

Ochsner 2023 Post-Doctoral Research Fellow



Lauren Cohen

Mentor: Dr. Juan Carlos Velez

Urinary Sediment Biomarkers for Diagnosis of Acute Tubular Necrosis

Acute kidney injury (AKI) is a leading cause of morbidity and mortality in intensive care units. Identification of urinary casts through microscopic examination of the urinary sediment is a well-established clinical tool with both diagnostic and prognostic value for the evaluation of AKI in the hospital setting. In particular, the presence of abundant muddy brown granular casts (MBGCs) is a pathognomonic finding for acute tubular necrosis (ATN). Unfortunately, hospital laboratories do not consistently report the presence or type of urinary casts. Our overall hypothesis is that proteins identified in urinary sediment specimens containing muddy brown granular casts (MBGCs) can be used as biomarkers for the diagnosis of acute kidney injury (AKI) caused by acute tubular necrosis (ATN). A novel urine test that could accurately predict the presence of abundant MBGCs in the urine would replace the microscopic examination and become a useful tool for the treating clinician. This would increase efficiency and improve correct identification of the etiology of AKI, and in particular, ATN.



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Rohan Krishnan

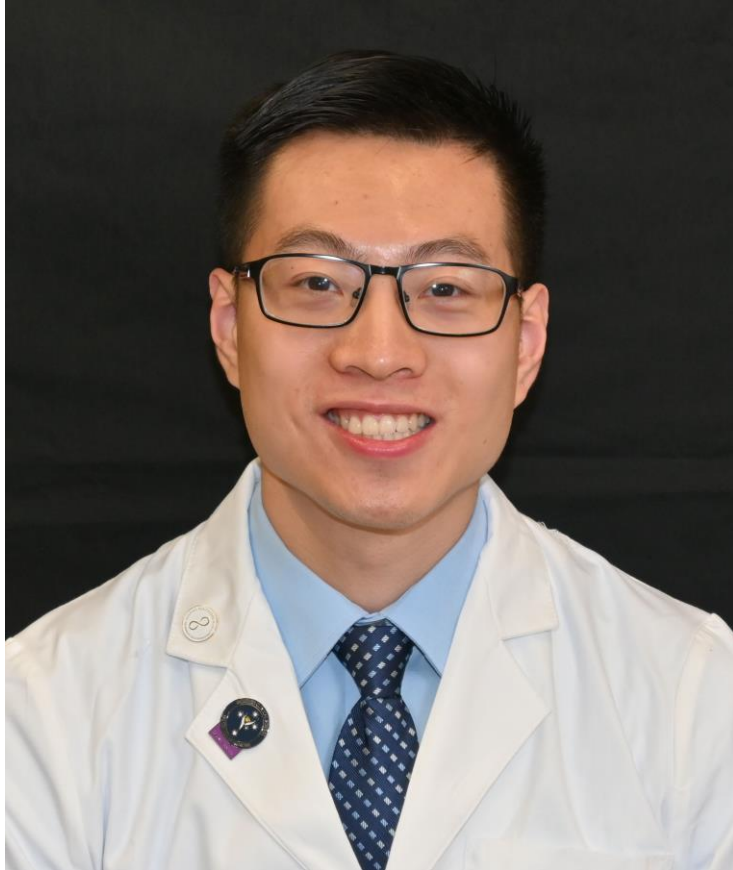
Mentor: Dr. Yashar Eshraghi

Immersive Virtual Reality Therapy - An Acute Therapeutic Option for Chronic Pain Patients

With the onset of the COVID-19 pandemic, the opportunity for in-person physician-patient interaction diminished and there became a rapid shift towards patient care in the virtual format i.e., through telemedicine. For acute and chronic pain specialists, there needed to be a way for treating acute and chronic pain states remotely. Through the implementation of virtual reality, it became possible to treat pain and other psychiatric disorders remotely. The virtual reality experiences alter pain by affecting the perception of pain via attention, concentration, and upregulating mechanisms of non-painful neural signaling. The immersive experience of virtual reality blocks external stimuli associated with the real environment and through the occupation of finite attentional resources. In contrast, analgesics alters pain through direct alteration of C-fibers carrying information from the periphery and into the central nervous system. The immersive experience of virtual reality encompasses a variety of settings. The juxtaposition between virtual reality and successful management of chronic pain is still burgeoning creating a need for further insight into how virtual reality actually benefits pain patients in both the short and long-term. Furthermore, the benefits of virtual reality on pain and its correlation with functional imaging and testing such as fMRI and EEG will also be novel.



