

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Omar Al-Qudsi

Department: Anesthesiology

Email: Omar.Al-Qudsi@osumc.edu

Lab Manager/Department Contact: Alberto Uribe,MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/omar-al-qudsi-md-96726>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: He is currently conducting a retrospective, observational study assessing the use of a hemofilter in COVID-19 Patients with Acute Respiratory Distress Syndrome (ARDS). The primary objective of the study is to explore the safety and efficacy of the hemofilter CLR 2.0 in COVID-19 patients with ARDS admitted to ICU based on all-cause mortality through day 60 from admission.

Specific area of research emphasis: Anesthesia/Surgery, Critical Care, Lung Disease

Desired skills: Interest in Clinical Research, Access to EMRs (IHIS), data extraction, data collection, Excel data collection sheet

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Fedias Christofi

Department: Anesthesiology

Email: Christofi.1@osu.edu

Lab Manager/Department Contact: Iveta Grants

Manager/Department email: Iveta.Grants@osumc.edu

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/clinical/anesthesiology/fievos-christofi-phd-agaf> <https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Translational

Project Description: This pilot study is conducted in human subjects undergoing abdominal surgery with the objective of collecting experimental data on human glia and motility (contractility) from intestinal surgical specimens and relate it to the clinical outcomes peritoneal inflammation and delay in gastrointestinal transit (GIT), the two hallmarks of postoperative ileus (POI). This is a translational research project is focused on the role of human enteric glial cells in the pathophysiology of postoperative ileus (POI) and constipation. The objectives of this translational study aims : 1) To investigate mechanotransduction pathways of ATP release in human enteric glial cells (hEGCs) and intact neural plexus networks, 2) To determine the role of hEGCs in the modulation of motility, and 3) To determine the impact of inflammation in POI on reactive glia and motility

Specific area of research emphasis: Anesthesia/Surgery, Cancer Biology, Cells, Organ Systems & Integrative Biology

Desired skills: Research interest in translational studies, data extraction, data collection, Excel data sheet design.

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Hamdy Elsayed-Awad

Department: Anesthesiology

Email: Hamdy.Elsayed-Awad@osumc.edu

Lab Manager/Department Contact: Alberto Uribe, MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/hamdy-elsayed-awad-md-4669>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Translational

Project Description: He is currently conducting a translational study that assess Ischemic Spinal Cord Injury in the Setting of Aortic Aneurysm Surgery. Previous mouse model studies conducted in the lab have shown that inflammation is a key mechanism that causes ischemic spinal cord (SC) injury after aortic surgery. In addition, oligodendrocytes (OLs) are important in both, the sensing of hypoxia and maintaining the myelin sheath.

Specific area of research emphasis: Anesthesia/Surgery, Neurologic Disorders, Neuroscience

Desired skills: Interest in clinical research, access to EMRs (IHIS), data extraction, data collection, Excel data collection sheet design

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Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Blair Hayes

Department: Anesthesiology

Email: Blair.Hayes@osumc.edu

Lab Manager/Department Contact: Alberto Uribe, MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/blair-hayes-md-70406>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: A prospective, randomized controlled trial to compare analgesic and labor outcomes of women not requiring a clinician administered epidural bolus for inadequate pain relief to those receiving an epidural bolus with either 10mL of 0.125% bupivacaine with 100mcg of fentanyl (to be referred to as "high dose fentanyl/bupivacaine") or 10mL of 0.125% bupivacaine with 20mcg of fentanyl (to be referred to as "low dose fentanyl/bupivacaine")

Specific area of research emphasis: Anesthesia/Surgery, Perioperative pain, obstetric anesthesia,

Desired skills: Interest in clinical research, access to EMRs (IHIS), data extraction, data collection, Excel data collection sheet

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Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Michael Kushelev

Department: Anesthesiology

Email: michael.kushelev@osumc.edu

Lab Manager/Department Contact: Alberto Uribe, MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/michael-kushelev-md-44380>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: A randomized prospective single-blinded controlled trial in patients undergoing ORIF distal radial and CMC arthroplasty, those two types of surgery are selected, as they are associated with higher postoperative pain levels. In this study, we intend to elucidate the effect of co-administration of perineural and intravenous dexamethasone on the duration of ropivacaine-induced local analgesia when compared with ropivacaine local block alone, or when administered in conjunction with IV dexamethasone.

Specific area of research emphasis: Anesthesia/Surgery, Postoperative pain,

Desired skills: Interest in clinical research, access to EMRs (IHIS), data extraction, data collection, Excel data collection sheet design

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Jyoti Pandya

Department: Anesthesiology

Email: jyoti.pandya@osumc.edu

Lab Manager/Department Contact: Alberto Uribe, MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/jyoti-pandya-md-57928>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: n ongoing prospective, doubled-blinded trial to demonstrate the hypothesis that Transcutaneous Electrical Acupoint Stimulation (TEAS) - through bilateral Neiguan (PC6), and Zusanli (ST36) 20 min after the first suture placement (start surgical wound closure) - will reduce the incidence of PONV in patients undergoing spinal surgeries compared to control group (patients not receiving electrostimulation).

Specific area of research emphasis: Anesthesia/Surgery, Postoperative pain,

Desired skills: Interest in clinical research, access to EMRs (IHIS), data extraction, data collection, Excel data sheet design

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Barbara Rogers

Department: Anesthesiology

Email: barbara.rogers@osumc.edu

Lab Manager/Department Contact: Alberto Uribe, MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/barbara-rogers-md-3990>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: She is currently conducting a retrospective/prospective observational, descriptive study aiming to define the Clinical Characteristics of Recovered COVID-19 Inpatients after Hospital Discharge.

