



PRELIMINARY PROCEEDINGS

**WRIGHT STATE UNIVERSITY
BOONSHOFT SCHOOL OF MEDICINE**

**SECOND ANNUAL
RESEARCH
SYMPOSIUM**

April 13, 2023

4:30 — 7:00 p.m.

**Student Union: Apollo, and
Endeavor Rooms**



Program

4:00 p.m.

Poster Setup &
Registration

4:30 p.m.

Dr. Valerie Weber
Welcome

4:40 p.m.

Student Grant
Awardees

5:03 p.m.

Faculty
Research Talks

5:30 p.m.

Poster Session &
Refreshments

Featured Student Research Talks

Morgan Hendrixson, MS3 & Yev Gladkiy, M.S., MS2

Platelet – Activating Factor- Receptor Pathway Modulates Sorafenib – Mediated Effects on Lung Cancer Growth and Microvesicle Particles Release

Yev is an MD student conducting research on microvesicle particles at the Department of Pharmacology and Toxicology under his advisor Ravi.P Sahu, PhD. He attended The Ohio State University for undergraduate and graduate studies in biomedical engineering. Yev completed his M.S. thesis under Steven T. Sizemore, PhD, where he explored the mechanisms of extracellular vesicle (EV) biogenesis, as well as EV isolation with a microfluidic device for liquid biopsy in breast cancer. Yev is looking forward to serving as a physician-scientist in his future.

Morgann Hendrixson is a third-year MD student at Wright State University. Morgann is originally from Monroe, OH and attended Miami University for her undergraduate studies. During the summer between her first and second year of medical school she began conducting research with Dr. Ravi Sahu. She enjoys conducting research and plans to continue to do so in her medical career.

Roselle Almazan, MS3

A Structured Approach to Increasing Diversity, Equity, and Inclusion Aspects of Surgery

Roselle Bea P. Almazan is a third-year medical student at Boonshoft School of Medicine. She is from Dayton, Ohio, and earned her bachelor of science in Biological Sciences at Wright State University. She previously conducted molecular biology research using the yeast model to investigate the role of alpha-synuclein in Parkinson's disease. Her current interest in academic medicine has led to her research with Dr. Priti Parikh regarding diversity in general surgery residency.

Featured Student Research Talks

Adaku Ume, PhD, MD/PhD Student

Calcineurin inhibitors: A Double Edge Sword

Adaku Ume recently completed her Biomedical Sciences PhD degree at Wright State University Boonshoft School of Medicine in Dr. Clintoria Williams Kidney Pathophysiology Research Lab. She earned an MS in Pharmacology from Georgetown University and a BS in Cell and Developmental Biology from the University of California, Santa Barbara. Her PhD research focuses on molecular mechanism by which the immunosuppressive agents calcineurin inhibitors cause irreversible kidney damage. Adaku is interested in a career as a physician-scientist where her contributions help address gaps in knowledge that currently remain in clinical practice.

Featured Faculty Research Talks

**J. Ashot Kozak, Ph.D., Associate Professor,
Department of Neuroscience, Cell Biology and
Physiology**

The Function of TRPM7 Channel – Kinase in Immune Cells

Dr. J. Ashot Kozak obtained his PhD at the Mount Sinai School of Medicine and was a postdoctoral fellow at Howard Hughes Medical Institute and the University of California. His research focuses on the physiological roles of calcium, ion channels and kinases in immune cells and pancreatic beta cells. His group uses various approaches, including electrophysiology, transgenic mice and cell-based assays.

**Amanda M. Hinson – Enslin, Ph.D., M.P.H., CHES
Assistant Professor, Population & Public Health
Sciences**

The Process of Investigating COVID – 19 Vaccine Behaviors among Deaf American Sign Language Users

Dr. Hinson-Enslin is an assistant professor in the Department of Population and Public Health Sciences. Her research focuses on improving health outcomes of individuals with chronic conditions and/or disabilities. She is specifically interested in improving health outcomes among American Sign Language users by learning about their perceptions and influences of COVID-19 vaccine uptake, hesitancy, and refusal. This research will be used to improve pandemic response.

Poster Session & Reception

Student Union Apollo Room

5:30 —7:00 p.m.

On the following pages you will find information regarding the poster presentations for this evening's symposium. The poster number corresponds to the location of the poster. All departments are associated with Wright State University or the Boonshoft School of Medicine unless otherwise noted.

Poster: 1

Chris Dupont

Mechanisms contributing to muscle dysfunction in hyperkalemic periodic paralysis

Dupont C, Nawaz M, Voss AA, Rich MM

Mentor: Dr. Mark Rich, MD-PhD

Department: NCBP/BSOM/Neurology

Abstract: Introduction: Hyperkalemic periodic paralysis (HyperKPP) is an autosomal dominant inherited disorder of skeletal muscle characterized by transient attacks of muscle weakness and stiffness (myotonia) associated with elevated serum K⁺. It is caused by mutations of the Nav1.4 sodium channel which lead to an increase in the inward persistent Na current (NaPIC), resulting in depolarization of the resting potential. While the proposed sequence of events is logical, there are gaps in understanding why weakness occurs with normal K⁺ levels, and why extreme K⁺ levels are required in the mouse model of HyperKPP. Finally, the mechanism associated with the symptom of muscle stiffness is still unknown.

Poster: 2

Widad El-Zein

Identifying and characterizing human genes that suppress the toxicity of ALS-associated MATR3

El-Zein W, Chumley A, Hayden E, Chen S, Zhong Q, Ju S

Mentor: Shulin Ju, Ph.D.