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Peter Liao

Mentor: Dr. George Fuhrman

Investigating Outcomes of Acute Care Surgery Patients Left in Gastrointestinal Discontinuity

Emergency abdominal surgery is challenging and demands quick decisions to achieve the best outcomes. Unfortunately, despite excellent technical skill and decision-making, poor outcomes might occur. When surgeons are faced with intraoperative hemodynamic instability during bowel resections, patients may be left in discontinuity to shorten operations. These shorter procedures expeditiously address the cause of the patient's illness and defer intestinal anastomosis until hemodynamic stability can be achieved. If surgeons had more information regarding which factors predicted successful management and futile care, better intraoperative decisions could be made. Additionally, more prognostic information would be helpful in discussing realistic expectations with family members and healthcare power of attorneys. The aim of this study is to determine prognostic factors to guide intraoperative decision making and postoperative management. Our hypothesis is that we can determine factors that would guide the decision to leave a patient in discontinuity, when to restore continuity, and identify factors that predict futility.



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Rohit Rajendran

Mentor: Dr. Kathy Jo Carstarphen

Telehealth Literacy Screening Tool (TLST) Validation Study

We believe that there are unspoken barriers and challenges in the topic of telehealth literacy. Based on a literature review performed by this team there were only 22 articles and 4 surveys that were relevant to telehealth, telemedicine, and eHealth in the domains of literacy, competency, or fluency in older adult, low health-literate or 'geriatric' populations. On review of that literature, we found that biopsychosocial features of the patient, access to technology, technological literacy, and literacy using eHealth are all factors that impact the patient's ability to connect via VVV. Although these components drove the contents of the TLST survey, we are unclear on whether the TLST accurately assesses these topics and barriers for older adult and low-health literate populations. Our hypothesis is that with the creation and implementation of TLST as an evidence-based tool for quantifying telehealth literacy, we can accurately assess telehealth literacy and further understand this social determinant of health (SDoH) and barriers to care. In this study we aim to understand the accuracy of the TLST screening tool for assessing telehealth literacy and access to technology for older adult and low-health literate populations.



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Michael Schneider

Mentor: Dr. Ari Cohen, Dr. Paul Thevenot

Hepatocellular Carcinoma Surveillance Biomarkers AFP-L3 and DCP in the Context of Current AFP Biomarker Utilization in Bridge to Transplant

Advances in hepatocellular carcinoma (HCC) surveillance continue to improve the rates of early-stage diagnosis, with an increasing percentage of patients diagnosed within Milan Criteria for liver transplantation (LT) with low-risk alpha fetoprotein (AFP) biomarker levels. Current literature estimates 40 – 60% of early-stage HCC is diagnosed without a positive AFP biomarker with conflicting data suggesting a more favorable prognosis. While biomarker phenotyping of early stage HCC is in its infancy, several studies have established the numerical accumulation of biomarkers can stratify time to progression, recurrence-free survival, and overall survival. Given the limited data regarding specific biomarker profiles, the role of AFP-L3 and DCP in refining AFP-based prognosis pertaining to bridge to LT outcomes is unclear. This project aims to understand bridge to transplant outcomes by stratifying the cohort by biomarker phenotype in the following subgroups: triple negative, only AFP positive, AFP negative with AFP-L3 and/or DCP positive, AFP positive with AFP-L3 and/or DCP positive to determine risk of tumor progression in bridge to transplant.