Specific area of research emphasis: Anesthesia/Surgery, Infectious Disease, Lung Disease

Desired skills: Interest in Clinical Research. Access to EMRs (IHIS), data extraction, data collection, Excel data collection sheet design

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Tristan Weaver

Department: Anesthesiology

Email: tristan.weaver@osumc.edu

Lab Manager/Department Contact: Alberto Uribe,MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email

Website(s): <https://medicine.osu.edu/departments/anesthesiology>
<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: Prospective observational study, aimed to explore and describe opioid consumption post-discharge, based on the hypothesis that the opioid medication (oral morphine equivalent) prescribed to treat pain after cystectomy exceeds by a large margin (30-50%) the actual patients' requirement and results as a leftover medication.

Specific area of research emphasis: Anesthesia/Surgery, Other Cell Biology and Organ Specific Disorders, Postoperative pain, Opioid Consumption

Desired skills: IHIS access, data collection, Excel data collection sheet,

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Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Tristan Weaver

Department: Anesthesiology

Email: tristan.weaver@osumc.edu

Lab Manager/Department Contact: Alberto Uribe, MD

Manager/Department email: alberto.uribe@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/tristan-weaver-md-53757>

<https://medicine.osu.edu/departments/anesthesiology/research>

Category of Research: Clinical

Project Description: Retrospective/prospective, observational study, aimed to explore and describe opioid consumption post-discharge, based on the hypothesis that the opioid medication (oral morphine equivalent) prescribed to treat pain after cystectomy exceeds by a large margin (30-50%) the actual patients' requirement and results as a leftover medication.

Specific area of research emphasis: Anesthesia/Surgery, Postoperative pain, Opioid Consumption,

Desired skills: Interest in clinical and translational research, MS-1, access to EMR (IHIS), abilities in data extraction, data collection, Excel data collection sheets, English grammar and spelling.

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Medical Student Research Program



THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Tianmin Fu

Department: Biological Chemistry and Pharmacology

Email: fu.978@osu.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/bcpharm/tian-min-fu-phd>
<https://u.osu.edu/fu.978/>

Category of Research: Basic

Project Description: We are using biochemical reconstitution, cryo-EM, as well as cellular assay to study cell signaling. The available projects for medical student will focus on mechanistic understanding of ion channels, and transporters that are involved in cancer, diabetes, and neurodegenerative diseases.

Specific area of research emphasis: Cancer Biology, Molecular Pharmacology, Pharmacogenomics and Pharmacotherapeutics, Neuroscience

Desired skills: Molecular cloning, cell culture, protein expression, protein purification

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Aaron Goldman

Department: Biological Chemistry and Pharmacology

Email: goldman.214@osu.edu

Lab Manager/Department Contact: Ishrat Jahan

Manager/Department email: jahan.23@osu.edu

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/bcpharm/aaron-goldman>

Category of Research: Basic

Project Description: We use genetic models to study gene regulation during zebrafish heart regeneration. We have several projects investigating chromatin based mechanisms of gene control.

Specific area of research emphasis: Heart Disease, Molecular Genetics, Tissue Repair and Regeneration

Desired skills: Dedication and perseverance

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Michael Kears

Department: Biological Chemistry and Pharmacology

Email: michael.kearse@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): kearselab.org

Category of Research: Basic

Project Description: mRNA translation is essential in all lifeforms and the use of translation inhibitors have taught us a tremendous amount the basic mechanism of protein synthesis. We have a unique translation inhibitor in hand (well, in the freezer) that is the only drug that specifically targets initiation, but the exact mechanism is not known. We have some clues how it might be working, but we need YOU to help! Targeting translation initiation is important because initiation is dysregulated in human cancer and many neurological diseases. By deciphering how this inhibitor is working it will open the possibility of therapeutics for these types of diseases.

Specific area of research emphasis: Molecular Genetics, Other Molecular Biology, Genetics, & Therapeutics, RNA biology

Desired skills: Women and underrepresented minorities in science & medicine are highly encouraged to contact us. Willing to work with a group of fun biochemists that love RNA, science, and coffee (we will not judge if you are not a coffee drinker...as long as you don't

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Sung Ok Yoon

Department: Biological Chemistry and Pharmacology

Email: sung.yoon@osumc.edu

Lab Manager/Department Contact: Sung Ok Yoon

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://wexnermedical.osu.edu/neurological-institute/researchers/sung-ok-yoon-phd>

Category of Research: Translational

Project Description: Our research focus is in Alzheimer's disease. We have two active projects. One is preclinical drug discovery for AD, and the other is to understand the role of metabolic disruption in inflammatory responses in AD.

Specific area of research emphasis: Neurologic Disorders, Neuroscience, Other Cell Biology and Organ Specific Disorders

Desired skills: You will be trained to learn required skills, but if you know how to work with mice is a plus.

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Kin Fai Au

Department: Biomedical Informatics

Email: kinfai.au@osumc.edu

Lab Manager/Department Contact: Kin Fai Au

Manager/Department email: kinfai.au@osumc.edu

Preferred Method of contact: Faculty email

Website(s): <http://augroup.org/> <http://augroup.org/>

Category of Research: Basic

Project Description: Our lab performs world leading science in development process and cancer research by adopting statistical and computational/algorithmic methods for high-throughput sequencing data analyses, such as transcriptome and epigenetics using PacBio and Oxford Nanopore Technologies. Our team focuses on making meaningful advances to understand development process and cancer, using cutting edge technologies (third generation sequencing technology) to create authentic models and gain novel biological insight in transcriptome and epigenetics level. The research will include the opportunity to collaborate with internationally recognized biomedical scientists at University of Iowa Carver College of Medicine, Stanford University, University of Oxford and Pacific Biosciences.