Department: Biological Sciences

Abstract: Introduction: ALS is a neurodegenerative disease characterized by degeneration of upper and lower motor neurons in the brain and spinal cord leading to progressive paralysis and ultimately death. Perturbations in RNA metabolism and RNA binding proteins have emerged as underlying defects in ALS pathogenesis. Matrin-3 is a multifunctional RNA binding protein that has been linked to familial and sporadic ALS. Fifteen mutations of the MATR3 gene have been identified. The proposed mechanism of toxicity due to these mutations is disruption in RNA processing and metabolism. Matrin-3 is normally found in the nucleus, but mutations in the gene cause mislocalization of the protein from the nucleus into the cytoplasm of neuronal cells where it forms protein aggregates. In this study, we show that over-expressing human MATR3 in the budding yeast, *Saccharomyces cerevisiae*, results in cellular toxicity and cytoplasmic aggregation, recapitulating phenotypes of mutant Matrin-3 in mammalian models and patients. Through a mating-based screening, we identified 40 human genes that can suppress the toxicity of MATR3 and classified genetic interaction networks among these genes. Studying the effect of MATR3 on RNA metabolism, along with its interaction with these suppression genes and other ALS-associated genes is ongoing.

Poster: 3

Weston Gelford

SK channel upregulation underlies MN hypoexcitability in aging

Abdulhalim I, Gelford WB, Gerber K, Ward S, Elbasiouny S

Mentor: Sherif Elbasiouny PhD, PE

Department: NCBP

Abstract: Introduction: Progressive loss of muscle strength and mass is a well-known phenomenon of aging, and this decrease in motor output can eventually result in the inability to complete daily tasks such as dressing, bathing, and eating¹. Previous literature has suggested that the main mechanism behind this degradation is connection degeneration at the neuromuscular junction (NMJ) as well as atrophy of specific muscle groups, but other studies have suggested that there may be changes in the motor neurons in addition to peripheral changes^{2,3}. Fast-fatigable fibers have been shown to be replaced by slow fibers in aged subjects, and the number of synaptic inputs has been shown to decrease in aged animals^{2,3}. Calcium-dependent potassium channels at synaptic junctions on motor neurons can serve as a marker for specific cell types, and their changes can drastically affect the firing properties of motor neurons⁴. This study will seek to connect previously documented synaptic changes with structural changes in calcium-dependent potassium channels to establish a better understanding of age-related decreases in motor output. C57BL/6J mice were divided into aged (25 months old, n=6) and control (13 months old, n=6) groups and subdivided into male and female groups. Mice were injected with euthasol and perfused with paraformaldehyde before dissection and removal of the lumbar spinal cord. Lumbar segments L3-L6 were sectioned into 45 μm slices and labeled with anti-NeuN, anti-SK2, anti-SK3, and anti-ChAT antibodies using standard immunohistochemical techniques. 60x images were collected using confocal microscopy, and images were analyzed using the Fluoview1000 microscope software. Statistics were completed using SPSS statistical software. Male mice showed an increase in cluster area between control (n=32 cells) and aged (n= 48 cells) groups for both SK2 and SK3 channels ($p<0.0001$). Conversely, female mice showed a decrease in cluster area for SK2 channels ($p<0.001$) and no change in SK3 channels between control (n=64 cells) and aged (n=48 cells) groups. Cluster intensity for SK2 channels decreased between groups for male mice ($p<0.001$) while increasing between groups for female mice ($p<0.0001$). For SK3 channels, male mice showed no change between groups while female mice showed an increase in channel intensity ($p<0.0001$). Finally, for cluster density, female mice showed a significant decrease in SK2 channel density ($p<0.0001$). These structural changes in calcium-dependent potassium channels prove that there are additional motor unit changes beyond the established degradation at the neuromuscular junction and individual muscle atrophy. Alterations to the structure of the potassium channels are likely coupled with conductance shifts that will be established once the electrophysiology data is completed. If the alterations in channel structure are leading to a decrease in conductance through the channel, the resulting decrease in motor neuron firing frequency could explain the phenotypic weakness observed in patients diagnosed with age-related weakness. Furthermore, this will parallel results previously seen in studies on amyotrophic lateral sclerosis concerning both structural and conductance changes. Existing potassium channel agonists should be tested in future work to determine whether activation of these channels could help in reversing the expressed weakness in aged animals.

Poster: 4

Yevgeniy Gladkiy and Morgann Hendrixson

Platelet-activating factor-receptor pathway modulates sorafenib-mediated effects on lung cancer growth and microvesicle particles release

Gladkiy Y., Hendrixson M., Thyagarajan A., Sahu R.

Mentor: Ravi P Sahu, Ph.D.

