The 7th Annual

SyNeRgY

Faculty Research Resource Guide

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Tulane University

SCHOOL OF MEDICINE

This “faculty research resource book” is a compilation of faculty research interests and expertise. Please feel free to use it for notes, contact information, etc.

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Alphabetical List of Faculty in Resource Guide

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Kahn, Marc
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Katakam, Prasad
Kaushal, Deepak
Khismatullin, Damir
Killackey, Mary
Kissinger, Patty
Klingsberg, Ross
Kordjamshidi, Parisa
Krousel-Wood, Tonette
Lacey, Michelle
Lazarus , Cathy
Lederer, Alyssa
Lichtveld, Maureen
Lindsey, Sarah
Liu, Hongbing
Machado, Heather
Maclean, Andrew

Mauvais-Jarvis, Franck
McLachlan, James
Meade, Peter
Meadows, Stryder
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Mielke, Howard
Miller, Charles
Mohan, Mahesh
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Morris, Gilbert
Moses, Lina
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Navar, L Gabriel
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Silberstein, Jonathan
Simon, Eric
Stewart, Gregory
Summa, Brian
Taskar, Varsha
Tasker, Jeff
Teran, Federico
Traina-Dorge, Vicki
Veazey, Ronald
Verne, George
Wang, Yu-Ping
Wang, Shusheng
Weiner, Roy
Wenk, Carola
Wennerstrom, Ashley
Westmoreland, Joby
Woods, Cooper
Wu, Hongju
Wu, Tong
Yosypiv, Ihor
You, Zongbing
Zadina, James
Zhang, Rubin
Zhang, Qiuyang
Zhou, QiQi
Zsombok, Andrea

AGING

Taby Ahsan, PhD
Assistant Professor, Biomedical Engineering - SSE
tahsan@tulane.edu
Our lab focuses on the effects of the physical microenvironment on stem cell fate utilizing engineered systems that control cellular configurations and apply mechanical forces. We take an interdisciplinary approach, working with basic scientists, engineers, and clinicians in both academia and industry, to answer questions and address issues in stem cell mechanobiology, stem cell bioprocessing, and tissue engineering.

Victoria P. Belancio, PhD
Associate Professor, Structural and Cellular Biology
vperepe@tulane.edu
My work is focused on retrotransposable element LINE-1, its regulation, and contribution to genomic instability and disease.

Gerald Berenson, MD
Research Professor, Medicine
berenson@tulane.edu
CV risk factors effect on aging, CV disease and renal disease

Paul Colombo, PhD
Associate Professor, Psychology - SSE
pcolomb@tulane.edu
There are three primary aims of research conducted in this laboratory. The first is to elucidate the neuronal mechanisms of memory formation with emphasis on the roles of signaling proteins, including kinases, phosphatases, and transcription factors. The second aim is test hypotheses regarding independence or interactions among multiple memory systems. The third aim is to apply results of studies of the neuronal mechanisms of memory formation to studies of age-related memory impairment under normal (e.g. non-pathological) aging conditions.

Malwina Czarny-Ratajczak, PhD
Assistant Professor, Dept. of Medicine, Center for Aging
mczarnyr@tulane.edu
Identification of novel genetic and epigenetic factors contributing to development of primary osteoarthritis (OA). Next-generation sequencing approach to study exome, transcriptome and exosomal miRNAs of patients with osteoarthritis.

AGING

Jill M. Daniel, PhD
Professor, Psychology and Neuroscience - SSE
jmdaniel@tulane.edu
I study the impact of estrogens and androgens on the brain and cognition across the lifespan using rodent models.

Elizabeth S. Didier, PhD
Professor, Division of Microbiology, TNPRC
esdnda@tulane.edu
Studies on immunology of aging and accelerated aging during SIV infection plus cART using nonhuman primate models. These studies focus on macrophages and innate immune responses.

Laurie R. Earls, PhD
Assistant Professor, Cell and Molecular Biology - SSE
learls@tulane.edu
I am is interested in how the molecular pathways that modulate synaptic plasticity change with age, and how this confers selective vulnerability to disease onset. For example, we have previously shown that microRNAs that do not target calcium stores early in development are critical for modulation of the SERCA calcium pump in early adulthood. This results in age-dependent alterations in synaptic plasticity in models of the 22q11 Deletion Syndrome, the major genetic risk factor for schizophrenia. Additionally, we have discovered a novel peptide encoded in the 22q11DS disease-critical region that affects synaptic plasticity in an age-dependent manner. We use genetics, molecular biology, and electrophysiology to study the effects of these pathways on neural function with age.

Genevieve Fava, PhD
Instructor, Orthopaedics
glum@tulane.edu
Our program is involved in research regarding cardiovascular and prostate health risks of former NFL players. We utilize clinical data obtained during health screening events to determine cardiovascular health risks, and prevalence and incidence of cardiovascular disease in this unique population.

AGING

Jeffrey M. Gimble MD, PhD
Adjunct Professor, Center for Stem Cell Research & Regenerative Medicine and Departments of Medicine and Surgery
jgimble@tulane.edu
My laboratory focuses on stromal/stem cells isolated from adipose tissue and bone for use in metabolic and regenerative medical studies. Ongoing and recent studies have explored the effects of aging on wound healing processes and the characteristics and differentiation potential of freshly isolated and cryopreserved stromal stem cells.

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

Kathleen S. Hering-Smith, PhD
Associate Professor, Medicine – Nephrology
khering@tulane.edu
We have significant experience and expertise in epithelial transport biology and cell and molecular techniques using a wide variety of kidney tubule cell lines. Most of these studies have addressed sodium, acid-base, and citrate transport, the latter an important inhibitor of kidney stones. Recently these studies have led to related issues involving diabetes and intermediate cell metabolism. Current techniques involve CRISPER knock-out studies and RNA-Seq

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

AGING

James Jackson, PhD
Assistant Professor, Biochemistry and Molecular Biology
jjacks8@tulane.edu

My lab is interested in the therapeutic response of breast cancers. Specifically, we aim to determine why some tumors relapse more quickly than others and also what cells in a heterogeneous tumor eventually proliferate to cause the relapse. We are investigating the role of p53 mediated cellular senescence in driving relapse. We use transgenic mouse models, ex vivo lentiviral infection, orthoptopic transplantation in syngeneic mice, and tissue culture model systems.

S. Michal Jazwinski, MD
Professor, Medicine – General Internal
sjazwins@tulane.edu

I am interested in the study of the genetic and epigenetic risk factors underlying complex traits with emphasis on population studies and mechanistic analyses in simple model systems such as yeast.

Roger Kelley, MD
Professor and Chair, Neurology
rkelley2@tulane.edu

My research efforts centers on neurodegenerative disease, specifically Alzheimer's disease, as well as stroke. Both areas center around brain imaging as well as protective interventions.

Marcelo Kuroda, MD, PhD
Associate Professor, Immunology – TNPRC
mkuroda@tulane.edu

My interests are in AIDS pathogenesis (nonhuman primate model); Innate Immunity (macrophages); Adaptive Immunity (CTL); Pediatric AIDS; TB/SIV model; Aging (Immunology); Innate immune responses (macrophages); Lung Immunology.

Arthur J. Lustig, PhD
Professor, Biochemistry and Molecular Biology
alustig@tulane.edu

Our laboratory is investigating the multi-complex segregation patterns of telomeric multimeric complexes to sister chromatids. The behavior of complexes differs from the expected random segregation of traits. Rather, our data suggest the formation of telomeric tight and open complexes that dictate their heritability to sister chromatids. We are collaborating with Dr. Hee-Won Parke on the biochemical examination of these interactions

AGING

Andrew G. MacLean, PhD
Assistant Professor, Microbiology & Immunology – TNPRC
amaclean@tulane.edu
My lab looks at activation and disruption of the blood-brain barrier in health and disease, specifically HIV infection. We specialize in cell biological techniques, including cell adhesion, imaging and activation of signal transduction pathways. These models are being adapted to examine the cell biology of lung inflammation. We are also examining activation of glia in behavioral abnormalities in nonhuman primates and the impact of opioid inhibitors. Ongoing projects include aging, depression and autism spectrum disorders.

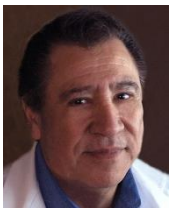
Kristin S. Miller, PhD
Assistant Professor, Biomedical Engineering - SSE
kmille11@tulane.edu
The Biomechanics of Growth & Remodeling Laboratory uses a combined experimental and computational approach to better understand, describe, and predict soft tissue remodeling in response to various chemo-mechanical stimuli including normal processes (e.g., aging and pregnancy), disease, and injury. To this end, our research utilizes model systems with varying restraints on regenerative capability (postnatal development, pregnancy, and postpartum) to define local microstructure and mechanical properties of evolving collagenous tissues to identify potential treatments and the appropriate time course for clinical interventions to prevent maladaptive remodeling, improve adult response to injury, and advance tissue engineering strategies. Our primary areas of research include orthopaedics (tendon and ligament) and women's reproductive health.

Ricardo Mostany, PhD
Assistant Professor, Pharmacology
rmostany@tulane.edu
Cortical circuits show a certain degree of plasticity during normal brain functions (e.g., sensory stimulation, memory storage and learning). This plasticity can be altered when the homeostasis of the brain is perturbed during aging, sensory deprivation, stroke, or after the exposure to environmental agents. Using cutting edge imaging techniques, i.e. two-photon laser microscopy and intrinsic optical signal imaging, in combination with transgenic mice-expressing fluorescent proteins in cortical pyramidal cells, we can study the dynamics of dendritic spines in vivo during normal brain function and how these dynamics change after ischemia, with aging, or during sensory stimulation.

AGING

Walter Lee Murfee, PhD
Associate Professor, Biomedical Engineering – SSE
wmurfee@tulane.edu
Our laboratory investigates the multi-cellular and multi-system dynamics involved in microvascular network growth. Specifically, we apply *in vivo*, *in vitro*, and computational bioengineering approaches to investigate the regulation of vascular patterning and the functional relationships between angiogenesis and other processes, such as lymphangiogenesis. Our work provides valuable insight for the engineering of functional vascularized tissues and for understanding vascular dysfunction associated with aging, hypertension, and other pathological conditions.

Elizabeth B. Norton, MPH, PhD
Assistant Professor, Microbiology and Immunology
enorton@tulane.edu
My research focuses on promoting a healthy immune system through animal model and primary human cell analyses. Ongoing areas of research include (1) how inflammation alters age-related immunity and vaccine efficacy, (2) how to best protect mucosal surfaces from respiratory infections (flu, TB) and bacterial diarrheal diseases (ETEC), (3) how derivatives from a unique bacterial toxin can act as vaccine adjuvants or anti-inflammatory therapies for gastrointestinal disease.

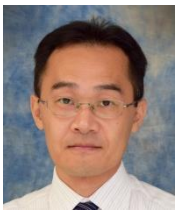


Enrique Palacios, MD
Professor, Radiology
epalaci@tulane.edu
Vascular

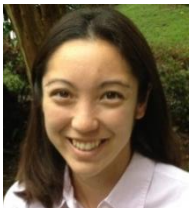
Kailash N. Pandey, PhD
Professor, Physiology
kpandey@tulane.edu
To delineate the molecular and cellular action of atrial natriuretic peptide (ANP) that controls the blood pressure and cardiovascular homeostasis. Our studies are aimed at examining the structure-function relationship of different domains of NPRA by deletion and site-directed mutagenesis and expression in cDNA transfected cells.

AGING

Derek Pociask, PhD
Assistant Professor, Medicine – Pulmonary Diseases
dpociask@tulane.edu
I am interested in the immune responses in the lung. Specifically I am interested in how aspects of the immune system can be exploited to reduce injury or promote repair during infection or injury. My lab uses models of chemical or particle injury (acid aspiration, bleomycin, asbestos) and infectious injury (influenza, bacterial). While I am focused on the lung, my studies have branched to the liver, gut and thymus. The current major focus in my laboratory is the IL-22/IL-22BP axis and how this balance effects the immune response throughout the body.



Shigeki Saito, MD
Assistant Professor, Medicine - Pulmonary & Critical Care Medicine
ssaito@tulane.edu
My research interests include pulmonary fibrosis, acute lung injury, pulmonary hypertension. My current research project: a role of class II HDAC in pulmonary fibrosis.



Mimi Sammarco, PhD
Assistant Professor, Surgery
msammarc@tulane.edu
My primary research interest is the influence of oxygen on the promotion of limb regeneration and tissue, muscle and bone salvage after traumatic injury. We use a mouse digit amputation model, which regenerates tendon, soft tissue, and patterned bone to characterize molecular mechanisms that influence the regenerative process. We find that a dynamic oxygen microenvironment is key to wound healing and regeneration.

Cecilia G. Sanchez , PhD
Assistant Professor, Medicine - Pulmonary Diseases
csanche3@tulane.edu
I am interested in the roles of Sirtuins, autophagy/metabolism and circadian clock in age related lung diseases. Her work focus in understanding the pathogenesis and the development the novel therapeutic paradigms in lung fibrosis for patients with Idiopathic Pulmonary Fibrosis and patients with Systemic Scleroderma.

AGING

Felix Savoie, MD
Professor and Chair, Orthopedics
fsavoie@tulane.edu
My research interests include chondrolysis in articular cartilage, advances in arthroscopy of the upper extremity, improvements in arthroscopic and open repair techniques of the upper extremity, and sports medicine. I have been co-PI on a series of studies investigating the interrelationship of time, temperature and intra-articular anesthetic injections in chondrolysis.

Laura Schrader, PhD
Associate Professor, Cell and Molecular Biology – SSE
schrader@tulane.edu
The main research interest in my lab involves investigation of regulation of neuronal excitability by ion channels. This research is relevant to normal plasticity processes, such as learning and memory and pathological processes such as epilepsy. Techniques include: patch clamp electrophysiology in brain slices, behavioral paradigms, molecular biology and biochemistry.

Jylana L. Sheats, PhD, MPH
Assistant Professor, Global Community Health & Behavioral Sciences – SPHTM
jsheats@tulane.edu
My research interests focus on the identification and examination of individual, social, contextual, environmental (built, food), and policy-related determinants of obesity and chronic disease among vulnerable populations (low-income, racial/ethnic minorities, older adults).

Suresh C. Sikka, PhD
Professor & Research Director, Urology
ssikka@tulane.edu
My research and clinic focus is on Aging male related to male infertility, Sexual health, Environmental reproductive toxicology; Forensic applications; Role of Oxidative Stress/Redox Changes and Antioxidants; Sperm safety multicenter studies; Endocrine Disruptors, Prostatic inflammation; and Andropause.

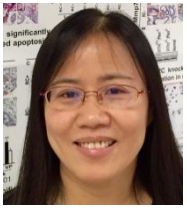
AGING

Shusheng Wang, PhD
Associate Professor, Cell and Molecular Biology – SSE
swang1@tulane.edu
(1) Noncoding RNAs in vascular development and diseases Vascular abnormalities underlie the pathogenesis of many ocular diseases. Our research focuses in the lab is to understand the role of noncoding RNAs, including microRNAs and long non-coding RNAs, in vascular biology and vascular retinopathies. (2) Cell death mechanism in degenerative retinal diseases We study cell death mechanism with hope to develop new therapeutic solutions for Age-related Macular Degeneration, a leading blinding disease in the elderly.

Zongbing You, MD, PhD
Associate Professor, Structural & Cellular Biology
zyou@tulane.edu

Primarily study inflammation/immune responses in prostate cancer and lung cancer, focusing on interleukin-17. Secondarily study tissue engineering of articular cartilage using adipose tissue-derived stem cells transfected with doublecortin gene (DCX).

James Zadina, PhD
Professor, Pharmacology and Neuroscience
jzadina@tulane.edu
Neurobiology of opioids and their receptors. Mechanisms and treatment of acute and chronic pain. Development of novel analgesics with reduced adverse side effects.



Qiuyang (Lisa) Zhang, PhD
Instructor, Structural & Cellular Biology
qzhang3@tulane.edu
I am interested in inflammaging (both aging and inflammation) and cancer, with a focus on Th17 cytokines and prostate cancer in the aging process. I am using genetically engineered mouse models to address the role of Th17 cytokines in the aging process. Also of interest is the role that Th17 cytokines play in the development of prostate cancer.

BEHAVIORAL HEALTH

Courtney Baker, PhD
Assistant Professor, Psychology - SSE
cnbaker@tulane.edu
My primary research interests include dissemination and implementation research, prevention and early intervention, mental health, violence prevention, early childhood, underserved populations, and community-based participatory research.

Alessandra Bazzano, PhD, MPH
Assistant Professor, Global Community Health and Behavioral Sciences - SPHTM
abazzano@tulane.edu
My research focus is in maternal and child health, with special emphasis on the behavioral and social aspects of maternal and newborn care in the community setting and care seeking for illness. Alongside that, I have worked on reproductive health issues, especially related to women's reproductive and sexual health and access to care. I also have a strong interest in nutrition, specifically community based nutrition and behavioral approaches to improving maternal and infant and young child feeding. My methodological focus is qualitative and I have experience in low income countries (in Southeast Asia and Sub Saharan Africa) and in the United States.

Paul Colombo, PhD
Associate Professor, Psychology - SSE
pcolomb@tulane.edu
My research includes: To elucidate the neuronal mechanisms of memory formation with emphasis on the roles of signaling proteins, including kinases, phosphatases, and transcription factors. The second aim is test hypotheses regarding independence or interactions among multiple memory systems. The third aim is to apply results of studies of the neuronal mechanisms of memory formation to studies of age-related memory impairment under normal (e.g. non-pathological) aging conditions.

Lorelei Cropley, Dr.PH
Associate Professor, Undergraduate Public Health Studies – SPHTM
lcropley@tulane.edu
Efficacy of Short Term Brigades, Iron deficiency anemia behavioral interventions using iron cookware, Chagas Disease KAP studies.

BEHAVIORAL HEALTH

Stacy Drury, MD, PHD
Assistant Professor, Psychiatry and Behavioral Sciences
sdrury@tulane.edu
I am interested in the interaction of genetic and epigenetic factors with early experience and how this interaction shapes neurodevelopment and long term outcomes in children. My research focuses on improving outcomes in medically ill children through providing a greater understanding of the impact of psychological distress, neurocognitive development and family functioning in these children.

Mary Margaret Gleason, MD
Associate Professor, Psychiatry and Behavioral Sciences – Child Psychiatry
mgleason@tulane.edu
My primary academic and clinical interests are in early childhood mental health and primary care mental health. I am increasingly interested in factors that influence access to care and utilization of services, but also interested in vulnerable populations and those exposed to significant adversity.

Emily Harville, PhD
Associate Professor, Epidemiology - SPHTM
eharville@tulane.edu
My research interests are in reproductive epidemiology and mechanisms of disparities in birth outcomes. Areas of study include: stress and mental health, life course and preconception health, the combined effect of the physical and social environment on pregnant women, the relationship between cardiovascular and reproductive health, and transgenerational influences on pregnancy. I recruit study participants extensively at ob/gyn, prenatal, and WIC clinics in the area.

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

BEHAVIORAL HEALTH

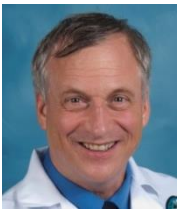
Patty Kissinger, BSN, MPH, PhD
Professor, Epidemiology SPHTM
kissing@tulane.edu
Presently I have two R01 awards. In the first, we are working on exploring the origins of repeat infections with Trichomonas vaginalis via an RCT as well as genotyping and conducting susceptibility testing and in the second we are examining the utility and cost effectiveness of screening men for Chlamydia trachomatis on the rates among women as well as mathematically modeling the percentage of men needed to screen to impact women's rates.

Tamas Kozicz, MD, PhD
Associate Professor, Human Genetics Program
tkozicz@tulane.edu
My research concerns the pathobiology of stress-associated psychiatric diseases, like anxiety and depression. More specifically, the outcome of gene by environment interaction are studied by assessing epigenetic, endocrine, behavioural, physiological and neuroanatomical aspects of the stress (mal)adaptation response. Special focus is on the interplay of stress, mitochondrial (dys)function and gender. My laboratory uses various animal models, such as conditional transgenic and adenoviral approaches to specifically control gene expression in a temporal and site-specific manner, as well as human *post-mortem* brain samples.

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

Andrew G. MacLean, PhD
Assistant Professor, Microbiology & Immunology – TNPRC
amaclean@tulane.edu
My lab looks at activation and disruption of the blood-brain barrier in health and disease, specifically HIV infection. We specialize in cell biological techniques, including cell adhesion, imaging and activation of signal transduction pathways. These models are being adapted to examine the cell biology of lung inflammation. We are also examining activation of glia in behavioral abnormalities in nonhuman primates and the impact of opioid inhibitors. Ongoing projects include aging, depression and autism spectrum disorders.

BEHAVIORAL HEALTH



Peter Meade, MD, MPH
Assistant Professor, Surgery
pmeade@tulane.edu
My research interests include rural trauma, overseas medicine, critical care, and connections between trauma and social issues. I have written on Police Dog bite injuries and police misconduct and landmine injuries in war zones with Doctors Without Borders.

Lina Moses, PhD, MSPH
Research Assistant Professor, Global Community Health and Behavioral Sciences
lmoses2@tulane.edu
My research focuses on applied public health research, with particular emphasis on implementation of evidence-based interventions for vector-borne and zoonotic diseases at the community level. I'm also interested in human and animal surveillance for zoonotic and emerging diseases, both from traditional indicator-based and community-event based approaches.

Damian R. Murray, PhD
Assistant Professor, Psychology – SSE
dmurray4@tulane.edu
My research investigates the implications of real and perceived disease threat for social behavior, personality, and cross-cultural differences.

Felicia Rabito, PhD
Associate Professor, Epidemiology – SPHTM
rabito@tulane.edu
My research interests are in asthma epidemiology, specifically the indoor environment. I am currently investigating factors associated with asthma outcome disparities and the influence of environmental (biologic and non-biologic) and social factors. I am interested in new methods of exposure assessment in particular monitoring techniques to measure indoor air pollution and respiratory and cardiovascular health, and novel methods to measure medication adherence in populations with chronic diseases.

BEHAVIORAL HEALTH

Heather Richter, PhD
Associate Professor, Global Environmental Health Sciences - SPHTM
hrichter@tulane.edu
My area of interest includes behavioral health combined with environmental exposure and individual biological characteristics such as genetics or microbiome - my work focuses on studying the distribution of various diseases within a population by identifying the spatial and temporal relational patterns between symptoms, co-morbidities, risk factors, and social/environmental conditions. I have studies ongoing in West Africa (respiratory diseases), native america (heart, lung, and blood diseases), and neuropsychological diseases (spatial analysis of neural structure/function).

Jeffrey Rouse, MD
Assistant Professor, Psychiatry and Behavioral Sciences
jrouse@tulane.edu
As a forensic psychiatrist at Tulane and the Orleans Parish Coroner, my academic interests include the neuroanatomical risk factors for violence, functional and structural neuroimaging of brain regions and networks involved in emotion regulation, and the application of biomarkers to forensic risk assessment. After an extended hiatus from research, I seek to leverage opportunities for cross-disciplinary collaboration and reinvigorate a career in clinical research.

