The 8th Annual Synergy Faculty Research Event

Tuesday, November 7, 2017
6:30pm - 9:30pm
Audubon Tea Room

Tulane University
SCHOOL OF MEDICINE
During tonight’s School of Medicine Faculty Research Synergy Event, you are encouraged to engage faculty and discover shared or synergistic research interests and explore concepts. Throughout the evening, you are strongly encouraged to visit different research “interest tables” to engage faculty in discussion.

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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</table>
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.

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.

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 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.

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.

Jeff Han, MD, PhD  
Assistant Professor, Biochemistry and Molecular Biology  
jhan5@tulane.edu  
SEE PAGE 29 for research details

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.

James Jackson, PhD
Assistant Professor, Biochemistry and Molecular Biology
jacks8@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.
AGING

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.

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.

Binhua Ling, MD, PhD
Assistant Professor, Comparative Pathology – TNPRC
bling@tulane.edu
My research interests are in HIV/immune activation and HIV cure research. Currently, HIV persistence in the central nervous system, the gut and other organs, novel approaches of reducing or eliminating HIV-infected cells, immune correlates of protection in HIV-1 infected elite controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug abuse in a nonhuman primate model.

Arthur J. Lustig, PhD
Professor, Biochemistry and Molecular Biology
alustig@tulane.edu
We are studying the multiple chromatin structures that lead to heritable telomere states. We are also interested in applying our new insights into telomere chromatin to rapidly diagnose telomere 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
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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
Our laboratory studies synaptic plasticity of cortical neurons with emphasis on the effects of aging on the ability to establish and maintain synaptic contacts between neurons. We are applying our results from the aged brain to the study of Alzheimer’s disease using animal models of the disease. We currently have research collaborative efforts with cancer-oriented laboratories studying potential glioblastoma multiforme therapies and the role of tumor suppressors in neuronal function.

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
Our research is focused on the genetic and molecular basis of hypertension and cardiovascular disorders in a sex- and age-dependent manner. Our long-term objectives are to determine the function of atrial and brain natriuretic peptides (ANP, BNP) that interact with guanylyl cycles/ natriuretic peptide receptor-A (GC-A/NPRA) which plays a central role in pathophysiology of hypertension and cardiovascular disorders. We hope to learn the transcriptional regulatory elements and the impact of Npr1 gene dosage globally and in the cell-specific manner in vivo in regulating the blood pressure and cardiovascular disorders.

Shigeki Saito, MD
Assistant Professor, Medicine - Pulmonary & Critical Care Medicine
ssaito@tulane.edu
My research interests include pulmonary fibrosis, acute lung injury, and pulmonary hypertension. My current research projects: epigenetics (e.g. HDACs, miRNAs) of pulmonary fibrosis and pulmonary hypertension
Mimi Sammarco, PhD  
Assistant Professor, Surgery  
msammarc@tulane.edu  
I investigate mechanisms promoting soft tissue and bone regeneration in the context of aging. I use the mouse digit regeneration model to gain a more thorough understanding of how the role of oxygen and cellular metabolism affect regeneration in an aged model in order to delineate between regeneration-competent and incompetent tissue environments. Using aging as a model to better understand regeneration will enable us to shed light on the regenerative process and to develop ways to address fracture healing and poor wound closure in the aged population.

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

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.

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.

Joby Westmoreland, PhD  
Assistant Professor, Cell and Molecular Biology – SSE  
jwestmor@tulane.edu  
My lab is interested in understanding what neural circuits are responsible for positive symptoms of schizophrenia. Additionally, we are interested in why the symptoms manifest later in life. Recently, we identified age-dependent changes in microRNAs that regulate normal synaptic communication between the auditory thalamus and the auditory cortex. We further showed that disruption in this circuit resulted in positive-like symptoms of schizophrenia in mouse models.
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

Qiuyang (Lisa) Zhang, PhD
Assistant Professor, Structural & Cellular Biology
gzhang3@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.

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.

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 – 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  
ehlerville@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.

Patty Kissinger, PhD, BSN, MPH  
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  
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.

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.

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. He also investigates the relationships between genetic markers of vulnerability to disease and disease-avoidant behavior.
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.

Jeffrey Rouse, MD
Assistant Professor, Psychiatry and Behavioral Sciences
jrouse@tulane.edu
As a forensic psychiatrist, my academic interests include neuroimaging of brain regions and networks involved in emotion regulation, the neural mechanisms of meditation and real-time neurofeedback, and the application of biomarkers to forensic risk assessment.

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.
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).

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.
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.

Melanie Ehrlich, PhD  
Professor, Human Genetics Program  
ehrich@tulane.edu  
My lab is using epigenomics and epigenetics to elucidate differentiation of the skeletal muscle, bone, and cardiovascular lineages and abnormal changes in epigenetics associated with disease, especially cancer, muscle disease, osteoporosis, and heart disease.

Loren Gragert, PhD  
Assistant Professor, Pathology and Laboratory Medicine  
lgragert@tulane.edu  
My lab focuses on population genetics and informatics in transplantation. Our main project involves translating datasets and tools originally developed for bone marrow transplant matching into the field of solid organ transplantation. We also develop statistical genetics methodologies for disease association and evolutionary biology studies, focusing on the highly polymorphic HLA and KIR immune gene systems.

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.

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.
The major goal of Dr. Kolls' research is to investigate mechanisms of mucosal host defenses in the lung in normal and immunocompromised hosts using genetic models. Presently, his lab is investigating how IL-23 and IL-17 and IL-22 regulate host defense against extracellular pathogens and epigenetic regulation of macrophage function. Additionally, he researches host susceptibility to opportunistic infection such as Pneumocystis and is developing novel therapies against this pathogen.

My main research interests are artificial intelligence, machine learning, natural language processing, information extraction and declarative learning based programming.

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.

I am particularly interested in two DNA tumor viruses: Human papillomavirus (HPV) and the Epstein-Barr virus (EBV). In our research we try to utilize both sequencing based informatics approaches and traditional wet-lab methods to investigate the pathological role of these viruses in cancer development (e.g. lung cancer, nasopharyngeal carcinoma, etc.). Meanwhile, I am also interested in clinical translational research and try to develop new therapeutic approaches to treat virus-associated cancers.
BIOINFORMATICS AND STATISTICS

Yao-Zhong Liu, PhD
Associate Professor, Global Biostatistics and Data Science – SPH
yliu8@tulane.edu
My research is focused on RNA-seq and other genomics data analysis. My recent research involves RNA-seq analysis of lung epithelial cells for toxicological effects of oil spill products. I’m now extending this research to mouse models. I’m also collaborating with other investigators in RNA-seq based research, such as virus interactome with humans, transcriptomic analysis of Trypanosoma cruzi (the parasite causing Chagas disease) and RNA-seq of stem cells for their survival outcome.