Specific area of research emphasis: Biomedical Informatics, RNA biology,

Desired skills: basic programming skills are required.

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Robert Cronin

Department: Internal Medicine

Email: robert.cronin@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s):

Category of Research: Clinical

Project Description: Research opportunities include: (1) personal health informatics (how patients use informatics to engage in their health, examples include mobile health technologies (mHealth) and patient engagement), and (2) use of electronic health records to follow clinical history of disease and complications. The methodology of the research includes both qualitative and quantitative methods. One current project is focusing on an mHealth app to improve knowledge of a disease and engagement in sickle cell disease. Tasks would include recruitment, following up with participants, qualitative interviews, data entry, chart review, data analysis, and potentially mobile health app development. The other project has to do with leveraging electronic health record information to discover complications of sickle cell disease. Tasks would include working with the electronic health records data, chart review, and quantitative analyses.

Specific area of research emphasis: Applied Medical Informatics, Biomedical Informatics, sickle cell disease

Desired skills: Professionalism, respect for participants, good communication, personable, (while not a skill - ability to get to Ohio State East Hospital) The following skills would be helpful, but not required: experience with clinical trials, knowledge of REDCap, qua

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Ann-Kathrin Eisfeld

Department: Internal Medicine

Email: ann-kathrin.eisfeld@osumc.edu

Lab Manager/Department Contact: Rikki Hurt

Manager/Department email: rikki.hurt@osumc.edu

Preferred Method of contact: Faculty email

Website(s):

Category of Research: Translational

Project Description: My lab is interested in cancer genomics, specifically acute myeloid leukemia and cancers in young adolescents and adults. I am offering a project that looks at the outcomes and treatments of young cancer patients to see if their biology is different from that of older adults.

Specific area of research emphasis: Cancer Biology, Cancer genetics,

Desired skills: Excel and dedication, excellent writing skills. Not necessary but of benefit: experience with sequencing data

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Laszlo Farkas

Department: Internal Medicine

Email: Laszlo.Farkas@osumc.edu

Lab Manager/Department Contact: Mehboob Ali

Manager/Department email: Mehboob.ali@osumc.edu

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/clinical/internal-medicine/laszlo-farkas>

Category of Research: Translational

Project Description: We are studying endothelial cell biology in pulmonary hypertension. Our main interests are endothelial progenitor cells, innate immunity including immunomodulatory therapies, and endosomal-mitochondrial dysfunction. Opportunities for medical students include characterization of new molecular pathways in tissues and cells from patients with pulmonary hypertension and fundamental research on the role of clonal selection in endothelial progenitor cell biology and endothelial cell regeneration.

Specific area of research emphasis: Cells, Organ Systems & Integrative Biology, Lung Disease, Tissue Repair and Regeneration

Desired skills: Basic understanding of physiology and cell biology. Previous wet lab experience is helpful, but not absolutely required. We are looking for team workers driven by an interest to discover new avenues to help patients and to learn new methods.

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THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Margaret Gatti-Mays

Department: Internal Medicine

Email: margaret.gatti-mays@osumc.edu

Lab Manager/Department Contact: Jane Hagley

Manager/Department email: jane.hagley@osumc.edu

Preferred Method of contact: Faculty email

Website(s):

Category of Research: Clinical

Project Description: I am a medical breast oncologist with a focus in immunotherapy and early phase clinical trials. There are multiple review manuscript options and potentially case reports that students could assist with.

Specific area of research emphasis: Cancer therapy, Other Cancer Biology & Clinical Cancer Research,

Desired skills: Motivated to complete a project. Self-driven. Energetic. Willing to learn.

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Bei Liu

Department: Internal Medicine

Email: bei.liu@osumc.edu

Lab Manager/Department Contact: Soo Ngoi

Manager/Department email: SooMun.Ngoi@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://cancer.osu.edu/for-cancer-researchers/research/research-labs/liu-lab>

Category of Research: Translational

Project Description: Our laboratory is interested in understanding chaperone biology and unfolded protein response in B cells and plasma cells in both normal and pathological conditions. We have demonstrated that heat shock protein gp96, also known as grp94, is an essential chaperone for folding Wnt co-receptor LRP6 and that it is required for multiple myeloma cell survival, which is mediated in part by the Wnt target survivin. Also, we found that gp96 is highly expressed in malignant plasma cells in multiple myeloma. The higher levels of gp96 have a significant association with worse clinical stage in this disease. Currently, our laboratory is studying the mechanism of gp96 in regulating myeloma initiation and progression as well as developing gp96 target therapeutics for the treatment of myeloma. We also interested in the function of dendritic cells (DCs) in cross-presenting antigens to T cell receptors, which play essential roles in both the priming and sustenance of adaptive T cell responses. We discovered that the deletion of gp96 from DCs resulted in the alteration of subsets of DCs and T cells. Intriguingly, we found that targeting gp96 on DCs significantly delayed the onset of tumor development and prolonged survival in a clinically relevant spontaneous mammary cancer mouse model. Currently, we are investigating the distinct function of cDCs in the different tumor microenvironments and develop a gp96-targeted strategy to enhance cancer immunotherapy as well as identify its clients that regulate DC functions.

Specific area of research emphasis: Cancer Biology, Cancer therapy, Immunology

Desired skills: The basic knowledge of cancer biology and tumor immunology, as well as some biochemistry and immunology technique skills.

