

# Ochsner 2024 Post-Doctoral Research Fellow



## Abirami Balarajan

Mentor: Li Li, MD, PhD

### Identifying targetable Cancer Stem Cell Biomarkers in Conventional Therapy Resistant Rectal Cancer

The recurrence and metastasis of rectal cancer post treatment is a major issue in stage II/III rectal cancer (RC). Current RC therapy is designed to target differentiated cancer cells, sparing small numbers of cancer stem cells (CSC), and ignoring the CSC-nurturing role of the lymph node (LN) microenvironment. While intrinsic changes in metastatic CRC have been studied extensively, LN microenvironmental factors are not well characterized. This study will examine the role that CSCs play, specifically through the CXCR4/CXCL12-signaling axis, in driving stage II/III RC recurrence and metastasis. Treatment with a combination of standard chemotherapy and small molecule CXCR4 antagonist AMD3100, which targets CSCs via the CXCR4/CXCL12-signaling axis, is anticipated to show reduced tumor formation as well as reduced distant organ metastasis.



# Ochsner 2024 Post-Doctoral Research Fellow



**Marlie Winslow**

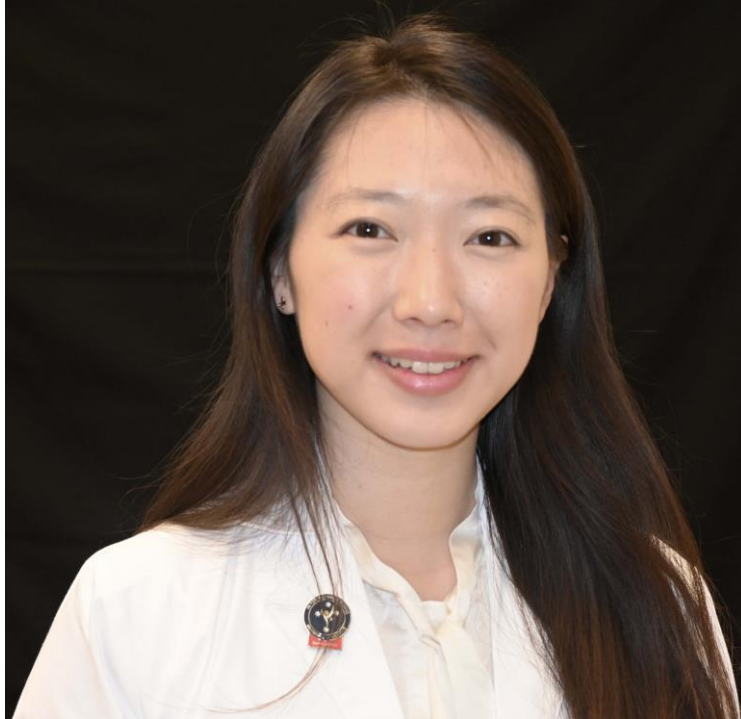
**Mentor: Dr. David Galarneau**

The Impact of Diagnosis on Healthcare Utilization and Treatment Adherence in Patients with Functional Neurological Disorder at a Public Hospital

Functional neurological disorders (FND) are disorders caused by dysfunction of the nervous system not readily demonstrated by structural imaging nor lab results. Only a handful of studies exist on FND patients' diagnosis and management outcomes. Even fewer identify whether healthcare utilization behavior may change after diagnosis. We hypothesize that FND patients will have improved clinical outcomes after diagnosis, including reduced ineffective healthcare utilization and improved adherence to standard treatment. We also hypothesize that those with a diagnosis will have greater adherence to standard treatment. In this study, we will compare patient clinical outcomes before and after diagnosis of FND, assess adherence to standard treatment, if present, after receiving a diagnosis of FND, and describe other types of treatment recommended after diagnosis, if not standard treatment.