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.

Tianhua (Tim) Niu, PhD
Assistant Professor, Biochemistry and Molecular Biology
tniu@tulane.edu
My long-term research interests mainly consist of four areas: (1) biostatistical methodology (e.g., Bayesian statistics and machine learning), (2) statistical genetics (e.g., Bayesian haplotype inference and computational molecular evolution), (3) transcriptome analysis (e.g., differential expressions of mRNAs and non-coding RNAs) and bioinformatics (e.g., software design, development, and application for integrative analysis of genomics, transcriptomics and proteomics data using a variety of pathway and network software tools, e.g., R & Bioconductor packages), and (4) clinical trials (clinical trial design, development of clinical trial protocol, conduct, data management, and data analysis).

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.
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  
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.

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
Juan Duchesne, MD
Professor, Surgery
jduchesn@tulane.edu
We are looking to partner with basic scientists in order to further study
the endotheliopathy of trauma resuscitation in patients with severe
hemorrhagic shock. We are looking forward to expand the department
d of surgery collaboration with basic science.

Vijay John, PhD
Professor, Chemical and Biomolecular Engineering – SSE
vil@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 technologies 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.

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.

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.
Asim Abdel-Mageed, DVM, PhD  
Professor, Urology  
amageed@tulane.edu  
My research interest focuses on identifying molecular determinants of prostate cancer progression, with special emphasis on health disparity. One approach involves genetic engineering and selective delivery of stem cells to target “intracrine” production of androgens at metastatic sites.

Muralidharan Anbalagan, PhD  
Assistant Professor, Structural and Cellular Biology  
amanbalag@tulane.edu  
Breast Cancer Research, Circadian Rhythm, and Bone Metastasis

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.
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.

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.

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.

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).

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.

Srikanta Dash, PhD  
Professor, Pathology and Laboratory Medicine  
sdash@tulane.edu  
Endoplasmic reticulum (ER-stress)/ unfolded protein response plays an important role in various forms of liver diseases related to viral and non-viral etiologies. My laboratory investigates basic mechanism how ER-stress/UPR stress response in the liver improves cell survival pathway by inhibiting cellular apoptosis and cellular autophagy that leads to development of hepatocellular carcinoma and exosome release. We are using this exosome based platform to measure stress exosomes as a serum biomarker for early prediction of liver cancer (hepatocellular carcinomas) among patients with liver cirrhosis.

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.
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  
Professor, Structural & Cellular Biology  
ydong@tulane.edu  
Our research is focused on prostate cancer, particularly in altered androgen receptor signaling in castration-resistant prostate cancer and mechanisms and efficacies of candidate prostate cancer interventions. 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  
ehrlch@tulane.edu  
My lab is using epigenomics and epigenetics to elucidate differentiation of the skeletal muscle, bone, and cardiovascular lineages and abnormal changes in epigenetics associated with disease, especially cancer, muscle disease, osteoporosis, and heart disease.

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, MBA
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.

Loren Gragert, PhD
Assistant Professor, Pathology and Laboratory Medicine
lgragert@tulane.edu
My lab focuses on population genetics and informatics in transplantation. Our main project involves translating datasets and tools originally developed for bone marrow transplant matching into the field of solid organ transplantation. We also develop statistical genetics methodologies for disease association and evolutionary biology studies, focusing on the highly polymorphic HLA and KIR immune gene systems.

Scott Grayson, PhD
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.
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.

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.

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.

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 Therapies in Elderly Patients with Chronic Heart Failure and Type 2 Diabetes

Janarthanan Jayawickramarajah, PhD
Professor, Chemistry – SSE
janani@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 are essential in technologies as mundane as consumer detergent products, and technologies 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  
Associate 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.

Takefumi Komiya, MD, PhD  
Assistant Professor, Medicine  
tkomiya@tulane.edu

My interest is to overcome resistance in cancer immunotherapy. I am planning to open several investigator-initiated trials using investigational agents for solid tumors. I welcome any idea to translate bench research into human studies.

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.
L. Spencer Krane, MD  
Assistant Professor, Urology  
lkrane1@tulane.edu  
I’m a urologic oncologist with an interest in precision therapies for prostate, kidney and bladder cancers. Currently we’re trying to identify novel biomarkers for predicting disease progression in small renal masses. We’re also interested targeting metabolic derangements in bladder cancers.

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).

Zhen Lin, MD, PhD  
Assistant Professor, Pathology  
zlin@tulane.edu  
I am particularly interested in two DNA tumor viruses: Human papillomavirus (HPV) and the Epstein-Barr virus (EBV). In our research we try to utilize both sequencing based informatics approaches and traditional wet-lab methods to investigate the pathological role of these viruses in cancer development (e.g. lung cancer, nasopharyngeal carcinoma, etc.). Meanwhile, I am also interested in clinical translational research and try to develop new therapeutic approaches to treat virus-associated cancers.

Hong Liu, PhD  
Assistant Professor, Biochemistry and Molecular Biology  
hliu22@tulane.edu  
To understand how genetic information is properly transmitted through generations and also apply the knowledge to understand the causes of human diseases, such as cancer.

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.
Arthur J. Lustig, PhD
Professor, Biochemistry and Molecular Biology
alustig@tulane.edu
We are studying the multiple chromatin structures that lead to heritable telomere states. We are also interested in applying our new insights into telomere chromatin to rapidly diagnose telomere diseases.

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 – SPH
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.
Our laboratory studies synaptic plasticity of cortical neurons with emphasis on the effects of aging on the ability to establish and maintain synaptic contacts between neurons. We are applying our results from the aged brain to the study of Alzheimer's disease using animal models of the disease. We currently have research collaborative efforts with cancer-oriented laboratories studying potential glioblastoma multiforme therapies and the role of tumor suppressors in neuronal function.

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

Reinhold Munker, MD
Professor, Medicine – Hematology/Medical Oncology
rmunker@tulane.edu
Basic Science: Non-coding RNAs, new cell lines, apoptosis
Clinical Science: Benign and malignant hematology, second malignancies, stem cell transplantation, immunotherapy

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
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.

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.
Jeffrey K. Wickliffe, PhD  
Associate Professor, Global Environmental Health Sciences – SPHTM  
jwicklif@tulane.edu  
Human cell culture models for genotox, mutagenesis, biotransformation, neurotox, senescence/cellular aging; mouse model for obesity, chemical sensitivity, and increased genotox + 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, 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, MD  
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  
Assistant Professor, Structural & Cellular Biology  
gzhang3@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.
**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.