Lesley Saketkoo, MD, MPH
Associate Professor, Medicine - Clinical Immunology
lsaketk@tulane.edu
Global rare disease registries,Patient-reported outcome development, HRQoL in complex/rare diseases, Mindfulness techniques and impact immunological response, symptom management and HRQoL, Mindfulness and Compassion Training in Medical Education.

Michael S. Scheeringa, MD, MPH
Professor, Psychiatry and Behavioral Sciences
mscheer@tulane.edu
Psychopathology in infant and preschool children; autonomic heart period control; electroencephalography; cortisol regulation; parent-child relationship quality; treatment for young children.

BEHAVIORAL HEALTH

Laura Schrader, PhD
Associate Professor, Cell and Molecular Biology – SSE
schrader@tulane.edu
The main research interest in my lab involves investigation of regulation of neuronal excitability by ion channels. This research is relevant to normal plasticity processes, such as learning and memory and pathological processes such as epilepsy. Techniques include: patch clamp electrophysiology in brain slices, behavioral paradigms, molecular biology and biochemistry.

Jylana L. Sheats, PhD, MPH
Assistant Professor, Global Community Health & Behavioral Sciences – SPHTM
jsheats@tulane.edu
My research interests focus on the identification and examination of individual, social, contextual, environmental (built, food), and policy-related determinants of obesity and chronic disease among vulnerable populations (low-income, racial/ethnic minorities, older adults).

Varsha Taskar, MD
Associate Professor, Medicine – Pulmonary Diseases
vtaskar@tulane.edu
I am interested in lung disease specifically cystic fibrosis (CF), non tuberculous mycobacteria, rheumatoid lung disease. I would like to explore role of environmental mycobacteria in pathophysiology of lung disease in CF and immunocompromised patients.

Yu-Ping Wang, PhD
Professor, Biomedical Engineering – SSE
wyp@tulane.edu
Integration of multiscale and multimodal imaging and genomic data. Biomedical image processing, statistical and computational modeling, and analysis of biomedical data.

Ashley Wennerstrom, PhD, MPH
Assistant Professor, Medicine – General Internal Medicine
awenners@tulane.edu
I use community-academic partnered methods to address a wide variety of community health concerns including intimate partner violence, behavioral health, health care for formerly incarcerated individuals.

BIOINFORMATICS AND STATISTICS

Sabrina Bent, MD
Associate Professor, Anesthesiology
sbent@tulane.edu
The Department of Anesthesiology has interest in all major organ system research, especially as it applies to the perioperative care of patients. In addition we are interested in novel and innovative techniques for education especially involving technology or simulation. We have additional interests in patient safety, quality, and process management of patients.

Eric Dumonteil, PhD
Associate Professor, Tropical Medicine – SPHTM
edumonte@tulane.edu
I am carrying out multidisciplinary studies for the development of new control tools for neglected tropical diseases, ranging from diagnostics, drugs and vaccines, to community based vector control interventions.

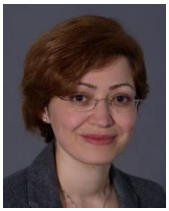
Loren Gragert, PhD
Assistant Professor, Pathology and Laboratory Medicine
lgragert@tulane.edu
My research focuses on understanding the role of immune gene polymorphisms (HLA and KIR) in transplantation, cancer, and autoimmune disease. As a bioinformatician, I apply statistical learning methods to the field of immunogenetics. My main project is fine-mapping of immune gene associations with hematologic diseases (lymphoma, leukemia, and severe aplastic anemia).

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

BIOINFORMATICS AND STATISTICS

Mac Hyman, PhD
Professor, Mathematics – SSE
mhyman@tulane.edu
My research is the development and application of mathematical models based on the underlying disease transmission mechanisms to help the medical/scientific community understand and anticipate the spread of an epidemic and evaluate the potential effectiveness of different approaches for bringing the epidemic under control. My current research is focused on vector-borne diseases, such as dengue fever, malaria, chikungunya, and West Nile Virus.



Parisa Kordjamshidi, PhD
Assistant Professor, Computer Science – SSE
pkordjam@tulane.edu
My main research interests are artificial intelligence, machine learning, natural language processing, information extraction and declarative learning based programming.

M.A. "Tonette" Krousel-Wood, MD, MSPH
Clinical Professor, Epidemiology & Family and Community Medicine
mawood@tulane.edu
Aging and Cardiovascular Disease with a special emphasis on adherence.

Michelle Lacey, PhD
Associate Professor, Mathematics – SSE
mlacey1@tulane.edu
My primary research interests are in epigenetic modeling and analysis and in phylogenetics, and I also have extensive experience in the analysis of data generated by high throughput experiments.

Lizheng Shi, PhD
Associate Professor, Global Health Systems & Development - SPHTM
lshi1@tulane.edu
Pharmaceutical and health care economics; pharmacoepidemiology; health care quality, access, and evaluation.

BIOINFORMATICS AND STATISTICS

Ramgopal Mettu, PhD
Associate Professor, Computer Science – SSE
rmettu@tulane.edu

My work is at the intersection of algorithms, machine learning and computational biology. Applications of my work include protein structure prediction and determination, protein-protein interactions, compound screening, as well as problems in high-throughput sequencing and proteomics.

Jeremy Nguyen, MD
Associate Professor, Radiology
jnguye2@tulane.edu

Diagnostic radiology with a focus in gastrointestinal tract, cardiopulmonary and neuroimaging. I am particularly interested in all aspects of liver imaging, and pancreatic-biliary disease. Neuroimaging includes functional magnetic resonance (MR) including spectroscopy and diffusion tensor imaging. I am also interested in mathematical aspects of medical image processing.

Nicholas Sandoval, PhD
Assistant Professor, Chemical and Biomolecular Engineering
nsandova@tulane.edu

My lab works on the development and application of advanced synthetic biology tools for model and non-model microbes for the purpose of sustainable fuel and chemical production. This includes the efficient use of directed evolution to engineer such microbes from the gene to genome level as well as high throughput tools for analysis and engineering such as DNA synthesis, next generation sequencing, and cell sorting.

Brian Summa, PhD
Assistant Professor, Computer Science – SSE
bsumma@tulane.edu

My research focuses on the design of scalable algorithms for the interactive exploration, visualization, segmentation, and analysis of large data. Recent medical applications of my work include: the visualization and registration of large 2-photon, electron, and confocal microscopy scans; automatic and semi-automatic neural pathway tracing; understanding and quantifying the uncertainty in medical image segmentation; and visualization and analysis of large digital pathology slides.

BIOINFORMATICS AND STATISTICS

Sudesh K. Srivastav, PhD
Professor, Biostatistics and Bioinformatics – SPHTM
ssrivas@tulane.edu
Any biostatistics and quantitative bioinformatics applications in biological and public health data – range from design issues (including sample and power analysis) to statistical analysis of the study.

Yu-Ping Wang, PhD
Professor, Biomedical Engineering – SSE
wyp@tulane.edu
Integration of multiscale and multimodal imaging and genomic data. Biomedical image processing, statistical and computational modeling, and analysis of biomedical data.

Carola Wenk, PhD
Associate Professor, Computer Science – SSE
cwenk@tulane.edu
My research area is in computational geometry, with a focus on analyzing discrete geometric shapes. I have strong interests in interdisciplinary applications including biology and medicine. I am interested in learning about the potential to collaborate on geometric data analysis problems for biomedical data, including medical imaging data. One of my current projects involves developing topological descriptors that capture architectural features of prostate glands in pathology images.

CANCER / HEMATOLOGY

Muralidharan Anbalagan, PhD
Instructor, Structural and Cellular Biology
manbalag@tulane.edu
I have been working on Breast Cancer Therapeutics. A small molecule kinase/tubulin dual inhibitor for the treatment of both Estrogen receptor Positive as well as Triple negative Breast cancer.

Victoria P. Belancio, PhD
Associate Professor, Structural and Cellular Biology
vperepe@tulane.edu
My work is focused on retrotransposable element LINE-1, its regulation, and contribution to genomic instability and disease.

Diane Blake, PhD
Professor, Biochemistry and Molecular Biology
blake@tulane.edu
My laboratory has expertise in antibody engineering and the development of new antibodies with novel binding activities for use as diagnostics and therapeutics. We also work with an interdisciplinary team to develop biodegradable drug delivery devices for treatment of glioblastoma and for control of fibrosis during the wound healing process.

David E. Blask, PhD, MD
Professor, Structural and Cellular Biology
dblask@tulane.edu
My research interest is in the circadian/melatonin regulation and circadian disruption by light at night of cancer growth and metabolism.

Mostafa Bouljihad, DVM, PhD
Associate Professor, Comparative Pathology – TNPRC
mbouljih@tulane.edu
I'm interested in studying Animal Models (NH-Primate, and other laboratory animals) for infectious diseases, especially those affecting respiratory system. I'm also interested in studying the relation between infectious disease and cancer.

CANCER / HEMATOLOGY

Stephen Braun, PhD
Assistant Professor, Regenerative Medicine – TNPRC
sbraun@tulane.e du
The intersection of gene therapy and hematopoietic stem cells. Using the rhesus model, we are developing lentiviral vaccine vectors for AIDS and new inhibitors of HIV/SIV viral replication. We are studying transduction of rhesus (mouse and human) CD34+ hematopoietic stem cells prior to expansion and differentiation into dendritic cells. These transduced DCs will be used to vaccinate animals.

Matthew E. Burow, PhD
Associate Professor, Medicine – Hematology/Medical Oncology
mburow@tulane.edu
Estrogen receptor, cell signaling and cancer systems. One of our goals is to elucidate the altered activation of signaling cascades which target estrogen receptor mediating gene expression which ultimately leads to a hormone independent and endurance therapy resistant phenotype. We are collaborating with other laboratories to study natural and artificial phytochemicals as novel anti-estrogenic and anti-resistance agents through coordinate targeting of ER-activity, cell signaling and coactivator function. We have begun to study the role played by microRNAs (miRNA) in estrogen receptor biology and the specific regulation of gene expression by steroid hormone receptors.

Bridgette Collins-Burow, MD, PhD
Associate Professor, Medicine – Hematology/Medical Oncology
bcollin1@tulane.edu
Breast Cancer long-term objectives of 1- identifying molecular mechanisms of breast cancer resistance and metastasis 2- implementing novel therapeutic strategies that can target and overcome altered gene networks involved in controlling breast cancer progression and 3- driving the translation of the laboratory science to the clinical patient setting. More recently we have focused on the role of novel experimental agents and epigenetic therapy in the regulation of microRNA expression in breast cancer with specific interest in triple-negative or basal phenotype breast cancer.

J. Quincy Brown, PhD
Assistant Professor, Biomedical Engineering - SSE
jqbrown@tulane.edu
My research focuses on the application and clinical translation of quantitative optical spectroscopy and imaging tools for the improvement of cancer management. We develop translatable optical methods to directly address gaps in clinical care, and carry those through to clinical validation in humans alongside our interdisciplinary collaborators. A major theme in

this work is the use of novel imaging devices (and computational analysis tools) to improve patient outcomes in surgical tumor removal in organs such as the breast, prostate, & kidney. We also develop tools & strategies using optics to answer interesting biological questions in cell and animal models. To achieve these goals, we leverage new & existing photonic technologies across multiple spatial scales such as quantitative diffuse reflectance spectroscopy and imaging (DRS, DRI), fluorescence lifetime imaging, structured-illumination microscopy (SIM), and light sheet microscopy (LSM).

Srikanta Dash, PhD
Professor, Pathology and Laboratory Medicine
sdash@tulane.edu

Infectious diseases-Hepatitis C virus infection and interferon resistance and Liver cancer. Breast cancer chemoresistance and cancer vaccine 3. Intracellular treatment for hepatitis C using siRNA-nanotechnology.

Prescott Deininger, PhD
Professor - Epidemiology SPHTM
pdeinin@tulane.edu

I am interested in the role that mobile elements play in mutagenesis within the human genome. This involves studies of their mutational capabilities, toxicity and the cellular response to their expression. Many studies involve DNA repair pathways, including nucleotide excision repair, mismatch repair and recombination. My laboratory specializes in high throughput molecular genetics techniques and applications.

Steven J. DiBiase, MD
Professor, Radiation Oncology
sdibiase@tulane.edu

My research involves translation approaches in the management of prostate cancer and brain tumors. My recent interests have focused on the use of biologic imaging (functional MRI) to guide radiation therapy, ways to improve cellular radiation sensitivity, the use of stereotactic radiosurgery to treat malignancies, and the influence of radiation therapy on cardiac pacemakers.

Yan Dong, PhD
Associate Professor, Structural & Cellular Biology
ydong@tulane.edu

Areas of research/interest: prostate cancer, breast cancer
I am interested in developing effective approaches to 1) prevent prostate cancer, 2) overcome resistance of prostate cancer to

hormone therapy, and 3) increase chemotherapeutic efficacy for triple-negative breast cancer. I am also interested in studying the mechanism of resistance of prostate cancer to hormone therapy as well as the mechanism of prostate cancer progression induced by circadian disruption.

Melanie Ehrlich, PhD
Professor, Human Genetics Program
ehrlich@tulane.edu

My lab is studying the interrelationships of tissue-specific changes in DNA methylation and hydroxymethylation with alterations in chromatin structure and gene expression in differentiation and disease. In our studies of normal tissue, we are particularly interested in how the skeletal muscle-specific and brain-specific epigenetics fine tunes transcription.

Mark J. Fink, PhD
Professor, Chemistry – SSE
fink@tulane.edu

Synthesis and Properties of Semiconductor Nanoparticles. Our group, in collaboration with Brian Mitchell (Chemical Engineering), is active in the synthesis of silicon nanoparticles and quantum dots. Silicon nanoparticles have great potential as non-toxic luminescent biomarkers and multimodal drug delivery agents.

Paul Friedlander, MD
Associate Professor and Chair, Otolaryngology
pfriedla@tulane.edu

Racial disparity in healthcare; Tumor growth and wound healing as well as outcome analysis for at risk populations for head and neck cancer.

Joseph Fuselier, PhD
Assistant Professor, Medicine - Peptide Research
fuselier@tulane.edu

Interested in creating novel therapeutic agents to help patients with diseases where there is little to no innovation or therapeutic benefit with current treatment modalities. My focus is to create intellectual property around these ideas and commercialize them to benefit humankind. My area of expertise revolves around modifying exquisitely potent drugs, conjugating them to peptides and proteins in a way so they are stable in circulation, are targeted to a specific tissue, and then release the biological warhead to the tissue of interest. Synthetic organic chemistry, peptide / protein chemistry, pharmacology, entrepreneurship, and business are all areas of interest.

CANCER / HEMATOLOGY

Loren Gragert, PhD
Assistant Professor, Pathology and Laboratory Medicine
lgragert@tulane.edu

My research focuses on understanding the role of immune gene polymorphisms (HLA and KIR) in transplantation, cancer, and autoimmune disease. As a bioinformatician, I apply statistical learning methods to the field of immunogenetics. My main project is fine-mapping of immune gene associations with hematologic diseases (lymphoma, leukemia, and severe aplastic anemia).

Scott Grayson, PhD
Associate Professor, Chemistry – SSE
sgrayson@tulane.edu

We investigate the role of polymer carrier architecture in optimizing physical (and hence pharmacokinetic) properties. We have projects which target aqueous soluble, bloodborne carriers, transdermal carriers, and gene transfection carriers.

Jeffrey Han, MD, PhD
Assistant Professor, Biochemistry and Molecular Biology
jhan5@tulane.edu

Retrotransposition in the germ line L1s are transposons that are expressed in the germ line of mammals. These mobile genetic elements replicate by transcribing their RNA, and then reverse transcribing this RNA into new DNA at a different chromosomal site. Since L1 replication involves chromosome breakage, we expect that excessive L1 activity can be disastrous to host genome integrity. Indeed, loss of transposon control pathways by mutation is associated with massive L1 expression, germ cell death, and sterility. This has obvious significance for fertility research. We have identified genetic pathways important for the activity of L1. We are also screening small drug-like compounds for inhibitory activity against L1. We hope to use these finding to assess the effects of blocking L1 activity genetically or with drugs on infertile mouse models that over express L1. We also would like to examine whether elevated L1 expression is overrepresented in human patients with infertility of unknown etiology.

Mohamed Hassan, PhD
Research Assistant Professor, Surgery
mhassan@tulane.edu

Melanoma stem cells (MSCs) are characterized by a unique protein signature and a network of aberrant signaling pathways. These unique protein signature and aberrant signaling pathways are either in a causal or consequential relationship to melanoma progression, metastasis and drug-resistance.

CANCER / HEMATOLOGY

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

James Jackson, PhD
Assistant Professor, Biochemistry and Molecular Biology
jjacks8@tulane.edu
My lab is interested in the therapeutic response of breast cancers. Specifically, we aim to determine why some tumors relapse more quickly than others and also what cells in a heterogeneous tumor eventually proliferate to cause the relapse. We are investigating the role of p53 mediated cellular senescence in driving relapse. We use transgenic mouse models, ex vivo lentiviral infection, orthoptopic transplantation in syngeneic mice, and tissue culture model systems.

Shanker Japa, PhD
Associate Professor, Medicine
japashan@tulane.edu
Coenzyme-Q10 as an Adjunct to Standard Therapis in Elderly Patients with Chronic Heart Failure and Type 2 Diabetes

Janarthanan Jayawickramarajah, PhD
Associate Professor, Chemistry – SSE
jananj@tulane.edu
My research focuses on the synthesis of designer molecules and nanoparticles that have the unique ability to undergo specific self-assembly and molecular recognition events. In particular, we are using these systems to generate protein inhibitors that are activated by endogenous biomarkers (including over-expressed microRNAs and enzymes).

Vijay John, PhD
Professor, Chemical and Biomolecular Engineering – SSE
vj@tulane.edu
A major project that I am now working on is in the exploitation of lipid self-assembly to induce transcutaneous vaccine delivery Biological lipids and synthetic surfactants) is essential in technologies as

mundane as consumer detergent products, and techologies of the future as in the development of structured, responsive nanomaterials. Biological membranes are ubiquitous examples of lipid-self assembly that impacts the entire function of a cell.

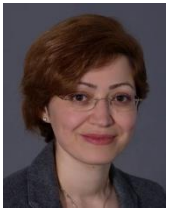
Marc J. Kahn, MD, MBA
Professor, Medicine – Administration
mkahn@tulane.edu
Medical Education—outcomes and evaluation of new programs
Financing the Academic Medical Center—costs, value, and funding of programs. Ethics and end of life care, and benign hematology

Emad Kandil, MD
Assistant Professor, Surgery
ekandil@tulane.edu
Therapeutic Targeting of the MAP Kinase and PI3K Pathways in Thyroid Cancer.

Jordan Karlitz, MD
Assistant Professor, Medicine - Gastroenterology
jkarlitz@tulane.edu
I am interested in Lynch syndrome screening practices by tumor analysis for microsatellite instability (MSI) and immunohistochemistry (IHC) testing in young colorectal cancer patients. I am also interested in surgical practices in young colorectal cancer patients (extent of colonic resection). Finally, I am interested in colorectal cancer risk in the Cajun population. We recently demonstrated that the Acadian parishes of Louisiana have one of the highest rates of colorectal cancer in the U.S. I am currently the PI on a LA CaTS pilot grant that focuses on performing MSI and IHC testing on banked tumor specimens in Cajun patients to look for evidence of Lynch syndrome (founder effect in Cajun population).

Damir Khismatullin, PhD
Associate Professor, Biomedical Engineering – SSE
damir@tulane.edu
My laboratory focuses on understanding the mechanical and transport properties of biological systems at cellular and tissue levels. Using experimental and theoretical approaches, we study the interactions of blood cells (leukocytes, platelets, red blood cells), tissue resident cells (macrophages, mast cells), and circulating tumor cells with vascular and lymphatic endothelium under pathophysiological conditions such as inflammation, atherosclerosis, thrombosis, sickle cell disease, and cancer metastasis. Another aspect of our research is the development of medical ultrasound technologies for cancer treatment, blood coagulation monitoring,

and nerve regeneration. We also develop novel methods for rheological characterization of living cells and tissues and use our state-of-the-art computational fluid dynamics models to predict blood flow in vessels with complex geometry.



Parisa Kordjamshidi, PhD
Assistant Professor, Computer Science – SSE
pkordjam@tulane.edu
My main research interests are artificial intelligence, machine learning, natural language processing, information extraction and declarative learning based programming.

Michelle Lacey, PhD
Associate Professor, Mathematics – SSE
mlacey1@tulane.edu
My primary research interests are in epigenetic modeling and analysis and in phylogenetics, and I also have extensive experience in the analysis of data generated by high throughput experiments.

Sean B. Lee, PhD
Associate Professor, Pathology and Laboratory Medicine
slee30@tulane.edu
My research interests are in cancer and development. Specifically, we study cancers that involve EWS (Ewing sarcoma) gene as an oncogenic translocation gene product using knock-in mice. We are also interested in studying the functions of EWS in development. We have recently uncovered a novel role for EWS in determining brown fat lineage during development. We are planning to further study the role of EWS in metabolism (e.g. diabetes and obesity).

Hua Lu, MB, PhD
Professor and Chair, Biochemistry and Molecular Biology
hlu2@tulane.edu
Molecular dissection and translational research of the p53 and c-myc networks in controlling cell growth, senescence, death, differentiation, and tumorigenesis as well as anti-cancer drug discovery.

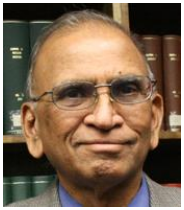
CANCER / HEMATOLOGY

Arthur J. Lustig, PhD
Professor, Biochemistry and Molecular Biology
alustig@tulane.edu
Our laboratory is investigating the multi-complex segregation patterns of telomeric multimeric complexes to sister chromatids. The behavior of complexes differs from the expected random segregation of traits. Rather, our data suggest the formation of telomeric tight and open complexes that dictate their heritability to sister chromatids. We are collaborating with Dr. Hee-Won Parke on the biochemical examination of these interactions.

Heather Machado, PhD
Assistant Professor, Biochemistry and Molecular Biology
hmachado@tulane.edu
My laboratory focuses on understanding how infiltrating macrophages promote breast cancer initiation and progression.

Charles Miller, PhD
Professor, Environmental Health Sciences
rellim@tulane.edu
I study adverse effects of chemicals in molecular, cellular, and animal model systems. I am particularly interested in chemicals that interact with the aryl hydrocarbon receptor signaling pathway.

Debasis Mondal, PhD
Associate Professor, Pharmacology
dmondal@tulane.edu
We are looking at the role of drug-efflux transporters (e.g. P-gp) and drug-metabolizing enzymes (Cyp3A) in drug pharmacokinetics and antiviral efficacy. We are focusing on the role of these host factors in facilitating viral persistence in subvascular reservoirs, e.g. brain & GI submucosa. Several pharmacological inhibitors are being tested as combination therapy to increase antiviral efficacy in reservoirs. We are also investigating whether these factors are upregulated in viral reservoirs and whether a gene therapy approach can be implemented to suppress their induction, thus enabling therapeutic levels of drugs to enter.