Department: Pharmacology & Toxicology

Abstract: Introduction: Non-small cell lung cancer (NSCLC) remains the leading cause of cancer-related deaths associated with low response rates to current treatment options, including the tyrosine kinase inhibitor, sorafenib (SF). This indicates the need to explore novel mechanisms responsible for impeding the efficacy of these types of therapeutic agents. Previous studies have implicated the potential role of a platelet-activating factor receptor (PAFR) pathway that favors tumor growth and reduces the efficacy of therapeutic agents in various cancer models. Previous research has implicated the involvement of tumor-secreted extracellular vesicles, particularly microvesicle particles (MVP), in carrying PAFR agonists, thus allowing survival and enhanced proliferation of cancer cells in response to different therapies. The impact of these MVPs and the enzyme central to their synthesis and release, acid sphingomyelinase (aSMase), on sorafenib, specifically, has remained elusive. Therefore, the purpose of this series of studies was to determine the impact of the PAFR and aSMase pathways in sorafenib-mediated cell cytotoxicity and MVP release in NSCLC models. These studies used two NSCLC cell lines, A549 and H1299, which express PAFR. We tested the growth effects of sorafenib on these cell lines by sulforhodamine B (SRB) assay. The results showed that SF inhibits the survival of both A549 and H1299 in a dose- and time-dependent manner. To determine the effects of sorafenib on MVP release, the same cell lines were treated with sorafenib alongside a known PAFR agonist, carbomoyl-PAF (CPAF), and a PAFR-independent agonist, phorbol myristate acetate (PMA). We demonstrated that SF induces an increase in dose-dependent MVP release, in a similar manner to CPAF and PMA. To determine the PAFR dependency of sorafenib-induced MVP release, cell lines were pretreated with PAFR antagonist, WEB2086, as well as the aSMase inhibitor imipramine. This showed SF-mediated MVP release is blocked by both WEB2086 and imipramine. While various therapies have shown improved survival rates in NSCLC patients, their efficacy is hampered by several factors. Since MVPs carry PAFR agonists and reduce therapeutic efficacy, we propose that targeting the PAFR-aSMase axis can improve established therapies. Overall, the findings here provide new insights and targets to be considered when using sorafenib for NSCLC.

Poster: 5

Courtney Johnson-Gonzalez

Upregulation of placental hypoxia-inducible factor 1 (HIF-1a) in preeclampsia

Johnson-Gonzalez CB, Chandiramani C, Linkous B, Rackett T, Nolan K, Stone E, Maxwell R, Dhanraj D, Brown TL

Mentor: Thomas L Brown, PhD

Department: Neuroscience, Cell Biology, and Physiology and Department of Obstetrics and Gynecology

Abstract: Introduction: Preeclampsia is one of the most devastating complications in pregnancy. Worldwide, 5-8% of pregnancies are affected by preeclampsia. Preeclampsia can progress rapidly and is a leading cause of maternal and fetal morbidity and mortality, making it a major public health issue in the field of obstetrics. While the condition has been studied extensively, many questions remain about how preeclampsia develops. One of the transcription factors that is implicated in abnormal placental

development is hypoxia-inducible factor 1 (HIF-1a). Continuous activation of HIF-1a after the first trimester can result in deleterious effects to the placental blood supply that lead to pathophysiological symptoms of preeclampsia. When studied in mice, constitutive HIF-1a expression has been shown to result in maternal hypertension, proteinuria, and reduced fetal birth weight – the classic hallmarks of preeclampsia.

While the mechanisms have yet to be determined, it is possible HIF-1a has a major role in the development of preeclampsia. In this study, we investigated whether preeclamptic patients have increased HIF-1a levels and by what magnitude protein levels are increased. Using placental tissue from healthy control and preeclamptic (PE) patients, samples were analyzed for levels of HIF-1a protein via western blot analysis. Because HIF-1a is a rapidly degraded protein, analysis required a specialized sample preparation protocol which we developed and optimized. HIF-1a protein levels were found to be elevated in the PE samples when compared to the controls, suggesting that its upregulation either causes or is a downstream effect of the pathologic process. Demonstrating the significance of placental HIF-1a upregulation identifies a potential mechanism in the pathogenesis of preeclampsia and could possibly serve as an early marker of the condition, allowing for earlier treatment and improved outcomes.

Poster: 6

Mark Ortenzio

Quality Evaluation of the Usefulness of an Emergency Department Fall Risk Assessment Tool Protocol

Ortenzio M., Brittain G., Frommeyer TC., Muwanga D., Parikh P., Stolfi A.

Mentor: Priti Parikh, PhD.

Department: Research Education and Professional Development in the Department of Surgery

Abstract: Introduction: Falls that occur within a hospital setting are preventable adverse events impacting both the patient and healthcare system. Patient falls have the potential to cause serious or fatal injuries, increase patient morbidity, and raise healthcare costs (1,2). In 2015, direct medical costs for inpatient, emergency department, and outpatient adults, aged 65 and older, related to falls totaled \$637.5 million and \$31.3 billion for fatal and non-fatal related injuries, respectively (3). Many hospitals utilize fall “predictor tools” to categorize a patient's fall risk, however, these tools are primarily studied within in-patient units. The emergency department (ED) presents a unique environment with a distinct patient population and demographic. With this in mind, there is little research aimed towards ED fall prevention strategies indicating a need for research in this area. The Memorial Emergency Department Fall Risk Assessment Tool (MEDFRAT) has shown high sensitivity and specificity with predicting a patients fall risk in the ED (4). However, given its recency, there is need to further assess its validity, reliability, and generalizability across different healthcare settings (5). This IRB-approved study aims to assess the validity, reliability, and usefulness of the MEDFRAT in an ED at a Level 1 Trauma Center. Additionally, we compare performance of MEDFRAT to the Moving Safely Risk Assessment Tool that is currently being used at our hospital.

Poster: 7

Katherine Trittschuh (M1) and Keisha Barnes (undergrad)

Analysis of synaptic fidelity in Huntington's disease mouse neuromuscular junctions

Trittschuh KT, Barnes KM, Burke SR.A, Singh A, and Voss AA.