**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.

**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.

**Jiang He, MD, PhD**
Professor, Epidemiology – SPH
jhe@tulane.edu
Omics, clinical, and epidemiological research in cardiometabolic diseases

**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.

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
Our research is focused on the genetic and molecular basis of hypertension and cardiovascular disorders in a sex-and age-dependent manner. Our long-term objectives are to determine the function of atrial and brain natriuretic peptides (ANP, BNP) that interact with guanylyl cycles/natriuretic peptide receptor-A (GC-A/NPRA) which plays a central role in pathophysiology of hypertension and cardiovascular disorders. We hope to learn the transcriptional regulatory elements and the impact of Npr1 gene dosage globally and in the cell-specific manner in vivo in regulating the blood pressure and cardiovascular disorders.

Ibolya Rutkai, PhD
Assistant Professor, Pharmacology
irutkai@tulane.edu
My research focuses on the role of the estrogen-mitochondria-mediated regulation of cerebral vascular function before and after ischemia-reperfusion.

Shigeki Saito, MD
Assistant Professor, Medicine - Pulmonary & Critical Care Medicine
ssaito@tulane.edu
My research interests include pulmonary fibrosis, acute lung injury, and pulmonary hypertension. My current research projects: epigenetics (e.g. HDACs, miRNAs) of pulmonary fibrosis and pulmonary hypertension.
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

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

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
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 nephropathy and evaluating biosimilar insulins.

Joseph Fuselier, MBA  
Assistant Professor, Medicine - Peptide Research  
fuselier@tulane.edu  
SEE PAGE 29

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.
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

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).

Yao-Zhong Liu, PhD
Associate Professor, Global Biostatistics and Data Science – SPH
yliu8@tulane.edu
My research is focused on RNA-seq and other genomics data analysis. My recent research involves RNA-seq analysis of lung epithelial cells for toxicological effects of oil spill products. I'm now extending this research to mouse models. I'm also collaborating with other investigators in RNA-seq based research, such as virus interactome with humans, transcriptomic analysis of Trypanosoma cruzi (the parasite causing Chagas disease) and RNA-seq of stem cells for their survival outcome.
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 novel 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.

Kailash N. Pandey, PhD
Professor, Physiology
kpandey@tulane.edu
SEE page 39
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.

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.

Mimi Sammarco, PhD
Assistant Professor, Surgery
msammarc@tulane.edu
I investigate mechanisms promoting soft tissue and bone regeneration in the context of aging. I use the mouse digit regeneration model to gain a more thorough understanding of how the role of oxygen and cellular metabolism affect regeneration in an aged model in order to delineate between regeneration-competent and incompetent tissue environments. Using aging as a model to better understand regeneration will enable us to shed light on the regenerative process and to develop ways to address fracture healing and poor wound closure in the aged population.

Fernando L. Sanchez, MD
Associate 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.
Felix Savoie, MD  
Professor, Orthopaedics  
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.

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

Michael Serou, MD  
Assistant Professor, Radiology  
mserou2@tulane.edu  
I have a general interest in applying advanced imaging to medical research. Current projects include quantitative CT assessment of bone mineral density in an evaluation of epigenomic contributions to male osteoporosis.

Hongju Wu, PhD  
Associate Professor, Medicine - Endocrinology and Metabolism  
hwu3@tulane.edu  
My laboratory explores genetic therapy, beta cell regeneration, and islet transplantation strategies for the treatment of diabetes. I am also interested in islet cell biology involving the roles of GLP-1 and GLP-1R in regulating glucagon secretion.

Andrea Zsombok, PhD  
Associate 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.
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  
Endoplasmic reticulum (ER-stress)/unfolded protein response plays an important role in various forms of liver diseases related to viral and non-viral etiologies. My laboratory investigates basic mechanism how ER-stress/UPR stress response in the liver improves cell survival pathway by inhibiting cellular apoptosis and cellular autophagy that leads to development of hepatocellular carcinoma and exosome release. We are using this exosome based platform to measure stress exosomes as a serum biomarker for early prediction of liver cancer (hepatocellular carcinomas) among patients with liver cirrhosis.

Juan Duchesne, MD  
Professor, Surgery  
jduchesn@tulane.edu  
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

Jordan Karlitz, MD  
Associate 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).
GASTROENTEROLOGY / LIVER

Binhua Ling, MD, PhD
Assistant Professor, Comparative Pathology – TNPRC
bling@tulane.edu
My research interests are in HIV/immune activation and HIV cure research. Currently, HIV persistence in the central nervous system, the gut and other organs, novel approaches of reducing or eliminating HIV-infected cells, immune correlates of protection in HIV-1 infected elite controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug abuse in a nonhuman primate model.

Anil Mishra, PhD
Professor of Medicine - Pulmonary Diseases & Critical Care
amishra@tulane.edu
SEE page 89

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.

Nazih Nakhoul, PhD, MsC
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.

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.
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.

Bapi Pahar, DVM, PhD
Associate Professor, Pathology – TNPRC
bpahar@tulane.edu
Broad background in cellular and humoral immunology, virology and work experience for over 15 years in macaque model. Research involves determining antigen-specific T and B cell responses in infant and adult macaques in relation to vaccine and infection; understanding the role of intestinal stem cells in regulating intestinal epithelial cell proliferation; mucosal innate immune responses; 3-D primary cell culture; Role of immunoregulatory cytokines in regulating intestinal homeostasis and HIV pathogenesis.

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

Tong Wu, MD, PhD
Professor, 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.
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 long-term 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.
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.

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 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 using epigenomics and epigenetics to elucidate differentiation of the skeletal muscle, bone, and cardiovascular lineages and abnormal changes in epigenetics associated with disease, especially cancer, muscle disease, osteoporosis, and heart disease 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

Loren Gragert, PhD
Assistant Professor, Pathology and Laboratory Medicine
lgragert@tulane.edu
My lab focuses on population genetics and informatics in transplantation. Our main project involves translating datasets and tools originally developed for bone marrow transplant matching into the field of solid organ transplantation. We also develop statistical genetics methodologies for disease association and evolutionary biology studies, focusing on the highly polymorphic HLA and KIR immune gene systems.

Jeff Han, MD, PhD
Assistant Professor, Biochemistry and Molecular Biology
jhan5@tulane.edu
SEE Page 29 for research details

Fenglei He, PhD
Assistant Professor, Cell and Molecular Biology – SSE
fhe@tulane.edu
Neural crest cells comprise a transient, highly migratory and multipotent 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.

Jiang He, MD, PhD
Professor, Epidemiology – SPH
jhe@tulane.edu
Omics, clinical, and epidemiological research in cardiometabolic diseases
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.