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THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Haseeba Shahzad

Department: Internal Medicine

Email: haseeba.shahzad@osumc.edu

Lab Manager/Department Contact: N/A

Manager/Department email: n/a

Preferred Method of contact: Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/haseeba-shahzad-mbbs-90411>

Category of Research:

Project Description:

Specific area of research emphasis: Medical Oncology

Desired skills:

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Priyamvada Singh

Department: Internal Medicine

Email: priyamvada.singh@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/priyamvada-singh-mbbs-77565>

Category of Research: Translational

Project Description: I am a transplant nephrologist and am involved in translational database research looking into long-term outcomes of transplant recipients. My google scholar link - <https://scholar.google.com/citations?user=JP-7PcgAAAAJ&hl=en&oi=ao>

Specific area of research emphasis: Kidney Disease, Transplantation,

Desired skills: Excel, word, and PowerPoint. Statistic is a bonus but not necessary.

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Dan Spakowicz

Department: Internal Medicine

Email: daniel.spakowicz@osumc.edu

Lab Manager/Department Contact: Jodie Embaugh

Manager/Department email: Jodie.embaugh@osumc.edu

Preferred Method of contact: Faculty email

Website(s): <https://cancer.osu.edu/find-a-researcher/search-researcher-directory/daniel-j-spakowicz>

Category of Research:

Project Description: I am a research assistant professor in the Division of Medical Oncology at The Ohio State University and a member of the Molecular Carcinogenesis and Chemoprevention Program at the OSUCCC – James. My lab studies the role of the microbiome in human health, particularly the immunomodulatory effects of microbes in the context of cancer.

I have a number of ongoing projects centered on this subject, including observational studies that correlate patients' microbiomes with cancer immunotherapy outcomes; mechanistic studies that seek to understand the small-molecule drivers of these effects; and interventional studies that alter the microbiome to improve treatment outcomes.

I have co-authored many articles in well-respected journals, including Cell Systems, Genome Biology, Journal of Biological Chemistry, and Applied Microbiology and Biotechnology. He has also shared his work in several presentations to organizations like the Cleveland Clinic Foundation.

Specific area of research emphasis: , ,

Desired skills:

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Fred Tabung

Department: Internal Medicine

Email: fred.tabung@osumc.edu

Lab Manager/Department Contact: Sarah Greenwood

Manager/Department email: Sarah.Greenwood@osumc.edu

Preferred Method of contact: Faculty email

Website(s): <https://u.osu.edu/caffre/people/fred-tabung-phd-msph/>
<https://u.osu.edu/caffre/people/fred-tabung-phd-msph/>

Category of Research: Translational

Project Description: -Analysis of existing cohort data of the impact of inflammatory and insulinemic dietary patterns on the gut microbiome and subsequent colon cancer risk -Analysis of existing cohort data of the impact of inflammatory and insulinemic dietary patterns on th

Specific area of research emphasis: Nutrition/Obesity, Other Cancer Biology & Clinical Cancer Research, Public Health Research

Desired skills: -Strong interest in nutrition and cancer research including basic skills -Data analysis skills: SAS, R etc

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THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Maurice Zayek

Department: Internal Medicine

Email: maurice.zayek@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact:

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/maurice-zayek-md-95747>

Category of Research:

Project Description:

Specific area of research emphasis:

Desired skills:

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THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. AMAL AMER

Department: Microbial Infection and Immunity

Email: AMAL.AMER@OSUMC.EDU

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/microbial-infection-and-immunity/amal-amer> <https://medicine.osu.edu/find-faculty/non-clinical/microbial-infection-and-immunity/amal-amer>

Category of Research: Translational

Project Description: 1-The pathogenesis of Legionella pneumophila 2-The role of mitochondria in lung infection 3-The role of inflammasome effectors in bacterial infections 4-Autophagy in health and disease 5-The characterization of microglia dysfunction in Alzheimer's disease 6- The inflammasome and the pathobiology of Alzheimer's Disease

Specific area of research emphasis: Immunology, Microbial Pathogenesis, Neuroscience

Desired skills: Excellent organization skills Strong desire to pursue high caliber research Devote enough time to develop and perform a research project



PI: Dr. Hazem Ghoneim

Department: Microbial Infection and Immunity

Email: Hazem.ghoneim@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://cancer.osu.edu/find-a-researcher/search-researcher-directory/hazem-ghoneim> <https://u.osu.edu/ghoneim.2/>

Category of Research: Translational

Project Description: Our lab is focused on understanding the regulation of "killer" T cell immune responses during virus infection or cancer. We mechanistically investigate how epigenetic programming regulates T cell exhaustion. Recently, we discovered that de novo epigenetic programs enforce full exhaustion of T cells, serving as a major cell-intrinsic barrier to T cell immunotherapy (Ghoneim, et al. Cell 2017, Alfei, et al. Nature 2019). Rejuvenating exhausted T cells by immune checkpoint blockade (ICB) therapy has made a revolution in cancer therapy. Despite the unprecedented success of ICB therapy in treating multiple previously refractory cancers, many patients remain nonresponsive while some patients relapse after initial clinical response. To understand how epigenetic programming regulates T cell differentiation and function, we are particularly interested in: 1- Identifying key microenvironmental signals that accelerate T cell exhaustion. 2- Developing therapeutic approaches to reprogram T cells function by targeting these microenvironmental cues. We employ multiple cutting-edge technologies in the lab, including multi-color spectral/flow cytometry, sorting of immune cells, CRISPR-cas9 gene editing, epigenetic analysis and next generation DNA sequencing. We track T cell differentiation and response to immunotherapies using in vitro and in vivo animal models (virus infections or cancer).