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Charles Sisk

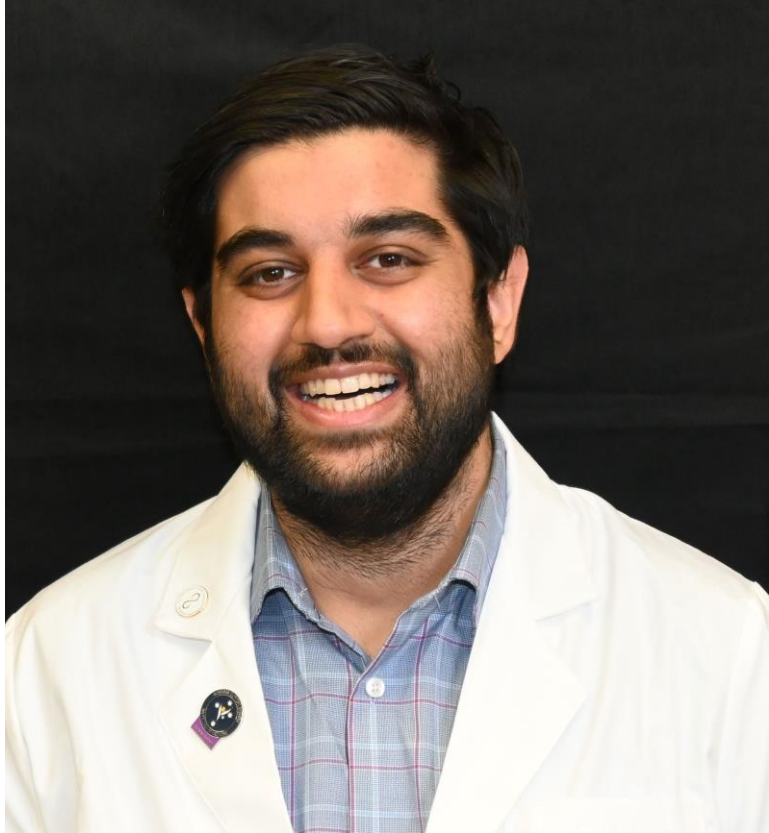
Mentor: Dr. Frank Williams

Adversity and lack of access to emergency contraception in the post- Roe/Dobbs era: Implications for maternal morbidity and mortality

The primary aim of this study is to determine the relationship between impaired access to emergency contraception and risk for severe maternal morbidity. In the state of Louisiana, between the years 2011-2016, the rate of pregnancy-related death among non-Hispanic Black women was 4.1 times the rate among non-Hispanic White women. Perhaps most worrisome, among non-Hispanic Black women who experienced pregnancy-related death, 59% of deaths were deemed potentially preventable compared with 9% among non-Hispanic White women. Building on existing research looking at “pharmacy deserts” and social determinants of maternal morbidity, we aim to characterize “emergency contraception deserts”, or areas where over the counter emergency contraception becomes difficult to obtain. In states like Louisiana, where minority women are already more likely to experience a severe adverse maternal outcome, the inability to prevent undesired pregnancy may lead to increased maternal morbidity and mortality.



Ochsner 2023 Post-Doctoral Research Fellow



Abdul Zia

Mentor: Dr. Evan Dvorin

A shot in the dark: A multifaceted intervention to reduce inappropriate corticosteroid shot injections and prescribing in the primary care setting

Corticosteroids, also known as steroids, are used in the treatment a wide variety of medical conditions. Steroids have long been known to be powerful anti-inflammatory drugs that have proven clinical efficacy in the treatment of asthma, COPD, dermatitis, inflammatory bowel disease, rheumatoid arthritis, and autoimmune conditions among other medical illnesses. However, a high proportion of systemic corticosteroid prescriptions are inappropriately prescribed for conditions with a lack of known evidence-based benefit. The aim of this project is to reduce inappropriate systemic corticosteroid use by Ochsner medical providers over a six-month period. The study will assess the effects of education and peer review utilization reports in decreasing the monthly rates of inappropriate systemic corticosteroid use by medical providers for adult patients diagnosed with acute respiratory tract illness over a six-month period.