Jordan Karlitz, MD
Associate Professor, Medicine - Gastroenterology
jkarlitz@tulane.edu
SEE page 32

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu

Jay Kolls, MD
Professor, Medicine
jkolls@tulane.edu
The major goal of Dr. Kolls’ research is to investigate mechanisms of mucosal host defenses in the lung in normal and immunocompromised hosts using genetic models. Presently, his lab is investigating how IL-23 and IL-17 and IL-22 regulate host defense against extracellular pathogens and epigenetic regulation of macrophage function. Additionally, he researches host
susceptibility to opportunistic infection such as Pneumocystis and is developing novel therapies against this pathogen.

**Zhen Lin, MD, PhD**
Assistant Professor, Pathology
zlin@tulane.edu
I am particularly interested in two DNA tumor viruses: Human papillomavirus (HPV) and the Epstein-Barr virus (EBV). In our research we try to utilize both sequencing based informatics approaches and traditional wet-lab methods to investigate the pathological role of these viruses in cancer development (e.g. lung cancer, nasopharyngeal carcinoma, etc.). Meanwhile, I am also interested in clinical translational research and try to develop new therapeutic approaches to treat virus-associated cancers.

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

**Yao-Zhong Liu, PhD**
Associate Professor, Global Biostatistics and Data Science – SPH
yliu8@tulane.edu
My research is focused on RNA-seq and other genomics data analysis. My recent research involves RNA-seq analysis of lung epithelial cells for toxicological effects of oil spill products. I'm now extending this research to mouse models. I'm also collaborating with other investigators in RNA-seq based research, such as virus interactome with humans, transcriptomic analysis of Trypanosoma cruzi (the parasite causing Chagas disease) and RNA-seq of stem cells for their survival outcome.

**Arthur J. Lustig, PhD**
Professor, Biochemistry and Molecular Biology
alustig@tulane.edu
We are studying the multiple chromatin structures that lead to heritable telomere states. We are also interested in applying our new insights into telomere chromatin to rapidly diagnose telomere diseases.
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.

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
GENETICS

**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. He also investigates the relationships between genetic markers of vulnerability to disease and disease-avoidant behavior.

**Tianhua (Tim) Niu, PhD**
Assistant Professor, Biochemistry and Molecular Biology  
tniu@tulane.edu
My long-term research interests mainly consist of four areas: (1) biostatistical methodology (e.g., Bayesian statistics and machine learning), (2) statistical genetics (e.g., Bayesian haplotype inference and computational molecular evolution), (3) transcriptome analysis (e.g., differential expressions of mRNAs and non-coding RNAs) and bioinformatics (e.g., software design, development, and application for integrative analysis of genomics, transcriptomics and proteomics data using a variety of pathway and network software tools, e.g., R & Bioconductor packages), and (4) clinical trials (clinical trial design, development of clinical trial protocol, conduct, data management, and data analysis).

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

**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.
Kailash N. Pandey, PhD  
Professor, Physiology  
kpandey@tulane.edu  
SEE page 39

Shigeki Saito, MD  
Assistant Professor, Medicine - Pulmonary & Critical Care Medicine  
ssaito@tulane.edu  
My research interests include pulmonary fibrosis, acute lung injury, and pulmonary hypertension. My current research projects: epigenetics (e.g. HDACs, miRNAs) of pulmonary fibrosis and pulmonary hypertension.

Michael Serou, MD  
Assistant Professor, Radiology  
mserou2@tulane.edu  
I have a general interest in applying advanced imaging to medical research. Current projects include quantitative CT assessment of bone mineral density in an evaluation of epigenomic contributions to male osteoporosis.

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.

Joby Westmoreland, PhD
Assistant Professor, Cell and Molecular Biology – SSE
jwestmor@tulane.edu
My lab is interested in understanding what neural circuits are responsible for positive symptoms of schizophrenia. Additionally, we are interested in why the symptoms manifest later in life. Recently, we identified age-dependent changes in microRNAs that regulate normal synaptic communication between the auditory thalamus and the auditory cortex. We further showed that disruption in this circuit resulted in positive-like symptoms of schizophrenia in mouse models.

Jeffrey K. Wickliffe, PhD
Associate Professor, Global Environmental 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.
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.

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.

Binhua Ling, MD, PhD  
Assistant Professor, Comparative Pathology – TNPRC  
bling@tulane.edu  
My research interests are in HIV/immune activation and HIV cure  
research. Currently, HIV persistence in the central nervous system, the  
gut and other organs, novel approaches of reducing or eliminating HIV-
infected cells, immune correlates of protection in HIV-1 infected elite  
controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug  
abuse in a nonhuman primate model.

Ricardo Mostany, PhD  
Assistant Professor, Pharmacology  
rmostany@tulane.edu  
Our laboratory studies synaptic plasticity of cortical neurons with  
emphasis on the effects of aging on the ability to establish and  
maintain synaptic contacts between neurons. We are applying our  
results from the aged brain to the study of Alzheimer’s disease using animal models of  
the disease. We currently have research collaborative efforts with cancer-oriented  
laboratories studying potential glioblastoma multiforme therapies and the role of tumor  
suppressors in neuronal function.
Nazih Nakhoul, PhD, MsC  
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.

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.

Michael Serou, MD  
Assistant Professor, Radiology  
mserou2@tulane.edu  
I have a general interest in applying advanced imaging to medical research. Current projects include quantitative CT assessment of bone mineral density in an evaluation of epigenomic contributions to male osteoporosis.
Stephen Braun, PhD
Assistant Professor, Regenerative Medicine—TNPRC
sbraun@tulane.edu
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.

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.
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, MBA
Assistant Professor, Medicine - Peptide Research
fuselier@tulane.edu
SEE PAGE 29

My lab focuses on population genetics and informatics in transplantation. Our main project involves translating datasets and tools originally developed for bone marrow transplant matching into the field of solid organ transplantation. We also develop statistical genetics methodologies for disease association and evolutionary biology studies, focusing on the highly polymorphic HLA and KIR immune gene systems.

Scott Grayson, PhD
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.
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.

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  
Pulmonary rehabilitation and exercise therapy.
Jay Kolls, MD  
Professor, Medicine  
jkolls@tulane.edu  
The major goal of Dr. Kolls' research is to investigate mechanisms of mucosal host defenses in the lung in normal and immunocompromised hosts using genetic models. Presently, his lab is investigating how IL-23 and IL-17 and IL-22 regulate host defense against extracellular pathogens and epigenetic regulation of macrophage function. Additionally, he researches host susceptibility to opportunistic infection such as Pneumocystis and is developing novel therapies against this pathogen.

