNITIES FOR TRAINEES

- Risk factors of hepatocellular carcinoma
- Biomarkers of hepatocellular carcinoma
- Prevalence and risk factors for non-alcoholic fatty liver disease
- Predictive algorithms for surveillance and diagnosis of hepatocellular carcinoma
- Risk factors for Barrett's esophagus progression into cancer
- Meta analyses

RELEVANT PUBLICATIONS

Tayob N, Corley DA, ... El-Serag HB. Validation of the Updated Hepatocellular Carcinoma Early Detection Screening Algorithm in a Community-Based Cohort of Patients With Cirrhosis of Multiple Etiologies. Clin Gastroenterol Hepatol. 2021 Jul;19(7):1443-1450.e6. PMID: 32768590.

Nguyen TH, Thrift AP, Rugge M, El-Serag HB. Prevalence of Barrett's esophagus and performance of societal screening guidelines in an unreferred primary care population of U.S. veterans. Gastrointest Endosc. 2021 Feb;93(2):409-419.e1. PMID: 32565183.

El-Serag HB, Kanwal F, ... Singal AG; Texas Hepatocellular Carcinoma Consortium. Risk Factors for Cirrhosis in Contemporary Hepatology Practices- Findings From the Texas Hepatocellular Carcinoma Consortium Cohort. Gastroenterology. 2020 Jul;159(1):376-377. PMID: 32234536.

ACADEMIC APPOINTMENTS

Professor and Chair,
Margaret M. and Albert B. Alkek
Department of Medicine



ADDITIONAL TITLES

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FASIHA KANWAL, MD

PRIMARY DEPT. AND SECTION

Medicine - Gastroenterology and Hepatology

RESEARCH INTERESTS

- Viral hepatitis
- Health-related quality of life
- Chronic liver disease
- Practice metrics
- Quality improvement
- Structure, processes, and outcomes of care

RESEARCH OPPORTUNITIES FOR TRAINEES

- Patient centered care for individuals with advanced liver disease
- Risk factors for hepatocellular carcinoma in non-alcoholic fatty liver disease
- Texas Medical Center Digestive Diseases Center for Gastrointestinal Development, Infection and Injury
- Risk stratification for and early detection of liver cancer
- Personalized surveillance program for hepatocellular carcinoma
- Risk of hepatocellular cancer after virological cure with direct acting antiviral agents in individuals with hepatitis C

RELEVANT PUBLICATIONS

Kanwal F, Tapper EB, Ho C, et al. (2019). Development of Quality Measures in Cirrhosis by the Practice Metrics Committee of the American Association for the Study of Liver Diseases. *Hepatology*. 69(4):1787-1797. PMID 30586188.

Kanwal F, Kramer JR, Mapakshi S, et al. (2018). Risk of Hepatocellular Cancer in Patients With Non-Alcoholic Fatty Liver Disease. *Gastroenterology*. 155 (6):1828-1837.e2. PMID 30144434.

Kanwal F, Kramer J, Asch SM, et al. (2017). Risk of Hepatocellular Cancer in HCV Patients Treated With Direct-Acting Antiviral Agents. *Gastroenterology*. 153(4):996-1005.e1. PMID 28642197.

ACADEMIC APPOINTMENTS

Professor and Section Chief,
Department of Medicine



ADDITIONAL TITLES

Editor-in-Chief,
Clinical Gastroenterology and
Hepatology

Co-Director,
Texas Medical Center Digestive
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Investigator,
Clinical Epidemiology and
Comparative Effectiveness
Program,
Center for Innovations in
Quality, Effectiveness and
Safety (IQuESt),
Michael E. DeBakey VA Medical
Center



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Kanwal@bcm.edu



JASON MILLS, MD, PHD

PRIMARY DEPT. AND SECTION

Medicine - Gastroenterology and Hepatology

RESEARCH INTERESTS

- Metaplasia
- Precancerous lesions
- Molecular/cellular tumorigenesis
- Gastrointestinal (GI) stem cells
- GI inflammation
- GI repair and regeneration
- Barrett's esophagus
- Patient-derived organoids
- Multi-omics approach to disease

RESEARCH OPPORTUNITIES FOR TRAINEES

- Using patient-derived organoids to study tumorigenesis and metaplasia
- Understanding conserved mechanisms underlying recruitment of stem cells for regeneration and tumorigenesis (aka paligenosis)
- Stem cell differentiation into GI functional lineages (e.g., parietal cells and chief cells)

RELEVANT PUBLICATIONS

Miao ZF, Sun JX, ... Mills JC. DDIT4 licenses only healthy cells to proliferate during injury-induced metaplasia. *Gastroenterology* 2021. 160:260-271. PMID: 32956680.

Miao ZF, Lewis MA, ... Mills JC. A Dedicated Evolutionarily Conserved Molecular Network Licenses Differentiated Cells to Return to the Cell Cycle. *Dev Cell*. 2020 55:178-194. PMID: 32768422.