Krishnarao Moparty, MD
Professor, Urology
kmopart@tulane.edu
My research has been in the field of prostate cancer, especially molecular biology and active surveillance.

CANCER / HEMATOLOGY

Gilbert Morris, PhD
Associate Professor, Department of Pathology
gmorris2@tulane.edu
Modeling lung tumorigenesis in mice; Lung tumor promotion by IL-17; Lung disease related to inflammasome repression by cigarette smoke

Zachary Pursell, PhD
Assistant Professor, Biochemistry and Molecular Biology
zpursell@tulane.edu
My research focuses on the regulation of DNA replication and how it relates to genome instability and human diseases, in particular the development of cancer.

Brian G. Rowan, PhD
Associate Professor and Chair, Structural & Cellular Biology
browan@tulane.edu
Research interests: 1. Estrogen receptor phosphorylation: understanding the role of estrogen receptor alpha (ERα) phosphorylation in regulating receptor function in normal and cancer tissue. 2. Experimental therapeutics for breast cancer: using peptidomimetic Src inhibitor in combination with endocrine and chemotherapy for breast cancer; novel bone targeted parathyroid hormone antagonists for bone metastatic breast cancer. 3. Circadian regulation of estrogen receptor function: understanding the reciprocal regulation of the circadian rhythm and estrogen receptor in physiologic processes. 4. Adipocyte tissue-derived stromal/stem in reconstructive surgery and soft tissue repair: understanding the mechanisms by which ASCs promote head/neck cancer metastasis; the impact of ASCs in a low oxygen environment on fibrosis and immunomodulation.

Nakhle Saba, MD
Assistant Professor, Medicine – Hematology/Oncology
nsaba@tulane.edu
Translational research in Chronic Lymphocytic Leukemia and Mantle Cell Lymphoma: disease biology and novel therapies.

Oliver Sartor, MD
Professor, Medicine - Hematology & Medical Oncology
osartor@tulane.edu
My current research interests include clinical trials in advanced prostate cancer with novel agents and novel combinations of agents. My collaborative projects include novel concepts in prostate stem cells and germ line assessment of prostate cancer risk.

CANCER / HEMATOLOGY

Jonathan Silberstein, MD
Assistant Professor, Urology
jsilbers@tulane.edu
I am a Urologic oncologist and am interested in all facets of genitourinary malignancy.
Recently I have begun to get very interested in using 3-D printing of two dimensional cross sectional imaging to create a 3-D model of various tumors to aid in surgical planning and potentially robotic extirpation.

Brian Summa, PhD
Assistant Professor, Computer Science – SSE
bsumma@tulane.edu
My research focuses on the design of scalable algorithms for the interactive exploration, visualization, segmentation, and analysis of large data. Recent medical applications of my work include: the visualization and registration of large 2-photon, electron, and confocal microscopy scans; automatic and semi-automatic neural pathway tracing; understanding and quantifying the uncertainty in medical image segmentation; and visualization and analysis of large digital pathology slides.

Roy S. Weiner, MD
Professor, Medicine - Hematology/Medical Oncology
rweiner@tulane.edu
My interests are in clinical research (development of new treatments) in Hematology/Oncology, identifying and modifying risk of disease, and teaching and training in clinical research.

Carola Wenk, PhD
Associate Professor, Computer Science – SSE
cwenk@tulane.edu
My research area is in computational geometry, with a focus on analyzing discrete geometric shapes. I have strong interests in interdisciplinary applications including biology and medicine. I am interested in learning about the potential to collaborate on geometric data analysis problems for biomedical data, including medical imaging data. One of my current projects involves developing topological descriptors that capture architectural features of prostate glands in pathology images.

Jeffrey K. Wickliffe, PhD
Associate Professor, Global Enivronmental Health Sciences – SPHTM
jwicklif@tulane.edu
Human cell culture models for genetox, mutagenesis, biotransformation, neurotox, senescence/cellular aging; mouse model

for obesity, chemical sensitivity, and increased genetox + cancer risk; signal transduction using complex mixtures in vitro; human population research assessing complex exposures to environmental chemicals and cumulative risks.

Tong Wu, MD, PhD
Professor and Chair, Pathology and Laboratory Medicine
twu@tulane.edu

My research centers on the molecular mechanisms of inflammation and carcinogenesis, with a special emphasis on the pathogenesis of liver cancer and inflammatory liver diseases. My additional research interests include mechanisms of liver injuries, regulation of hepatobiliary epithelial cell growth and clinical/translational research on human liver cancer and liver diseases.

Zongbing You, MD, PhD
Associate Professor, Structural & Cellular Biology
zyou@tulane.edu

Primarily study inflammation/immune responses in prostate cancer and lung cancer, focusing on interleukin-17. Secondarily study tissue engineering of articular cartilage using adipose tissue-derived stem cells transfected with doublecortin gene (DCX).

Shelya Zeng, MB
Research Professor, Biochemistry and Molecular Biology
szeng@tulane.edu

Molecular dissection and translational research of the p73 and c-myc networks in controlling cell growth, senescence, death, differentiation, and tumorigenesis.

Qiuyang (Lisa) Zhang, PhD
Instructor, Structural & Cellular Biology
qzhang3@tulane.edu

I am interested in inflammaging (both aging and inflammation) and cancer, with a focus on Th17 cytokines and prostate cancer in the aging process. I am using genetically engineered mouse models to address the role of Th17 cytokines in the aging process. Also of interest is the role that Th17 cytokines play in the development of prostate cancer.

CARDIOVASCULAR

Taby Ahsan, PhD
Assistant Professor, Biomedical Engineering - SSE
tahsan@tulane.edu
Our lab focuses on the effects of the physical microenvironment on stem cell fate utilizing engineered systems that control cellular configurations and apply mechanical forces. We take an interdisciplinary approach, working with basic scientists, engineers, and clinicians in both academia and industry, to answer questions and address issues in stem cell mechanobiology, stem cell bioprocessing, and tissue engineering.

Alvaro Alonso, MD
Assistant Professor, Heart & Vascular Institute
aalonso2@tulane.edu
Peripheral vascular disease (arterial and venous), acute coronary syndromes, hemodynamic support, cardiovascular disease in chronic kidney disease patients, contrast-induced acute kidney injury, cardiovascular risk factor management and cardiovascular epidemiology, evidence-based medicine, clinical effectiveness, translational research.

Sabrina Bent, MD
Associate Professor, Anesthesiology
sbent@tulane.edu
The Department of Anesthesiology has interest in all major organ system research, especially as it applies to the perioperative care of patients. In addition we are interested in novel and innovative techniques for education especially involving technology or simulation. We have additional interests in patient safety, quality, and process management of patients.

David Busija, PhD
Professor and Chair, Pharmacology
dbusija@tulane.edu
I have a well-established, diverse research program that focuses on: 1) The mechanisms involved in the regulation of the cerebral circulation in health and disease; 2) The mechanisms of damage to the brain following injury; 3) Therapeutic strategies to restore normal cerebral vascular responses during disease processes such as insulin resistance and ischemia/reperfusion; and 4) Development of methods to protect cells of the neurovascuÂ¬lar unit (endothelium, smooth muscle, perivascular nerves, astroglia, neurons, etc.) against potentially lethal stimuli.

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CARDIOVASCULAR

Jing Chen, MD
Professor, Medicine – Nephrology and Hypertension
jchen@tulane.edu
Etiology, Prevention and Treatment of Chronic Kidney Disease and Hypertension, Cardiovascular Disease in Chronic Kidney Disease Metabolic Syndrome and Obesity Related Kidney Disease, Vascular Calcification in Chronic Kidney Disease, Diabetic Nephropathy, Gene-Environment Interaction in Chronic Kidney Disease and Hypertension.

Genevieve Fava, PhD
Instructor, Orthopaedics
glum@tulane.edu
Our program is involved in research regarding cardiovascular and prostate health risks of former NFL players. We utilize clinical data obtained during health screening events to determine cardiovascular health risks, and prevalence and incidence of cardiovascular disease in this unique population.

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

Shanker Japa, PhD
Associate Professor, Medicine
japashan@tulane.edu
Coenzyme-Q10 as an Adjunct to Standard Therapis in Elderly Patients with Chronic Heart Failure and Type 2 Diabetes

Philip J. Kadowitz, PhD
Professor, Pharmacology
pkadowi@tulane.edu
Pulmonary hypertension, diabetes-vascular complications, hypertension and erectile dysfunction.

CARDIOVASCULAR

Shengxu Li, MD, MPH, PhD
Assistant Professor, Epidemiology – SPHTM
sli10@tulane.edu
My research focuses on etiology of obesity, type 2 diabetes, and cardiovascular disease.

Sarah Lindsey, PhD
Assistant Professor, Department of Pharmacology
lindsey@tulane.edu
My current research investigates how estrogens are beneficial in vascular health. I am particularly interested in membrane-initiated estrogenic signaling events which influence vascular tone and remodeling.

Dewan Syed Abdul Majid, MD, PhD
Professor, Physiology
majid@tulane.edu
Elucidation of the intra-renal mechanisms regulating renal hemodynamics and excretory function by endothelial/vasoactive factors. Elucidation of the mechanistic link between Oxidative stress, inflammation and salt-sensitive hypertension.

Stryder Meadows, PhD
Assistant Professor, Cell and Molecular Biology - SSE
smeadows@tulane.edu
My lab is focused on understanding the genetic pathways involved in regulating embryonic and retinal blood vessel development. In particular, we are interested in blood vessel fusion and artery-vein identity.

Kailash N. Pandey, PhD
Professor, Physiology
kpandey@tulane.edu
To delineate the molecular and cellular action of atrial natriuretic peptide (ANP) that controls the blood pressure and cardiovascular homeostasis. Our studies are aimed at examining the structure-function relationship of different domains of NPRA by deletion and site-directed mutagenesis and expression in cDNA transfected cells.

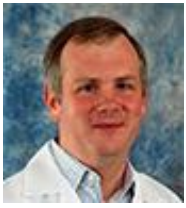
CARDIOVASCULAR

Minolfa C. Prieto, MD, PhD
Associate Professor, Physiology
mprieto@tulane.edu
Renal physiology. Experimental hypertension. Role of intrarenal RAS in hypertension. Angiotensin II-dependent hypertension. Role of collecting duct rrenin & prorenin receptor interaction in the control blood pressure. Mechanisms of regulation of renin & prorenin receptor in the collecting duct in hypertension and diabetes mellitus. Contributions of gender differences of the intrarenal RAS to the develoment of hypertension. Intrarenal RAS activation in diabetic nephropathy. Renal morphological rearrangements in hypertension. Effects of salt intake on renal damage during hypertension.

Shigeki Saito, MD
Assistant Professor, Medicine - Pulmonary & Critical Care Medicine
ssaito@tulane.edu
My research interests include pulmonary fibrosis, acute lung injury, pulmonary hypertension. My current research project: a role of class II HDAC in pulmonary fibrosis.

Lesley Saketkoo, MD, MPH
Associate Professor, Medicine - Clinical Immunology
lsaketk@tulane.edu
Global rare disease registries,Patient-reported outcome development, HRQoL in complex/rare diseases, Mindfulness techniques and impact immunological response, symptom management and HRQoL, Mindfulness and Compassion Training in Medical Education

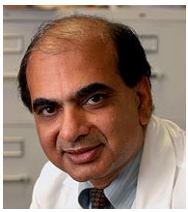
Gregory W. Stewart, MD
Associate Professor, Orthopedics
gstewart@tulane.edu
Concussion, CTE and brain changes, long-term cardiovascular implications in former professional athletes.



Thomas Cooper Woods, PhD
Assistant Professor, Physiology
twoods3@tulane.edu
Vascular biology, intimal thickening, atherosclerosis, and the cardiovascular complications of diabetes.

ENDOCRINE / BONE

Charles Billings, MD
Assistant Professor, Orthopaedics
cbillin1@tulane.edu
Topical use of tranexamic acid to reduce blood loss in total joint replacements



Vivian Fonseca, MD
Professor, Medicine - Endocrinology and Metabolism
vfonseca@tulane.edu
The prevention and treatment of diabetic complications and risk factor reduction in cardiovascular disease. I am currently evaluating inflammation as risk factors for heart disease in diabetes. I am an investigator in the NIH-funded (ACCORD) study and its follow up ACCORDION) and Action to Control Cardiovascular Risk in Diabetes serve on the Glycemic control and ancillary studies committees. I am conducting clinical trials in diabetic nephronpathy and evaluating biosimilar insulins.

Jeffrey M. Gimble MD, PhD
Adjunct Professor, Center for Stem Cell Research & Regenerative Medicine and Departments of Medicine and Surgery
jgimble@tulane.edu
My laboratory focuses on stromal/stem cells isolated from adipose tissue and bone for use in metabolic and regenerative medical studies. Ongoing and recent studies have explored the effects of aging on wound healing processes and the characteristics and differentiation potential of freshly isolated and cryopreserved stromal stem cells.

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

Fenglei He, PhD
Assistant Professor, Cell and Molecular Biology – SSE
fhe@tulane.edu
Neural crest cells comprise a transient, highly migratory and multi-potent population. Arising at early stage of embryo development, they play essential roles in organ morphogenesis and homeostasis. My research interest lies in understanding fundamental mechanisms of neural crest cell

development and related diseases using mouse models. Our current projects focus on dissecting the role of growth factor signaling and downstream pathways in development of cranial neural crest cells and their skeletal derivatives.

Shanker Japa, PhD
Associate Professor, Medicine
japashan@tulane.edu
Coenzyme-Q10 as an Adjunct to Standard Therapis in Elderly Patients with Chronic Heart Failure and Type 2 Diabetes.

Emad Kandil, MD
Assistant Professor, Surgery
ekandil@tulane.edu
Therapeutic Targeting of the MAP Kinase and PI3K Pathways in Thyroid Cancer.

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

Sean B. Lee, PhD
Associate Professor, Pathology and Laboratory Medicine
slee30@tulane.edu
My research interests are in cancer and development. Specifically, we study cancers that involve EWS (Ewing sarcoma) gene as an oncogenic translocation gene product using knock-in mice. We are also interested in studying the functions of EWS in development. We have recently uncovered a novel role for EWS in determining brown fat lineage during development. We are planning to further study the role of EWS in metabolism (e.g. diabetes and obesity).

ENDOCRINE / BONE

Sarah Lindsey, PhD
Assistant Professor, Department of Pharmacology
lindsey@tulane.edu

My current research investigates how estrogens are beneficial in vascular health. I am particularly interested in membrane-initiated estrogenic signaling events which influence vascular tone and remodeling.

Franck Mauvais-Jarvis, MD, PhD
Professor, Medicine - Endocrinology and Metabolism
fmauvais@tulane.edu

We are interested in novel mechanisms and/or therapeutic perspectives for diabetes and of obesity especially as it relates to the role of estrogen and androgen in metabolic diseases. We seek to find novels ways to modulate estrogen and androgen actions in a tissue- and sex-specific manner to prevent/improve diabetes and metabolic dysfunction.

Kristin S. Miller, PhD
Assistant Professor, Biomedical Engineering - SSE
kmille11@tulane.edu

The Biomechanics of Growth & Remodeling Laboratory uses a combined experimental and computational approach to better understand, describe, and predict soft tissue remodeling in response to various chemo-mechanical stimuli including normal processes (e.g., aging and pregnancy), disease, and injury. To this end, our research utilizes model systems with varying restraints on regenerative capability (postnatal development, pregnancy, and postpartum) to define local microstructure and mechanical properties of evolving collagenous tissues to identify potential treatments and the appropriate time course for clinical interventions to prevent maladaptive remodeling, improve adult response to injury, and advance tissue engineering strategies. Our primary areas of research include orthopaedics (tendon and ligament) and women's reproductive health.

Eva Morava, MD, PhD
Professor, Pediatrics
emoravakozicz@tulane.edu

My research concerns protein glycosylation, and glycosylation related inborn errors of metabolism, including dolichol synthesis. My translational research line aims at elucidating novel genetic and metabolic disorders related to N- linked and O-linked protein glycosylation and disorders of Golgi trafficking. More specifically, our lab has been successfully used next generation sequencing to discover novel diseases and evaluate the metabolic defect related to the gene defect to understand the underlying pathomechanism.

ENDOCRINE / BONE

Kailash N. Pandey, PhD
Professor, Physiology
kpandey@tulane.edu
To delineate the molecular and cellular action of atrial natriuretic peptide (ANP) that controls the blood pressure and cardiovascular homeostasis. Our studies are aimed at examining the structure-function relationship of different domains of NPRA by deletion and site-directed mutagenesis and expression in cDNA transfected cells.

Noshir Pesika, PhD
Associate Professor, Chemical and Biomolecular Engineering
npesika@tulane.edu
My research interest lies in the development of electrochemical sensor platforms to detect various biomolecules with high sensitivity. I am also interested in modifying surfaces, either through chemistry or topography to enhance their properties for different applications.

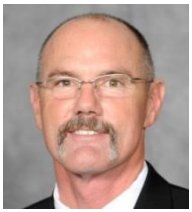
Zubaida Saifudeen, PhD
Associate Professor, Pediatrics - Nephrology
zubisaif@tulane.edu
Impaired nephron progenitor cell renewal in embryogenesis results in fewer nephrons. Research in our lab is focused on understanding the mechanisms by which energy metabolism influences nephron progenitor cell renewal and differentiation. We use mouse models, kidney organ culture, primary cell culture, RNA-Seq, chromatin immunoprecipitation and metabolic profiling to characterize requirements for nephron stem cell renewal versus differentiation. How the metabolic status of the nephron stem cell switches the cellular program from self-renewal to nephrogenesis has potentially huge implications on the influence of the maternal diabetic environment on embryonic kidney development. The knowledge gained can be utilized to adjust maternal conditions for optimal nephrogenesis during fetal development and towards regenerative therapies.

Fernando L. Sanchez, MD
Assistant Professor, Orthopaedics
fsanchez@tulane.edu
My area of research interest includes orthopaedic clinical outcomes especially total joint and adult reconstruction. I am currently interested in doing further research in wear debris associated with bone loss and osteoarthritis.

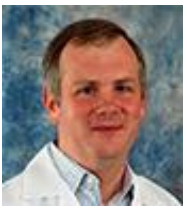
ENDOCRINE / BONE

Felix Savoie, MD
Professor, Orthopedics
fsavoie@tulane.edu
My research interests include chondrolysis in articular cartilage, advances in arthroscopy of the upper extremity, improvements in arthroscopic and open repair techniques of the upper extremity, and sports medicine. I have been co-PI on a series of studies investigating the interrelationship of time, temperature and intra-articular anesthetic injections in chondrolysis.

Michael Serou, MD
Assistant Professor, Radiology
mserou2@tulane.edu
Current research includes application of imaging techniques to metabolic and degenerative changes of bones and joints.



Gregory W. Stewart, MD
Associate Professor, Orthopedics
gstewart@tulane.edu
Concussion, CTE and brain changes, long-term cardiovascular implications in former professional athletes.



Thomas Cooper Woods, PhD
Assistant Professor, Physiology
twoods3@tulane.edu
Vascular biology, intimal thickening, atherosclerosis, and the cardiovascular complications of diabetes.

Hongju Wu, PhD
Associate Professor, Medicine - Endocrinology and Metabolism
hwu3@tulane.edu
Diabetes: particularly in islet cell biology, especially with regard to the regeneration and function of α-, β-, and δ-cells. We have shown the regeneration of adult α- and δ-cell regeneration following β-cell loss during diabetes development, and attempted to identify the mechanisms/cellular origins for the regenerated cells. I am also interested in the molecules and other factors (such as exercise, aging, etc.) that impact the potential of islet cell regeneration. I have also

been exploring strategies that can protect β-cells and promote β-cell regeneration. I am also attempting to convert other cell types into β-cells using transcription factors that are essential for β-cell development.

Andrea Zsombok, PhD
Assistant Professor, Physiology
azsombo@tulane.edu

My laboratory examines the fundamental relationship between the central nervous system and glucose homeostasis. We identify circuits regulating visceral organs (e.g., brain-liver axis) and focus on neuronal alterations in the hypothalamus and brainstem during diabetic and obese conditions.

GASTROENTEROLOGY / LIVER

Solange Abdulnour-Nakhoul, PhD
Associate Professor, Medicine - Gastroenterology
solange@tulane.edu
My research is in physiology and biology of the esophagus (stratified squamous epithelium and glands), Reflux disease, and Eosinophilic Esophagitis.

Srikanta Dash, PhD
Professor, Pathology and Laboratory Medicine
sdash@tulane.edu
Infectious diseases-Hepatitis C virus infection and interferon resistance and Liver cancer. Breast cancer chemoresistance and cancer vaccine 3. Intracellular treatment for hepatitis C using siRNA-nanotechnology.

Jordan Karlitz, MD
Assistant Professor, Medicine - Gastroenterology
jkarlitz@tulane.edu
I am interested in Lynch syndrome screening practices by tumor analysis for microsatellite instability (MSI) and immunohistochemistry (IHC) testing in young colorectal cancer patients. I am also interested in surgical practices in young colorectal cancer patients (extent of colonic resection). Finally, I am interested in colorectal cancer risk in the Cajun population. We recently demonstrated that the Acadian parishes of Louisiana have one of the highest rates of colorectal cancer in the U.S. I am currently the PI on a LA CaTS pilot grant that focuses on performing MSI and IHC testing on banked tumor specimens in Cajun patients to look for evidence of Lynch syndrome (founder effect in Cajun population).

Anil Mishra, PhD
Professor of Medicine - Pulmonary Diseases & Critical Care
amishra@tulane.edu
My research is aimed at deciphering mechanisms of inflammation, primarily based on discoveries concerning innate immunity. In particular, gene-environment interactions in the elicitation of inflammatory states in the respiratory and gastrointestinal tracts are under investigation. Environmental triggers (such as aeroallergens and food allergens) are studied in the context of specific genetic variants (e.g. IL-15 and IL-18 signaling) using population studies (cross sectional and longitudinal prospective cohorts) and mechanism-driven studies. The biological properties of innate inflammatory cells (eosinophils, mast cells, iNKT cells, epithelial cells) and the cytokines (especially chemokines and cell surface receptors) that mediate their function are under investigation.

GASTROENTEROLOGY / LIVER

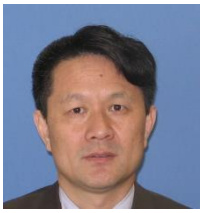
Martin Moehlen, MD, MPH
Assistant Professor, Medicine - Gastroenterology & Hepatology
mmoehle@tulane.edu
I am specifically interested in using the VA database to answer clinically relevant questions within hepatology: descriptive analysis of viral hepatitis (treatment of monoinfected hepatitis C and hepatitis C-HIV coinfection in VA versus "real world"); hepatocellular carcinoma - treatment practices and access to care. The inter-relationship between treatment of hepatitis C with newly available direct antiviral agents and effect on diabetes related outcomes.