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

Binhua Ling, MD, PhD  
Assistant Professor, Comparative Pathology – TNPRC  
bling@tulane.edu  
My research interests are in HIV/immune activation and HIV cure research. Currently, HIV persistence in the central nervous system, the gut and other organs, novel approaches of reducing or eliminating HIV-infected cells, immune correlates of protection in HIV-1 infected elite controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug abuse in a nonhuman primate model.

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  
Associate 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 – SSErmettu@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.

Reinhold Munker, MD  
Professor, Medicine – Hematology/Medical Oncology  
rmunker@tulane.edu  
Basic Science: Non-coding RNAs, new cell lines, apoptosis  
Clinical Science: Benign and malignant hematology, second malignancies, stem cell transplantation, immunotherapy

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.

Bapi Pahar, DVM, PhD
Associate Professor, Pathology – TNPRC
bpahar@tulane.edu
Broad background in cellular and humoral immunology, virology and work experience for over 15 years in macaque model. Research involves determining antigen-specific T and B cell responses in infant and adult macaques in relation to vaccine and infection; understanding the role of intestinal stem cells in regulating intestinal epithelial cell proliferation; mucosal innate immune responses; 3-D primary cell culture; Role of immunoregulatory cytokines in regulating intestinal homeostasis and HIV pathogenesis.

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.
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.

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  
vveazey@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).

Qiuyang (Lisa) Zhang, PhD  
Assistant Professor, Structural & Cellular Biology  
gzhang3@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.
INFECTIONOUS 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.

Jacob Bitoun, PhD
Assistant Professor, Microbiology and Immunology
jbitoun@tulane.edu
The long-term goal of my laboratory is aimed at developing a safe and effective ST-toxoid vaccine candidate. Since ST is small, it is not immunogenic. We are pursuing conjugation chemistry and other delivery systems to make ST and ST-toxoids immunogenic for inclusion into current pipeline ETEC vaccines.

James Blanchard, DVM, PhD
Professor, Veterinary Medicine-TNPRC
jblanch1@tulane.edu
My research interests are related to the use of nonhuman primate (NHP) models of AIDS and other infectious diseases. Clinical interests include minimally invasive techniques and surgical procedures supporting NHP infectious disease research.

Rudolf (Skip) Bohm, DVM
Professor and Chair, Veterinary Medicine – TNPRC
bohm@tulane.edu
My overall interest is in the development of nonhuman primate models to support a variety of research programs with emphasis on infectious disease studies. As the Chair of the Division of Veterinary Medicine, I provide oversight for the provision of veterinary medical care for the nonhuman primate breeding colonies and support for research programs utilizing nonhuman primates. We use the rhesus monkey breeding colony for population studies in infectious disease, behavior, and genetics. I direct the Tulane University Laboratory Animal Medicine Training Program which is an American College of Laboratory Animal Medicine recognized residency program. The program prepares veterinarians for board certification in the specialty of laboratory animal medicine.
Stephen Braun, PhD  
Assistant Professor, Regenerative Medicine—TNPRC  
sbraun@tulane.edu  
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  
Endoplasmic reticulum (ER-stress)/ unfolded protein response plays an important role in various forms of liver diseases related to viral and non-viral etiologies. My laboratory investigates basic mechanism how ER-stress/UPR stress response in the liver improves cell survival pathway by inhibiting cellular apoptosis and cellular autophagy that leads to development of hepatocellular carcinoma and exosome release. We are using this exosome based platform to measure stress exosomes as a serum biomarker for early prediction of liver cancer (hepatocellular carcinomas) among patients with liver cirrhosis.
Juan Duchesne, MD  
Professor, Surgery  
jduchesn@tulane.edu  
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

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, MBA  
Assistant Professor, Medicine - Peptide Research  
fuselier@tulane.edu  
SEE PAGE 29

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**

**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 Therapies in Elderly Patients with Chronic Heart Failure and Type 2 Diabetes

**Vijay John, PhD**
Professor, Chemical and Biomolecular Engineering – SSE  
vij@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 technologies 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.

**Amitinder Kaur, MD**
Professor, Microbiology and Immunology – TNPRC  
akaurs@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, PhD, BSN, MPH  
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  

Jay Kolls, MD  
Professor, Medicine  
jkolls@tulane.edu  
The major goal of Dr. Kolls’ research is to investigate mechanisms of mucosal host defenses in the lung in normal and immunocompromised hosts using genetic models. Presently, his lab is investigating how IL-23 and IL-17 and IL-22 regulate host defense against extracellular pathogens and epigenetic regulation of macrophage function. Additionally, he researches host susceptibility to opportunistic infection such as Pneumocystis and is developing novel therapies against this pathogen.
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 & 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.
Zhen Lin, MD, PhD
Assistant Professor, Pathology
zlin@tulane.edu
I am particularly interested in two DNA tumor viruses: Human papillomavirus (HPV) and the Epstein-Barr virus (EBV). In our research we try to utilize both sequencing based informatics approaches and traditional wet-lab methods to investigate the pathological role of these viruses in cancer development (e.g. lung cancer, nasopharyngeal carcinoma, etc.). Meanwhile, I am also interested in clinical translational research and try to develop new therapeutic approaches to treat virus-associated cancers.

Binhua Ling, MD, PhD
Assistant Professor, Comparative Pathology – TNPRC
bling@tulane.edu
My research interests are in HIV/immune activation and HIV cure research. Currently, HIV persistence in the central nervous system, the gut and other organs, novel approaches of reducing or eliminating HIV-infected cells, immune correlates of protection in HIV-1 infected elite controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug abuse in a nonhuman primate model.

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.
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
Associate 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.

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

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. He also investigates the relationships between genetic markers of vulnerability to disease and disease-avoidant behavior.

David Mushatt, MD, MPH  
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-markers 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.

Bapi Pahar, DVM, PhD  
Associate Professor, Pathology – TNPRC  
bpahar@tulane.edu  
Broad background in cellular and humoral immunology, virology and work experience for over 15 years in macaque model. Research involves determining antigen-specific T and B cell responses in infant and adult macaques in relation to vaccine and infection; understanding the role of intestinal stem cells in regulating intestinal epithelial cell proliferation; mucosal innate immune responses; 3-D primary cell culture; Role of immunoregulatory cytokines in regulating intestinal homeostasis and HIV pathogenesis.

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.
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.

Patricia Scaraffia, PhD  
Assistant Professor, Tropical Medicine  
pscaraff@tulane.edu  
My expertise is in insect metabolism, specifically in Aedes aegypti mosquitoes, vectors of dengue, yellow fever, chikungunya and Zika virus. Her research interests include medical entomology, vector control, parasitology, and development, optimization and application of mass spectrometry techniques. Her laboratory uses traditional and cutting-edge approaches, including RNA interference, isotopically-labeled compounds and mass spectrometry. Scaraffia’s laboratory is particularly interested in unraveling the physiological, biochemical and molecular bases underlying the regulation of nitrogen and carbon metabolism in mosquitoes, as well as in discovering new metabolic targets that can be used for the design of better mosquito-control strategies.