Mentor: Andrew Voss, PhD

Department: Biological Sciences

Abstract: Introduction: Huntington's disease (HD) is a genetic disorder associated with progressive cognitive and motor decline. Although most studies of HD have focused on central neurodegeneration, recent work has shown that the widespread expression of the mutant huntingtin gene also causes primary peripheral pathologies. Previously, we discovered progressive ion channel defects that cause muscle from the transgenic R6/2 HD mouse model of HD to be hyperexcitable, which means that membrane potential changes in R6/2 muscle become amplified. Perhaps as a compensatory response to the muscle hyperexcitability, we found evidence of decreased quantal content at the neuromuscular junction R6/2 mice. In this study, we used voltage-clamp electrophysiology to investigate the time course over which the changes in motor endplate hyperexcitability and synaptic vesicle release develop in R6/2 mice. Pre- and post-synaptic properties were measured from the same neuromuscular junctions. We hypothesized that the more dramatic defects in the muscle membrane precede the decrease in synaptic vesicle from the motor neuron. To better understand the mechanism causing the decreased release of synaptic vesicle from the motor neuron, we also used computational modeling to estimate vesicle refilling rates during late stages of the disease. Our results suggest that changes in membrane hyperexcitability occur as early as 8 weeks, while quantal content is reduced only at late stages of the disease. Furthermore, at 12 weeks, vesicle mobilization is greatly reduced, which has implication for peripheral and central synaptic function in HD. This work helps us better understand the progression of HD and may help us develop treatments to delay motor symptoms.

Poster: 8

Alexander Winkle

Design and evaluation of a solution for mechanical stimulation of in-vitro culture

Winkle A, McClenney C, Hund TJ.

Mentor: Thomas Hund PhD (non-BSOM)

Department: Medicine/Biomedical Engineering

Abstract: Introduction: The in-vivo cardiac environment is uniquely dynamic as characterized by its mechanical conditions. From early development to end-of-life, the cells that develop in these tissues will be subjected to and will respond to this environment. An increasing body of literature indicates that these mechanical stimuli exert wide-ranging effects and take part in critical regulatory mechanisms including at the level of gene expression¹⁻⁴. While the importance of these relationships is widely acknowledged, an empirical understanding is much more elusive. To fill this gap, these data detailing mechanical regulation must become more frequently and consistently documented. The current state of the field offers few commercially-produced options for this manner of testing, of which all require highly trained personnel, and are prohibitively expensive for smaller labs, and preliminary study⁵. The literature includes many design proposals promising to achieve similar results at lower cost, however these almost universally include complex procedures for fabrication of disposables, again requiring highly trained personnel.

Poster: 9

Garrett Brittain, Timothy Frommeyer, Michael Gilbert, Tongfan Wu

Cerebral Sinus Venous Thrombosis Following an mRNA COVID-19 Vaccination and Recent Oral Contraception Use

Frommeyer TC, Wu T, Gilbert MM, Brittain GV, Fuqua SP

Mentor: Steven Fuqua, DO

Department: Internal Medicine

Abstract: Introduction: Cerebral venous sinus thrombosis (CVST) is a rare and fatal form of stroke. Early recognition of its presentation and prompt treatment can improve overall health outcomes [1]. Combined oral contraceptives (OCPs) are associated with an increased risk of venous thromboembolism (VTE) [2,3]. Additionally, infection with COVID-19 may aggravate the risk of VTE and strokes [4]. Yet, less is known about the thromboembolic effects of mRNA COVID-19 vaccines in combination with OCPs. These side effects have been rarely reported, with only a few cases published [5-10]. Moreover, the relationship between VTE, COVID-19 vaccination, and OCP use in women of reproductive age is not well understood. Therefore, we report a rare case of CVST in a female on OCPs after an mRNA COVID vaccination.

Poster: 10

Shivani Dighamber

Comprehensive Medical Management in Psychiatric Patients: A Case Report

Dighamber S, Bhatt N, Gentile, J

Mentor: Nita Bhatt, MD

Department: Psychiatry

Abstract: Introduction: Society has made marked strides in the perception of mental health; however, it is imperative there is an understanding of psychiatry's existence amongst other medical specialties. Misconceptions of psychiatry being a specialty that loses the practice of medicine risks fatal outcomes, which can be dually noted in vulnerable populations such as pregnant or incarcerated individuals. This includes proper medical management and comprehensive history and physical exam (HP) in patient care.

Poster: 11

Makenzie Dye

Crowe's Sign: A Classic Case of Axillary Freckling in a Patient With NF1

Dye M, Garcia-Whitko L., Garcia-Zuazaga J

Mentor: Jorge Garcia-Zuazaga, MD

Department: Dermatology

Abstract: Introduction: Neurofibromatosis type 1 (NF1) is an autosomal dominant neurocutaneous disorder characterized by the uncontrolled growth of tumors in nerve tissue. Crowe's sign, is the presence of axillary freckling in people with NF1. There is an array of diagnostic criteria that have been established for NF1, however axillary freckling is often considered the most specific of the cardinal criteria for NF1 and is nearly pathognomonic for NF1. The majority of NF1 adults have axillary freckling,

however, axillary freckling development often begins in early childhood in conjunction with the development of café-au-lait macules (CALMS). Neurofibromas typically start developing in the late teenage years/ early adulthood. Overall, NF1 freckling is similar to solar-induced freckling, but in areas with no sun exposure.

Poster 12:

Karley Fischer

Common Misdiagnosis of HFpEF in Young Females Due to Under Diagnosis of Coronary Microvascular Dysfunction

Fischer K, Khattab O, Valencia D, Linares J, Sequeira R

Mentor: Damian Valencia, MD

Department: Cardiology

Abstract: Introduction: Coronary Microvascular Dysfunction (CMD) is defined as an abnormality in the microcirculation leading to an inadequate vasodilatory response following stressors. Unfortunately, this abnormality in the coronary microvasculature goes undetected during routine cardiovascular workup. Despite the understanding of CMD pathophysiology, it remains underdiagnosed as cause for heart failure with preserved ejection fraction (HFpEF) as invasive or non-invasive testing for CMD is not currently in the workup algorithm for patients presenting with HfpEF.