Miao ZF, Adkins-Threats M, ... Mills JC. A Metformin-Responsive Metabolic Pathway Controls Distinct Steps in Gastric Progenitor Fate Decisions and Maturation. *Cell Stem Cell*. 2020 26:910-925 PMID: 32243780.

ACADEMIC APPOINTMENT

Herman Brown Endowed
Professor and Chief of
Research,
Department of Medicine



ADDITIONAL TITLE

Co-Director,
Texas Medical Center Digestive
Disease Center (TMC DDC)



CONTACT ME AT



Jason.Mills@bcm.edu



LAURA A. PETERSEN, MD, MPH

PRIMARY DEPT. AND SECTION

Medicine - Health Services Research

RESEARCH INTERESTS

- Assessing how health care policy, organization, and financing affects the quality and safety of health care
- Health care quality measurement methods
- Implementing research into practice

RESEARCH OPPORTUNITIES FOR TRAINEES

- Measuring quality and value in health care
- Studying impacts of policies such as Medicaid expansion on health care quality

RELEVANT PUBLICATIONS

Petersen LA, Simpson K, Pietz K, et al. (2013). **Effects of Individual Physician-Level and Practice-Level Financial Incentives on Hypertension Care: A Randomized Trial.** JAMA. 310(10):1042-50. PMID 24026599.

Hwang KO, Thomas EJ, Petersen LA. (2018). **Use of Home Blood Pressure Results for Assessing the Quality of Care for Hypertension.** JAMA. 320(17):1753-4. PMID 30398609.

O'Mahen P, Petersen LA. (2021). **To Battle COVID-19's Twin Economic and Health Crises, Medicaid Needs Flexible Funding Structures for Stabilization.** J Gen Intern Med. 36(4):1067-70. PMID 33483809.

ACADEMIC APPOINTMENTS

Professor and Section Chief,
Department of Medicine



ADDITIONAL TITLES

Associate Chief of Staff for
Research,
Michael E. DeBakey VA Medical
Center

Director,
Center for Innovations in
Quality, Effectiveness, and
Safety (IQuEST),
Michael E. DeBakey VA Medical
Center



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 LauraP@bcm.edu



HARDEEP SINGH, MD, MPH

PRIMARY DEPT. AND SECTION

Medicine - Health Services Research

RESEARCH INTERESTS

- Understanding and reducing diagnostic errors
- Use of health information technology to improve health care
- Safety of electronic health record implementation and use

RESEARCH OPPORTUNITIES FOR TRAINEES

- Measurement of patient safety outcomes, including missed, delayed and incorrect diagnosis using multiple methods
- Research on health care improvement strategies and implementation science

RELEVANT PUBLICATIONS

Sittig DF, Singh H. (2012). **Electronic Health Records and National Patient-Safety Goals.** N Engl J Med. 367 (19): 1854-60. PMID 23134389.

Singh H, Graber ML. (2015). **Improving Diagnosis in Health Care - The Next Imperative for Patient Safety.** N Engl J Med. 373 (26): 2493-5. PMID 26559457.

Singh H, Giardina TD, Meyer AN, et al. (2013). **Types and Origins of Diagnostic Errors in Primary Care Settings.** JAMA Intern Med. 173 (6): 418-25. PMID 23440149.

ACADEMIC APPOINTMENT

Professor,
Department of Medicine



ADDITIONAL TITLES

Chief,
Health Policy, Quality and
Informatics
Center for Innovations in
Quality, Effectiveness and
Safety (IQuEST),
Michael E. DeBakey VA Medical
Center

Director,
Diagnosis Improvement Safety
Center (DIScovery)



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MATTHEW J. ELLIS, MB, BCHIR, BSC, PHD

PRIMARY DEPT. AND SECTION

Medicine - Hematology and Oncology

RESEARCH INTERESTS

- Breast cancer oncology
- Breast cancer proteogenomics
- Metastatic breast cancer
- Clinical trials

RESEARCH OPPORTUNITIES FOR TRAINEES

- We have a wide range of projects that integrate clinical investigations, bioinformatics and laboratory based studies.
- The objectives are to develop better diagnostic algorithms that drive more effective treatments. Projects will be individualized to match time commitments or interests.

RELEVANT PUBLICATIONS

Ellis MJ, Ding L, Shen D, et al. (2012). **Whole-Genome Analysis Informs Breast Cancer Response to Aromatase Inhibition.** *Nature.* 486(7403):353 -60. PMID 22722193.

Mertins P, Mani DR, Ruggles KV, et al. (2016). **Proteogenomics Connects Somatic Mutations to Signalling in Breast Cancer.** *Nature.* 534 (7605):55-62. PMID 27251275.

Krug K, Jaehnig EJ, ... Ellis MJ, Gillette MA; Clinical Proteomic Tumor Analysis Consortium. **Proteogenomic Landscape of Breast Cancer Tumorigenesis and Targeted Therapy.** *Cell.* 2020 Nov 25;183(5):1436-1456.e31. PMID: 33212010.