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.

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.
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.
KIDNEY / HYPERTENSION

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.

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.

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.
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.

Loren Gragert, PhD  
Assistant Professor, Pathology and Laboratory Medicine  
lgragert@tulane.edu  
My lab focuses on population genetics and informatics in transplantation. Our main project involves translating datasets and tools originally developed for bone marrow transplant matching into the field of solid organ transplantation. We also develop statistical genetics methodologies for disease association and evolutionary biology studies, focusing on the highly polymorphic HLA and KIR immune gene systems.

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.

Jiang He, MD, PhD  
Professor, Epidemiology – SPH  
jhe@tulane.edu  
Omics, clinical, and epidemiological research in cardiometabolic diseases
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.

Myra A. Kleinpeter, MD, MPH
Associate Professor, Medicine – Nephrology
mkleinp@tulane.edu
Chronic kidney disease education and interventions to improve outcomes in patients with low health literacy and/or from underserved populations. Disaster outcomes in ESRD patients.

L. Spencer Krane, MD
Assistant Professor, Urology
lkrane1@tulane.edu
I'm a urologic oncologist with an interest in precision therapies for prostate, kidney and bladder cancers. Currently we're trying to identify novel biomarkers for predicting disease progression in small renal masses. We're also interested targeting metabolic derangements in bladder cancers.

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.
KIDNEY / HYPERTENSION

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.

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, MBBS, 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.

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, MsC
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.
KIDNEY / HYPERTENSION

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
SEE page 39

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

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.

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

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

Rubin Zhang, MD  
Professor, Medicine – Nephrology  
rzhang@tulane.edu  
I am interested in identifying 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.
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.

Juan Duchesne, MD  
Professor, Surgery  
jduchesn@tulane.edu  
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

Joseph Fuselier, MBA  
Assistant Professor, Medicine - Peptide Research  
fuselier@tulane.edu  
SEE PAGE 29  

Donald P. Gaver, PhD  
Professor and Chair, Biomedical Engineering - SSE  
dpg@tulane.edu  
My research involves the investigation of biofluid mechanics and biotransport phenomena 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.
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.

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 acylated 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.

Ross Klingsberg, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu
Jay Kolls, MD
Professor, Medicine
jkolls@tulane.edu
The major goal of Dr. Kolls’ research is to investigate mechanisms of mucosal host defenses in the lung in normal and immunocompromised hosts using genetic models. Presently, his lab is investigating how IL-23 and IL-17 and IL-22 regulate host defense against extracellular pathogens and epigenetic regulation of macrophage function. Additionally, he researches host susceptibility to opportunistic infection such as Pneumocystis and is developing novel therapies against this pathogen.

Takefumi Komiya, MD, PhD
Assistant Professor, Medicine
tkomiya@tulane.edu
My interest is to overcome resistance in cancer immunotherapy. I am planning to open several investigator-initiated trials using investigational agents for solid tumors. I welcome any idea to translate bench research into human studies.

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.

Zhen Lin, MD, PhD
Assistant Professor, Pathology
zlin@tulane.edu
I am particularly interested in two DNA tumor viruses: Human papillomavirus (HPV) and the Epstein-Barr virus (EBV). In our research we try to utilize both sequencing based informatics approaches and traditional wet-lab methods to investigate the pathological role of these viruses in cancer development (e.g. lung cancer, nasopharyngeal carcinoma, etc.). Meanwhile, I am also interested in clinical translational research and try to develop new therapeutic approaches to treat virus-associated cancers.
Binhua Ling, MD, PhD
Assistant Professor, Comparative Pathology – TNPRC
bling@tulane.edu
My research interests are in HIV/immune activation and HIV cure research. Currently, HIV persistence in the central nervous system, the gut and other organs, novel approaches of reducing or eliminating HIV-infected cells, immune correlates of protection in HIV-1 infected elite controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug abuse in a nonhuman primate model.

Yao-Zhong Liu, PhD
Associate Professor, Global Biostatistics and Data Science – SPH
yliu8@tulane.edu
My research is focused on RNA-seq and other genomics data analysis. My recent research involves RNA-seq analysis of lung epithelial cells for toxicological effects of oil spill products. I’m now extending this research to mouse models. I’m also collaborating with other investigators in RNA-seq based research, such as virus interactome with humans, transcriptomic analysis of Trypanosoma cruzi (the parasite causing Chagas disease) and RNA-seq of stem cells for their survival outcome.

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.

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
Reinhold Munker, MD  
Professor, Medicine – Hematology/Medical Oncology  
rmunker@tulane.edu  
Basic Science: Non-coding RNAs, new cell lines, apoptosis  
Clinical Science: Benign and malignant hematology, second malignancies, stem cell transplantation, immunotherapy

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 affects 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, and pulmonary hypertension. My current research projects: epigenetics (e.g. HDACs, miRNAs) of pulmonary fibrosis and pulmonary hypertension.

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

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.
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.

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).
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.

Juan Duchesne, MD
Professor, Surgery
jduchesn@tulane.edu
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

Vijay John, PhD
Professor, Chemical and Biomolecular Engineering – SSE
vij@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 technologies 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.

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

Rudolf (Skip) Bohm, DVM
Professor and Chair, Veterinary Medicine – TNPRC
bohm@tulane.edu
My overall interest is in the development of nonhuman primate models to support a variety of research programs with emphasis on infectious disease studies. As the Chair of the Division of Veterinary Medicine, I provide oversight for the provision of veterinary medical care for the nonhuman primate breeding colonies and support for research programs utilizing nonhuman primates. We use the rhesus monkey breeding colony for population studies in infectious disease, behavior, and genetics. I direct the Tulane University Laboratory Animal Medicine Training Program which is an American College of Laboratory Animal Medicine recognized residency program. The program prepares veterinarians for board certification in the specialty of laboratory animal medicine.

Donald P. Gaver, PhD
Professor and Chair, Biomedical Engineering - SSE
dpg@tulane.edu
My research involves the investigation of biofluid mechanics and biotransport phenomena 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.

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)
ROSS KLINGSBERG, MD
Assistant Professor, Medicine - Pulmonary Diseases
rklingsb@tulane.edu

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.

MARY MULCAHEY, MD
Assistant Professor, Orthopaedic Surgery
mmulcahey@tulane.edu
I am interested in undergraduate and graduate medical education and I have numerous ongoing projects in these areas (e.g. factors that motivate/deter female medical students from pursuing a career in orthopaedics; Trends in the Sports Medicine Fellowship Match). I am also very interested in women’s musculoskeletal health, understanding the MSK injuries/conditions that women are more prone to and why, and identifying opportunities for injury prevention. I am also involved in numerous orthopaedic clinical projects related to shoulder and knee injuries.