CMD has a higher prevalence in women with 60-75% of cases diagnosed in females. Women presenting with persistent symptoms of ischemia with no obstructive coronary artery disease (INOCA) on angiogram are often labeled with a non-cardiac etiology, yet 1 in 13 of those women will die of cardiac event within 10 years, with the most common being HFpEF. In addition, these patients are often more likely to suffer from depression and anxiety. We present a female patient with severe HFpEF symptoms secondary to coronary microvascular ischemia, for whom initial workup was negative, as an argument for coronary microvascular dysfunction to be included in differential diagnosis and diagnostic algorithm for HFpEF.

Poster: 13

Karley Fischer

Rapid Identification and Management of Cardiogenic Shock

Fischer K, Valencia D, Linares J, Schwartz B

Mentor: Damian Valencia, MD

Department: Cardiology

Abstract: Introduction: Introduction: Cardiogenic Shock (CS) occurs due to severe impairment of myocardial contractile function with substantial decrease in cardiac output resulting in end-organ hypoperfusion and hypoxia. The result is hypotension that is refractory to volume resuscitation. Despite advancements in medical therapy and support devices, CS continues to have high mortality. Increased number of inotropic agents has been found to be associated with higher mortality and increased risk for arrhythmia. Mechanical circulatory support (MCS) is the cornerstone of treatment for advanced stages of cardiogenic shock with improved survival rates over medical therapy alone. Impella 5.5 was initially approved by the FDA for MCS in 2019 only at limited centers, with favorable outcomes, including 75%

survival to discharge rate in one center. We present a case of CS that required rapid escalation of intervention, resulting in use of the first Impella 5.5 at Kettering Health Network.

Poster: 14

Elizabeth Fonte and Donald Hefelfinger

Rapidly Destructive Osteoarthritis of the Hip in the Setting of Multiple Intra-articular Steroid Injections: A Case Report

Fonte E, Hefelfinger D, Lyons J, Krishnamurthy A

Mentor: Joe Lyons, MD

Department: Orthopedics

Abstract: Introduction: Rapidly destructive osteoarthritis (RDO) of the hip is a poorly understood disease that is characterized by a greater than fifty percent narrowing of the joint space or greater than 2 mm of femoral head destruction in a 1-year timeframe. Risk factors for this disease include increasing age, osteopenia, labrum inversion, and female sex. In recent studies, intra-articular glucocorticoid injections have been implicated as a mechanism for the development of this disease resulting in debilitating pain and impaired mobility. Recent data suggests a significant percentage of glucocorticoid injections may lead to RDO, calling the safety of these intra-articular injections into question.

Poster: 15

Donald Hefelfinger and Elizabeth Fonte

Musculoskeletal Coccidioidomycosis in the Setting of Adalimumab: A Case Report

Hefelfinger D, Fonte E, Nehzati A, Scott J

Mentor: Joshua Scott, DO

Department: Rheumatology

Abstract: Introduction: Musculoskeletal coccidioidomycosis is a rare disseminated fungal infection that can be caused by either *Coccidioides immitis* or *Coccidioides posadasii* that are both endemic to the southwestern United States as well as northwestern Mexico. Symptomatic primary infection of coccidioidomycosis can resemble pneumonia with influenza-like symptoms, but the majority of cases remain asymptomatic. When dissemination occurs, the most common extrapulmonary sites include the skin, lymph nodes, musculoskeletal system, and meninges.

Poster: 16

Sabrina Kaul

Marked Reduction in Severe Resistant Hypertriglyceridemia on PCSK9 Inhibitor

Kaul S, Gupta A.

Mentor: Ankur Gupta, MD, FACE, ECNU

Department: Internal Medicine

Abstract: Introduction: Hypertriglyceridemia is a dyslipidemia that can lead to acute pancreatitis. Current Endocrine Society guidelines recommend using a fibrate as first-line medication for severe hypertriglyceridemia (triglyceride level >1000 mg/dL).¹ PCSK9 inhibitors, such as evolocumab, are

another treatment option for hypertriglyceridemia and have been shown to lower triglyceride levels by approximately 10-20%.² However, there have not been any reports in the literature of PCSK9 inhibitors lowering triglyceride levels by more than 100%. Greater triglyceride reduction is critical for patients with severe hypertriglyceridemia who are not well-controlled on lifestyle modifications and drugs, especially with history of recurrent episodes of pancreatitis. We describe a case in which a patient with a high triglyceride level of 5000 mg/dL and recurrent pancreatitis who had unsuccessfully tried many different treatment options achieved a normal triglyceride level of 138 mg/dL after taking evolocumab.

Poster: 17

Sabrina Kaul

A Challenging Case of Medication-Nonadherent Hypothyroidism Requiring Frequent Primary Care Visits to Achieve Euthyroidism

Kaul S, Gupta A.

Mentor: Ankur Gupta, MD, FACE, ECNU

Department: Internal Medicine

Abstract: Introduction: Nonadherence to medications is a common clinical issue. We describe a case in which weekly visits to assess home medication adherence achieved euthyroidism in a patient with persistent primary hypothyroidism and suspected nonadherence to levothyroxine. The patient, however, denied nonadherence.

Poster: 18

Annika Kisha, Samantha Shugar, Jason Miner

Open Rib Fracture Management with Primary Reduction and Suture Fixation in an Elderly Male with Complex Chest Wall Anatomy

Kisha AF, Shugar SE, Miner JA

Mentor: Jason Miner, MD

Department: Surgery

Abstract: Introduction: Rib fractures are the most common thoracic injury, accounting for 10-15% of all traumatic injuries and 40% of injuries following blunt trauma. Although historically managed without surgery, surgical stabilization of rib fractures (SSRF) has become increasingly common as more literature elucidates the benefits of surgical intervention first in patients suffering flail segments and, more recently, non-flail injuries. Specifically, SSRF has been associated with lowering rates of pneumonia, tracheostomy, and mortality by 21%, 29%, and 22%, respectively. Open reduction and internal fixation (ORIF) with plating is the most common approach to SSRF. Open injuries, while accounting for only 2% of rib fractures, represent additional treatment challenges and require consideration of alternative approaches.