# Ochsner 2024 Post-Doctoral Research Fellow



**Sharon Shu**

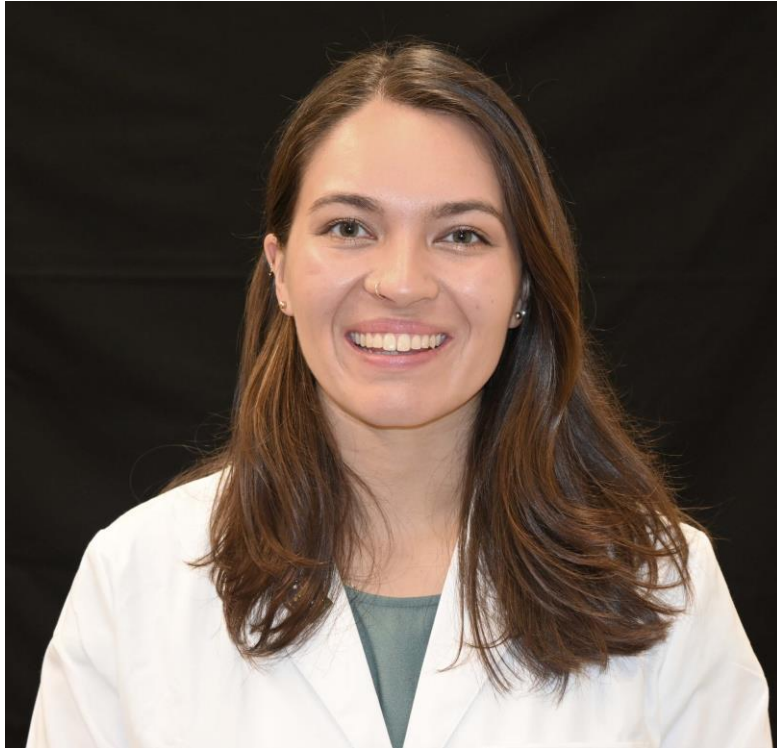
**Mentor: Dr. Frank Williams**

Can implementation of tighter blood pressure control targets reduce preterm delivery for patients with chronic hypertension?

Chronic hypertension affects 0.9-1.5% of pregnancies, disproportionately impacting Black women and those from neighborhoods with high Area Deprivation Index (ADI). These patients experience 5 to 10 times the risk of maternal mortality and morbidity as well as 3 to 5 times the risk of poor perinatal outcomes. Despite increasing prevalence, management goals for hypertension in pregnancy have remained contentious due to concerns that iatrogenically-lowered blood pressures (BP) might reduce uterine perfusion, causing restricted fetal growth. The recent multicenter randomized Chronic Hypertension and Pregnancy (CHAP) Trial demonstrated lower incidence of preeclampsia with severe features, medically indicated preterm birth at less than 35 weeks' gestation, placental abruption, and fetal or neonatal death in pregnant women treated to a BP threshold of 140/90 mmHg compared to a control group treated according to historic guidelines. While the high internal validity of RCTs make them the gold-standard for determining efficacy, tight inclusion criteria and low enrollment of marginalized populations reduce external validity. Rare adverse outcomes can go undetected, particularly when trial populations have better baseline health and fewer comorbidities than the real-world treatment population. Accordingly, we aim to evaluate the effects of implementing CHAP-based guidelines in a large, sociodemographically diverse population.



# Ochsner 2024 Post-Doctoral Research Fellow



**Audrey Shawley**

**Mentor: Dr. Kathy Jo Carstarphen**

## Quantifying the Impact of Ride-Share Services for Vulnerable Patients

Social Determinants of Health (SDOH) are drivers of health inequities, poor health outcomes, and increased health care utilization. Transportation is an important SDOH. It is estimated that barriers to nonemergent medical transportation (NEMT) cause 3.6 million individuals to forego or delay medical care annually. This leads to poorer health outcomes, increased risk for hospitalization, and higher healthcare costs. Ride share services address transportation barriers, but there is a need to understand how to better tailor ride-share services to complex patient needs. A 2022 systematic review and meta-analysis found that interventions that address NEMT barriers are associated with fewer missed appointments. Importantly, they acknowledge that the association with costs, utilization, or health outcomes is insufficiently studied to reach conclusions. There is a significant need to correlate preventative care interventions that address social determinants of health with their associated cost to the health system and impact on health outcomes. This study will test the hypothesis that investing in providing medically and socially complex patients with free-of-charge transportation to primary care appointments is associated with 1) decreased “no show” rate 2) decrease per-member-per-month costs and 3) decreased Emergency Department utilization.