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.

KATHERINE RAYMOND, PhD
Professor of Practice, Biomedical Engineering – SSE
kraymon1@tulane.edu
Through collaboration within the Tulane community and with international partners, I am working with other BME faculty to engage students in a biomedical global health initiative.
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

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.

Isis Smith, MD  
Instructor, Medicine – General Internal Medicine  
ismith3@tulane.edu  
I'm interested in studying medical student's interested in learning more about underserved populations as part of their curriculum as well as what outcomes and how we can effectively teach them about these topics.

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.
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.

Jeff Han, MD, PhD
Assistant Professor, Biochemistry and Molecular Biology
jhan5@tulane.edu
SEE Page 29 for research details

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, PhD, BSN, MPH
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.

L. Spencer Krane, MD
Assistant Professor, Urology
lkrane1@tulane.edu
I'm a urologic oncologist with an interest in precision therapies for prostate, kidney and bladder cancers. Currently we’re trying to identify novel biomarkers for predicting disease progression in small renal masses. We’re also interested targeting metabolic derangements in bladder cancers.
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

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 neurovascular unit (endothelium, smooth muscle, perivascular nerves, astroglia, neurons, etc.) against potentially lethal stimuli.

Paul Colombo, PhD
Associate Professor, Psychology - SSE
colomb@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.

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

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

Juan Duchesne, MD
Professor, Surgery
jduchesn@tulane.edu
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

Stacy Drury, MD, PHD
Associate 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 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.

Jonathan Fadok, PhD
Assistant Professor, Psychology – SSE
jfadok@tulane.edu
My research is focused on understanding how the brain controls the formation and expression of emotional memory at the level of defined neuronal circuits. Methods in my laboratory include large-scale in vivo recordings of neuronal activity, targeted manipulations of function in behaving animals, as well as cell-type specific neuroanatomical tracing techniques.
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.

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.

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.
NEUROSCIENCES

Jenifer Juengling, PhD
Instructor, Orthopaedics
juengli@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.

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.

Binhua Ling, MD, PhD
Assistant Professor, Comparative Pathology – TNPRC
bling@tulane.edu
My research interests are in HIV/immune activation and HIV cure research. Currently, HIV persistence in the central nervous system, the gut and other organs, novel approaches of reducing or eliminating HIV-infected cells, immune correlates of protection in HIV-1 infected elite controllers and long-term nonprogressors, HIV/gut microbiota, HIV/aging and HIV/drug abuse in a nonhuman primate model.

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  
The environmental signal we measure is metals in accumulated dusts of communities of New Orleans. We then obtain children’s exposure data from the city and state. The combined environmental signal and exposure data is stratified by community and evaluated for patterns and trends.

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 microscopy, 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  
Our laboratory studies synaptic plasticity of cortical neurons with emphasis on the effects of aging on the ability to establish and maintain synaptic contacts between neurons. We are applying our results from the aged brain to the study of Alzheimer’s disease using animal models of the disease. We currently have research collaborative efforts with cancer-oriented laboratories studying potential glioblastoma multiforme therapies and the role of tumor suppressors in neuronal function.
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.

Jeffrey Rouse, MD  
Assistant Professor, Psychiatry and Behavioral Sciences  
jrouse@tulane.edu  
As a forensic psychiatrist, my academic interests include neuroimaging of brain regions and networks involved in emotion regulation, the neural mechanisms of meditation and real-time neurofeedback, and the application of biomarkers to forensic risk assessment.

Ibolya Rutkai, PhD  
Assistant Professor, Pharmacology  
irutkai@tulane.edu  
My research focuses on the role of the estrogen-mitochondria-mediated regulation of cerebral vascular function before and after ischemia-reperfusion.

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.

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.

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  
My lab is interested in understanding what neural circuits are responsible for positive symptoms of schizophrenia. Additionally, we are interested in why the symptoms manifest later in life. Recently, we identified age-dependent changes in microRNAs that regulate normal synaptic communication between the auditory thalamus and the auditory cortex. We further showed that disruption in this circuit resulted in positive-like symptoms of schizophrenia in mouse models.

Jeffrey K. Wickliffe, PhD  
Associate Professor, Global Environmental 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  

Andrea Zsombok, PhD  
Associate 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.
Joseph Fuselier, MBA
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.

James Zadina, PhD
Professor, Pharmacology and Neuroscience
jzadina@tulane.edu
Stephen Braun, PhD  
Assistant Professor, Regenerative Medicine – TNPRC  
sbraun@tulane.edu  
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.

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.

Donald P. Gaver, PhD  
Professor and Chair, Biomedical Engineering - SSE  
dpg@tulane.edu  
My research involves the investigation of biofluid mechanics and biotransport phenomena 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.

Fenglei He, PhD  
Assistant Professor, Cell and Molecular Biology – SSE  
fhe@tulane.edu  
Neural crest cells comprise a transient, highly migratory and multipotent 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.
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.

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

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 microscopy, 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.
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.
Mimi Sammarco, PhD
Assistant Professor, Surgery
msammarc@tulane.edu
I investigate mechanisms promoting soft tissue and bone regeneration in the context of aging. I use the mouse digit regeneration model to gain a more thorough understanding of how the role of oxygen and cellular metabolism affect regeneration in an aged model in order to delineate between regeneration-competent and incompetent tissue environments. Using aging as a model to better understand regeneration will enable us to shed light on the regenerative process and to develop ways to address fracture healing and poor wound closure in the aged population.

Hongju Wu, PhD
Associate Professor, Medicine - Endocrinology and Metabolism
hwu3@tulane.edu
My laboratory explores genetic therapy, beta cell regeneration, and islet transplantation strategies for the treatment of diabetes. I am also interested in islet cell biology involving the roles of GLP-1 and GLP-1R in regulating glucagon secretion.

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).
Asim Abdel-Mageed, DVM, PhD
Professor, Urology
amageed@tulane.edu
My research interest focuses on identifying molecular determinants of prostate cancer progression, with special emphasis on health disparity. One approach involves genetic engineering and selective delivery of stem cells to target “intracrine” production of androgens at metastatic sites.

Stephen Braun, PhD
Assistant Professor, Regenerative Medicine – TNPRC
sbraun@tulane.edu
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.
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.

Reinhold Munker, MD
Professor, Medicine – Hematology/Medical Oncology
rmunker@tulane.edu
Basic Science: Non-coding RNAs, new cell lines, apoptosis
Clinical Science: Benign and malignant hematology, second malignancies, stem cell transplantation, immunotherapy

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.
STEM CELL RESEARCH

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.