Poster: 19

Deborah Lee

Aicardi - Goutieres Syndrome Secondary to ADAR Mutation Masquerading as Athetoid Cerebral Palsy

Chikkannaiah M, Lee D, Fonseca L, Goenka A, Kumar G

Mentor: Mahesh Chikkannaiah, MD

Department: Pediatric Neurology

Abstract: Introduction: This case report describes a 4-year-old boy initially diagnosed as athetoid cerebral palsy secondary to hyperbilirubinemia but subsequently found to have Aicardi's GoutiÃ'es syndrome (AGS) secondary to ADAR mutation.

Poster: 20

Roya Morakabian

Pediatric epilepsy associated with GAMT deficiency

Chikkannaiah M, Kumar G, Set K, Fonseca L, Morakabia R

Mentor: Mahesh Chikkannaiah, MD

Department: Neurology

Abstract: Introduction: This case report describes a young patient with guanidinoacetate methyltransferase (GAMT) deficiency, a rare genetic inborn error of metabolism that is part of the Cerebral Creatine Deficiency Syndromes (CCDS).

Poster: 21

Halimat Olaoluwa

The Andes of Bladder Stones

Olaoluwa, HA, Hakim, J

Mentor: Jonathan Hakim, MD

Department: Urology

Abstract: Introduction: Primary hyperparathyroidism (PHPT) and bladder outlet obstruction (BOO) are distinct medical conditions that can be associated with the formation of bladder stones. PHPT is a condition where a parathyroid adenoma autonomously produces too much parathyroid hormone (PTH). The resultant cascade of hypercalcemia with hypercalciuria can result in bladder stone formation. Similarly, BOO is an anatomical impairment of the normal emptying of the urinary bladder. The subsequent stasis of urine increases the risk of bladder stone formation. We present a profound case wherein 13 cm of bladder stones accumulated due to the combined effect of both an anatomical and metabolic derangement in a 30-month period.

Poster: 22

Ankur Parekh

Acute encephalopathy with biphasic seizures and late reduced diffusion (AESD) secondary to norovirus infection

Parekh AM, Fonseca L, Agarwal R, Kumar G, Chikkannaiah M,

Mentor: Mahesh Chikkannaiah MD

Department: Pediatric Neurology

Abstract: Introduction: This case report illustrates the case of a previously healthy boy diagnosed with Acute encephalopathy with biphasic seizures and late reduced diffusion (AESD) secondary to norovirus infection. Methods: We describe a 2-year-old boy who presented with febrile status epilepticus and was diagnosed with AESD. Investigations included a continuous EEG monitoring, neuroimaging studies, cerebrospinal fluid (CSF) evaluation, metabolic, auto-immune, and infectious work-up. A review of literature of AESD secondary to norovirus and other etiology was performed. Results: Head CT completed in the emergency department (ED) was negative. Initial MRI brain at 24 hours of presentation, showed large confluent areas of T2 signal abnormality with restricted diffusion throughout the cerebellum and similar, smaller areas in the subcortical white matter of occipital lobes, parietal lobes, and to a lesser extent in the frontal lobes. Continuous EEG showed left > right generalized slowing and bilateral, independent, left > right frontally predominant diffuse epileptiform activity. No electrographic or electro-clinical seizures were noted. Extensive metabolic, auto-immune and infectious work up was negative except for Gastrointestinal Infectious Disease Panel (GIDP), which was positive for Norovirus. Follow up MRI brain completed 5 days after initial presentation due to persistent encephalopathy showed near diffuse, abnormal T2 prolongation and restricted diffusion throughout the subcortical white matter and cortex of the cerebral and cerebellar hemispheres bilaterally and he was diagnosed with AESD. Discussion: Acute encephalopathy with biphasic seizures and late reduced diffusion (AESD) is a type of rare encephalopathy seen in children and is often caused by viral infection, however other etiologies like bacterial infection and trauma has also been reported. It is characterized by an initial febrile seizure which may be followed by secondary seizures and altered consciousness. MRI brain typically shows late symmetrical diffusion restricted lesions in the cortical and subcortical white matter on brain MRI. Outside of Asian countries, especially Japan, AESD is rare, indicating that genetic background may play a role. Interestingly, our patient did not have an Eastern Asian background but was mixed race: African American and Caucasian. Typical age of presentation is in the toddler age group like our case. Outcomes of norovirus associated AESD can vary, but is generally poor in patients presenting with an initial prolonged seizure, early onset of neurological symptoms, abnormal blood glucose level (<40 mg/dl or >200 mg/dl) and elevated serum creatinine level. On the contrary, the prognosis is better in patients with AESD who have initial brief seizure as they tend to have less extent of injury on MRI with restricted diffusion noted mainly in the frontal areas as compared to diffuse, bilateral lesions in patients presenting with prolonged seizures. Our patient presented with prolonged seizure with status epilepticus, elevated initial blood glucose level 330 mg/dl, and serum creatinine of 1.1 mg/dl (reference 0.2 – 0.4 mg/dl) and indeed had a poor outcome given significant neurologic sequelae with spastic quadriplegic cerebral palsy and intractable epilepsy with Lennox-Gastaut syndrome. Although rare, AESD should be considered as an important differential diagnosis.