Jeremy Nguyen, MD
Associate Professor, Radiology
jnguye2@tulane.edu
Diagnostic radiology with a focus in gastrointestinal tract, cardiopulmonary and neuroimaging. I am particularly interested in all aspects of liver imaging, and pancreatic-biliary disease. Neuroimaging includes functional magnetic resonance (MR) including spectroscopy and diffusion tensor imaging. I am also interested in mathematical aspects of medical image processing.

Anil Paramesh, MD
Associate Professor, Surgery – Abdominal Transplant
aparamesh@tulane.edu

Ronald S. Veazey, DVM, PhD
Professor and Chair, Division of Comparative Pathology – TNPRC
rveazey@tulane.edu
The immunology, prevention, and treatment of HIV infection and AIDS. Current projects involve determining correlates of protective immune responses, testing new HIV therapies and preventatives (microbicides), and examining the immune response to HIV infection in mucosal tissues, including the intestinal and reproductive tracts. I am also examining the pathogenesis of SIV infection in pediatric hosts, and the effects of alcohol use as a cofactor in the susceptibility and progression to AIDS.

GASTROENTEROLOGY / LIVER



Tong Wu, MD, PhD
Professor and Chair, Pathology and Laboratory Medicine
twu@tulane.edu

My research centers on the molecular mechanisms of inflammation and carcinogenesis, with a special emphasis on the pathogenesis of liver cancer and inflammatory liver diseases. My additional research interests include mechanisms of liver injuries, regulation of hepatobiliary epithelial cell growth and clinical/translational research on human liver cancer and liver diseases.

GENETICS

Hans C. Andersson, MD
Professor and Director, Hayward Genetics Center
handers@tulane.edu
The Hayward Genetics Center follows the majority of inherited metabolic patients in the Gulf South Region (>200pts) which diseases are rare and have a poor evidence base. Our efforts have been to characterize the natural history and responses to therapy for these metabolic disorders. We have described the first longterm treatment outcomes for cobalamin C disease and pediatric Gaucher Disease. We are currently trying to understand the neurologic basis for changes in behavior and executive function in phenylketonuria patients treated with tetrahydrobiopterin. Through a regional genetics collaborative, we are developing a strategic plan for emergency preparedness as a model for genetics centers and genetic laboratories to follow.

Henry Bart, Jr., PhD
Professor, Ecology and Evolutionary Biology – SSE
hbartjr@tulane.edu
Ecology, molecular genetics and systematics (taxonomy, phylogenetic relationships) of fishes. Director of the Tulane University Biodiversity Research Institute and Curator of the Royal D. Suttkus Fish Collection (Hebert Research Center in Belle Chasse)

YiPing Chen, PhD
Professor and Chair, Cell and Molecular Biology - SSE
ychen@tulane.edu
My research focuses on genetic regulation of organ formation and pathogenesis, particularly in craniofacial and cardiac development using transgenic/knockout mouse models.

Malwina Czarny-Ratajczak, PhD
Assistant Professor, Dept. of Medicine, Center for Aging
mczarnyr@tulane.edu
Identification of novel genetic and epigenetic factors contributing to development of primary osteoarthritis (OA). Next-generation sequencing approach to study exome, transcriptome and exosomal miRNAs of patients with osteoarthritis.

GENETICS

Prescott Deininger, PhD
Professor - Epidemiology SPHTM
pdeinin@tulane.edu
I am interested in the role that mobile elements play in mutagenesis within the human genome. This involves studies of their mutational capabilities, toxicity and the cellular response to their expression. Many studies involve DNA repair pathways, including nucleotide excision repair, mismatch repair and recombination. My laboratory specializes in high throughput molecular genetics techniques and applications.

Laurie R. Earls, PhD
Assistant Professor, Cell and Molecular Biology - SSE
learls@tulane.edu
I am is interested in how the molecular pathways that modulate synaptic plasticity change with age, and how this confers selective vulnerability to disease onset. For example, we have previously shown that microRNAs that do not target calcium stores early in development are critical for modulation of the SERCA calcium pump in early adulthood. This results in age-dependent alterations in synaptic plasticity in models of the 22q11 Deletion Syndrome, the major genetic risk factor for schizophrenia. Additionally, we have discovered a novel peptide encoded in the 22q11DS disease-critical region that affects synaptic plasticity in an age-dependent manner. We use genetics, molecular biology, and electrophysiology to study the effects of these pathways on neural function with age.

Melanie Ehrlich, PhD
Professor, Human Genetics Program
ehrlich@tulane.edu
My lab is studying the interrelationships of tissue-specific changes in DNA methylation and hydroxymethylation with alterations in chromatin structure and gene expression in differentiation and disease. In our studies of normal tissue, we are particularly interested in how the skeletal muscle-specific and brain-specific epigenetics fine tunes transcription.

Samir S. El-Dahr, MD
Professor and Chair, Pediatrics
seldahr@tulane.edu
Genetic and epigenetic control of renal development

GENETICS

Jeffrey Han, MD, PhD
Assistant Professor, Biochemistry and Molecular Biology
jhan5@tulane.edu
Retrotransposition in the germ line L1s are transposons that are expressed in the germ line of mammals. These mobile genetic elements replicate by transcribing their RNA, and then reverse transcribing this RNA into new DNA at a different chromosomal site. Since L1 replication involves chromosome breakage, we expect that excessive L1 activity can be disastrous to host genome integrity. Indeed, loss of transposon control pathways by mutation is associated with massive L1 expression, germ cell death, and sterility. This has obvious significance for fertility research. We have identified genetic pathways important for the activity of L1. We are also screening small drug-like compounds for inhibitory activity against L1. We hope to use these finding to assess the effects of blocking L1 activity genetically or with drugs on infertile mouse models that over express L1. We also would like to examine whether elevated L1 expression is overrepresented in human patients with infertility of unknown etiology.

Fenglei He, PhD
Assistant Professor, Cell and Molecular Biology – SSE
fhe@tulane.edu
Neural crest cells comprise a transient, highly migratory and multi-potent population. Arising at early stage of embryo development, they play essential roles in organ morphogenesis and homeostasis. My research interest lies in understanding fundamental mechanisms of neural crest cell development and related diseases using mouse models. Our current projects focus on dissecting the role of growth factor signaling and downstream pathways in development of cranial neural crest cells and their skeletal derivatives.

James Jackson, PhD
Assistant Professor, Biochemistry and Molecular Biology
jjacks8@tulane.edu
My lab is interested in the therapeutic response of breast cancers. Specifically, we aim to determine why some tumors relapse more quickly than others and also what cells in a heterogeneous tumor eventually proliferate to cause the relapse. We are investigating the role of p53 mediated cellular senescence in driving relapse. We use transgenic mouse models, ex vivo lentiviral infection, orthoptopic transplantation in syngeneic mice, and tissue culture model systems.

GENETICS

S. Michal Jazwinski, MD
Professor, Medicine – General Internal
sjazwins@tulane.edu
I am interested in the study of the genetic and epigenetic risk factors underlying complex traits with emphasis on population studies and mechanistic analyses in simple model systems such as yeast.

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

Tamas Kozicz, MD, PhD
Associate Professor, Anatomy
tkozicz@tulane.edu
My research concerns the pathobiology of stress-associated psychiatric diseases, like anxiety and depression. More specifically, the outcome of gene by environment interaction are studied by assessing epigenetic, endocrine, behavioural, physiological and neuroanatomical aspects of the stress (mal)adaptation response. Special focus is on the interplay of stress, mitochondrial (dys)function and gender. My laboratory uses various animal models, such as conditional transgenic and adenoviral approaches to specifically control gene expression in a temporal and site-specific manner, as well as human *post-mortem* brain samples.

Michelle Lacey, PhD
Associate Professor, Mathematics – SSE
mlacey1@tulane.edu
My primary research interests are in epigenetic modeling and analysis and in phylogenetics, and I also have extensive experience in the analysis of data generated by high throughput experiments.

Hongbing Liu, PhD
Assistant Professor, Pediatrics - Nephrology
hliu8@tulane.edu
The nephric lineage-specific functions of class I histone deacetylases (HDACs) in kidney development.

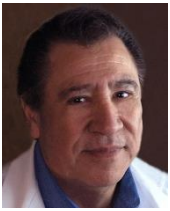
GENETICS

Stryder Meadows, PhD
Assistant Professor, Cell and Molecular Biology - SSE
smeadows@tulane.edu
My lab is focused on understanding the genetic pathways involved in regulating embryonic and retinal blood vessel development. In particular, we are interested in blood vessel fusion and artery-vein identity.

Ramgopal Mettu, PhD
Associate Professor, Computer Science – SSE
rmettu@tulane.edu
My work is at the intersection of algorithms, machine learning and computational biology. Applications of my work include protein structure prediction and determination, protein-protein interactions, compound screening, as well as problems in high-throughput sequencing and proteomics.

Charles Miller, PhD
Professor, Environmental Health Sciences
rellim@tulane.edu
I study adverse effects of chemicals in molecular, cellular, and animal model systems. I am particularly interested in chemicals that interact with the aryl hydrocarbon receptor signaling pathway.

Eva Morava, MD, PhD
Professor, Pediatrics
emoravakozicz@tulane.edu
My research concerns protein glycosylation, and glycosylation related inborn errors of metabolism, including dolichol synthesis. My translational research line aims at elucidating novel genetic and metabolic disorders related to N- linked and O-linked protein glycosylation and disorders of Golgi trafficking. More specifically, our lab has been successfully used next generation sequencing to discover novel diseases and evaluate the metabolic defect related to the gene defect to understand the underlying pathomechanism.



Enrique Palacios, MD
Professor, Radiology
epalaci@tulane.edu
Vascular

GENETICS

Kailash N. Pandey, PhD
Professor, Physiology
kpandey@tulane.edu

To delineate the molecular and cellular action of atrial natriuretic peptide (ANP) that controls the blood pressure and cardiovascular homeostasis. Our studies are aimed at examining the structure-function relationship of different domains of NPRA by deletion and site-directed mutagenesis and expression in cDNA transfected cells.

Sudesh K. Srivastav, PhD
Professor, Biostatistics and Bioinformatics – SPHTM
ssrivas@tulane.edu

Any biostatistics and quantitative bioinformatics applications in biological and public health data – range from design issues (including sample and power analysis) to statistical analysis of the study.

Shusheng Wang, PhD
Associate Professor, Cell and Molecular Biology – SSE
swang1@tulane.edu

(1) Noncoding RNAs in vascular development and diseases Vascular abnormalities underlie the pathogenesis of many ocular diseases. Our research focuses in the lab is to understand the role of noncoding RNAs, including microRNAs and long non-coding RNAs, in vascular biology and vascular retinopathies. (2) Cell death mechanism in degenerative retinal diseases We study cell death mechanism with hope to develop new therapeutic solutions for Age-related Macular Degeneration, a leading blinding disease in the elderly.

Yu-Ping Wang, PhD
Professor, Biomedical Engineering – SSE
wyp@tulane.edu

Integration of multiscale and multimodal imaging and genomic data. Biomedical image processing, statistical and computational modeling, and analysis of biomedical data.

Jeffrey K. Wickliffe, PhD
Associate Professor, Global Enivronmental Health Sciences – SPHTM
jwicklif@tulane.edu

Human cell culture models for genetox, mutagenesis, biotransformation, neurotox, senescence/cellular aging; mouse model for obesity, chemical sensitivity, and increased genetox + cancer risk; signal transduction using complex mixtures in vitro; human population research assessing complex exposures to environmental chemicals and cumulative risks.

IMMUNOLOGY / ALLERGY / SKIN

Solange Abdulnour-Nakhoul, PhD
Associate Professor, Medicine - Gastroenterology
solange@tulane.edu
My research is in physiology and biology of the esophagus (stratified squamous epithelium and glands), Reflux disease, and Eosinophilic Esophagitis.

Stephen Braun, PhD
Assistant Professor, Regenerative Medicine—TNPRC
sbraun@tulane.e du
The intersection of gene therapy and hematopoietic stem cells. Using the rhesus model, we are developing lentiviral vaccine vectors for AIDS and new inhibitors of HIV/SIV viral replication. We are studying transduction of rhesus (mouse and human) CD34+ hematopoietic stem cells prior to expansion and differentiation into dendritic cells. These transduced DCs will be used to vaccinate animals.

John Carlson, MD, PhD
Assistant Professor, Pediatrics – Allergy/Immunology
jcarlso@tulane.edu
Environmental exposures and asthma

Elizabeth S. Didier, PhD
Professor, Division of Microbiology, TNPRC
esdnda@tulane.edu
Studies on immunology of aging and accelerated aging during SIV infection plus cART using nonhuman primate models. These studies focus on macrophages and innate immune responses.

Eric Dumonteil, PhD
Associate Professor, Tropical Medicine – SPHTM
edumonte@tulane.edu
I am carrying out multidisciplinary studies for the development of new control tools for neglected tropical diseases, ranging from diagnostics, drugs and vaccines, to community based vector control interventions.

IMMUNOLOGY / ALLERGY / SKIN

Mark J. Fink, PhD
Professor, Chemistry – SSE
fink@tulane.edu
Synthesis and Properties of Semiconductor Nanoparticles. Our group, in collaboration with Brian Mitchell (Chemical Engineering), is active in the synthesis of silicon nanoparticles and quantum dots. Silicon nanoparticles have great potential as non-toxic luminescent biomarkers and multimodal drug delivery agents.

Lucy C. Freytag, PhD
Associate Professor, Microbiology and Immunology
lfreyta@tulane.edu
Understanding the immune responses that occur in animals/humans as a result of infection or vaccination. We are interested in developing needle-free vaccines delivered in the right formulation (i.e. with adjuvants and/or nanocarriers) to induce immunity. We have worked on potential vaccines against fungal (i.e. Candida, Cryptococcus), bacterial (i.e. B. anthracis, Salmonella) and viral (i.e. influenza) infections.

Loren Gragert, PhD
Assistant Professor, Pathology and Laboratory Medicine
lgragert@tulane.edu
My research focuses on understanding the role of immune gene polymorphisms (HLA and KIR) in transplantation, cancer, and autoimmune disease. As a bioinformatician, I apply statistical learning methods to the field of immunogenetics. My main project is fine-mapping of immune gene associations with hematologic diseases (lymphoma, leukemia, and severe aplastic anemia).

Scott Grayson, PhD
Associate Professor, Chemistry – SSE
sgrayson@tulane.edu
We investigate the role of polymer carrier architecture in optimizing physical (and hence pharmacokinetic) properties. We have projects which target aqueous soluble, bloodborne carriers, transdermal carriers, and gene transfection carriers.

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

IMMUNOLOGY / ALLERGY / SKIN

Deepak Kaushal, PhD
Professor, Microbiology & Immunology – TNPRC
dkaushal@tulane.edu
We are studying the molecular pathogenesis of Mycobacterium tuberculosis in a highly tractable macaque model. Our interests include the identification of bacillary virulence factors required for survival and persistence in host lesions; systems biology based identification of latent and reactivation TB and the role of miRNA molecules in immunomodulating innate immune response to Mtb infection of phagocytes.

Damir Khismatullin, PhD
Associate Professor, Biomedical Engineering – SSE
damir@tulane.edu
My research focuses on understanding the mechanical and transport properties of biological systems at cellular and tissue levels. Using experimental and theoretical approaches, we study the interactions of blood cells (leukocytes, platelets, red blood cells), tissue resident cells (macrophages, mast cells), and circulating tumor cells with vascular and lymphatic endothelium under pathophysiological conditions such as inflammation, atherosclerosis, thrombosis, sickle cell disease, and cancer metastasis. Another aspect of our research is the development of medical ultrasound technologies for cancer treatment, blood coagulation monitoring, and nerve regeneration. We also develop novel methods for rheological characterization of living cells and tissues and use our state-of-the-art computational fluid dynamics models to predict blood flow in vessels with complex geometry.

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

Marcelo Kuroda, MD, PhD
Associate Professor, Immunology – TNPRC
mkuroda@tulane.edu
My interests are in AIDS pathogenesis (nonhuman primate model); Innate Immunity (macrophages); Adaptive Immunity (CTL); Pediatric AIDS; TB/SIV model; Aging (Immunology); Innate immune responses (macrophages); Lung Immunology

IMMUNOLOGY / ALLERGY / SKIN

Andrew G. MacLean, PhD
Assistant Professor, Microbiology & Immunology – TNPRC
amaclean@tulane.edu
My lab looks at activation and disruption of the blood-brain barrier in health and disease, specifically HIV infection. We specialize in cell biological techniques, including cell adhesion, imaging and activation of signal transduction pathways. These models are being adapted to examine the cell biology of lung inflammation. We are also examining activation of glia in behavioral abnormalities in nonhuman primates and the impact of opioid inhibitors. Ongoing projects include aging, depression and autism spectrum disorders.

Nick Maness, PhD
Assistant Professor, Microbiology – TNPRC
nmaness@tulane.edu
My research interests are focused on T cell-mediated immunity and vaccines against viral infections. Currently, I study SIV-infected rhesus macaques and HIV-infected humans. I also use next generation pyrosequencing to examine virus-induced gene expression changes in the host as well as viral evolution in response to host immune responses.

James B. McLachlan, PhD
Assistant Professor, Microbiology and Immunology
jmclachl@tulane.edu
I am currently studying the role of the adaptive immune response to persistent bacterial pathogens in order to design better vaccines.

Ramgopal Mettu, PhD
Associate Professor, Computer Science – SSE
rmettu@tulane.edu
My work is at the intersection of algorithms, machine learning and computational biology. Applications of my work include protein structure prediction and determination, protein-protein interactions, compound screening, as well as problems in high-throughput sequencing and proteomics.

Gilbert Morris, PhD
Associate Professor, Department of Pathology
gmorris2@tulane.edu
Modeling lung tumorigenesis in mice; Lung tumor promotion by IL-17; Lung disease related to inflammasome repression by cigarette smoke

IMMUNOLOGY / ALLERGY / SKIN

Andrea Murina, MD
Assistant Professor, Dermatology
amurina@tulane.edu
Current education-based research projects include online adaptive learning modules for performance improvement, physical examination using virtual reality. In dermatology, I have interests in melanoma, vulvar diseases, hidradenitis suppurativa, and other chronic inflammatory diseases of the skin.

Elizabeth B. Norton, MPH, PhD
Assistant Professor, Microbiology and Immunology
enorton@tulane.edu
My research focuses on promoting a healthy immune system through animal model and primary human cell analyses. Ongoing areas of research include (1) how inflammation alters age-related immunity and vaccine efficacy, (2) how to best protect mucosal surfaces from respiratory infections (flu, TB) and bacterial diarrheal diseases (ETEC), (3) how derivatives from a unique bacterial toxin can act as vaccine adjuvants or anti-inflammatory therapies for gastrointestinal disease.

Anil Paramesh, MD
Associate Professor, Surgery – Abdominal Transplant
aparamesh@tulane.edu

Derek Pociask, PhD
Assistant Professor, Medicine – Pulmonary Diseases
dpociask@tulane.edu
I am interested in the immune responses in the lung. Specifically I am interested in how aspects of the immune system can be exploited to reduce injury or promote repair during infection or injury. My lab uses models of chemical or particle injury (acid aspiration, bleomycin, asbestos) and infectious injury (influenza, bacterial). While I am focused on the lung, my studies have branched to the liver, gut and thymus. The current major focus in my laboratory is the IL-22/IL-22BP axis and how this balance effects the immune response throughout the ody.

IMMUNOLOGY / ALLERGY / SKIN

Felicia Rabito, PhD
Associate Professor, Epidemiology – SPHTM
rabito@tulane.edu
My research interests are in asthma epidemiology, specifically the indoor environment. I am currently investigating factors associated with asthma outcome disparities and the influence of environmental (biologic and non-biologic) and social factors. I am interested in new methods of exposure assessment in particular monitoring techniques to measure indoor air pollution and respiratory and cardiovascular health, and novel methods to measure medication adherence in populations with chronic diseases.

Lesley Saketkoo, MD, MPH
Associate Professor, Medicine - Clinical Immunology
lsaketk@tulane.edu
Global rare disease registries,Patient-reported outcome development, HRQoL in complex/rare diseases, Mindfulness techniques and impact immunological response, symptom management and HRQoL, Mindfulness and Compassion Training in Medical Education.

Cecilia G. Sanchez PhD
Assistant Professor, Medicine - Pulmonary Diseases
csanche3@tulane.edu
I am interested in the roles of Sirtuins, autophagy/metabolism and circadian clock in age related lung diseases. Her work focus in understanding the pathogenesis and the development the novel therapeutic paradigms in lung fibrosis for patients with Idiopathic Pulmonary Fibrosis and patients with Systemic Scleroderma.

Vicki Traina-Dorge, PhD
Associate Professor, Division of Microbiology – TNPRC
vtraina@tulane.edu
My research interests include pathogenesis of viral infections in the nonhuman primate (NHP) as well as development of vaccines and/or therapeutics to combat those infections. My laboratory has a long standing shingles program studying varicella pathogenesis in the NHP using the varicella zoster virus (VZV) simian counterpart virus, simian varicella virus (SVV). Our current studies aim to identify cell types and cell signaling molecules for SVV trafficking in virus reactivation and the onset of shingles. We also have an AIDS pathogenesis program and are currently conducting preclinical vaccine trials in the NHP with our novel live attenuated rSVV-vectored SIV vaccine. We are testing both protective and therapeutic vaccine efficacy to identify immune correlates of protection and for ultimate development of a vaccine against HIV.

IMMUNOLOGY / ALLERGY / SKIN

Ronald S. Veazey, DVM, PhD
Professor and Chair, Division of Comparative Pathology – TNPRC
rveazey@tulane.edu
The immunology, prevention, and treatment of HIV infection and AIDS. Current projects involve determining correlates of protective immune responses, testing new HIV therapies and preventatives (microbicides), and examining the immune response to HIV infection in mucosal tissues, including the intestinal and reproductive tracts. I am also examining the pathogenesis of SIV infection in pediatric hosts, and the effects of alcohol use as a cofactor in the susceptibility and progression to AIDS.

Xiaolei Wang, PhD
Assistant Professor, Comparative Pathology – TNPRC
xwang@tulane.edu
My research interests are the immune system of infants, with a particular focus on mucosal immunology. We currently work on tracking & comparing the development of the systemic & mucosal immune systems in the neonates, & study the immune responses to the vaccines & pathogens in infant nonhuman primates. We also seek to understand immune control of virus & eradication of reservoirs to achieve a functional cure in pediatric AIDS patients.

Zongbing You, MD, PhD
Associate Professor, Structural & Cellular Biology
zyou@tulane.edu
Primarily study inflammation/immune responses in prostate cancer and lung cancer, focusing on interleukin-17. Secondarily study tissue engineering of articular cartilage using adipose tissue-derived stem cells transfected with doublecortin gene (DCX).

INFECTIOUS DISEASES

Pyone Pyone Aye, DVM, MS, PhD
Associate Professor, Comparative Pathology – TNPRC
paye@tulane.edu
My research interest is in cellular immune responses, pathogenesis of infectious diseases and substances, drugs, and vaccine effects on HIV/SIV pathogenesis and immunity.