ACADEMIC APPOINTMENTS

Professor,
Departments of Medicine and
Molecular & Cellular Biology

Director,
Lester and Sue Smith Breast
Center



ADDITIONAL TITLES

McNair Scholar



CONTACT ME AT



Matthew.Ellis@bcm.edu



H. COURTNEY HODGES, PHD

PRIMARY AND SECONDARY DEPT.

Molecular & Cellular Biology
Medicine - Hematology and Oncology

RESEARCH INTERESTS

- Epigenetic dysfunction in pediatric and adult malignancies
- Cancer metabolism
- Chromatin and chemical biology
- 3D cell culture modeling

RESEARCH OPPORTUNITIES FOR TRAINEES

- Mechanisms and vulnerabilities related to transcriptional deregulation in pediatric and adult malignancies
- Cross-talk between epigenetic and metabolic tumor suppression mechanisms
- Improving genomic modeling of cancer using 3D culture of organoids/spheroids
- Collaborative studies with Rice Bioengineering faculty focused on drug delivery, biomaterials, and organ-on-a-chip models

RELEVANT PUBLICATIONS

Smith EA, Hodges HC. (2019). **The Spatial and Genomic Hierarchy of Tumor Ecosystems Revealed by Single-Cell Technologies.** Trends Cancer. 5(7):411-425. PMID 31311656.

Hodges HC, Stanton BZ, Cermakova K, et al. (2018). **Dominant-Negative SMARCA4 Mutants Alter the Accessibility Landscape of Tissue-Unrestricted Enhancers.** Nat Struct Mol Biol. 25(1):61-72. PMID 29323272.

Cermakova K, Demeulemeester J, ... Hodges HC, Veverka V. **A ubiquitous disordered protein interaction module orchestrates transcription elongation.** Science (in press, 2021).

ACADEMIC APPOINTMENTS

Assistant Professor,
Departments of Molecular &
Cellular Biology and
Medicine

Assistant Professor (adjunct),
Department of Bioengineering,
Rice University



ADDITIONAL TITLES

Member,
Dan L. Duncan Cancer Center

CPRIT Scholar

V Scholar,
Baylor College of Medicine

Member,
Center for Cancer Epigenetics,
MD Anderson Cancer Center



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CHodges@bcm.edu



VALENTINA HOYOS, MD

PRIMARY DEPT. AND SECTION

Medicine - Hematology and Oncology

RESEARCH INTERESTS

- Cellular and gene therapies
- Immunotherapies for breast cancer
- T cell genetic engineering

RESEARCH OPPORTUNITIES FOR TRAINEES

- Adoptive T cell therapies for the treatment of breast cancer
- Genetic engineering of T cells to enhance their anti-tumor function
- Overcoming the immune-suppressive breast cancer microenvironment

RELEVANT PUBLICATIONS

Hoyos V, Savoldo V, Quintarelli C, et al. (2010). **Engineering CD19- Specific T Lymphocytes with Interleukin-15 and a Suicide Gene to Enhance Their Anti-Lymphoma/Leukemia Effects and Safety.** *Leukemia*. 24(6):1160-70. PMID 20428207.

Hoyos V, Del Bufalo F, Yagyu S, et al. (2015). **Mesenchymal Stromal Cells for Linked Delivery of Oncolytic and Apoptotic Adenoviruses to Non-Small-Cell Lung Cancers.** *Mol Ther*. 23(9):1497-506. PMID 26084970.

Bajgain P, Tawinwung S, D'Elia L, et al. (2018). **CAR T Cell Therapy for Breast Cancer: Harnessing the Tumor Milieu to Drive T Cell Activation.** *J Immunother Cancer*. 6(1):34. PMID 29747685.

ACADEMIC APPOINTMENT

Assistant Professor,
Center for Cell and Gene
Therapy,
Lester and Sue Smith Breast
Center



ADDITIONAL TITLES

Program Director,
Cell and Gene Therapy (CAGT)
Summer Research Internship
Program

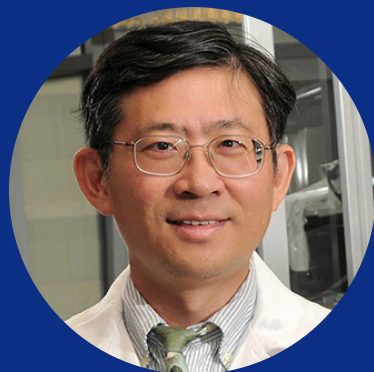


Member,
Dan L. Duncan Comprehensive
Cancer Center (DLDC)

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WEEI-CHIN LIN, MD, PHD

PRIMARY DEPT. AND SECTION

Medicine - Hematology and Oncology

RESEARCH INTERESTS

- Cell cycle regulation
- Development of cancer therapeutics
- Clinical hematology

RESEARCH OPPORTUNITIES FOR TRAINEES

- Mechanisms of cell cycle and DNA replication checkpoint defects in cancer
- Mechanisms of breast cancer metastasis and loss of estrogen receptor
- Novel targeted therapies against mutant p53 in breast cancer and ovarian cancer
- New biomarker and therapeutic target for platinum resistance in lung cancer

RELEVANT PUBLICATIONS

Ho SR, Lee YC, Ittmann MM, Lin FT, Chan KS, Lin WC. RNF144A deficiency promotes PD-L1 protein stabilization and carcinogen-induced bladder tumorigenesis. *Cancer Lett.* 2021 Nov 1;520:344-360. PMID: 34400221.