Poster: 23

Young Jun Park

A Case of Hairy Tongue from Clindamycin

Park Y, Elliott B.

Mentor: Brian Elliott, MD.

Department: Internal Medicine

Abstract: Introduction: Lingua villosa nigra, more commonly known as Black Hairy Tongue (BHT), is a benign medical condition caused by the elongation and hypertrophy of filiform lingual papillae on the dorsal part of the tongue¹. The name is derived from its clinical presentation of black and hairy carpet-like growth which comes from the accumulation of debris, bacteria, fungi, and other foreign substances. Nonpigmented presentations of BHT are part of a greater category called hairy tongue. Incidence of BHT varies depending on the population but predisposing factors include smoking, drugs that provoke xerostomia, alcohol use, poor oral hygiene, trigeminal neuralgia, excessive coffee or black tea consumption, and general debilitation.

Poster: 24

Samantha Roberts

Management of Renal Cell Carcinoma with Tumor Thrombus and Concurrent Intraoperative Tumor Embolization

Roberts SA, Gold H, Posid T, Dason S

Mentor: Shawn Dason MD

Department: Urology

Abstract: Introduction: Intraoperative embolization is a potentially lethal complication during inferior vena cava (IVC) thrombectomy for renal cell carcinoma (RCC). Early recognition with transesophageal echocardiography is essential to surviving and embolization event. Management options include conservative measures, endovascular options, and cardiopulmonary bypass with embolectomy.

Poster: 25

Andrea Shugar

Novel Use of Resuscitative Endovascular Balloon Occlusion of the Aorta for Massive Perineal Hemorrhage Secondary to Blast Injury

Shugar AL, Shugar SE, Wong YM

Mentor: Yee Wong, MD

Department: Surgery

Abstract: Introduction: Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) technology emerged in the early 2010s after the idea of balloon occlusion for intra-abdominal hemorrhage began at the time of the Korean War. REBOA usage has become more popular in the last few years in the United States as it can mimic emergent resuscitative thoracotomy with aortic cross-clamping.

There are three zones that the balloon can be inflated, Zone I, II, and III. In Zone I, the balloon is positioned in supra-celiac/descending thoracic aortic region. In Zone II, the balloon is para-renal. In Zone

III, the balloon is infra-renal and proximal to the iliac bifurcation. Zone III is the optimal position to inflate the REBOA for extensive pelvic bleeding as perfusion to the intra-abdominal organs can be maintained proximal to the balloon.

To date, there is no literature describing the use of REBOA for control of hemorrhage from massive soft tissue destruction secondary to blast injury. Our case presentation demonstrates a novel use of balloon occlusion technology to temporize bleeding while assessing injury to the perineum.

Poster: 26

Sarah Yu

Pediatric stroke: A case of focal cerebral arteriopathy secondary to tuberculous meningitis in the United States

Chikkannaiah M, Yu SG, Goenka A, Kumar G

Mentor: Mahesh Chikkannaiah, MD

Department: Pediatric Neurology

Abstract: Introduction: This case report describes an 11-month old girl with stroke associated with inflammatory focal cerebral arteriopathy secondary to tuberculous meningitis.

Poster: 27

Tyler Langenfeld

Microsurgical Head and Neck Reconstruction with an Autologous Arteriovenous Loop: Multicenter Series of 36 Patients

Pak KY, Anderson SR, Langenfeld TL, Tan K, Slijepcevic A, Wimalawansa S, Ducic Y, Wax MK FACS, Kadakia SP

Mentor: Sameep Kadakia, MD FACS

Department: Plastic and Reconstructive Surgery

Abstract: Introduction: The utilization of an autologous arteriovenous (AV) loop is an underreported technique that affords the creation of reliable vascular options.

Poster: 28

Adrian Babel

No postoperative positioning in primary vitrectomy for rhegmatogenous retinal detachment: outcomes in 116 consecutive patients

Babel A, Xu K, Chin E, Almeida D

Mentor: David Almeida

Department: Erie Retinal Surgery

Abstract: Introduction: The role of face-down posturing following rhegmatogenous retinal detachment (RRD) repair remains a consistent management component; however, there is no direct evidence to allow firm conclusions as to what role face-down positioning plays following RRD repair with modern micro-incisional vitrectomy surgery (MIVS) platforms. We evaluated the anatomic and visual outcomes

of primary vitrectomy for RRD repair, employing no amount of post-operative prone positioning (POPP) to clarify the role of face-down posturing for RRD re-attachment.

Poster: 29

Kiren Bashir and Carin Statt

Acute trauma: Seasonal and daily variations in injury patterns

Marco CA, Statt C, Bashir, K, Repas SJ

Mentor: Catherine Marco, MD

Department: Emergency Medicine

Abstract: Introduction: This paper serves to delineate patterns in emergency department visits according to both month of the year and day of the week. While many emergency physicians can anecdotally attest to the fact that certain shift volumes are higher than others, these claims are important to investigate with data. Previous studies demonstrate more ED admissions in summer months as well as some injury-specific patterns of admission. However, these findings, while helpful, cannot always be generalizable to every ED department due to variations in admission based on geographical location and population risk factors, among other things. By conducting a retrospective chart review across five years, we were able to conclude that trauma volumes were highest in the months of June, July, and August and the days of Friday, Saturday, and Sunday. Other patterns based upon age, gender, and injury severity score across different days or months were not found. These results can inform expected trauma volumes in the Dayton area and allow for ED departments to prepare adequately for shifts in volumes internally. Future research needs to be conducted to investigate the reasons for such seasonal and daily variation patterns in trauma.