Specific area of research emphasis: Cancer therapy, Immunology, Infectious Disease

Desired skills: Passion to immunology research, experience or willing to utilize small animals (mice) in experimental work, good record-keeping and writing skills.

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THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Jerry Lio

Department: Microbial Infection and Immunity

Email: lio.4@osu.edu

Lab Manager/Department Contact: Jerry Lio

Manager/Department email: lio.4@osu.edu

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/microbial-infection-and-immunity/chanwang-jerry-lio-phd> <https://medicine.osu.edu/find-faculty/non-clinical/microbial-infection-and-immunity/chanwang-jerry-lio-phd>

Category of Research: Basic

Project Description: B lymphocytes (or B cells) are essential for the production of antibodies against pathogens. The Lio lab studies how epigenetic factors regulate the function, differentiation, and transformation of B cells. Our primary focus is on the DNA methylcytosine oxidases TET (Ten-Eleven-Translocation; TET1, TET2, TET3), which convert 5-methylcytosine (5mC) to 5-hydroxymethylcytosine (5hmC) and demethylate DNA. TET proteins essential for cell differentiation and tumor suppression. In humans, TET2 is one of the most frequent somatic mutations in blood cancers. In addition, germline TET2 mutation has been linked to increased lymphoma susceptibility and B cell immunodeficiency. However, how TET enzymes function in B cells remained incompletely understood. Projects in the lab include: 1) Development of novel CRISPR-based tool to study TET-mediated gene regulation; 2) Effect of metabolites on TET-mediated B cell differentiation; 3) Investigate the correlation between 5hmC status and disease phenotypes in diffuse large B cell lymphoma.

Specific area of research emphasis: Cancer Biology, Other Basic and Applied Research in Inflammation, Infection & Immunology, Epigenetics

Desired skills: Molecular cloning Cell culture Optional: NGS-sequencing, bioinformatics



PI: Dr. Michael Root

Department: Microbial Infection and Immunity

Email: root.186@osu.edu

Lab Manager/Department Contact: Michael Root

Manager/Department email: root.186@osu.edu

Preferred Method of contact: Faculty email

Website(s): <https://www.linkedin.com/in/elisabeth-root-208497b5>

Category of Research:

Project Description:

I am a health geographer, meaning my research focuses on the intersection between geography and public health. I study the epidemiology of a variety of health outcomes, behaviors, and diseases - with a focus on geographic patterns and inequalities - using quantitative spatial methodologies. I am particularly interested in the complex interactions between demographic, socioeconomic and environmental factors that influence human health and how we can quantify these factors and interactions to better understand health outcomes. I have extensive experience in survey design and have led the implementation of several large household surveys in low- and middle-income countries. I also manage and utilize large secondary data sources such as medical claims records, birth/death registries, and large surveillance systems. My work relies on traditional biostatistical methods, spatial statistical analysis, geographic information systems and remote sensing.

My current research focuses on two broad topics: the socio-environmental drivers of communicable diseases (e.g., pneumonia and cholera) and evaluating health programs and interventions in the U.S. and in developing countries using spatial methodologies. I have several major international health projects (Bangladesh, Honduras, Philippines, Indonesia) as well as two research initiatives in the United States.

Specific area of research emphasis: the epidemiology of a variety of health outcomes

Desired skills:



PI: Dr. Gang Xin

Department: Microbial Infection and Immunity

Email: gang.xin@osumc.edu

Lab Manager/Department Contact: Gang Xin

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/microbial-infection-and-immunity/gang-xin-phd> <https://medicine.osu.edu/find-faculty/non-clinical/microbial-infection-and-immunity/gang-xin-phd>

Category of Research: Basic

Project Description: Despite the revolutionary success of immunotherapies such as immune checkpoint-blocking (ICB) antibodies, only a small fraction of patients respond to these therapies owing to the immunosuppressive tumor microenvironment (TME). This is primarily due to the accumulation of myeloid-derived suppressor cells (MDSCs), which are the dominant negative regulators of antitumor immune responses. However, a lack of understanding of this process hinders the development of specific inhibitors targeting this pathway to overcome resistance to ICB therapy. In our studies, we aim to define the specific metabolic programming in MDSCs that arises in response to obesity and its underlying mechanism using cutting edge single-cell sequencing and metabolic analysis. Through the experiments we plan to conduct, we hope to answer four important questions with regard to myeloid-mediated resistance to ICB therapy. 1. When do myeloid cells reprogram their metabolic profile to sustain their function inside TME? 2. What genes are expressed during this metabolic reprogramming? 3. What signals act to regulate this metabolic reprogramming? 4. How to better harness this metabolic reprogramming in cancer immunotherapy. Based on this, we will develop novel therapeutic strategies to restore the responsiveness to ICB therapy in the majority of cancer patients.

Specific area of research emphasis: Cancer therapy, Immunology,

Desired skills:

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Shahid Nimjee

Department: Neurological Surgery

Email: shahid.nimjee@osumc.edu

Lab Manager/Department Contact: Debra Wheeler

Manager/Department email: debra.wheeler@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/shahid-nimjee-md-phd-53043>
<https://medicine.osu.edu/research/opportunities/mdsr-openings/neurological-surgery>

Category of Research: Translational

Project Description: Our lab focuses on elucidating the thrombo-inflammatory mechanisms of stroke and developing RNA-based therapies called aptamers to improve outcomes in thrombosis in the brain, heart and periphery. Aptamers are single-stranded oligonucleotides that can fold into a 3-dimensional conformation to bind to and inhibit protein function. Using an in vitro selection strategy we have identified an aptamer that binds to von Willebrand factor (VWF) and inhibits its activity. We have designed an antidote oligonucleotide to the aptamer that reverses its activity within 2 minutes. We are evaluating this drug-antidote pair in vivo as both therapeutic agents and to shed light on the mechanism of arterial thrombosis in stroke.