Liu K, Graves JD, Lin FT, Lin WC. Overexpression of TopBP1, a canonical ATR/Chk1 activator, paradoxically hinders ATR/Chk1 activation in cancer. *J Biol Chem.* 2021 Jan-Jun;296:100382. Erratum in: *J Biol Chem.* 2021 Jun 30;297(1):100924. PMID: 33556369.

Xiao Y, Lin FT, Lin WC. ACTL6A promotes repair of cisplatin-induced DNA damage, a new mechanism of platinum resistance in cancer. *Proc Natl Acad Sci U S A.* 2021 Jan 19;118(3):e2015808118. PMID: 33408251.

ACADEMIC APPOINTMENTS

Professor,
Departments of Medicine and
Molecular & Cellular Biology



ADDITIONAL TITLES

Program Director,
Oncology Scholar Training
Program

Co-Director,
Program in Integrative
Molecular and Biomedical
Sciences



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PREMAL LULLA, MBBS

PRIMARY DEPT. AND SECTION

Medicine - Hematology and Oncology

RESEARCH INTERESTS

- T cell immunotherapy
- Hematopoietic stem cell transplants

RESEARCH OPPORTUNITIES FOR TRAINEES

- Immune reconstitution post-allogeneic hematopoietic stem cell transplantation
- Identification of novel leukemia antigens for T cell immunotherapy
- Clonal hematopoiesis and its effects on adaptive immunity

RELEVANT PUBLICATIONS

Lulla P, Heslop HE. (2017). **Fall of the Mutants: T Cells Targeting BCR-ABL**. *Blood*. 129(5):539-540. PMID 28153834.

Leung W, Workineh A, Mukhi S, et al. (2020). **Evaluation of Cyclin A1- Specific T Cells as a Potential Treatment for Acute Myeloid Leukemia**. *Blood Adv*. 4(2):387-397. PMID 31985805.

ACADEMIC APPOINTMENT

Assistant Professor,
Center for Cell and Gene
Therapy,
Department of Medicine



ADDITIONAL TITLES

Faculty,
Translational Biology and
Molecular Medicine Graduate
Program

Member,
Dan L. Duncan Comprehensive
Cancer Center (DLCCCC)



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 Lulla@bcm.edu



CARLOS RAMOS, MD

PRIMARY DEPT. AND SECTION

Medicine - Hematology and Oncology

RESEARCH INTERESTS

- Hematopoietic stem cell transplantation
- Chimeric antigen receptors for cancer therapy
- Cellular therapy for HPV-associated tumors

RESEARCH OPPORTUNITIES FOR TRAINEES

- CD19-CAR iNKT cells as therapy for B cell lymphomas
- Allogeneic CD30-CAR T cells as therapy for Hodgkin lymphoma
- Cellular therapy for HPV-associated tumors

RELEVANT PUBLICATIONS

Ramos CA, Grover NS, Beaven AW, et al. **Anti-CD30 CAR-T Cell Therapy in Relapsed and Refractory Hodgkin Lymphoma.** J Clin Oncol. 2020 Nov 10;38(32):3794-3804. PMID: 32701411.

Ramos CA, Rouce R, Robertson CS, et al. **In Vivo Fate and Activity of Second- versus Third-Generation CD19-Specific CAR-T Cells in B Cell Non-Hodgkin's Lymphomas.** Mol Ther. 2018 Dec 5;26(12):2727-2737. PMID: 30309819.

Gomes-Silva D, Ramos CA. **Cancer Immunotherapy Using CAR-T Cells: From the Research Bench to the Assembly Line.** Biotechnol J. 2018 Feb;13(2):10.1002/biot.201700097. PMID: 28960810.

ACADEMIC APPOINTMENT

Assistant Professor,
Center for Cell and Gene
Therapy,
Department of Medicine



ADDITIONAL TITLE

Member,
Dan L. Duncan Comprehensive
Cancer Center (DLDCCC)



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SANDEEP K. AGARWAL, MD, PHD

PRIMARY DEPT. AND SECTION

Medicine - Immunology, Allergy, and Rheumatology

RESEARCH INTERESTS

- Systemic sclerosis
- Rheumatoid arthritis
- Cadherin biology
- JAK-STAT signaling
- Mechanisms of fibrosis in autoimmune diseases
- Mechanisms of lung and skin fibrosis
- Contributions of macrophages and epithelial injury to fibrosis

RESEARCH OPPORTUNITIES FOR TRAINEES

- Mouse models of lung and skin fibrosis
- Cellular and molecular immunology
- Translational studies in systemic sclerosis, rheumatoid arthritis and idiopathic pulmonary fibrosis

RELEVANT PUBLICATIONS

Agarwal SK, Wu M, Huang M, et al. (2011). Toll-Like Receptor 3 Upregulation by Type I Interferon in Healthy and Scleroderma Dermal Fibroblasts. *Arthritis Res Ther.* 13(1):R3. PMID 21223583.