# Ochsner 2024 Post-Doctoral Research Fellow



**Taylor Ogden**

**Mentor: Dr. Dodd Denton**

## Characterization of the Female Population Living with HIV in the Ochsner System

In 2020, Louisiana had the 4th highest incidence of HIV in the United States with 15.6 new cases per 100,000 people. Almost one quarter of those new diagnoses were in female patients, with 10.7 times as many black females affected than white. This disparity is especially shocking when compared to race differentials in men, where black men are 4.4 times more likely than white men to have HIV. This disproportionate burden of HIV on black women in Louisiana is compounded by a lack of tools for providers to use to identify women at high risk of HIV transmission in whom Pre-Exposure Prophylaxis (PrEP) could be beneficial. Currently, females make up only 15.5% of PrEP users in the state, highlighting that the need for HIV prevention is not adequately met by PrEP use. Many of the tools currently in use to determine HIV risk and thus PrEP eligibility are based on data and risk factors in men, such as male-to-male sexual contact. However, women have a less clearly defined yet distinct set of risk factors as indicated by the ineffectiveness of current predictive models in women. With its ongoing expansion throughout the gulf south, Ochsner has the ideal patient population for this project which aims first to understand and then to address the disparities in HIV diagnosis and PrEP use in women in the Ochsner Catchment.



# Ochsner 2024 Post-Doctoral Research Fellow



**Kali Juracek**

**Mentor: Dr. Frank Williams**

Effect of continuous glucose monitoring on glycemic control in pregnant type 1 diabetic patients living in high deprivation areas

Despite recent advances, pregnant patients with type 1 diabetes (T1DM) continue to have significantly increased risks of pregnancy complications. These include elevated risks of stillbirth, fetal anomalies, pre-eclampsia, and worsening of diabetes complications. One strategy to combat adverse outcomes is to maintain optimal glycemic control throughout pregnancy, a goal that is often difficult to achieve. Continuous glucose monitoring (CGM) provides real-time displays of blood glucose values, offering patients an opportunity to be more intimately aware of glucose trends. The broad uptake of CGM in pregnancy has remained muted, highlighting the potential but unclear benefit. In the United States, utilization has been particularly limited among patients at risk based on social determinants of health. The relationship between adverse health outcomes and neighborhood deprivation may contribute to disparities in maternal outcomes, but there remains a critical need to assess the role of continuous glucose monitoring in improved glycemic control amongst T1DM patients in high ADI areas. This study will examine the use of continuous glucose monitoring and its effectiveness in providing improved glycemic control in pregnant patients with T1DM living in areas of high deprivation.



# Ochsner 2024 Post-Doctoral Research Fellow



## Sayantane Das

Mentor: Dr. Luis Salcedo

### Goodbye Narcotics: Exploring Multimodal Care Alternatives for Pediatric Tympanostomy Tube Placement

Bilateral tympanostomy tube placement (BTT) is commonly performed on infants and children in the USA. Although the BTT procedure is straightforward, the tympanic membrane is very sensitive to painful stimuli and can cause significant postoperative distress in children requiring rescue therapies. Postoperative distress events requiring rescue therapies such as additional nursing support can lead to increases in medical care costs, delays in patient discharge, and decreases in patient and care-provider satisfaction scores. The development of multimodal techniques to minimize the negative impact of postoperative distress needs in-depth study as no consensus has been reached on the optimum approach for perioperative anesthesia/analgesia for BTT. Currently treatment regimen typically includes midazolam, ketorolac, Tylenol, and fentanyl. There are several benefits to avoiding narcotics in pediatric operations including family stigma, waste of medication, and reduced apnea side effects. Replacing fentanyl with intranasal dexmedetomidine for sedation could be a safe and positive alternative. The purpose of this retrospective study is to analyze the benefits, if any, of the current administration of multimodal analgesics on the incidences of postoperative distress in this patient population at Ochsner Health.