Specific area of research emphasis: Molecular Pharmacology, Pharmacogenomics and Pharmacotherapeutics, Neurologic Disorders, Neuroscience

Desired skills: passion for science -excellent work ethic -team player -reliable -teachable

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Carmen DiGiovine

Department: Occupational Therapy

Email: carmen.digiovine@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://hrs.osu.edu/faculty-and-staff/faculty-directory/digiovine-carmen>
<https://u.osu.edu/rstlab/>

Category of Research: Clinical

Project Description: The purpose of this project is to investigate a new health coverage policy for custom manual and power wheelchairs (aka: Complex Rehabilitation Technology or CRT) for people with disabilities to improve their ability to live and participate in their communities. Current health policy for these devices is very restrictive to the point that they are not even covered for people to leave their homes to attend work or school that conflicts with the spirit of the Rehabilitation Act. Modern healthcare is moving towards accountable and value-based care that uses a combination of research, large data, and best practices to determine what services will be paid for. This presents an opportunity for CRT and people who use these devices to seek a more equitable coverage policy. Therefore, the University of Pittsburgh Department of Rehabilitation Science & Technology in collaboration with the University of Pittsburgh Medical Center (UPMC), UPMC Health Plan, The Ohio State University, University of Michigan and key disability, industry, and policy stakeholders propose to perform a series of interrelated project activities to; 1) evaluate current policies, novel models (both within and outside the United States) with stakeholder input; 2) develop a standardized assessment and procurement protocol; 3) perform analyses of existing datasets relevant to CRT; and 4) evaluate the feasibility of a new model. The overall expected outcome is a strategy for the provision and payment of CRT within an accountable and value-based healthcare environment that can inform all stakeholders including health plans and policy makers.

Specific area of research emphasis: Neurologic Disorders, Public Health Research, Recovery & Rehabilitation

Desired skills:

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Abberly Lott Limbach

Department: Pathology

Email: lottlimbach.1@osu.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact:

Website(s): <https://pathology.osu.edu/faculty/limbach.html>

Category of Research:

Project Description: Dr. Abberly Lott Limbach is an assistant professor of pathology at the Ohio State University. She is the director of the head and neck pathology service and a member of the cytology division. Before joining OSU, she was an assistant professor of pathology and ophthalmology at the University of Rochester in Rochester, NY. After finishing her residency in anatomic and clinical pathology at the Cleveland Clinic, Dr. Lott Limbach completed fellowships in cytology at MD Anderson Cancer Center in Houston, TX, and head and neck surgical pathology at the University of Chicago. She received her MD from Wayne State University in Detroit, MI and her BS from Lyman Briggs College at Michigan State University. She is board certified in Anatomic & Clinical Pathology and Cytology.

Dr. Lott Limbach's research interests include salivary gland neoplasms, salivary gland cytology, cytology of the head and neck, and thyroid pathology. She has published a number of articles in these areas and presented several abstracts at academic meetings. She is interested in education and has worked with learners at all levels from high school students through fellow pathologists. She also serves on the Progressive Education Committee (PEC) of the American Society of Cytopathology (ASC), and is a former member of the ASC's E-Journal Committee.

Specific area of research emphasis: clinical pathology

Desired skills:



PI: Dr. Abhay Satoskar

Department: Pathology

Email: abhay.satoskar@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s):

Category of Research: Translational

Project Description: The goal of this project is to develop a globally deployable vaccine against coronavirus disease 2019 (COVID19) caused by severe acute respiratory coronavirus 2 (SARS-CoV-2). COVID 19 has become a global pandemic causing significant morbidity and mortality and its anticipated spread in resource poor countries is a concern. It is widely acknowledged that SARS-CoV-2 will become a seasonal infection and an effective vaccine is needed to control the spread of disease. The spike (S) protein on SARS-CoV-2, which is glycosylated, is a promising candidate for a vaccine as it is indispensable for viral entry into the host cells through binding to angiotensin-converting enzyme 2 (ACE2) expressed on the cell surface. A vaccine that is a persistent long-term source of glycosylated S protein antigen is likely to induce a robust immune response and provide longer immunity against SARS-CoV-2. A NIH funded research by our team has developed an attenuated centrin gene deficient eukaryote microbe *Leishmania major* (LmCen^{-/-}) as a vaccine for leishmaniasis. Safety and efficacy of LmCen^{-/-} has been established in pre-clinical animal studies as per US-FDA guidelines and GMP manufacturing of LmCen^{-/-} is commenced by our industry partner for clinical trials which will begin in 2021. Our data show that immunization with LmCen^{-/-} induces robust antigen-specific polyclonal antibody as well as cell mediated immune responses as *Leishmania* including LmCen^{-/-} are natural adjuvants which promote both antibody response and cell mediated immunity by modulating functions of follicular T helper cells and antigen presenting cells. In the present project, we propose to test the hypothesis that vaccination with genetically engineered eukaryote LmCen^{-/-} producing glycosylated S antigen will induce robust and sustained immunity against SARS-CoV-2 as well as leishmaniasis.

Specific area of research emphasis: Immunology, Infectious Disease, Vaccines

Desired skills: Molecular biology, Immunology, Animal experimentation.