Pedroza M, To S, Assassi S, Wu M, Tweardy D, Agarwal SK. Role of STAT3 in skin fibrosis and transforming growth factor beta signalling. *Rheumatology (Oxford).* 2018 Oct 1;57(10):1838-1850. PMID: 29029263.

Pedroza M, Welschhans RL, Agarwal SK. (2017). Targeting of Cadherin-11 Decreases Skin Fibrosis in the Tight Skin-1 Mouse Model. *PLoS One.* 12(11):30187109. PMID 29112946.

ACADEMIC APPOINTMENTS

Associate Professor,
Department of Medicine



ADDITIONAL TITLES

Program Director,
Rheumatology Fellowship

The Cullen Trust for Health
Care Endowed Chair in
Immunology



CONTACT ME AT



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DAVID B. CORRY, MD

PRIMARY DEPT. AND SECTION

Medicine - Immunology, Allergy, and Rheumatology

RESEARCH INTERESTS

- Allergic airway disease
- Fungi
- Dementia
- Emphysema
- MicroRNAs

RESEARCH OPPORTUNITIES FOR TRAINEES

- Fungal pathogenesis of allergic airway disease
- Fungal pathogenesis of chronic cerebritis and dementia
- MicroRNA-dependent control of inflammatory lung disease
- Design and testing of novel antifungal agents

RELEVANT PUBLICATIONS

Grunig G, Warnock M, ... Corry DB. (1998). Requirement for IL-13 Independently of IL-4 in Experimental Asthma. *Science*. 282:(5397) 2261-2263. PMID 9856950.

Lee S-H, Goswami S, Grudo A, et al. (2007). Anti-Elastin Autoimmunity in Tobacco Smoking-Induced Emphysema. *Nat Med*. 13:(5)567-569. PMID 17450149.

Kheradmand F, Kiss A, ... Corry DB. (2002). A Protease Activated Pathway Underlying T Helper Cell Type 2 Commitment and Allergic Lung Disease. *J Immunol*. 169:5904-5911. PMID 12421974.

ACADEMIC APPOINTMENTS

Professor,
Departments of Medicine and
Pathology & Immunology

Vice Chair for Immunology ,
Department of Pathology &
Immunology



ADDITIONAL TITLE

Staff Physician,
Immunology,
Medical Care Line,
Michael E. DeBakey VA Medical
Center



CONTACT ME AT



DCorry@bcm.edu



THOMAS P. GIORDANO, MD, MPH

PRIMARY DEPT. AND SECTIONS

Medicine - Infectious Diseases

RESEARCH INTERESTS

- HIV clinical, outcomes and health services research
- Adherence and retention in HIV care
- HIV epidemiology and public health
- Ending the HIV epidemic
- HIV-related comorbidities

RESEARCH OPPORTUNITIES FOR TRAINEES

- Developing and testing interventions to improve retention in HIV care
- Measuring adherence and retention in HIV care
- Telehealth in HIV care
- Developing and testing epidemiology and health delivery strategies to end the HIV epidemic

RELEVANT PUBLICATIONS

Giordano TP, Gifford AL, White AC Jr, et al. **Retention in care: a challenge to survival with HIV infection.** Clin Infect Dis. 2007 Jun 1;44(11):1493-9. doi: 10.1086/516778. Epub 2007 Apr 23. PMID: 17479948.

Giordano TP, Cully J, Amico KR, et al. **A Randomized Trial to Test a Peer Mentor Intervention to Improve Outcomes in Persons Hospitalized With HIV Infection.** Clin Infect Dis. 2016 Sep 1;63(5):678-686. doi: 10.1093/cid/ciw322. Epub 2016 May 23. PMID: 27217266; PMCID: PMC4981755.

Dandachi D, de Groot A, ... Giordano TP. **Reliability and Validity of a Brief Self-Report Adherence Measure among People with HIV Experiencing Homelessness and Mental Health or Substance Use Disorders.** AIDS Behav. 2021 Feb;25(2):322-329. doi: 10.1007/s10461-020-02971-6. PMID: 32666245.