Stephen Braun, PhD
Assistant Professor, Regenerative Medicine—TNPRC
sbraun@tulane.e du
The intersection of gene therapy and hematopoietic stem cells. Using the rhesus model, we are developing lentiviral vaccine vectors for AIDS and new inhibitors of HIV/SIV viral replication. We are studying transduction of rhesus (mouse and human) CD34+ hematopoietic stem cells prior to expansion and differentiation into dendritic cells. These transduced DCs will be used to vaccinate animals.

Mostafa Bouljihad, DVM, PhD
Associate Professor, Comparative Pathology – TNPRC
mbouljih@tulane.edu
I'm interested in studying Animal Models (NH-Primate, and other laboratory animals) for infectious diseases, especially those affecting respiratory system. I'm also interested in studying the relation between infectious disease and cancer.

Lorelei Cropley, Dr.PH
Associate Professor, Undergraduate Public Health Studies – SPHTM
lcropley@tulane.edu
Efficacy of Short Term Brigades, Iron deficiency anemia behavioral interventions using iron cookware, Chagas Disease KAP studies.

Srikanta Dash, PhD
Professor, Pathology and Laboratory Medicine
sdash@tulane.edu
Infectious diseases-Hepatitis C virus infection and interferon resistance and Liver cancer. Breast cancer chemoresistance and cancer vaccine 3. Intracellular treatment for hepatitis C using siRNA-nanotechnology.

INFECTIOUS DISEASES

Eric Dumonteil, PhD
Associate Professor, Tropical Medicine – SPHTM
edumonte@tulane.edu
I am carrying out multidisciplinary studies for the development of new control tools for neglected tropical diseases, ranging from diagnostics, drugs and vaccines, to community based vector control interventions.

Lucy C. Freytag, PhD
Associate Professor, Microbiology and Immunology
lfreyta@tulane.edu
Understanding the immune responses that occur in animals/humans as a result of infection or vaccination. We are interested in developing needle-free vaccines delivered in the right formulation (i.e. with adjuvants and/or nanocarriers) to induce immunity. We have worked on potential vaccines against fungal (i.e. Candida, Cryptococcus), bacterial (i.e. B. anthracis, Salmonella) and viral (i.e. influenza) infections.

Joseph Fuselier, PhD
Assistant Professor, Medicine - Peptide Research
fuselier@tulane.edu
Interested in creating novel therapeutic agents to help patients with diseases where there is little to no innovation or therapeutic benefit with current treatment modalities. My focus is to create intellectual property around these ideas and commercialize them to benefit humankind. My area of expertise revolves around modifying exquisitely potent drugs, conjugating them to peptides and proteins in a way so they are stable in circulation, are targeted to a specific tissue, and then release the biological warhead to the tissue of interest. Synthetic organic chemistry, peptide / protein chemistry, pharmacology, entrepreneurship, and business are all areas of interest.

Robert Garry, PhD
Professor, Microbiology and Immunology
rfgarry@tulane.edu
My research involves development of modern immunoassays for Lassa fever and diseases caused by other highly pathogenic viruses. We are also developing entry inhibitors for various enveloped viruses, including influenza virus.

INFECTIOUS DISEASES

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

Kerstin Honer zu Bentrup, PhD
Assistant Professor, Microbiology and Immunology
khonerzu@tulane.edu
Methods of active learning (Med. Ed.); Fluorescent/Light Microscopy, Bacterial Pathogenesis, Three-dimensional Cell-culture Systems (ID)

Mac Hyman, PhD
Professor, Mathematics – SSE
mhyman@tulane.edu
My research is the development and application of mathematical models based on the underlying disease transmission mechanisms to help the medical/scientific community understand and anticipate the spread of an epidemic and evaluate the potential effectiveness of different approaches for bringing the epidemic under control. My current research is focused on vector-borne diseases, such as dengue fever, malaria, chikungunya, and West Nile Virus.

Shanker Japa, PhD
Associate Professor, Medicine
japashan@tulane.edu
Coenzyme-Q10 as an Adjunct to Standard Therapis in Elderly Patients with Chronic Heart Failure and Type 2 Diabetes

Vijay John, PhD
Professor, Chemical and Biomolecular Engineering – SSE
vj@tulane.edu
A major project that I am now working on is in the exploitation of lipid self-assembly to induce transcutaneous vaccine delivery Biological lipids and synthetic surfactants) is essential in technologies as mundane as consumer detergent products, and techologies of the future as in the development of structured, responsive nanomaterials. Biological membranes are ubiquitous examples of lipid-self assembly that impacts the entire function of a cell.

INFECTIOUS DISEASES

Amitinder Kaur, MD
Professor, Microbiology and Immunology – TNPRC
akaur@tulane.edu
My laboratory is currently pursuing projects on mechanisms of protection against AIDS in natural hosts of SIV infection, natural killer T cells as adjuvants and modulators of immune activation, immune protection against congenital CMV in rhesus macaques, and the early host response to vaccines and SIV infection in nonhuman primate models of AIDS.

Deepak Kaushal, PhD
Professor, Microbiology & Immunology – TNPRC
dkaushal@tulane.edu
We are studying the molecular pathogenesis of Mycobacterium tuberculosis in a highly tractable macaque model. Our interests include the identification of bacillary virulence factors required for survival and persistence in host lesions; systems biology based identification of latent and reactivation TB and the role of miRNA molecules in immunomodulating innate immune response to Mtb infection of phagocytes.

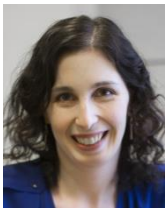
Patty Kissinger, BSN, MPH, PhD
Professor, Epidemiology SPHTM
kissing@tulane.edu
Presently I have two R01 awards. In the first, we are working on exploring the origins of repeat infections with Trichomonas vaginalis via an RCT as well as genotyping and conducting susceptibility testing and in the second we are examining the utility and cost effectiveness of screening men for Chlamydia trachomatis on the rates among women as well as mathematically modeling the percentage of men needed to screen to impact women's rates.

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

INFECTIOUS DISEASES

Marcelo Kuroda, MD, PhD
Associate Professor, Immunology – TNPRC
mkuroda@tulane.edu
My interests are in AIDS pathogenesis (nonhuman primate model); Innate Immunity (macrophages); Adaptive Immunity (CTL); Pediatric AIDS; TB/SIV model; Aging (Immunology); Innate immune responses (macrophages); Lung Immunology

Samuel J. Landry, PhD
Professor, Biochemistry
landry@tulane.edu
We combine biophysical and immunological approaches in vaccine design, with particular emphasis on the relationship of CD4+ T-cell epitope dominance to antigen structure, especially for HIV/AIDS.



Alyssa Lederer, PhD, MPH
Assistant Professor, Global Community Health and Behavioral Sciences
alederer@tulane.edu
My research primarily focuses on partnering with community-based organizations to enhance child, adolescent and emerging adult health through intervention design and evaluation, especially in the areas of sexual health and the reduction of sexuality-related stigma, nutrition, and physical activity. Much of my work is based in school and university settings and utilizes theory-driven and multi-method approaches.

Maureen Lichtveld, MD, PhD
Professor and Chair, Global Environmental Health Sciences- SPHTM
mlichtve@tulane.edu
My research integrates environmental health, health disparities, disasters, community-based participatory research, women's health, and environmental policy. I am an endowed chair in environmental policy and Associate Director, Population Sciences, Louisiana Cancer Research Consortium. As Director of the Center for Gulf Coast Environmental Health Research, Leadership, and Strategic Initiatives, my research portfolio encompasses national and global environmental health projects.

INFECTIOUS DISEASES

Andrew G. MacLean, PhD
Assistant Professor, Microbiology & Immunology – TNPRC
amaclean@tulane.edu
My lab looks at activation and disruption of the blood-brain barrier in health and disease, specifically HIV infection. We specialize in cell biological techniques, including cell adhesion, imaging and activation of signal transduction pathways. These models are being adapted to examine the cell biology of lung inflammation. We are also examining activation of glia in behavioral abnormalities in nonhuman primates and the impact of opioid inhibitors. Ongoing projects include aging, depression and autism spectrum disorders.

Nick Maness, PhD
Assistant Professor, Microbiology – TNPRC
nmaness@tulane.edu
My research interests are focused on T cell-mediated immunity and vaccines against viral infections. Currently, I study SIV-infected rhesus macaques and HIV-infected humans. I also use next generation pyrosequencing to examine virus-induced gene expression changes in the host as well as viral evolution in response to host immune responses.

Preston A. Marx, PhD
Professor, Tropical Medicine - SPHTM
pmarx@tulane.edu
My research interest are the evolution and emergence of epidemic strains of HIV-2 in West Africa. I also conduct research on anti-viral vaccines, currently HIV and Dengue virus vaccines. I am interested in prevention of STDs to women through the development of anti-viral vaginal microbicides. He primarily uses non-human primate models in his research.

James B. McLachlan, PhD
Assistant Professor, Microbiology and Immunology
jmclachl@tulane.edu
I am currently studying the role of the adaptive immune response to persistent bacterial pathogens in order to design better vaccines.

Ramgopal Mettu, PhD
Associate Professor, Computer Science – SSE
rmettu@tulane.edu
My work is at the intersection of algorithms, machine learning and computational biology. Applications of my work include protein structure prediction and determination, protein-protein

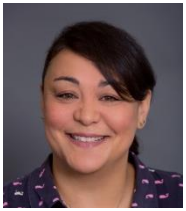
interactions, compound screening, as well as problems in high-throughput sequencing and proteomics.

Debasis Mondal, PhD
Associate Professor, Pharmacology
dmondal@tulane.edu

We are looking at the role of drug-efflux transporters (e.g. P-gp) and drug-metabolizing enzymes (Cyp3A) in drug pharmacokinetics and antiviral efficacy. We are focusing on the role of these host factors in facilitating viral persistence in subvascular reservoirs, e.g. brain and GI submucosa. Several pharmacological inhibitors are being tested as combination therapy to increase antiviral efficacy in reservoirs. We are also investigating whether these factors are upregulated in viral reservoirs and whether a gene therapy approach can be implemented to suppress their induction, thus enabling therapeutic levels of drugs to enter.

Lisa A. Morici, PhD
Assistant Professor, Microbiology and Immunology
lmorici@tulane.edu

My research focus is to identify novel mechanisms by which bacterial pathogens evade host immune surveillance and establish chronic infection in the host. Currently, my laboratory is examining the molecular basis by which the biological threat agent, *Burkholderia pseudomallei*, evades host innate immune responses. We are using genetic, proteomic, and immunological approaches to identify virulence determinants of *B. pseudomallei* that influence disease outcome through initial interactions with antigen-presenting cells. In addition, we are applying these same techniques for the purposes of vaccine discovery and development against *B. pseudomallei* and other aerosol threat agents.



Lina Moses, PhD, MSPH
Research Assistant Professor, Global Community Health and Behavioral Sciences
lmoses2@tulane.edu

My research focuses on applied public health research, with particular emphasis on implementation of evidence-based interventions for vector-borne and zoonotic diseases at the community level. I'm also interested in human and animal surveillance for zoonotic and emerging diseases, both from traditional indicator-based and community-event based approaches.

INFECTIOUS DISEASES

David A. Mullin
Associate Professor, Cell and Molecular Biology – SSE
damullin@tulane.edu
My research interests are in the production of advanced liquid biofuels that can be used in place of gasoline and the development of a new class of antibacterial compounds that I discovered.

Damian R. Murray, PhD
Assistant Professor, Psychology – SSE
dmurray4@tulane.edu
My research investigates the implications of real and perceived disease threat for social behavior, personality, and cross-cultural differences.

David Mushatt, MD, MPHTM
Associate Professor, Medicine – Infectious Diseases
dmushatt@tulane.edu
My focus is in HIV therapeutics, serving as the local PI for the Tulane site of the International Network for Strategic Initiatives in Global HIV Trials (INSIGHT). In addition, I am working with Deepak Kaushal, PhD at the Tulane Primate Center to develop a non-human primate model of pulmonary M. avium complex infection.

Amber Naresh, MD, MPH
Assistant Professor, Obstetrics & Gynecology
anaresh@tulane.edu
I am interested HPV-related pre-malignant lesions of the cervix in women. One current projects focuses on improving HPV vaccination rates locally, and another seeks to delineate lifestyle factors associated with HPV persistence in women with low grade dysplasia, with a focus on nutritional factors. This project also seeks to identify novel molecular bio-markets which could help predict behavior of HPV in the genital tract.

Elizabeth B. Norton, MPH, PhD
Assistant Professor, Microbiology and Immunology
enorton@tulane.edu
My research focuses on promoting a healthy immune system through animal model and primary human cell analyses. Ongoing areas of research include (1) how inflammation alters age-related immunity and vaccine efficacy, (2) how to best protect mucosal surfaces from respiratory infections (flu, TB) and bacterial diarrheal diseases (ETEC), (3) how derivatives from a unique

bacterial toxin can act as vaccine adjuvants or anti-inflammatory therapies for gastrointestinal disease.

Antonio (Nito) Panganiban, PhD
Professor and Interim Chair, Microbiology - TNPRC
apangani@tulane.edu

We're working on virus replication, the host response to virus infection, and anti-viral strategies. Our primary focus is on emerging, zoonotic, minus strand RNA viruses that cause hemorrhagic fever and related pathogenesis. Pathogenesis typically involves infection of vessel endothelial cells and either systemic or localized hemorrhagic fever. The approaches we use include molecular virology, genomics, and transcriptomics.

Anil Paramesh, MD
Associate Professor, Surgery – Abdominal Transplant
aparamesh@tulane.edu

Noshir Pesika, PhD
Associate Professor, Chemical and Biomolecular Engineering
npesika@tulane.edu

My research interest lies in the development of electrochemical sensor platforms to detect various biomolecules with high sensitivity. I am also interested in modifying surfaces, either through chemistry or topography to enhance their properties for different applications.

Derek Pociask, PhD
Assistant Professor, Medicine – Pulmonary Diseases
dpociask@tulane.edu

I am interested in the immune responses in the lung. Specifically I am interested in how aspects of the immune system can be exploited to reduce injury or promote repair during infection or injury. My lab uses models of chemical or particle injury (acid aspiration, bleomycin, asbestos) and infectious injury (influenza, bacterial). While I am focused on the lung, my studies have branched to the liver, gut and thymus. The current major focus in my laboratory is the IL-22/IL-22BP axis and how this balance effects the immune response throughout the body.

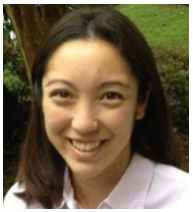
INFECTIOUS DISEASES

James E. Robinson, MD
Professor, Pediatrics – Infectious Diseases
jrobinso@tulane.edu

My research is focused on dissecting B cell responses to human and primate retroviruses, dengue virus, and lassa fever virus in naturally infected hosts. We produce human and monkey monoclonal antibodies that define which antibodies mediate activities that might protect against infection. The antibodies define structures that are capable of eliciting protective immune responses. In theory monoclonal antibodies should aid in vaccine design.

Daniel Salerno, MD, MS
Assistant Professor, Medicine - Pulmonary Diseases
dsalerno@tulane.edu

I am doing research about the use of biomarkers for the diagnosis of Pneumocystis pneumonia in patients with AIDS.



Mimi Sammarco, PhD
Assistant Professor, Surgery
msammarc@tulane.edu

My primary research interest is the influence of oxygen on the promotion of limb regeneration and tissue, muscle and bone salvage after traumatic injury. We use a mouse digit amputation model, which regenerates tendon, soft tissue, and patterned bone to characterize molecular mechanisms that influence the regenerative process. We find that a dynamic oxygen microenvironment is key to wound healing and regeneration.

John S. Schieffelin, MD, MSPH
Assistant Professor, Pediatrics - Infectious Disease
jschieff@tulane.edu

My two main areas of research are 1. Antibody response to viral hemorrhagic fever infections and 2. Natural history, diagnosis and treatment of Lassa fever and Ebola virus disease. Both of these areas of interest involve the development of novel diagnostic platforms and treatment and prevention strategies.

INFECTIOUS DISEASES

Deborah E. Sullivan, PhD
Associate Professor, Microbiology and Immunology
dsulliva@tulane.edu

A major research focus of my laboratory is on the pathobiology of human herpesviruses with special emphasis on cytomegalovirus infection of mesenchymal stem cells and placental progenitor cells. We are also studying in the role of stem cells in lung repair and tumorigenesis.

Varsha Taskar, MD
Associate Professor, Medicine – Pulmonary Diseases
vtaskar@tulane.edu

I am interested in lung disease specifically cystic fibrosis (CF), non tuberculous mycobacteria, rheumatoid lung disease. I would like to explore role of environmental mycobacteria in pathophysiology of lung disease in CF and immunocompromised patients.

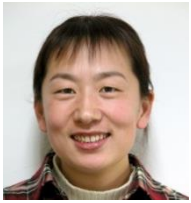
Vicki Traina-Dorge, PhD
Associate Professor, Division of Microbiology – TNPRC
vtraina@tulane.edu

My research interests include pathogenesis of viral infections in the nonhuman primate (NHP) as well as development of vaccines and/or therapeutics to combat those infections. My laboratory has a long standing shingles program studying varicella pathogenesis in the NHP using the varicella zoster virus (VZV) simian counterpart virus, simian varicella virus (SVV). Our current studies aim to identify cell types and cell signaling molecules for SVV trafficking in virus reactivation and the onset of shingles. We also have an AIDS pathogenesis program and are currently conducting preclinical vaccine trials in the NHP with our novel live attenuated rSVV-vectored SIV vaccine. We are testing both protective and therapeutic vaccine efficacy to identify immune correlates of protection and for ultimate development of a vaccine against HIV.

Ronald S. Veazey, DVM, PhD
Professor and Chair, Division of Comparative Pathology – TNPRC
rveazey@tulane.edu

The immunology, prevention, and treatment of HIV infection and AIDS. Current projects involve determining correlates of protective immune responses, testing new HIV therapies and preventatives (microbicides), and examining the immune response to HIV infection in mucosal tissues, including the intestinal and reproductive tracts. I am also examining the pathogenesis of SIV infection in pediatric hosts, and the effects of alcohol use as a cofactor in the susceptibility and progression to AIDS.

INFECTIOUS DISEASES



Xiaolei Wang, PhD
Assistant Professor, Comparative Pathology – TNPRC
xwang@tulane.edu

My research interests are the immune system of infants, with a particular focus on mucosal immunology. We currently work on tracking and comparing the development of the systemic and mucosal immune systems in the neonates, and study the immune responses to the vaccines and pathogens in infant nonhuman primates. We also seek to understand immune control of virus and eradication of reservoirs to achieve a functional cure in pediatric AIDS patients.

Huanbin Xu, PhD
Assistant Professor, Comparative Pathology – TNPRC
hxu@tulane.edu

My research focuses on correlates of immunity to HIV infection, the immunology and pathogenesis of AIDS, and testing new and novel therapeutic strategies to eliminate viral reservoirs and "cure" pathogenic infection in the highly relevant SIV/SHIV macaque models of HIV infection. His current work is to optimize universal delivery systems for vaccines and drugs, designed to eradicate viral reservoirs by combining new and novel approaches with innovative molecular biology techniques in nonhuman primate models.

KIDNEY / HYPERTENSION

Carolyn Bayer, PhD
Assistant Professor, Biomedical Engineering – SSE
carolynb@tulane.edu
The research in our laboratory develops novel medical imaging methods to study the dynamics of molecular expression and physiological function by integrating ultrasound and contrast-enhanced photoacoustic imaging systems. A key focus of our imaging technology is the functional and molecular environment during compromised pregnancies which lead to the development of birth defects.

Vecihi Batuman, MD
Professor, Medicine - Nephrology and Hypertension
vbatuma@tulane.edu
Renal metabolism and toxicity of myeloma light chains; biomarkers of tubular injury; acute kidney injury--mechanisms, therapeutic strategies; radio-contrast-induced kidney injury; Balkan endemic nephropathy; environmental kidney disease-- lead nephropathy and hypertension.

Gerald Berenson, MD
Research Professor, Medicine
berenson@tulane.edu
CV risk factors effect on aging, CV disease and renal disease

Jing Chen, MD
Professor, Medicine – Nephrology and Hypertension
jchen@tulane.edu
Etiology, Prevention and Treatment of Chronic Kidney Disease and Hypertension, Cardiovascular Disease in Chronic Kidney Disease Metabolic Syndrome and Obesity Related Kidney Disease, Vascular Calcification in Chronic Kidney Disease, Diabetic Nephropathy, Gene-Environment Interaction in Chronic Kidney Disease and Hypertension.

Samir S. El-Dahr, MD
Professor and Chair, Pediatrics
seldahr@tulane.edu
Genetic and epigenetic control of renal development

KIDNEY / HYPERTENSION

Cecilia Gambala, MD, MPH
Assistant Professor, Obstetrics and Gynecology
cgambal@tulane.edu
My interests reside in Women's Health, particularly during pregnancy. Topics of interest include diabetes, hypertension and obesity in pregnancy.

L. Lee Hamm, MD
Dean, School of Medicine
lhamm@tulane.edu
Acid-base homeostasis – basic mechanisms and clinical disorders; Citrate transport in the kidney related to stones; Sodium transport in the kidney related to hypertension; Cardiovascular disease in Chronic kidney disease; Genetic mechanisms of kidney disease and hypertension.

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

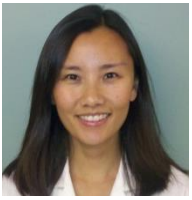
Kathleen S. Hering-Smith, PhD
Associate Professor, Medicine – Nephrology
khering@tulane.edu
We have significant experience and expertise in epithelial transport biology and cell and molecular techniques using a wide variety of kidney tubule cell lines. Most of these studies have addressed sodium, acid-base, and citrate transport, the latter an important inhibitor of kidney stones. Recently these studies have led to related issues involving diabetes and intermediate cell metabolism. Current techniques involve CRISPER knock-out studies and RNA-Seq

Suttira Intapad, PhD
Assistant Professor, Pharmacology
sintapad@tulane.edu
I am interested in research related to the developmental programming of chronic diseases, especially cardiovascular disease, and how an improper environment during fetal development such as preeclampsia can result in long-lasting effects on an individual's health.

KIDNEY / HYPERTENSION

Philip J. Kadowitz, PhD
Professor, Pharmacology
pkadowi@tulane.edu
Pulmonary hypertension, diabetes-vascular complications, hypertension and erectile dysfunction.

Muhammad Altaf Khan, PhD
Research Instructor, Medicine - Nephrology and Hypertension
akhan2@tulane.edu
Our research focuses on the cellular and molecular mechanisms involved in acute and chronic kidney disorders. The current emphases are on nephropathy due to ischemia/reperfusion, myeloma light chain overload and common nephrotoxic agents such as cisplatin, cyclosporine A, aristolochic acid and radiocontrast media. We are also focusing on the development of diagnostic and therapeutic strategies for these kidney diseases.



Belinda T. Lee, MD
Assistant Professor, Medicine - Nephrology and Hypertension
blee14@tulane.edu
My research focuses on kidney disease, kidney transplantation, and racial disparities in healthcare.