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Anna Vilgelm

Department: Pathology

Email: anna.vilgelm@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://pathology.osu.edu/faculty/vilgelm.html>

Category of Research: Basic

Project Description: Dr. Vilgelm is a cancer biologist with experience in basic and translational studies. Her research team is engaged in pre-clinical research to develop novel effective strategies for therapy of melanoma and metastatic breast cancer. Dr. Vilgelm's recent studies are focused on developing therapies that can facilitate tumor immune recognition stimulate anti-tumor immunity by inducing "hot", immune-cell enriched, tumor microenvironment. Her group is also evaluating strategies for combining tumor-targeted and immune therapies for effective and long lasting tumor control. They utilize Patient-Derived models, such as Patient-Derived xenografts and organoids, and immunocompetent murine models for our studies. The ultimate research goal of Dr. Vilgelm's laboratory is to advance precision oncology and personalized immunotherapy fields.

Specific area of research emphasis: Cancer Biology, Cancer therapy, Immunology

Desired skills: Motivation for research Flexibility Willingness to work mice

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Jian Zhu

Department: Pathology

Email: jian.zhu@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://pathology.osu.edu/faculty/zhu.html> <https://sites.google.com/view/jianzhulab>

Category of Research: Translational

Project Description: Our lab studies the epigenetic and epitranscriptional regulation of viral infections and antiviral immune responses. We also develop small-molecule compounds targeting host regulators to be investigated as the next-generation antiviral reagents and/or immune modulators.

Specific area of research emphasis: Immunology, Infectious Disease, Molecular Virology and Gene Therapy

Desired skills: basic molecular and cellular biology techniques cell culture, cloning, protein and DNA/RNA biochemistry

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Kedryn Baskin

Department: Physiology & Cell Biology

Email: Kedryn.Baskin@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/physiology-and-cell-biology/kedryn-baskin>

Category of Research:

Project Description: The Baskin laboratory studies cardiovascular physiology and the molecular mechanisms that regulate cardiac function and metabolism, with a focus on the endocrine function of the heart. The heart has the remarkable capacity to adapt to metabolic, hormonal, and stress signals, in part by secreting factors that act in an autocrine/paracrine manner to optimize cardiac function. Some proteins and metabolites secreted from the heart have the potential to regulate systemic metabolism. We have identified and are investigating the function of novel factors secreted from the heart, in order to determine how these "cardiomyokines" regulate body weight. We also investigate how cardiomyokines are transcriptionally regulated, particularly through the Mediator complex. Collectively, our discoveries will broaden the understanding of the heart's role in inter-organ communication and systemic metabolism. Our long-term goal is to identify new avenues for the prevention and treatment of cardiovascular and metabolic diseases.

Specific area of research emphasis: , ,

Desired skills:

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Jonathan Davis

Department: Physiology & Cell Biology

Email: davis.812@osu.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/physiology-and-cell-biology/jonathan-p-davis> <https://medicine.osu.edu/find-faculty/non-clinical/physiology-and-cell-biology/jonathan-p-davis>

Category of Research: Translational

Project Description: The Davis lab is currently engineering proteins for gene therapy applications in the musculoskeletal and cardiovascular systems. The lab is also discovering small molecules to treat diseases in these systems too. Research in the lab uses ideas and tools to increase understanding and achieve our goals from the single molecule, to simple and complex biochemistry, to simple and complex in vitro muscle studies, ultimately to application in small animal pre-clinical models. There are research opportunities in the lab at all levels of interest.

Specific area of research emphasis: Heart Disease, Musculoskeletal Disorders, Vascular Disease

Desired skills: An interest and curiosity in discovering new and novel treatment strategies for the musculoskeletal and cardiovascular systems. A willingness to put time and thought into the agreed upon research project.

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Harpreet Singh

Department: Physiology & Cell Biology

Email: Harpreet.singh@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/physiology-and-cell-biology/harpreet-singh> <https://u.osu.edu/singhresarchlab/>

Category of Research: Basic

Project Description: Our group is focussed on establishing the role and mechanism of intracellular ion channels in heart failure and heart function. We use a combination of genetic and pharmacological approaches to study ion channels in the heart. We have so far discovered three ion channels in cardiac mitochondria and two in exosomes. We are the first group to record ion channel activity in exosomes. Techniques range from electrophysiology, imaging, heart function, echocardiography to genetics. We extensively collaborate with physicians, basic biologists and aeronautical and mechanical engineers.

Specific area of research emphasis: Aging, Cells, Organ Systems & Integrative Biology, Heart Disease

Desired skills: Scientific aptitude and interest.

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Yutong Zhao

Department: Physiology & Cell Biology

Email: yutong.zhao@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://medicine.osu.edu/find-faculty/non-clinical/physiology-and-cell-biology/yutong-zhao>

Category of Research: Translational

Project Description: Our research group is focusing on investigating the effects of protein ubiquitination on lung injury, repair, and remodeling. We are interested in acute lung injury, pulmonary fibrosis, pulmonary hypertension, and sepsis.

Specific area of research emphasis: Cells, Organ Systems & Integrative Biology, Lung Disease, Vascular Disease

Desired skills: Basic molecular biology knowledge is required. We will train the medical students basic technologies in molecular, cellular biology, and small animal disease models in the lab.

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Sonu Jain

Department: Plastic Surgery

Email: sonu.jain@osumc.edu

Lab Manager/Department Contact: Jill Beedy

Manager/Department email: Jill.beedy@osumc.edu

Preferred Method of contact: Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/sonu-jain-md-45644>

Category of Research:

Project Description: My main interest is treating disorders of the hand and wrist. I also help patients with arthritis, trauma, tendonitis, compression neuropathy and skin cancer. In addition, I'm interested in treating disorders of the nose and face.