ACADEMIC APPOINTMENTS

Professor and Section Chief,
Department of Medicine



ADDITIONAL TITLES

Director, Texas Developmental
Center for AIDS Research

Chief, Clinical Effectiveness
and Population Health
Program, Center for
Innovations in Quality,
Effectiveness and Safety
(IQuEst),
Michael E. DeBakey VA Medical
Center



CONTACT ME AT

 TPG@bcm.edu



INDIRA MYSOREKAR, PHD

PRIMARY DEPT. AND SECTIONS

Medicine - Infectious Diseases

RESEARCH INTERESTS

- Urinary tract infections and mucosal immunity in the urinary bladder
- Viral infections in pregnancy (Zika virus, SARS-CoV-2, HIV)
- Maternal microbiome, fetal immunity, and reproductive immunology
- infectious disease mechanisms

RESEARCH OPPORTUNITIES FOR TRAINEES

- Investigating biomarkers for inflammatory changes that occur in aging bladder
- Testing how SARS-CoV-2 infection alters hypertensive pathways in pregnant women
- Investigate bacterial metabolite that may drive fetal tolerance

RELEVANT PUBLICATIONS

Joshi CS, Mora A, Felder PA, Mysorekar IU. **NRF2 promotes urothelial cell response to bacterial infection by regulating reactive oxygen species and RAB27B expression.** Cell Rep. 2021 Oct 19;37(3):109856. PMID: 34686330.

Verma S, Joshi CS, Silverstein RB, He M, Carter EB, Mysorekar IU. **SARS-CoV-2 colonization of maternal and fetal cells of the human placenta promotes alteration of local renin-angiotensin system.** Med (N Y). 2021 May 14;2(5):575-590.e5. PMID: 33870242; PMCID: PMC8043616.

Ligon MM, Wang C, DeJong EN, Schulz C, Bowdish DME, Mysorekar IU. **Single cell and tissue-transcriptomic analysis of murine bladders reveals age- and TNF α -dependent but microbiota-independent tertiary lymphoid tissue formation.** Mucosal Immunol. 2020 Nov;13(6):908-918. PMID: 32366865; PMCID: PMC7572484.

ACADEMIC APPOINTMENTS

E. L. Wagner Endowed
Professor,
Department of Medicine

Professor, Department of
Molecular Virology and
Microbiology and Huffington
Center for Aging



ADDITIONAL TITLES

Chief of Basic and
Translational Research,
Section of Infectious Diseases,
Department of Medicine



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SANJIV SUR, MD

PRIMARY DEPT. AND SECTION

Medicine - Immunology, Allergy, and Rheumatology

RESEARCH INTERESTS

- Role of cytosolic DNA-multiprotein interactome in allergic airway inflammation
- Role of cytosolic DNA sensor in allergic airway inflammation
- Allergic lung inflammation-induced oxidative DNA damage in the brain as a risk factor for Alzheimer's disease

RESEARCH OPPORTUNITIES FOR TRAINEES

- Immune and molecular mechanisms of asthma and allergic inflammation
- Biologic therapies for treatment of asthma
- Role of epigenetics and DNA damage in allergic inflammation

RELEVANT PUBLICATIONS

Hosoki K, Chakraborty A, Sur S. (2020). **Molecular Mechanisms and Epidemiology of COVID-19 from an Allergist's Perspective.** J Allergy Clin Immunol. S0091-6749(20)30799-5. PMID 32624257.

Tian B, Hosoki K, Liu Z, et al. (2019). **Mucosal Bromodomain-Containing Protein 4 Mediates Aeroallergen-Induced Inflammation and Remodeling.** J Allergy Clin Immunol 143(4):1380-1394. PMID 30321559.

Wu AY, Sur S, Grant JA, Tripple JW. (2019). **Interleukin-4/Interleukin-13 Versus Interleukin-5: A Comparison of Molecular Targets in Biologic Therapy for the Treatment of Severe Asthma.** Curr Opin Allergy Clin Immunol. 19(1):30-37. PMID 30407206.

ACADEMIC APPOINTMENT

Professor,
Department of Medicine



ADDITIONAL TITLES

Director,
Clinical Allergy and
Immunology Services in
Section of Immunology,
Allergy and Rheumatology

Director,
Human Immunology Research
Biology of Inflammation Center



CONTACT ME AT



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BARBARA TRAUTNER, MD, PHD

PRIMARY DEPT. AND SECTIONS

Medicine - Infectious Diseases and Health Services
Research

RESEARCH INTERESTS

- Urinary tract infections
- Healthcare-associated infections
- Antimicrobial stewardship
- Bacteriophage
- Asymptomatic bacteriuria

RESEARCH OPPORTUNITIES FOR TRAINEES

- VA HSR&D: Less is more: improving antibiotic stewardship for asymptomatic bacteriuria
- AHRQ R01: reducing use of antibiotics without a prescription among outpatients in a safety net healthcare system
- VA RR&D: Bacteriophage to treat multidrug-resistant UTI in persons with spinal cord injury
- VA seed grant: Protecting Veterans from Harms of Inappropriate Self-Treatment for COVID-19

RELEVANT PUBLICATIONS

Drekonja DM, Trautner B, Amundson C, Kuskowski M, Johnson JR. **Effect of 7 vs 14 Days of Antibiotic Therapy on Resolution of Symptoms Among Afebrile Men With Urinary Tract Infection: A Randomized Clinical Trial.** JAMA. 2021 Jul 27;326(4):324-331. PMID: 34313686.