Hongbing Liu, PhD
Assistant Professor, Pediatrics - Nephrology
hliu8@tulane.edu
The nephric lineage-specific functions of class I histone deacetylases (HDACs) in kidney development.

Dewan Syed Abdul Majid, MD, PhD
Professor, Physiology
majid@tulane.edu
Elucidation of the intra-renal mechanisms regulating renal hemodynamics and excretory function by endothelial/vasoactive factors. Elucidation of the mechanistic link between Oxidative stress, inflammation and salt-sensitive hypertension.

KIDNEY / HYPERTENSION

Kenneth D. Mitchell, PhD
Associate Professor, Physiology
kdmitch@tulane.edu

My research interests are oriented toward evaluation of the mechanisms underlying the renal functional derangements that contribute to the pathogenesis of angiotensin II-dependent hypertension.

Nazih Nakhoul, PhD
Associate Professor, Medicine - Nephrology and Hypertension
nakhoul@tulane.edu

I study cellular and molecular mechanisms of renal regulation of acid-base balance and pH regulation. We have identified new mechanisms of ammonia transport in the kidney that contribute to acid excretion by the kidney and we are investigating the role of acidosis as an epigenetic factor.

L. Gabriel Navar, PhD
Professor and Chair, Physiology
navar@tulane.edu

Research in my lab consist of studies on experimental hypertension and the regulation of the intrarenal renin-angiotensin system.

Kailash N. Pandey, PhD
Professor, Physiology
kpandey@tulane.edu

To delineate the molecular and cellular action of atrial natriuretic peptide (ANP) that controls the blood pressure and cardiovascular homeostasis. Our studies are aimed at examining the structure-function relationship of different domains of NPRA by deletion and site-directed mutagenesis and expression in cDNA transfected cells.

Anil Paramesh, MD
Associate Professor, Surgery – Abdominal Transplant
aparamesh@tulane.edu

KIDNEY / HYPERTENSION

Minolfa C. Prieto, MD, PhD
Associate Professor, Physiology
mprieto@tulane.edu

Renal physiology. Experimental hypertension. Role of intrarenal RAS in hypertension. Angiotensin II-dependent hypertension. Role of collecting duct rrenin and prorenin receptor interaction in the control blood pressure. Mechanisms of regulation of renin and prorenin receptor in the collecting duct in hypertension and diabetes mellitus. Contributions of gender differences of the intrarenal RAS to the develoment of hypertension. Intrarenal RAS activation in diabetic nephropathy. Renal morphological rearrangements in hypertension. Effects of salt intake on renal damage during hypertension.

Zubaida Saifudeen, PhD
Associate Professor, Pediatrics - Nephrology
zubisaif@tulane.edu

Impaired nephron progenitor cell renewal in embryogenesis results in fewer nephrons. Research in our lab is focused on understanding the mechanisms by which energy metabolism influences nephron progenitor cell renewal and differentiation. We use mouse models, kidney organ culture, primary cell culture, RNA-Seq, chromatin immunoprecipitation and metabolic profiling to characterize requirements for nephron stem cell renewal versus differentiation. How the metabolic status of the nephron stem cell switches the cellular program from self-renewal to nephrogenesis has potentially huge implications on the influence of the maternal diabetic environment on embryonic kidney development. The knowledge gained can be utilized to adjust maternal conditions for optimal nephrogenesis during fetal development and towards regenerative therapies.

Ryosuke Sato, PhD
Assistant Professor, Physiology
rsato@tulane.edu

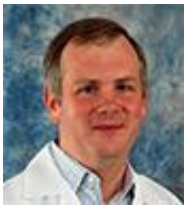
We investigate molecular mechanisms underlying regulation of intrarenal renin-angiotensin system.

Eric Simon, MD
Professor, Medicine - Nephrology and Hypertension
esimon@tulane.edu

Diuretics in hypertension, aging and kidney function, acute kidney injury, hemodialysis volume assessment.

KIDNEY / HYPERTENSION

Federico Teran, MD
Assistant Professor, Medicine - Nephrology and Hypertension
fteran@tulane.edu
I am currently working on a developing a mouse model for kidney stone development and how certain electrolyte/compound transport in the kidneys affect the development of kidney stones.



Thomas Cooper Woods, PhD
Assistant Professor, Physiology
twoods3@tulane.edu
Vascular biology, intimal thickening, atherosclerosis, and the cardiovascular complications of diabetes.

Ihor V. Yosypiv, MD
Associate Professor, Pediatrics –Nephrology
iiosipi@tulane.edu
Kidney development: Renin-angiotensin system in ureteric bud branching morphogenesis.

Rubin Zhang, MD
Associate Professor, Medicine – Nephrology
rzhang@tulane.edu
I am interested in identify new biomarkers of acute kidney injury after kidney transplant. I am studying a group of biomarkers in urine to determine which one is more sensitive and specific for predicting ischemia reperfusion injury, delayed graft dysfunction, graft function recovery and long-term graft survival.

LUNG

Sabrina Bent, MD
Associate Professor, Anesthesiology
sbent@tulane.edu
The Department of Anesthesiology has interest in all major organ system research, especially as it applies to the perioperative care of patients. In addition we are interested in novel and innovative techniques for education especially involving technology or simulation. We have additional interests in patient safety, quality, and process management of patients.

Bruce A. Bunnell, PhD
Professor, Pharmacology
bbunnell@tulane.edu
Areas of research/interest: Stem Cells and Regenerative Medicine. My group is interested in various stem cell populations from understanding their basic biology to therapeutic applications. We are currently working on applying stem cells for the treatment of Krabbe's disease, a lysosomal storage disease that affects the CNS and Multiple Sclerosis, an autoimmune disease. Moreover, we are interested in the role that mesenchymal stem cells play in tumor formation and growth. Lastly, we are currently working on the decellularization damaged or diseased lung tissue and recellularization of the native matrix with stem cells.

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Donald P. Gaver, PhD
Professor and Chair, Biomedical Engineering - SSE
dpg@tulane.edu
My research involves the investigation of biofluid mechanics and biotransport phemomena with a specific interest in interfacial flows and surfactant transport related to the lung. I also direct an NSF-funded interdisciplinary PhD program on Bioinnovation that helps to develop commercially viable technologies and link faculty between the SoM, SPHTM and SSE.

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

LUNG

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

Janarthanan Jayawickramarajah, PhD
Associate Professor, Chemistry – SSE
jananj@tulane.edu
My research focuses on the synthesis of designer molecules and nanoparticles that have the unique ability to undergo specific self-assembly and molecular recognition events. In particular, we are using these systems to generate protein inhibitors that are activated by endogenous biomarkers (including over-expressed microRNAs and enzymes).

Deepak Kaushal, PhD
Professor, Microbiology & Immunology – TNPRC
dkaushal@tulane.edu
We are studying the molecular pathogenesis of Mycobacterium tuberculosis in a highly tractable macaque model. Our interests include the identification of bacillary virulence factors required for survival and persistence in host lesions; systems biology based identification of latent and reactivation TB and the role of miRNA molecules in immunomodulating innate immune response to Mtb infection of phagocytes.

Thomas Kennedy, MD, MPH
Professor, Medicine - Pulmonary, Critical Care & Environmental Medicine
Tkenned7@tulane.edu
My research involves drug development: 1. 2-O, 3-O desulfated low anticoagulant heparin as a cancer support drug and anti-inflammatory drug. 2. Sulfated and aklyated analogs of hyaluronan for oral health and for interstitial cystitis. 3. Arylated diazenium diolate nitric oxide pro-drugs for human cancer 4. Thiocarbamate/metal complexes as glutathionylating agents to treat human cancer. I have developed start-up pharmaceutical entities around each of the four families of companies noted above and am in the process of translating to the bedside.

LUNG

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

Joseph A. Lasky, MD
Professor, Medicine – Pulmonary Diseases
Section Chief Pulmonary, Critical Care and Sleep Medicine
jlasky@tulane.edu
My primary research interest involves basic and clinical aspects of pulmonary fibrosis. A significant component of the basic research program is focused on the role of class II HDACs in fibrogenesis, with an emphasis on the non-epigenetic functions of HDACs. The primary thrust of this work now entails understanding which key fibrogenic signaling events are regulated by lysine acetylation. I also have an interest in the aging lung and so my laboratory is investigating the role of PML bodies in pulmonary fibrosis.

Nick Maness, PhD
Assistant Professor, Microbiology – TNPRC
nmaness@tulane.edu
My research interests are focused on T cell-mediated immunity and vaccines against viral infections. Currently, I study SIV-infected rhesus macaques and HIV-infected humans. I also use next generation pyrosequencing to examine virus-induced gene expression changes in the host as well as viral evolution in response to host immune responses.

Anil Mishra, PhD
Professor of Medicine - Pulmonary Diseases & Critical Care
amishra@tulane.edu
My research is aimed at deciphering mechanisms of inflammation, primarily based on discoveries concerning innate immunity. In particular, gene-environment interactions in the elicitation of inflammatory states in the respiratory and gastrointestinal tracts are under investigation. Environmental triggers (such as aeroallergens and food allergens) are studied in the context of specific genetic variants (e.g. IL-15 and IL-18 signaling) using population studies (cross sectional and longitudinal prospective cohorts) and mechanism-driven studies. The biological properties of innate inflammatory cells (eosinophils, mast cells, iNKT cells, epithelial cells) and the cytokines (especially chemokines and cell surface receptors) that mediate their function are under investigation.

LUNG

Gilbert Morris, PhD
Associate Professor, Department of Pathology
gmorris2@tulane.edu
Modeling lung tumorigenesis in mice; Lung tumor promotion by IL-17; Lung disease related to inflammasome repression by cigarette smoke

Derek Pociask, PhD
Assistant Professor, Medicine – Pulmonary Diseases
dpociask@tulane.edu
I am interested in the immune responses in the lung. Specifically I am interested in how aspects of the immune system can be exploited to reduce injury or promote repair during infection or injury. My lab uses models of chemical or particle injury (acid aspiration, bleomycin, asbestos) and infectious injury (influenza, bacterial). While I am focused on the lung, my studies have branched to the liver, gut and thymus. The current major focus in my laboratory is the IL-22/IL-22BP axis and how this balance effects the immune response throughout the body.

Shigeki Saito, MD
Assistant Professor, Medicine - Pulmonary & Critical Care Medicine
ssaito@tulane.edu
My research interests include pulmonary fibrosis, acute lung injury, pulmonary hypertension. My current research project: a role of class II HDAC in pulmonary fibrosis.

Lesley Saketkoo, MD, MPH
Associate Professor, Medicine - Clinical Immunology
lsaketk@tulane.edu
Global rare disease registries,Patient-reported outcome development, HRQoL in complex/rare diseases, Mindfulness techniques and impact immunological response, symptom management and HRQoL, Mindfulness and Compassion Training in Medical Education

Daniel Salerno, MD, MS
Assistant Professor, Medicine - Pulmonary Diseases
dsalerno@tulane.edu
I am doing research about the use of biomarkers for the diagnosis of Pneumocystis pneumonia in patients with AIDS.

LUNG

Cecilia G. Sanchez PhD
Assistant Professor, Medicine - Pulmonary Diseases
csanche3@tulane.edu
I am interested in the roles of Sirtuins, autophagy/metabolism and circadian clock in age related lung diseases. Her work focus in understanding the pathogenesis and the development the novel therapeutic paradigms in lung fibrosis for patients with Idiopathic Pulmonary Fibrosis and patients with Systemic Scleroderma.

Deborah E. Sullivan, PhD
Associate Professor, Microbiology and Immunology
dsulliva@tulane.edu
A major research focus of my laboratory is on the pathobiology of human herpesviruses with special emphasis on cytomegalovirus infection of mesenchymal stem cells and placental progenitor cells. We are also studying in the role of stem cells in lung repair and tumorigenesis.

Varsha Taskar, MD
Associate Professor, Medicine – Pulmonary Diseases
vtaskar@tulane.edu
I am interested in lung disease specifically cystic fibrosis (CF), non tuberculous mycobacteria, rheumatoid lung disease. I would like to explore role of environmental mycobacteria in pathophysiology of lung disease in CF and immunocompromised patients.

Vicki Traina-Dorge, PhD
Associate Professor, Division of Microbiology – TNPRC
vtraina@tulane.edu
My research interests include pathogenesis of viral infections in the nonhuman primate (NHP) as well as development of vaccines and/or therapeutics to combat those infections. My laboratory has a long standing shingles program studying varicella pathogenesis in the NHP using the varicella zoster virus (VZV) simian counterpart virus, simian varicella virus (SVV). Our current studies aim to identify cell types and cell signaling molecules for SVV trafficking in virus reactivation and the onset of shingles. We also have an AIDS pathogenesis program and are currently conducting preclinical vaccine trials in the NHP with our novel live attenuated rSVV-vectored SIV vaccine. We are testing both protective and therapeutic vaccine efficacy to identify immune correlates of protection and for ultimate development of a vaccine against HIV.

LUNG

Zongbing You, MD, PhD
Associate Professor, Structural & Cellular Biology
zyou@tulane.edu

Primarily study inflammation/immune responses in prostate cancer and lung cancer, focusing on interleukin-17. Secondarily study tissue engineering of articular cartilage using adipose tissue-derived stem cells transfected with doublecortin gene (DCX).

MEDICAL EDUCATION

Sabrina Bent, MD
Associate Professor, Anesthesiology
sbent@tulane.edu
The Department of Anesthesiology has interest in all major organ system research, especially as it applies to the perioperative care of patients. In addition we are interested in novel and innovative techniques for education especially involving technology or simulation. We have additional interests in patient safety, quality, and process management of patients.

Donald P. Gaver, PhD
Professor and Chair, Biomedical Engineering - SSE
dpg@tulane.edu
My research involves the investigation of biofluid mechanics and biotransport phemomena with a specific interest in interfacial flows and surfactant transport related to the lung. I also direct an NSF-funded interdisciplinary PhD program on Bioinnovation that helps to develop commercially viable technologies and link faculty between the SoM, SPHTM and SSE.

Jennifer W. Gibson, PhD
Assistant Professor and Director, Office of Medical Education
jwgibson@tulane.edu
Utilize outcome data to evaluate the effectiveness of the undergraduate medical education program.

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

Kerstin Honer zu Bentrup, PhD
Assistant Professor, Microbiology and Immunology
khonerzu@tulane.edu
Methods of active learning (Med. Ed.); Fluorescent/Light Microscopy, Bacterial Pathogenesis, Three-dimensional Cell-culture Systems (ID)

MEDICAL EDUCATION

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Corrector/potentiator medications for patients with CFTR mutations and cystic fibrosis. Bronchiectasis and mycobacterial diseases including tuberculosis and non-tuberculous mycobacteria. Anxiety and depression in patients with chronic diseases. Medical education. Pulmonary rehabilitation and exercise therapy.

Deborah Larimer, EdD
Instructor, Office of Medical Education
dlarimer@tulane.edu
My current research areas include peer evaluation and fostering and assessing professionalism in medical education

Cathy J. Lazarus, MD
Professor, Medicine
clazaru@tulane.edu
My research interests are medical education including students and residents and faculty development. I have published in the areas of innovative curricula, professional development, humanism in medicine, and student and resident well being. I have a current project looking at faculty development in the area of medical education scholarship.

Geraldine E. Ménard MD
Associate Professor, Medicine – General Internal Medicine
gmenard@tulane.edu
My area of research interest is in hospitalist care, improving transitions of care and reducing readmissions, and perioperative medicine.

Andrea Murina, MD
Assistant Professor, Dermatology
amurina@tulane.edu
Current education-based research projects include online adaptive learning modules for performance improvement, physical examination using virtual reality. In dermatology, I have interests in melanoma, vulvar diseases, hidradenitis suppurativa, and other chronic inflammatory diseases of the skin.

MEDICAL EDUCATION

Ashley Wennerstrom, PhD, MPH
Assistant Professor, Medicine – General Internal Medicine
awenners@tulane.edu
I use community-academic partnered methods to address a wide variety of community health concerns including intimate partner violence, behavioral health, health care for formerly incarcerated individuals.

Lesley Saketkoo, MD, MPH
Associate Professor, Medicine - Clinical Immunology
lsaketk@tulane.edu
Global rare disease registries,Patient-reported outcome development, HRQoL in complex/rare diseases, Mindfulness techniques and impact immunological response, symptom management and HRQoL, Mindfulness and Compassion Training in Medical Education

Valerie A. Yeager, DrPH
Assistant Professor, Global Health Management and Policy - SPHTM
vayeager@tulane.edu
I am interested in the use of health information technology (electronic health records and health information exchange) as it relates to quality of care. Also related to quality of care, I am interested in patient satisfaction and access to care as well as the use of patient navigators in health care delivery. Recently, I have been examining Accountable Care Models (ACOs) in relation to quality of care.

MEN'S HEALTH

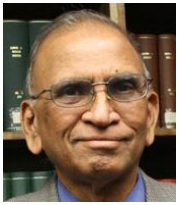
Genevieve Fava, PhD
Instructor, Orthopaedics
glum@tulane.edu
Our program is involved in research regarding cardiovascular and prostate health risks of former NFL players. We utilize clinical data obtained during health screening events to determine cardiovascular health risks, and prevalence and incidence of cardiovascular disease in this unique population.

Jeffrey Han, MD, PhD
Assistant Professor, Biochemistry and Molecular Biology
jhan5@tulane.edu
Retrotransposition in the germ line L1s are transposons that are expressed in the germ line of mammals. These mobile genetic elements replicate by transcribing their RNA, and then reverse transcribing this RNA into new DNA at a different chromosomal site. Since L1 replication involves chromosome breakage, we expect that excessive L1 activity can be disastrous to host genome integrity. Indeed, loss of transposon control pathways by mutation is associated with massive L1 expression, germ cell death, and sterility. This has obvious significance for fertility research. We have identified genetic pathways important for the activity of L1. We are also screening small drug-like compounds for inhibitory activity against L1. We hope to use these finding to assess the effects of blocking L1 activity genetically or with drugs on infertile mouse models that over express L1. We also would like to examine whether elevated L1 expression is overrepresented in human patients with infertility of unknown etiology.

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

Patty Kissinger, BSN, MPH, PhD
Professor, Epidemiology SPHTM
kissing@tulane.edu
Presently I have two R01 awards. In the first, we are working on exploring the origins of repeat infections with Trichomonas vaginalis via an RCT as well as genotyping and conducting susceptibility testing and in the second we are examining the utility and cost effectiveness of screening men for Chlamydia trachomatis on the rates among women as well as mathematically modeling the percentage of men needed to screen to impact women's rates.

MEN'S HEALTH



Krishnarao Moparty, MD
Professor, Urology
kmopart@tulane.edu
My research has been in the field of prostate cancer, especially molecular biology and active surveillance.

Oliver Sartor, MD
Professor, Medicine - Hematology & Medical Oncology
osartor@tulane.edu
My current research interests include clinical trials in advanced prostate cancer with novel agents and novel combinations of agents. His collaborative projects include novel concepts in prostate stem cells and germ line assessment of prostate cancer risk.

Suresh C. Sikka, PhD
Professor & Research Director, Urology
ssikka@tulane.edu
My research and clinic focus is on Aging male related to male infertility, Sexual health, Environmental reproductive toxicology; Forensic applications; Role of Oxidative Stress/Redox Changes and Antioxidants; Sperm safety multicenter studies; Endocrine Disruptors, Prostatic inflammation; and Andropause.

Raju Thomas, MD
Professor and Chair, Urology
rthomas@tulane.edu

NEUROSCIENCES

Sabrina Bent, MD
Associate Professor, Anesthesiology
sbent@tulane.edu

The Department of Anesthesiology has interest in all major organ system research, especially as it applies to the perioperative care of patients. In addition we are interested in novel and innovative techniques for education especially involving technology or simulation. We have additional interests in patient safety, quality, and process management of patients.

David Busija, PhD
Professor and Chair, Pharmacology
dbusija@tulane.edu

I have a well-established, diverse research program that focuses on: 1) The mechanisms involved in the regulation of the cerebral circulation in health and disease; 2) The mechanisms of damage to the brain following injury; 3) Therapeutic strategies to restore normal cerebral vascular responses during disease processes such as insulin resistance and ischemia/reperfusion; and 4) Development of methods to protect cells of the neurovascuÂ¬lar unit (endothelium, smooth muscle, perivascular nerves, astroglia, neurons, etc.) against potentially lethal stimuli.

Paul Colombo, PhD
Associate Professor, Psychology - SSE
pcolomb@tulane.edu

There are three primary aims of research conducted in this laboratory. The first is to elucidate the neuronal mechanisms of memory formation with emphasis on the roles of signaling proteins, including kinases, phosphatases, and transcription factors. The second aim is test hypotheses regarding independence or interactions among multiple memory systems. The third aim is to apply results of studies of the neuronal mechanisms of memory formation to studies of age-related memory impairment under normal (e.g. non-pathological) aging conditions.

Doug Chrisey, PhD
Professor, Physics and Engineering Physics – SSE
dchrisey@tulane.edu

My research is focused on fabricating engineered tissue constructs by the CAD/CAM direct writing of cells, scaffold, and biomolecules for fundamental and applied research. Past work has included studying disparate cells and environments such as stem cell differentiation, angiogenesis, and neural growth.

NEUROSCIENCES

Jill M. Daniel, PhD
Professor, Psychology and Neuroscience - SSE
jmdaniel@tulane.edu
I study the impact of estrogens and androgens on the brain and cognition across the lifespan using rodent models.

Andrei Derbenev, PhD
Assistant Professor, Physiology
aderben@tulane.edu
My laboratory investigates the involvement of the brain in the regulation of blood pressure. We focus on synaptic plasticity in the in the brainstem during hypertension.

Stacy Drury, MD, PHD
Assistant Professor, Psychiatry and Behavioral Sciences
sdrury@tulane.edu
I am interested in the interaction of genetic and epigenetic factors with early experience and how this interaction shapes neurodevelopment and long term outcomes in children. My research focuses on improving outcomes in medically ill children through providing a greater understanding of the impact of psychological distress, neurocognitive development and family functioning in these children.

Laurie R. Earls, PhD
Assistant Professor, Cell and Molecular Biology - SSE
learls@tulane.edu
I am is interested in how the molecular pathways that modulate synaptic plasticity change with age, and how this confers selective vulnerability to disease onset. For example, we have previously shown that microRNAs that do not target calcium stores early in development are critical for modulation of the SERCA calcium pump in early adulthood. This results in age-dependent alterations in synaptic plasticity in models of the 22q11 Deletion Syndrome, the major genetic risk factor for schizophrenia. Additionally, we have discovered a novel peptide encoded in the 22q11DS disease-critical region that affects synaptic plasticity in an age-dependent manner. We use genetics, molecular biology, and electrophysiology to study the effects of these pathways on neural function with age.

NEUROSCIENCES

Gary Haynes, MD, PhD
Professor and Chair, Anesthesiology
ghaynes@tulane.edu
I am interested in point of care testing for assessment of hemostasis and coagulation as well as the use of non-invasive technology to assess hemodynamic function.