I chose this specialty because I wanted to make an immediate difference in patient's lives. The most rewarding part of my job is to restore the ability of a patient to use his or her hand as much as possible, especially after a devastating injury.

At The Ohio State University Wexner Medical Center, we focus on personalizing care to each patient's specific needs. Patients also benefit from the education we offer and our use of the most advanced technology.

Specific area of research emphasis: Surgery, Plastic, Hand Injuries, Arm Injuries, Orthopedics, Surgical Procedures, Operative

Desired skills:

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Steven Schulz

Department: Plastic Surgery

Email: steven.schulz@osumc.edu

Lab Manager/Department Contact: Becky Crisp

Manager/Department email: Rebecca.Crisp@osumc.edu

Preferred Method of contact: Lab Manager/Dept Contact email/Faculty email

Website(s):

Category of Research: Clinical

Project Description: Creating and evaluating a prospective database for patients undergoing targeted muscle reinnervation.

Specific area of research emphasis: Other Neuroscience, Psychological, & Musculoskeletal, Recovery & Rehabilitation, Tissue Repair and Regeneration

Desired skills: Experience with database management

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY

College of Medicine

PI: Dr. Emil Coccaro

Department: Psychiatry and Social Work

Email: emil.coccaro@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://wexnermedical.osu.edu/find-a-doctor/emil-coccaro-md-111967>

Category of Research:

Project Description:

Specific area of research emphasis: Psychological Disorders

Desired skills:

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Jaclyn Caccese

Department: School of Health and Rehab Sciences

Email: jaclyn.caccese@osumc.edu

Lab Manager/Department Contact:

Manager/Department email:

Preferred Method of contact: Faculty email

Website(s): <https://hrs.osu.edu/faculty-and-staff/faculty-directory/caccese-jaclyn>

Category of Research: Translational

Project Description: My research program focuses on the understanding the short- and long-term effects of repetitive head impacts in sport, with and without concussion diagnosis. I have three upcoming projects: (1) to determine the effects of football-related neurotrauma on later-in-life brain health; (2) to determine how contact sports participation independent of concussion affects neurodevelopment; (3) to determine the mechanisms underlying postural control impairments following concussion using virtual reality (VR). My overarching goal is to inform public policy regarding youth sports participation and to improve outcomes in former athletes with the potential to develop neurodegenerative diseases.

Specific area of research emphasis: Neuroscience, Pediatrics/Adolescence, Recovery & Rehabilitation

Desired skills: Computer programming skills and a background in biomechanics would be preferable, but not required. An interest in sport-related concussions and concussion research, as well as a willingness to work with kids is most important!

Research Trainees

Medical Student Research Program



THE OHIO STATE UNIVERSITY
College of Medicine

PI: Dr. Oluyinka Olutoye

Department: Surgery

Email: Candace.style@nationwidechildrens.org

Lab Manager/Department Contact: Alicia.menchaca@nationwidechildrens.org

Manager/Department email: Candace.style@nationwidechildrens.org

Preferred Method of contact: Please cc both fellows on your email

Website(s): <https://www.nationwidechildrens.org/find-a-doctor/profiles/oluyinka-o-olutoye>

Category of Research: Translational

Project Description: Our PI, Dr. Olutoye, is a pediatric general surgeon who specializes in treatment of newborn diseases and fetal anomalies. There are opportunities for medical student involvement in either basic or clinical research. The lab is open to medical students of any level of training (M1-M4). For those interested in pediatric general surgery, fetal surgery, neonatal intensive care, or pediatrics, this lab is a one of a kind experience both for clinical learning and preparation for residency applications. One of our major studies centers on a newborn disease called necrotizing enterocolitis. We study this disease in a piglet model. Currently, there are several opportunities for medical student involvement. On the day of surgery (c-section of the sow), we will need several medical students to transport the piglets as they are born in the operating room to the piglet intensive care unit (PigCU) down the hall, and to aid with resuscitation under the guidance of the center's veterinarian. All students can assist with weighing the pigs in the PigCU and taking down initial vitals. Students that have completed their surgery clerkship can also help with suturing in feeding lines and our oxygen delivery devices under the guidance of our postdoctoral fellows. Each experiment in this study runs for 96 hours, typically Monday-Friday, and on average once/month. Each day following surgery has a routine that generally consists of feeding the piglets baby formula via their OG (oral-gastric) tubes, taking vitals, drawing labs, etc. Medical students can participate in these activities alongside our fellows. Time commitment is based on student availability. We do ask that students sign up for a minimum 4-hour block, especially on the day of surgery. We also welcome student involvement in our clinical projects. Students who contribute to data collection, analysis, or manuscript review, will be included in the final manuscript list of authors. Our current clinical projects include: pediatric hypertrophic scar/keloid treatment and prevention literature review, treatment outcomes in children with omphaloceles, clinical trial of NIRS (near infrared spectroscopy) monitoring in preterm infants (translational application of our piglet NEC model), among many others. Interested students should contact our lab fellows, Dr. Candace Style and Dr. Alicia Menchaca. Please cc both fellows on your email. Candace.style@nationwidechildrens.org, Alicia.menchaca@nationwidechildrens.org.

Specific area of research emphasis: Pediatrics/Adolescence, Recovery & Rehabilitation, surgery

Desired skills: We welcome student involvement in our clinical projects. Students who contribute to data collection, analysis, or manuscript review, will be included in the final manuscript list of authors. Our current clinical projects include: pediatric hypertrophic sc