Goebel MC, Trautner BW, Grigoryan L. **The Five Ds of Outpatient Antibiotic Stewardship for Urinary Tract Infections.** Clin Microbiol Rev. 2021 Aug 25;34(4):e0000320. PMID: 34431702.

Grigoryan L, Germanos G, ...Trautner BW. **Use of Antibiotics Without a Prescription in the U.S. Population: A Scoping Review.** Ann Intern Med. 2019 Aug 20;171(4):257-263. PMID: 31330541.

ACADEMIC APPOINTMENTS

Professor,
Departments of Medicine,
Surgery, and
Molecular Virology & Biology



ADDITIONAL TITLES

Director of Clinical and Health
Services Research,
Department of Surgery

Investigator,
Behavioral Health and
Implementation Program,
Center for Innovations in
Quality, Effectiveness and
Safety (IQEST),
Michael E. DeBakey VA Medical
Center



CONTACT ME AT



Trautner@bcm.edu



NICOLA (NICK) HANANIA, MD

PRIMARY DEPT. AND SECTION

Medicine - Pulmonary, Critical Care, and Sleep Medicine

RESEARCH INTERESTS

- Airway pharmacology
- COPD comorbidities
- Airway biomarkers
- Bronchodilators
- Cohort studies, clinical and translational trials: asthma and chronic obstructive pulmonary disease (COPD)

RESEARCH OPPORTUNITIES FOR TRAINEES

- Asthma and COPD clinical trials and observational studies
- Access to large databases of ongoing studies in asthma and COPD (ACRC Network and COPD Gene Network)
- Quality improvement projects – COPD readmissions
- Aging in asthma and COPD

RELEVANT PUBLICATIONS

Parulekar AD, Martinez C, ... Hanania NA. (2017). Examining the Effects of Age on Health Outcomes of Chronic Obstructive Pulmonary Disease: Results From the Genetic Epidemiology of Chronic Obstructive Pulmonary Disease Study and Evaluation of Chronic Obstructive Pulmonary Disease Longitudinally to Identify Predictive Surrogate Endpoints Cohorts. *J Am Med Dir Assoc.* 18 (12):1063-68. PMID: 29169736.

Hanania NA, Korenblat P, Chapman KR, et al. (2016). Efficacy and Safety of Lebrikizumab in Patients with Uncontrolled Asthma (LAVOLTA I and LAVOLTA II): Replicate, Phase 3, Randomised, Double-Blind, Placebo-Controlled Trials. *Lancet Respir Med.* 4(10):781-96. PMID: 27616196.

Hanania NA, Wenzel S, Rosen K, et al.. (2013). Exploring the Effects of Omalizumab in Allergic Asthma: An Analysis of Biomarkers in the EXTRA Study. *Am J Respir Crit Care Med.* 187(8):804-11. PMID: 23471469.

ACADEMIC APPOINTMENT

Associate Professor,
Department of Medicine



ADDITIONAL TITLES

Director,
Airways Clinical Research
Center

Member,
Faculty Senate

Director,
Asthma and COPD Clinic,
Ben Taub Hospital

Deputy Editor,
Respiratory Medicine

Associate Editor,
Current Opinion in Pulmonary
Medicine

Editorial Board,
Pulmonary Pharmacology &
Therapeutics and
Therapeutic Advances in
Chronic Disease



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FARRAH KHERADMAND, MD

ACADEMIC APPOINTMENTS

Nancy Chang, PhD Endowed
Professorship for the Biology of
Inflammation Center,
Department of Medicine

Co-Director,
Clinical Scientist Training
Program,
Graduate School of Biomedical
Sciences



ADDITIONAL TITLE

Staff Physician,
Pulmonary and Critical Care,
Medical Service Line,
Michael E. DeBakey VA Medical
Center



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PRIMARY DEPT. AND SECTION

Medicine - Pulmonary, Critical Care, and Sleep
Medicine

RESEARCH INTERESTS

- Immune cells in lung disease: COPD and asthma
- Inflammation and biomarkers in the lungs
- Models of lung cancer

RESEARCH OPPORTUNITIES FOR TRAINEES

- Lung immunity under normal or diseased conditions
- Immune responses to lung tumors

RELEVANT PUBLICATIONS

Le DT, Huynh TR, ... Kheradmand F, Tyner JJ, Paust S. **Natural killer cells and cytotoxic T lymphocytes are required to clear solid tumor in a patient-derived xenograft.** JCI Insight. 2021 Jul 8;6(13):e140116. PMID: 34081628.

Wu Y, Zeng Z, ... Kheradmand F, Corry DB. **Candida albicans elicits protective allergic responses via platelet mediated T helper 2 and T helper 17 cell polarization.** Immunity. 2021 Sep 3:S1074-7613(21)00339-3. PMID: 34506733.

Madison MC, Landers CT, ... Kheradmand F. **Electronic cigarettes disrupt lung lipid homeostasis and innate immunity independent of nicotine.** J Clin Invest. 2019 Oct 1;129(10):4290-4304. PMID: 31483291.