Hai Huang, PhD
Assistant Professor, Cell and Molecular Biology - SSE
hhuang5@tulane.edu
We aim to understand the synaptic mechanisms that support reliable and precise auditory information processing and how noise exposure and hearing loss affect these function, using a combination of techniques including electrophysiology, two-photon imaging, computational modeling, and molecular biology.

Damir Khismatullin, PhD
Associate Professor, Biomedical Engineering – SSE
damir@tulane.edu
My research focuses on understanding the mechanical and transport properties of biological systems at cellular and tissue levels. Using experimental and theoretical approaches, we study the interactions of blood cells (leukocytes, platelets, red blood cells), tissue resident cells (macrophages, mast cells), and circulating tumor cells with vascular and lymphatic endothelium under pathophysiological conditions such as inflammation, atherosclerosis, thrombosis, sickle cell disease, and cancer metastasis. Another aspect of our research is the development of medical ultrasound technologies for cancer treatment, blood coagulation monitoring, and nerve regeneration. We also develop novel methods for rheological characterization of living cells and tissues and use our state-of-the-art computational fluid dynamics models to predict blood flow in vessels with complex geometry.

Jenifer Juengling, PhD
Instructor, Orthopaedics
jjuengli@tulane.edu
Development of rehabilitation outcome measures and functional behavioral interventions in the areas of cognition, communication, and dysphagia to utilize in the clinical setting with athletic and non-athletic population who have acquired brain injuries, stroke, and/or neurodegenerative disorders to improve patient daily function and quality of life.

NEUROSCIENCES

Tamas Kozicz, MD, PhD
Associate Professor, Human Genetics Program
tkozicz@tulane.edu

My research concerns the pathobiology of stress-associated psychiatric diseases, like anxiety and depression. More specifically, the outcome of gene by environment interaction are studied by assessing epigenetic, endocrine, behavioural, physiological and neuroanatomical aspects of the stress (mal)adaptation response. Special focus is on the interplay of stress, mitochondrial (dys)function and gender. My laboratory uses various animal models, such as conditional transgenic and adenoviral approaches to specifically control gene expression in a temporal and site-specific manner, as well as human *post-mortem* brain samples.

Andrew G. MacLean, PhD
Assistant Professor, Microbiology & Immunology – TNPRC
amaclean@tulane.edu

My lab looks at activation and disruption of the blood-brain barrier in health and disease, specifically HIV infection. We specialize in cell biological techniques, including cell adhesion, imaging and activation of signal transduction pathways. These models are being adapted to examine the cell biology of lung inflammation. We are also examining activation of glia in behavioral abnormalities in nonhuman primates and the impact of opioid inhibitors. Ongoing projects include aging, depression and autism spectrum disorders.

Julie Markant, PhD
Assistant Professor, Psychology – SSE
jmarkant@tulane.edu

My research focuses on interactions between attention and memory systems and the development of neural systems supporting these interactions. I am particularly interested in examining the role of increasing control over selective attention in promoting more effective learning during infancy. I use a convergent methods approach, including behavioral, eye tracking, genetics, and functional MRI methods.

Howard Mielke, PhD
Professor, Pharmacology
hmielke@tulane.edu

Exposome of the city and children's exposure. Current work is on multiple metals (and lead) in the environment and the exposure response by children (to lead). If children are being exposed to lead they are also being exposed to multiple metals.

NEUROSCIENCES

Michael Moore, PhD
Assistant Professor, Biomedical Engineering – SSE
mooremj@tulane.edu
The focus of my laboratory is to develop *in vitro* models of neural growth, physiology, and disease by manipulating the chemical and physical extracellular microenvironment. Toward this end, we employ a number of microengineering technologies such as microscale tissue engineering, novel nanomaterials, microfabrication, digital light projection microcopy, and optical modes of electrophysiological stimulation and recording. We are using these approaches to compare neurons derived from different sources of stem cells for their ability to respond to molecular guidance cues, and we are developing functional models of synaptic physiology, of inflammatory demyelinating disorders, and of peripheral neuropathy.

Ricardo Mostany, PhD
Assistant Professor, Pharmacology
rmostany@tulane.edu
Cortical circuits show a certain degree of plasticity during normal brain functions (e.g., sensory stimulation, memory storage and learning). This plasticity can be altered when the homeostasis of the brain is perturbed during aging, sensory deprivation, stroke, or after the exposure to environmental agents. Using cutting edge imaging techniques, i.e. two-photon laser microscopy and intrinsic optical signal imaging, in combination with transgenic mice-expressing fluorescent proteins in cortical pyramidal cells, we can study the dynamics of dendritic spines in vivo during normal brain function and how these dynamics change after ischemia, with aging, or during sensory stimulation.

Jeremy Nguyen, MD
Associate Professor, Radiology
jnguye2@tulane.edu
Diagnostic radiology with a focus in gastrointestinal tract, cardiopulmonary and neuroimaging. I am particularly interested in all aspects of liver imaging, and pancreatic-biliary disease. Neuroimaging includes functional magnetic resonance (MR) including spectroscopy and diffusion tensor imaging. I am also interested in mathematical aspects of medical image processing.

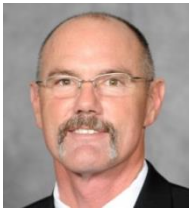
NEUROSCIENCES

Jeffrey Rouse, MD
Assistant Professor, Psychiatry and Behavioral Sciences
jrouse@tulane.edu
As a forensic psychiatrist at Tulane and the Orleans Parish Coroner, my academic interests include the neuroanatomical risk factors for violence, functional and structural neuroimaging of brain regions and networks involved in emotion regulation, and the application of biomarkers to forensic risk assessment. After an extended hiatus from research, I seek to leverage opportunities for cross-disciplinary collaboration and reinvigorate a career in clinical research.

Lesley Saketkoo, MD, MPH
Associate Professor, Medicine - Clinical Immunology
lsaketk@tulane.edu
Global rare disease registries,Patient-reported outcome development, HRQoL in complex/rare diseases, Mindfulness techniques and impact immunological response, symptom management and HRQoL, Mindfulness and Compassion Training in Medical Education.

Michael S. Scheeringa, MD, MPH
Professor, Psychiatry and Behavioral Science
mscheer@tulane.edu
Psychopathology in infant and preschool children; autonomic heart period control; electroencephalography; cortisol regulation; parent-child relationship quality; treatment for young children.

Laura Schrader, PhD
Associate Professor, Cell and Molecular Biology – SSE
schrader@tulane.edu
The main research interest in my lab involves investigation of regulation of neuronal excitability by ion channels. This research is relevant to normal plasticity processes, such as learning and memory and pathological processes such as epilepsy. Techniques include: patch clamp electrophysiology in brain slices, behavioral paradigms, molecular biology and biochemistry.



Gregory W. Stewart, MD
Associate Professor, Orthopedics
gstewart@tulane.edu
Concussion, CTE and brain changes, long-term cardiovascular implications in former professional athletes.

NEUROSCIENCES

Brian Summa, PhD
Assistant Professor, Computer Science – SSE
bsumma@tulane.edu
My research focuses on the design of scalable algorithms for the interactive exploration, visualization, segmentation, and analysis of large data. Recent medical applications of my work include: the visualization and registration of large 2-photon, electron, and confocal microscopy scans; automatic and semi-automatic neural pathway tracing; understanding and quantifying the uncertainty in medical image segmentation; and visualization and analysis of large digital pathology slides.

Jeffrey Tasker, PhD
Professor, Cell and Molecular Biology – SSE
tasker@tulane.edu
I am researching the physiological and biochemical properties of brain cells that control pituitary hormone release.

Nandini Vasudevan, PhD
Assistant Professor, Cell and Molecular Biology - SSE
nandini@tulane.edu
Our lab is interested in how hormones signal in the brain to give rise to behaviors. We are particularly interested in novel modes of estrogen signaling and how they affect aggression in males and anxiety in both males and females. In addition, we are also interested in the possible links between state anxiety and learning and memory. We use genetically modified and wildtype mice, as well as molecular techniques, clell culture and mouse behavior to investigate these areas.

Yu-Ping Wang, PhD
Professor, Biomedical Engineering – SSE
wyp@tulane.edu
Integration of multiscale and multimodal imaging and genomic data. Biomedical image processing, statistical and computational modeling, and analysis of biomedical data.

Joby Westmoreland, PhD
Assistant Professor, Cell and Molecular Biology – SSE
jwestmor@tulane.edu
I am interested in non-coding RNAs in schizophrenia and Rett Syndrome.

NEUROSCIENCES

Jeffrey K. Wickliffe, PhD
Associate Professor, Global Enivronmental Health Sciences – SPHTM
jwicklif@tulane.edu

Human cell culture models for genetox, mutagenesis, biotransformation, neurotox, senescence/cellular aging; mouse model for obesity, chemical sensitivity, and increased genetox + cancer risk; signal transduction using complex mixtures in vitro; human population research assessing complex exposures to environmental chemicals and cumulative risks.

James Zadina, PhD
Professor, Pharmacology and Neuroscience
jzadina@tulane.edu

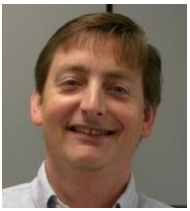
Neurobiology of opioids and their receptors. Mechanisms and treatment of acute and chronic pain. Development of novel analgesics with reduced adverse side effects.

Andrea Zsombok, PhD
Assistant Professor, Physiology
azsombo@tulane.edu

My laboratory examines the fundamental relationship between the central nervous system and glucose homeostasis. We identify circuits regulating visceral organs (e.g., brain-liver axis) and focus on neuronal alterations in the hypothalamus and brainstem during diabetic and obese conditions.

REGENERATIVE MEDICINE / TISSUE ENGINEERING

Taby Ahsan, PhD
Assistant Professor, Biomedical Engineering - SSE
tahsan@tulane.edu
Our lab focuses on the effects of the physical microenvironment on stem cell fate utilizing engineered systems that control cellular configurations and apply mechanical forces. We take an interdisciplinary approach, working with basic scientists, engineers, and clinicians in both academia and industry, to answer questions and address issues in stem cell mechanobiology, stem cell bioprocessing, and tissue engineering.



Stephen Braun, PhD
Assistant Professor, Regenerative Medicine – TNPRC
sbraun@tulane.e du
The intersection of gene therapy and hematopoietic stem cells. Using the rhesus model, we are developing lentiviral vaccine vectors for AIDS and new inhibitors of HIV/SIV viral replication. We are studying transduction of rhesus (mouse and human) CD34+ hematopoietic stem cells prior to expansion and differentiation into dendritic cells. These transduced DCs will be used to vaccinate animals.

YiPing Chen, PhD
Professor and Chair, Cell and Molecular Biology - SSE
ychen@tulane.edu
My research focuses on genetic regulation of organ formation and pathogenesis, particularly in craniofacial and cardiac development using transgenic/knockout mouse models.

Donald P. Gaver, PhD
Professor and Chair, Biomedical Engineering - SSE
dpg@tulane.edu
My research involves the investigation of biofluid mechanics and biotransport phemomena with a specific interest in interfacial flows and surfactant transport related to the lung. I also direct an NSF-funded interdisciplinary PhD program on Bioinnovation that helps to develop commercially viable technologies and link faculty between the SoM, SPHTM and SSE.

REGENERATIVE MEDICINE / TISSUE ENGINEERING

Fenglei He, PhD
Assistant Professor, Cell and Molecular Biology – SSE
fhe@tulane.edu

Neural crest cells comprise a transient, highly migratory and multi-potent population. Arising at early stage of embryo development, they play essential roles in organ morphogenesis and homeostasis. My research interest lies in understanding fundamental mechanisms of neural crest cell development and related diseases using mouse models. Our current projects focus on dissecting the role of growth factor signaling and downstream pathways in development of cranial neural crest cells and their skeletal derivatives.

Kristin S. Miller, PhD
Assistant Professor, Biomedical Engineering - SSE
kmille11@tulane.edu

The Biomechanics of Growth & Remodeling Laboratory uses a combined experimental and computational approach to better understand, describe, and predict soft tissue remodeling in response to various chemo-mechanical stimuli including normal processes (e.g., aging and pregnancy), disease, and injury. To this end, our research utilizes model systems with varying restraints on regenerative capability (postnatal development, pregnancy, and postpartum) to define local microstructure and mechanical properties of evolving collagenous tissues to identify potential treatments and the appropriate time course for clinical interventions to prevent maladaptive remodeling, improve adult response to injury, and advance tissue engineering strategies. Our primary areas of research include orthopaedics (tendon and ligament) and women's reproductive health.

Michael Moore, PhD
Assistant Professor, Biomedical Engineering – SSE
mooremj@tulane.edu

The focus of my laboratory is to develop *in vitro* models of neural growth, physiology, and disease by manipulating the chemical and physical extracellular microenvironment. Toward this end, we employ a number of microengineering technologies such as microscale tissue engineering, novel nanomaterials, microfabrication, digital light projection microcopy, and optical modes of electrophysiological stimulation and recording. We are using these approaches to compare neurons derived from different sources of stem cells for their ability to respond to molecular guidance cues, and we are developing functional models of synaptic physiology, of inflammatory demyelinating disorders, and of peripheral neuropathy.

REGENERATIVE MEDICINE / TISSUE ENGINEERING

Walter Lee Murfee, PhD
Associate Professor, Biomedical Engineering – SSE
wmurfee@tulane.edu

Our laboratory investigates the multi-cellular and multi-system dynamics involved in microvascular network growth. Specifically, we apply *in vivo*, *in vitro*, and computational bioengineering approaches to investigate the regulation of vascular patterning and the functional relationships between angiogenesis and other processes, such as lymphangiogenesis. Our work provides valuable insight for the engineering of functional vascularized tissues and for understanding vascular dysfunction associated with aging, hypertension, and other pathological conditions.

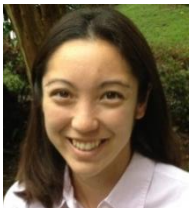
Derek Pociask, PhD
Assistant Professor, Medicine – Pulmonary Diseases
dpociask@tulane.edu

I am interested in the immune responses in the lung. Specifically I am interested in how aspects of the immune system can be exploited to reduce injury or promote repair during infection or injury. My lab uses models of chemical or particle injury (acid aspiration, bleomycin, asbestos) and infectious injury (influenza, bacterial). While I am focused on the lung, my studies have branched to the liver, gut and thymus. The current major focus in my laboratory is the IL-22/IL-22BP axis and how this balance effects the immune response throughout the body.

Brian G. Rowan, PhD
Associate Professor and Chair, Structural & Cellular Biology
browan@tulane.edu

Research interests: 1. Estrogen receptor phosphorylation: understanding the role of estrogen receptor alpha (ERα) phosphorylation in regulating receptor function in normal and cancer tissue. 2. Experimental therapeutics for breast cancer: using peptidomimetic Src inhibitor in combination with endocrine and chemotherapy for breast cancer; novel bone targeted parathyroid hormone antagonists for bone metastatic breast cancer. 3. Circadian regulation of estrogen receptor function: understanding the reciprocal regulation of the circadian rhythm and estrogen receptor in physiologic processes. 4. Adipocyte tissue-derived stromal/stem in reconstructive surgery and soft tissue repair**:** understanding the mechanisms by which ASCs promote head/neck cancer metastasis; the impact of ASCs in a low oxygen environment on fibrosis and immunomodulation.

REGENERATIVE MEDICINE / TISSUE ENGINEERING



Mimi Sammarco, PhD
Assistant Professor, Surgery
msammarc@tulane.edu

My primary research interest is the influence of oxygen on the promotion of limb regeneration and tissue, muscle and bone salvage after traumatic injury. We use a mouse digit amputation model, which regenerates tendon, soft tissue, and patterned bone to characterize molecular mechanisms that influence the regenerative process. We find that a dynamic oxygen microenvironment is key to wound healing and regeneration.

Cecilia G. Sanchez PhD
Assistant Professor, Medicine - Pulmonary Diseases
csanche3@tulane.edu

I am interested in the roles of Sirtuins, autophagy/metabolism and circadian clock in age related lung diseases. Her work focus in understanding the pathogenesis and the development the novel therapeutic paradigms in lung fibrosis for patients with Idiopathic Pulmonary Fibrosis and patients with Systemic Scleroderma.

Hongju Wu, PhD
Associate Professor, Medicine - Endocrinology and Metabolism
hwu3@tulane.edu

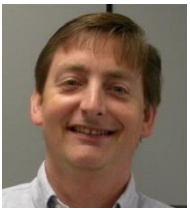
Diabetes: particularly in islet cell biology, especially with regard to the regeneration and function of α-, β-, and δ-cells. We have shown the regeneration of adult α- and δ-cell regeneration following β-cell loss during diabetes development, and attempted to identify the mechanisms/cellular origins for the regenerated cells. I am also interested in the molecules and other factors (such as exercise, aging, etc.) that impact the potential of islet cell regeneration. I have also been exploring strategies that can protect β-cells and promote β-cell regeneration. I am also attempting to convert other cell types into β-cells using transcription factors that are essential for β-cell development.

Zongbing You, MD, PhD
Associate Professor, Structural & Cellular Biology
zyou@tulane.edu

Primarily study inflammation/immune responses in prostate cancer and lung cancer, focusing on interleukin-17. Secondarily study tissue engineering of articular cartilage using adipose tissue-derived stem cells transfected with doublecortin gene (DCX).

STEM CELL RESEARCH

Taby Ahsan, PhD
Assistant Professor, Biomedical Engineering - SSE
tahsan@tulane.edu
Our lab focuses on the effects of the physical microenvironment on stem cell fate utilizing engineered systems that control cellular configurations and apply mechanical forces. We take an interdisciplinary approach, working with basic scientists, engineers, and clinicians in both academia and industry, to answer questions and address issues in stem cell mechanobiology, stem cell bioprocessing, and tissue engineering.



Stephen Braun, PhD
Assistant Professor, Regenerative Medicine – TNPRC
sbraun@tulane.e du
The intersection of gene therapy and hematopoietic stem cells. Using the rhesus model, we are developing lentiviral vaccine vectors for AIDS and new inhibitors of HIV/SIV viral replication. We are studying transduction of rhesus (mouse and human) CD34+ hematopoietic stem cells prior to expansion and differentiation into dendritic cells. These transduced DCs will be used to vaccinate animals.

Bruce A. Bunnell, PhD
Professor, Pharmacology
bbunnell@tulane.edu
Areas of research/interest: Stem Cells and Regenerative Medicine. My group is interested in various stem cell populations from understanding their basic biology to therapeutic applications. We are currently working on applying stem cells for the treatment of Krabbe's disease, a lysosomal storage disease that affects the CNS and Multiple Sclerosis, an autoimmune disease. Moreover, we are interested in the role that mesenchymal stem cells play in tumor formation and growth. Lastly, we are currently working on the decellularization damaged or diseased lung tissue and recellularization of the native matrix with stem cells.

Doug Chrisey, PhD
Professor, Physics and Engineering Physics – SSE
dchrisey@tulane.edu
My research is focused on fabricating engineered tissue constructs by the CAD/CAM direct writing of cells, scaffold, and biomolecules for fundamental and applied research. Past work has included studying disparate cells and environments such as stem cell differentiation, angiogenesis, and neural growth.

STEM CELL RESEARCH

Jeffrey M. Gimble MD, PhD
Adjunct Professor, Center for Stem Cell Research & Regenerative Medicine and Departments of Medicine and Surgery
jgimble@tulane.edu

My laboratory focuses on stromal/stem cells isolated from adipose tissue and bone for use in metabolic and regenerative medical studies. Ongoing and recent studies have explored the effects of aging on wound healing processes and the characteristics and differentiation potential of freshly isolated and cryopreserved stromal stem cells.

Mohamed Hassan, PhD
Research Assistant Professor, Surgery
mhassan@tulane.edu

Melanoma stem cells (MSCs) are characterized by a unique protein signature and a network of aberrant signaling pathways. These unique protein signature and aberrant signaling pathways are either in a causal or consequential relationship to melanoma progression, metastasis and drug-resistance.

Fenglei He, PhD
Assistant Professor, Cell and Molecular Biology – SSE
fhe@tulane.edu

Neural crest cells comprise a transient, highly migratory and multi-potent population. Arising at early stage of embryo development, they play essential roles in organ morphogenesis and homeostasis. My research interest lies in understanding fundamental mechanisms of neural crest cell development and related diseases using mouse models. Our current projects focus on dissecting the role of growth factor signaling and downstream pathways in development of cranial neural crest cells and their skeletal derivatives.

Michael Moore, PhD
Assistant Professor, Biomedical Engineering – SSE
mooremj@tulane.edu

The focus of my laboratory is to develop *in vitro* models of neural growth, physiology, and disease by manipulating the chemical and physical extracellular microenvironment. Toward this end, we employ a number of microengineering technologies such as microscale tissue engineering, novel nanomaterials, microfabrication, digital light projection microcopy, and optical modes of electrophysiological stimulation and recording. We are using these approaches to compare neurons derived from different sources of stem cells for their ability to respond to molecular guidance cues, and we are developing functional models of synaptic physiology, of inflammatory demyelinating disorders, and of peripheral neuropathy.

STEM CELL RESEARCH

Walter Lee Murfee, PhD
Associate Professor, Biomedical Engineering – SSE
wmurfee@tulane.edu

Our laboratory investigates the multi-cellular and multi-system dynamics involved in microvascular network growth. Specifically, we apply *in vivo*, *in vitro*, and computational bioengineering approaches to investigate the regulation of vascular patterning and the functional relationships between angiogenesis and other processes, such as lymphangiogenesis. Our work provides valuable insight for the engineering of functional vascularized tissues and for understanding vascular dysfunction associated with aging, hypertension, and other pathological conditions.

Derek Pociask, PhD
Assistant Professor, Medicine – Pulmonary Diseases
dpociask@tulane.edu

I am interested in the immune responses in the lung. Specifically I am interested in how aspects of the immune system can be exploited to reduce injury or promote repair during infection or injury. My lab uses models of chemical or particle injury (acid aspiration, bleomycin, asbestos) and infectious injury (influenza, bacterial). While I am focused on the lung, my studies have branched to the liver, gut and thymus. The current major focus in my laboratory is the IL-22/IL-22BP axis and how this balance effects the immune response throughout the body.

Zubaida Saifudeen, PhD
Associate Professor, Pediatrics - Nephrology
zubisaif@tulane.edu

Impaired nephron progenitor cell renewal in embryogenesis results in fewer nephrons. Research in our lab is focused on understanding the mechanisms by which energy metabolism influences nephron progenitor cell renewal and differentiation. We use mouse models, kidney organ culture, primary cell culture, RNA-Seq, chromatin immunoprecipitation and metabolic profiling to characterize requirements for nephron stem cell renewal versus differentiation. How the metabolic status of the nephron stem cell switches the cellular program from self-renewal to nephrogenesis has potentially huge implications on the influence of the maternal diabetic environment on embryonic kidney development. The knowledge gained can be utilized to adjust maternal conditions for optimal nephrogenesis during fetal development and towards regenerative therapies.

STEM CELL RESEARCH

Deborah E. Sullivan, PhD
Associate Professor, Microbiology and Immunology
dsulliva@tulane.edu

A major research focus of my laboratory is on the pathobiology of human herpesviruses with special emphasis on cytomegalovirus infection of mesenchymal stem cells and placental progenitor cells. We are also studying in the role of stem cells in lung repair and tumorigenesis.