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.
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
My laboratory explores genetic therapy, beta cell regeneration, and islet transplantation strategies for the treatment of diabetes. I am also interested in islet cell biology involving the roles of GLP-1 and GLP-1R in regulating glucagon secretion.

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).
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.

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.

Juan Duchesne, MD  
Professor, Surgery  
jduchesn@tulane.edu  
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

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.

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

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

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.

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.
WOMEN’S HEALTH

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. 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.

Mary Mulcahey, MD
Assistant Professor, Orthopaedic Surgery
mmulcahey@tulane.edu
I am interested in undergraduate and graduate medical education and I have numerous ongoing projects in these areas (e.g. factors that motivate/deter female medical students from pursuing a career in orthopaedics; Trends in the Sports Medicine Fellowship Match). I am also very interested in women's musculoskeletal health, understanding the MSK injuries/conditions that women are more prone to and why, and identifying opportunities for injury prevention. I am also involved in numerous orthopaedic clinical projects related to shoulder and knee injuries.
Amber Naresh, MD, MPH  
Assistant Professor, Obstetrics & Gynecology  
anaresh@tulane.edu

I am interested in HPV-related pre-malignant lesions of the cervix in women. One current project 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-markers 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.

Katherine Raymond, PhD  
Professor of Practice, Biomedical Engineering – SSE  
kraymon1@tulane.edu

Through collaboration within the Tulane community and with international partners, I am working with other BME faculty to engage students in a biomedical global health initiative. Partnership opportunities are welcome.

Ibolya Rutkai, PhD  
Assistant Professor, Pharmacology  
irutkai@tulane.edu

My research focuses on the role of the estrogen-mitochondria-mediated regulation of cerebral vascular function before and after ischemia-reperfusion.

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 Environmental 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)

James Blanchard, DVM, PhD
Professor, Veterenary Medicine-TNPRC
jblanch1@tulane.edu
My research interests are related to the use of nonhuman primate (NHP) models of AIDS and other infectious diseases. Clinical interests include minimally invasive techniques and surgical procedures supporting NHP infectious disease research.

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.

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).
OTHER RESEARCH AREAS

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 neurovascular unit (endothelium, smooth muscle, perivascular nerves, astroglia, neurons, etc.) against potentially lethal stimuli.

Ricardo Cortez, PhD
Professor, Mathematics – SSE
rcortez@tulane.edu
Mathematical and Computational Modeling of microscopic fluid flows; sperm motility; bacterial flows.

Juan Duchesne, MD
Professor, Surgery
jduchesne@tulane.edu
We are looking to partner with basic scientists in order to further study the endotheliopathy of trauma resuscitation in patients with severe hemorrhagic shock. We are looking forward to expand the department of surgery collaboration with basic science.

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.
OTHER RESEARCH AREAS

**Lisa Fauci, PhD**  
Professor, Math – SSE  
fauci@tulane.edu  
My research is in biological fluid dynamics. Projects include sperm motility in the reproductive tract and the neuromechanics of locomotion in simple vertebrates.

**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, MBA**  
Assistant Professor, Medicine - Peptide Research  
fuselier@tulane.edu  
See Page 29

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

**Chrissy Guidry, DO**  
Assistant Professor, Surgery  
cguidry@tulane.edu  
Trauma Resuscitation, Endotheliopathy
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.

Jiang He, MD, PhD  
Professor, Epidemiology – SPH  
jhe@tulane.edu  
Omnics, clinical, and epidemiological research in cardiometabolic diseases

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.

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.

Yao-Zhong Liu, PhD
Associate Professor, Global Biostatistics and Data Science – SPH
yliu8@tulane.edu
My research is focused on RNA-seq and other genomics data analysis. My recent research involves RNA-seq analysis of lung epithelial cells for toxicological effects of oil spill products. I’m now extending this research to mouse models. I’m also collaborating with other investigators in RNA-seq based research, such as virus interactome with humans, transcriptomic analysis of Trypanosoma cruzi (the parasite causing Chagas disease) and RNA-seq of stem cells for their survival outcome.
Patrick McGrew, MD  
Assistant Professor, Surgery  
pmcgrew@tulane.edu  
Currently researching mass casualty incidents. Interested in ICU delerium, affects of circadian rhythms on ICU drug metabolism. Interested in victim blaming in trauma patients.

Howard Mielke, PhD  
Professor, Pharmacology  
hmielke@tulane.edu  
The environmental signal we measure is metals in accumulated dusts of communities of New Orleans. We then obtain children's exposure data from the city and state. The combined environmental signal and exposure data is stratified by community and evaluated for patterns and trends.

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.

Mary Mulcahey, MD  
Assistant Professor, Orthopaedic Surgery  
mmulcahey@tulane.edu  
I am interested in undergraduate and graduate medical education and I have numerous ongoing projects in these areas (e.g. factors that motivate/deter female medical students from pursuing a career in orthopaedics; Trends in the Sports Medicine Fellowship Match). I am also very interested in women's musculoskeletal health, understanding the MSK injuries/conditions that women are more prone to and why, and identifying opportunities for injury prevention. I am also involved in numerous orthopaedic clinical projects related to shoulder and knee injuries.
OTHER RESEARCH AREAS

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.

Ibolya Rutkai, PhD
Assistant Professor, Pharmacology
irutkai@tulane.edu
My research focuses on the role of the estrogen-mitochondria-mediated regulation of cerebral vascular function before and after ischemia-reperfusion.

Nicholas Sandoval, PhD
Assistant Professor, Chemical and Biomolecular Engineering
nsandoval@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 expertise is in insect metabolism, specifically in Aedes aegypti mosquitoes, vectors of dengue, yellow fever, chikungunya and Zika virus. Her research interests include medical entomology, vector control, parasitology, and development, optimization and application of mass spectrometry techniques. Her laboratory uses traditional and cutting-edge approaches, including RNA interference, isotopically-labeled compounds and mass spectrometry. Scaraffia’s laboratory is particularly interested in unraveling the physiological, biochemical and molecular bases underlying the regulation of nitrogen and carbon metabolism in mosquitoes, as well as 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.

Cedric Walker, PhD
Professor, Biomedical Engineering – SSE
cfw@tulane.edu
Prototyping of new devices for medical research. The Tulane MakerSpace offers digital tools (3d printers, laser cutters, CNC mill and lathe) and training in their use to students, staff and faculty. Most projects are "DIY" but there is a mechanism to hire our student workers for specific projects beyond the scope of the researcher requesting them.
Carola Wenk, PhD  
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.

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.
Resource Booklet compiled by:

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