IVAN O. ROSAS, MD

PRIMARY DEPT. AND SECTION

Medicine - Pulmonary, Critical Care, and Sleep
Medicine

RESEARCH INTERESTS

The long-term goal of our pulmonary research program is to better understand pathologic mechanisms that contribute to development and progression of parenchymal lung disease thereby enabling us to develop novel diagnostic and therapeutic strategies. Our clinical research studies have shown that subclinical pulmonary fibrosis can be detected in at-risk populations including families affected with pulmonary fibrosis, smokers and patients affected with rheumatoid arthritis. These studies are transformative as they provide critical evidence that prevention is feasible in common parenchymal lung diseases associated with high morbidity and mortality. Our mechanistic research studies focus on Idiopathic Pulmonary Fibrosis (IPF) and Chronic Obstructive Pulmonary Disease (COPD), we employ cutting edge genomic technologies and animal models to determine how select molecular derangements contribute to development and progression of lung disease

RESEARCH OPPORTUNITIES FOR TRAINEES

- Detection of subclinical interstitial lung disease in at risk populations using molecular markers
- Phenotypic and molecular overlap of primary and inflammatory lung fibrosis
- Validation of IPF and COPD molecular targets identified through single-cell RNA sequencing

RELEVANT PUBLICATIONS

Doyle TJ, Hunninghake GM, Rosas IO. (2012). **Subclinical Interstitial Lung Disease: Why You Should Care.** Am J Respir Crit Care Med. 185(11):1147-53. PMID 22366047.

Morse D, Rosas IO. (2014). **Tobacco Smoke-Induced Lung Fibrosis and Emphysema.** Annu Rev Physiol. 76:493-513. PMID 24274738.

Adams TA, Schupp JC, Poli S, et al. (2019). **Single Cell RNA-seq Reveals Ectopic and Aberrant Lung Resident Cell Populations in Idiopathic Pulmonary Fibrosis.** <http://dx.doi.org/10.1101/759902>.

ACADEMIC APPOINTMENTS

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ROLANDO E. RUMBAUT, MD, PHD

ACADEMIC APPOINTMENTS

Professor,
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Vice Chair for Research,
Department of Medicine



ADDITIONAL TITLES

Deputy Associate Chief of
Staff/Research,
Michael E. DeBakey VA Medical
Center

Director,
Center for Translational
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Diseases (CTRID)



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PRIMARY DEPT. AND SECTION

Medicine - Pulmonary, Critical Care, and Sleep
Medicine

RESEARCH INTERESTS

- Sepsis
- Microvascular thrombosis
- Inflammation

RESEARCH OPPORTUNITIES FOR TRAINEES

- Microvascular thrombosis in experimental sepsis
- Mechanisms of platelet-endothelial interactions in inflammation
- Role of platelets in inflammation

RELEVANT PUBLICATIONS

De La Cruz A, Hargrave A, Magadi S, Courson JA, Landry PT, Zhang W, Lam FW, Bray MA, Smith CW, Burns AR, Rumbaut RE. **Platelet and Erythrocyte Extravasation across Inflamed Corneal Venules Depend on CD18, Neutrophils, and Mast Cell Degranulation.** Int J Mol Sci. 2021 Jul 8;22(14):7360. PMID: 34298979.

Courson JA, Hanlon SD, Bray MA, Lam FW, Burns AR, Rumbaut RE. **Serial block-face scanning electron microscopy: A provocative technique to define 3-dimensional ultrastructure of microvascular thrombosis.** Thromb Res. 2020 Dec;196:519-522. PMID: 33099176.

Bray MA, Sartain SE, Gollamudi J, Rumbaut RE. **Microvascular thrombosis: experimental and clinical implications.** Transl Res. 2020 Nov;225:105-130. PMID: 32454092.



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ACADEMIC APPOINTMENT

Associate Professor,
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ADDITIONAL TITLE

Nephrologist,
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PRIMARY DEPT. AND SECTION

Medicine - Nephrology

RESEARCH INTERESTS

- Health services research in nephrology
- Cardiovascular disease and obesity in CKD
- Systematic reviews in nephrology

RESEARCH OPPORTUNITIES FOR TRAINEES

- Trainees would have the opportunity to work on various research projects using large national databases
- Participate and lead systematic reviews

RELEVANT PUBLICATIONS

Navaneethan SD, Akeroyd JM, Ramsey D, et al. **Facility-Level Variations in Kidney Disease Care among Veterans with Diabetes and CKD.** Clin J Am Soc Nephrol. 2018 Dec 7;13(12):1842-1850. PMID: 30498000.

Navaneethan SD, Jolly SE, Schold JD, et al. (2017). **Pragmatic Randomized, Controlled Trial of Patient Navigators and Enhanced Personal Health Records in CKD.** Clin J Am Soc Nephrol. 12(9):1418- 1427. PMID 28778854.

Schauer PR, Bhatt DL, Kirwan JP, et al. (2017). **Bariatric Surgery Versus Intensive Medical Therapy for Diabetes - 5-Year Outcomes.** N Engl J Med. 376(7):641-651. PMID 28199805.