Shusheng Wang, PhD
Associate Professor, Cell and Molecular Biology – SSE
swang1@tulane.edu

(1) Noncoding RNAs in vascular development and diseases Vascular abnormalities underlie the pathogenesis of many ocular diseases. Our research focuses in the lab is to understand the role of noncoding RNAs, including microRNAs and long non-coding RNAs, in vascular biology and vascular retinopathies. (2) Cell death mechanism in degenerative retinal diseases We study cell death mechanism with hope to develop new therapeutic solutions for Age-related Macular Degeneration, a leading blinding disease in the elderly.

Hongju Wu, PhD
Associate Professor, Medicine - Endocrinology and Metabolism
hwu3@tulane.edu

Diabetes: particularly in islet cell biology, especially with regard to the regeneration and function of α-, β-, and δ-cells. We have shown the regeneration of adult α- and δ-cell regeneration following β-cell loss during diabetes development, and attempted to identify the mechanisms/cellular origins for the regenerated cells. I am also interested in the molecules and other factors (such as exercise, aging, etc.) that impact the potential of islet cell regeneration. I have also been exploring strategies that can protect β-cells and promote β-cell regeneration. I am also attempting to convert other cell types into β-cells using transcription factors that are essential for β-cell development.

Zongbing You, MD, PhD
Associate Professor, Structural & Cellular Biology
zyou@tulane.edu

Primarily study inflammation/immune responses in prostate cancer and lung cancer, focusing on interleukin-17. Secondarily study tissue engineering of articular cartilage using adipose tissue-derived stem cells transfected with doublecortin gene (DCX).

WOMEN'S HEALTH

Carolyn Bayer, PhD
Assistant Professor, Biomedical Engineering – SSE
carolynb@tulane.edu
The research in our laboratory develops novel medical imaging methods to study the dynamics of molecular expression and physiological function by integrating ultrasound and contrast-enhanced photoacoustic imaging systems. A key focus of our imaging technology is the functional and molecular environment during compromised pregnancies which lead to the development of birth defects.

Alessandra Bazzano, PhD, MPH
Assistant Professor, Global Community Health and Behavioral Sciences - SPHTM
abazzano@tulane.edu
My research focus is in maternal and child health, with special emphasis on the behavioral and social aspects of maternal and newborn care in the community setting and care seeking for illness. Alongside that, I have worked on reproductive health issues, especially related to women's reproductive and sexual health and access to care. I also have a strong interest in nutrition, specifically community based nutrition and behavioral approaches to improving maternal and infant and young child feeding. My methodological focus is qualitative and I have experience in low income countries (in Southeast Asia and Sub Saharan Africa) and in the United States.

Jill M. Daniel, PhD
Professor, Psychology and Neuroscience - SSE
jmdaniel@tulane.edu
I study the impact of estrogens and androgens on the brain and cognition across the lifespan using rodent models.

Cecilia Gambala, MD, MPH
Assistant Professor, Obstetrics and Gynecology
cgambal@tulane.edu
My interests reside in Women's Health, particularly during pregnancy. Topics of interest include diabetes, hypertension and obesity in pregnancy.

WOMEN'S HEALTH

Cynthia Hanemann, MD
Associate Professor, Radiology
chaneman@tulane.edu
My research interests are in breast cancer imaging.

Emily Harville, PhD
Associate Professor, Epidemiology - SPHTM
eharville@tulane.edu
My research interests are in reproductive epidemiology and mechanisms of disparities in birth outcomes. Areas of study include: stress and mental health, life course and preconception health, the combined effect of the physical and social environment on pregnant women, the relationship between cardiovascular and reproductive health, and transgenerational influences on pregnancy. I recruit study participants extensively at ob/gyn, prenatal, and WIC clinics in the area.

Michael Hoerger, PhD
Assistant Professor, Psychology - SSE
mhoerger@tulane.edu
I conduct research in psycho-oncology. Using a translational perspective, he draws upon fundamental behavioral science to anticipate, prevent, and alleviate the stress of cancer.

Suttira Intapad, PhD
Assistant Professor, Pharmacology
sintapad@tulane.edu
I am interested in research related to the developmental programming of chronic diseases, especially cardiovascular disease, and how an improper environment during fetal development such as preeclampsia can result in long-lasting effects on an individual's health.

Patty Kissinger, BSN, MPH, PhD
Professor, Epidemiology SPHTM
kissing@tulane.edu
Presently I have two R01 awards. In the first, we are working on exploring the origins of repeat infections with Trichomonas vaginalis via an RCT as well as genotyping and conducting susceptibility testing and in the second we are examining the utility and cost effectiveness of screening men for Chlamydia trachomatis on the rates among women as well as mathematically modeling the percentage of men needed to screen to impact women's rates.

WOMEN'S HEALTH

Myra A. Kleinpeter, MD, MPH
Associate Professor, Medicine – Nephrology
mkleinp@tulane.edu
I am interested chronic care management in underserved population, health disparities in CKD and ESRD, and cardiovascular disease risk factors in chronic kidney disease patients. My other research interests are: health literacy assessment, the impact of modifying patient education programs on health outcomes, and the effect of modified clinical visits on health outcomes and access to healthcare.

Maureen Lichtveld, MD, PhD
Professor and Chair, Global Environmental Health Sciences- SPHTM
mlichtve@tulane.edu
My research integrates environmental health, health disparities, disasters, community-based participatory research, women's health, and environmental policy. I am an endowed chair in environmental policy and Associate Director, Population Sciences, Louisiana Cancer Research Consortium. As Director of the Center for Gulf Coast Environmental Health Research, Leadership, and Strategic Initiatives, my research portfolio encompasses national and global environmental health projects.

Sarah Lindsey, PhD
Assistant Professor, Department of Pharmacology
lindsey@tulane.edu
My current research investigates how estrogens are beneficial in vascular health. I am particularly interested in membrane-initiated estrogenic signaling events which influence vascular tone and remodeling.

Heather Machado, PhD
Assistant Professor, Biochemistry and Molecular Biology
hmachado@tulane.edu
My laboratory focuses on understanding how infiltrating macrophages promote breast cancer initiation and progression.

Preston A. Marx, PhD
Professor, Tropical Medicine, Tulane School of Public Health and Tropical Medicine
pmarx@tulane.edu
My research interest are the evolution and emergence of epidemic strains of HIV-2 in West Africa. I also conduct research on anti-viral

vaccines, currently HIV and Dengue virus vaccines. I am interested in prevention of STDs to women through the development of anti-viral vaginal microbicides. He primarily uses non-human primate models in his research.

Kristin S. Miller, PhD
Assistant Professor, Biomedical Engineering - SSE
kmille11@tulane.edu
The Biomechanics of Growth & Remodeling Laboratory uses a combined experimental and computational approach to better understand, describe, and predict soft tissue remodeling in response to various chemo-mechanical stimuli including normal processes (e.g., aging and pregnancy), disease, and injury. To this end, our research utilizes model systems with varying restraints on regenerative capability (postnatal development, pregnancy, and postpartum) to define local microstructure and mechanical properties of evolving collagenous tissues to identify potential treatments and the appropriate time course for clinical interventions to prevent maladaptive remodeling, improve adult response to injury, and advance tissue engineering strategies. Our primary areas of research include orthopaedics (tendon and ligament) and women's reproductive health.

Amber Naresh, MD, MPH
Assistant Professor, Obstetrics & Gynecology
anaresh@tulane.edu
I am interested HPV-related pre-malignant lesions of the cervix in women. One current projects focuses on improving HPV vaccination rates locally, and another seeks to delineate lifestyle factors associated with HPV persistence in women with low grade dysplasia, with a focus on nutritional factors. This project also seeks to identify novel molecular bio-markets which could help predict behavior of HPV in the genital tract.

Bonnie K. Nastasi, PhD
Professor, Psychology – SSE
bnastasi@tulane.edu
The development of culturally constructed psychological theory/conceptual models, interventions, and assessment measures related to psychological well-being (i.e., children's mental health, youth and adult sexual health) in local and global contexts. Also interested in participatory mixed methods research approaches.

Cecilia G. Sanchez PhD
Assistant Professor, Medicine - Pulmonary Diseases
csanche3@tulane.edu
I am interested in the roles of Sirtuins, autophagy/metabolism and circadian clock in age related lung diseases. My work focuses in

understanding the pathogenesis and the development the novel therapeutic paradigms in lung fibrosis for patients with Idiopathic Pulmonary Fibrosis and patients with Systemic Scleroderma.

Jylana L. Sheats, PhD, MPH
Assistant Professor, Global Community Health & Behavioral Sciences – SPHTM
jsheats@tulane.edu

My research interests focus on the identification and examination of individual, social, contextual, environmental (built, food), and policy-related determinants of obesity and chronic disease among vulnerable populations (low-income, racial/ethnic minorities, older adults).

Ronald S. Veazey, DVM, PhD
Professor and Chair, Division of Comparative Pathology – TNPRC
rveazey@tulane.edu

The immunology, prevention, and treatment of HIV infection and AIDS. Current projects involve determining correlates of protective immune responses, testing new HIV therapies and preventatives (microbicides), and examining the immune response to HIV infection in mucosal tissues, including the intestinal and reproductive tracts. I am also examining the pathogenesis of SIV infection in pediatric hosts, and the effects of alcohol use as a cofactor in the susceptibility and progression to AIDS.

Jeffrey K. Wickliffe, PhD
Associate Professor, Global Enivronmental Health Sciences – SPHTM
jwicklif@tulane.edu

Human cell culture models for genetox, mutagenesis, biotransformation, neurotox, senescence/cellular aging; mouse model for obesity, chemical sensitivity, and increased genetox + cancer risk; signal transduction using complex mixtures in vitro; human population research assessing complex exposures to environmental chemicals and cumulative risks.

Paula D. Zeanah, PhD
Associate Professor, Psychiatry and Behavioral Sciences
pzeanah@tulane.edu

Perinatal, infant, child and pediatric mental health. Current research has focused on relationship of nutritional risk and depression in first time, low income pregnant women.

OTHER RESEARCH AREAS

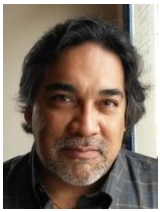
Henry Bart, Jr., PhD
Professor, Ecology and Evolutionary Biology – SSE
hbartjr@tulane.edu
Ecology, molecular genetics and systematics (taxonomy, phylogenetic relationships) of fishes. Director of the Tulane University Biodiversity Research Institute and Curator of the Royal D. Suttkus Fish Collection (Hebert Research Center in Belle Chasse)

Carolyn Bayer, PhD
Assistant Professor, Biomedical Engineering – SSE
carolynb@tulane.edu
The research in our laboratory develops novel medical imaging methods to study the dynamics of molecular expression and physiological function by integrating ultrasound and contrast-enhanced photoacoustic imaging systems. A key focus of our imaging technology is the functional and molecular environment during compromised pregnancies which lead to the development of birth defects.

J. Quincy Brown, PhD
Assistant Professor, Biomedical Engineering - SSE
jqbrown@tulane.edu
My research focuses on the application and clinical translation of quantitative optical spectroscopy and imaging tools for the improvement of cancer management. We develop translatable optical methods to directly address gaps in clinical care, and carry those through to clinical validation in humans alongside our interdisciplinary collaborators. A major theme in this work is the use of novel imaging devices (and computational analysis tools) to improve patient outcomes in surgical tumor removal in organs such as the breast, prostate, and kidney. We also develop tools and strategies using optics to answer interesting biological questions in cell and animal models. To achieve these goals, we leverage new and existing photonic technologies across multiple spatial scales such as quantitative diffuse reflectance spectroscopy and imaging (DRS, DRI), fluorescence lifetime imaging, structured-illumination microscopy (SIM), and light sheet microscopy (LSM).

David Busija, PhD
Professor and Chair, Pharmacology
dbusija@tulane.edu
I have a well-established, diverse research program that focuses on: 1) The mechanisms involved in the regulation of the cerebral circulation in health and disease; 2) The mechanisms of damage to the brain following injury; 3) Therapeutic strategies to restore normal cerebral vascular responses during disease processes such as insulin resistance and

ischemia/reperfusion; and 4) Development of methods to protect cells of the neurovascuÂ¬lar unit (endothelium, smooth muscle, perivascular nerves, astroglia, neurons, etc.) against potentially lethal stimuli.



Ricardo Cortez, PhD
Professor, Mathematics – SSE
rcortez@tulane.edu
Computational Modeling

Malwina Czarny-Ratajczak, PhD
Assistant Professor, Dept. of Medicine, Center for Aging
mczarnyr@tulane.edu
Identification of novel genetic and epigenetic factors contributing to development of primary osteoarthritis (OA). Next-generation sequencing approach to study exome, transcriptome and exosomal miRNAs of patients with osteoarthritis.

Matthew Escarra, PhD
Assistant Professor, Physics and Engineering Physics – SSE
escarra@tulane.edu
I do research on new photonic materials and optoelectronic devices. This includes metasurfaces that can manipulate light by design and optical devices from 2D materials. These photonic structures are ultra-small and may be used in highly-sensitive sensors, light detectors, light emitters, flat/microscale optics, and more.

Genevieve Fava, PhD
Instructor, Orthopaedics
glum@tulane.edu
Our program is involved in research regarding cardiovascular and prostate health risks of former NFL players. We utilize clinical data obtained during health screening events to determine cardiovascular health risks, and prevalence and incidence of cardiovascular disease in this unique population.

Paul Friedlander, MD
Associate Professor and Chair, Otolaryngology
pfriedla@tulane.edu
Racial disparity in healthcare; Tumor growth and wound healing as well as outcome analysis for at risk
populations for head and neck cancer.

OTHER RESEARCH AREAS

Joseph Fuselier, PhD
Assistant Professor, Medicine - Peptide Research
fuselier@tulane.edu
Interested in creating novel therapeutic agents to help patients with diseases where there is little to no innovation or therapeutic benefit with current treatment modalities. My focus is to create intellectual property around these ideas and commercialize them to benefit humankind. My area of expertise revolves around modifying exquisitely potent drugs, conjugating them to peptides and proteins in a way so they are stable in circulation, are targeted to a specific tissue, and then release the biological warhead to the tissue of interest. Synthetic organic chemistry, peptide / protein chemistry, pharmacology, entrepreneurship, and business are all areas of interest

Bruce C. Gibb, PhD
Professor, Chemistry – SSE
bgibb@tulane.edu
Aqueous solutions, the Hydrophobic Effect, the Hofmeister Effect

Emily Harville, PhD
Associate Professor, Epidemiology - SPHTM
eharville@tulane.edu
My research interests are in reproductive epidemiology and mechanisms of disparities in birth outcomes. Areas of study include: stress and mental health, life course and preconception health, the combined effect of the physical and social environment on pregnant women, the relationship between cardiovascular and reproductive health, and transgenerational influences on pregnancy. I recruit study participants extensively at ob/gyn, prenatal, and WIC clinics in the area.

Kathleen S. Hering-Smith, PhD
Associate Professor, Medicine – Nephrology
khering@tulane.edu
We have significant experience and expertise in epithelial transport biology and cell and molecular techniques using a wide variety of kidney tubule cell lines. Most of these studies have addressed sodium, acid-base, and citrate transport, the latter an important inhibitor of kidney stones. Recently these studies have led to related issues involving diabetes and intermediate cell metabolism. Current techniques involve CRISPER knock-out studies and RNA-Seq.

OTHER RESEARCH AREAS

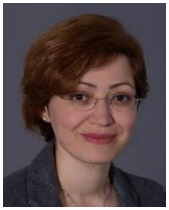
Mac Hyman, PhD
Professor, Mathematics – SSE
mhyman@tulane.edu
My research is the development and application of mathematical models based on the underlying disease transmission mechanisms to help the medical/scientific community understand and anticipate the spread of an epidemic and evaluate the potential effectiveness of different approaches for bringing the epidemic under control. My current research is focused on vector-borne diseases, such as dengue fever, malaria, chikungunya, and West Nile Virus.

Suttira Intapad, PhD
Assistant Professor, Pharmacology
sintapad@tulane.edu
I am interested in research related to the developmental programming of chronic diseases, especially cardiovascular disease, and how an improper environment during fetal development such as preeclampsia can result in long-lasting effects on an individual's health.

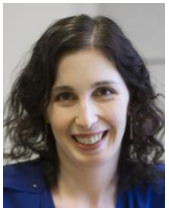
Damir Khismatullin, PhD
Associate Professor, Biomedical Engineering – SSE
damir@tulane.edu
My research focuses on understanding the mechanical and transport properties of biological systems at cellular and tissue levels. Using experimental and theoretical approaches, we study the interactions of blood cells (leukocytes, platelets, red blood cells), tissue resident cells (macrophages, mast cells), and circulating tumor cells with vascular and lymphatic endothelium under pathophysiological conditions such as inflammation, atherosclerosis, thrombosis, sickle cell disease, and cancer metastasis. Another aspect of our research is the development of medical ultrasound technologies for cancer treatment, blood coagulation monitoring, and nerve regeneration. We also develop novel methods for rheological characterization of living cells and tissues and use our state-of-the-art computational fluid dynamics models to predict blood flow in vessels with complex geometry.

Mary Killackey, MD
Associate Professor and Chair, Surgery
mkillack@tulane.edu
We have multiple areas of research going on in the department of surgery. Transplant, Trauma, Tissue Regeneration, Melanoma, Thyroid Cancer, Resident Education, to name a few.

OTHER RESEARCH AREAS



Parisa Kordjamshidi, PhD
Assistant Professor, Computer Science – SSE
pkordjam@tulane.edu
My main research interests are artificial intelligence, machine learning, natural language processing, information extraction and declarative learning based programming.

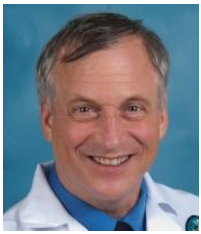


Alyssa Lederer, PhD, MPH
Assistant Professor, Global Community Health and Behavioral Sciences
alederer@tulane.edu
My research primarily focuses on partnering with community-based organizations to enhance child, adolescent and emerging adult health through intervention design and evaluation, especially in the areas of sexual health and the reduction of sexuality-related stigma, nutrition, and physical activity. Much of my work is based in school and university settings and utilizes theory-driven and multi-method approaches.

Maureen Lichtveld, MD, PhD
Professor and Chair, Global Environmental Health Sciences- SPHTM
mlichtve@tulane.edu
My research integrates environmental health, health disparities, disasters, community-based participatory research, women's health, and environmental policy. I am an endowed chair in environmental policy and Associate Director, Population Sciences, Louisiana Cancer Research Consortium. As Director of the Center for Gulf Coast Environmental Health Research, Leadership, and Strategic Initiatives, my research portfolio encompasses national and global environmental health projects.

Howard Mielke, PhD
Professor, Pharmacology
hmielke@tulane.edu
Exposome of the city and children's exposure. Current work is on multiple metals (and lead) in the environment and the exposure response by children (to lead). If children are being exposed to lead they are also being exposed to multiple metals.

OTHER RESEARCH AREAS



Peter Meade, MD, MPH
Assistant Professor, Surgery
pmeade@tulane.edu
My research interests include rural trauma, overseas medicine, critical care, and connections between trauma and social issues. I have written on Police Dog bite injuries and police misconduct and landmine injuries in war zones with Doctors Without Borders.

Ramgopal Mettu, PhD
Associate Professor, Computer Science – SSE
rmettu@tulane.edu
My work is at the intersection of algorithms, machine learning and computational biology. Applications of my work include protein structure prediction and determination, protein-protein interactions, compound screening, as well as problems in high-throughput sequencing and proteomics.

Charles Miller, PhD
Professor, Environmental Health Sciences
rellim@tulane.edu
I study adverse effects of chemicals in molecular, cellular, and animal model systems. I am particularly interested in chemicals that interact with the aryl hydrocarbon receptor signaling pathway.

Damian R. Murray, PhD
Assistant Professor, Psychology – SSE
dmurray4@tulane.edu
My research investigates the implications of real and perceived disease threat for social behavior, personality, and cross-cultural differences.

Nicholas Sandoval, PhD
Assistant Professor, Chemical and Biomolecular Engineering
nsandova@tulane.edu
My lab works on the development and application of advanced synthetic biology tools for model and non-model microbes for the purpose of sustainable fuel and chemical production. This includes the efficient use of directed evolution to engineer such microbes from the gene to genome level as well as high throughput tools for analysis and engineering such as DNA synthesis, next generation sequencing, and cell sorting.

OTHER RESEARCH AREAS

Patricia Scaraffia, PhD
Assistant Professor, Tropical Medicine
pscaraff@tulane.edu
My laboratory investigates nitrogen and carbon metabolism in Aedes aegypti, vector of dengue, yellow fever, chikungunya and Zika viruses. Her lab is interested in discovering new metabolic targets that can be used for the design of better mosquito-control strategies

Rebecca Schroll, MD
Assistant Professor, Surgery
rschroll@tulane.edu
I am interested in clinical research evaluating outcomes of care in trauma and critically ill patients. My research has primarily focused on pre-hospital treatment as well as operative and perioperative management of trauma patients.

Suresh C. Sikka, PhD
Professor & Research Director, Urology
ssikka@tulane.edu
My research and clinic focus is on Aging male related to male infertility, Sexual health, Environmental reproductive toxicology; Forensic applications; Role of Oxidative Stress/Redox Changes and Antioxidants; Sperm safety multicenter studies; Endocrine Disruptors, Prostatic inflammation; and Andropause.

Varsha Taskar, MD
Associate Professor, Medicine – Pulmonary Diseases
vtaskar@tulane.edu
I am interested in lung disease specifically cystic fibrosis (CF), non tuberculous mycobacteria, rheumatoid lung disease. I would like to explore role of environmental mycobacteria in pathophysiology of lung disease in CF and immunocompromised patients.

Carola Wenk, PhD
Associate Professor, Computer Science – SSE
cwenk@tulane.edu
My research area is in computational geometry, with a focus on analyzing discrete geometric shapes. I have strong interests in interdisciplinary applications including biology and medicine. I am interested in learning about the potential to collaborate on geometric data analysis problems for biomedical data, including medical imaging data. One of my current projects involves developing topological descriptors that capture architectural features of prostate glands in pathology images.

OTHER RESEARCH AREAS

Ashley Wennerstrom, PhD, MPH
Assistant Professor, Medicine – General Internal Medicine
awenners@tulane.edu
I use community-academic partnered methods to address a wide variety of community health concerns including intimate partner violence, behavioral health, health care for formerly incarcerated individuals.

Valerie A. Yeager, DrPH
Assistant Professor, Global Health Management and Policy - SPHTM
vayeager@tulane.edu
I am interested in the use of health information technology (electronic health records and health information exchange) as it relates to quality of care. Also related to quality of care, I am interested in patient satisfaction and access to care as well as the use of patient navigators in health care delivery. Recently, I have been examining Accountable Care Models (ACOs) in relation to quality of care.

NOTES

NOTES

Resource Booklet compiled by:

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