Poster: 30

Charles Botti and Michael Almany

Utilization of Kyphoplasty / Vertebroplasty For Pain Management Of Traumatic Vertebral Compression Fractures in Geriatric Patients

Herzing, K., Newman, E., Botti, C.J., Almany, M., Palmer, B, Siebenburgen, C.

Mentor: Karen Herzing, RN and Dr. Christa Siebenburgen, MD

Department: Trauma

Abstract: Introduction: Nearly 1.5 million new vertebral compression fractures (VCF) occur annually in the United States, with increased prevalence in the aging population. Vertebroplasty and kyphoplasty procedures (VKP) are a reliable and minimally invasive treatment to reduce pain and promote healing. The primary objective of this study was to identify the efficacy of using VKPs versus opioids for pain management in geriatric patients suffering from traumatic VCFs.

Poster: 31

Maneesh Chidambaram

Addressing Stereotypes in Healthcare: Patient's Physician-Gender Biases in an Ambulatory Urology Clinic

Mohaghegh M, Asif H, Blanco N, Riedinger E, Kleinguetl C, Arnold C, Michael W. Sourial, Dairon Denis-Diaz, Essa Gul, Hayat Mohammed, Maneesh Chidambaram, Tony Nessem, Tasha Posi

Mentor: Tasha Posid, MA, PhD

Department: Urology

Abstract: Introduction: Physicians are facing the challenge of managing an increasingly diverse patient population. Implicit biases are thoughts/feelings that exist outside of conscious awareness, making them difficult to acknowledge, but with the potential to influence behavior and interpersonal interactions including in medicine. There is a paucity of data on biases amongst patient populations, particularly amongst smaller but increasingly diverse specialties like Urology. The purpose of this study was to investigate physician-gender biases amongst patients at our single institution.

Poster: 32

Baria Choudry BSc, John Pascoe MD MPH

Is Restless Legs Syndrome More Common in Young Women Compared to Young Men?

Choudry B, Pascoe J

Mentor: John Pascoe, MD MPH

Department: Pediatrics

Abstract: Introduction: Restless Legs Syndrome (RLS) is characterized by an intense unpleasant urge to move one's legs. RLS may occur in association with decreased iron stores. While earlier work has documented that women have lower iron stores than men, few studies have compared the prevalence of RLS in young women compared to young men and girls.

Poster: 33

Andrew Correll, M3

Comparing Midazolam to Alternatives for Management of Acute Agitation and Status Epilepticus in Austere Environments Such as Space

Correll A, Johnson, K, Close H, Correll T, Peirson R

Mentor: Terry Correll, D.O.

Department: Psychiatry

Abstract: Introduction: Benzodiazepines, such as lorazepam, are the standard of care for the abortion of acute trauma-induced epileptic events and are one of the first-line treatments of acute psychogenic agitation. However, lorazepam, viewed by many as a gold-standard benzodiazepine, necessitates refrigeration and restocking every 60 days, which can be a challenge in austere environments where refrigeration is at a premium or not available at all. Currently, NASA employs intramuscular diazepam injections in this role. Concerns exist, though, for the erratic absorption of diazepam via intramuscular route, and its metabolites have an extended half-life leading to increased risk of respiratory depression and prolonged sedation. Furthermore, recent data suggests that midazolam is superior in two core measures as a treatment for status epilepticus: efficacy of time to onset and efficacy of seizure abortion.

Midazolam has also been shown effective in other domains more particular to missions in space: shelf life and flexible routes of delivery. Previously, long-term stability data and temperature tolerability data for midazolam were not available, rendering diazepam the more reasonable option. Considering updated pharmaceutical data and recent trials, it is demonstrated that stable and versatile midazolam is superior to other benzodiazepines in yielding safe, timely termination of undifferentiated acute agitation and status epilepticus, and is particularly well-suited for use in challenging environments such as space.

Poster: 34

Akshima Dhiman

Traumatic Brain Injury Biomarkers, Simulations and Kinetics

Hicks C, Dhiman A, Barrymore C, Goswami T

Mentor: Tarun Goswami, D. Sc.

Department: Biomed Industrial & Human Factors Engineering

Abstract: Introduction: This paper reviews the predictive capabilities of blood-based biomarkers to quantify traumatic brain injury (TBI). Biomarkers for concussive conditions also known as mild, to moderate and severe TBI identified along with post-traumatic stress disorder (PTSD) and chronic traumatic encephalopathy (CTE) that occur due to repeated blows to the head during one's lifetime. Since the pathways of these biomarkers into the blood are not fully understood whether there is disruption in the blood-brain barrier (BBB) and the time it takes after injury for the expression of the biomarkers to be able to predict the injury effectively, there is a need to understand the protein biomarker structure and other physical properties. The injury events in terms of brain and mechanics are a result of external force with or without the shrapnel, in the wake of a wave result in local tissue damage. Thus, these mechanisms express specific biomarkers kinetics of which reaches half-life within a few hours after injury to few days. Therefore, there is a need to determine the concentration levels that follow injury. Even though current diagnostics linking biomarkers with TBI severity are not fully developed, there is a need to quantify protein structures and their viability after injury. This research was conducted to fully understand the structures of 12 biomarkers by performing molecular dynamics simulations involving atomic movement and energies of forming hydrogen bonds. Molecular dynamics software, NAMD and VMD were used to determine and compare the approximate thermodynamic stabilities of the biomarkers and their bonding energies. Five biomarkers used clinically were S100B, GFAP, UCHL1, NF-L and tau, the kinetics obtained from literature show that the concentration values abruptly change with time after injury. For a given protein length, associated number of hydrogen bonds and bond energy describe a lower bound region where proteins self-dissolve and do not have long enough half-life to be detected in the fluids. However, above this lower bound, involving higher number of bonds and energy, we hypothesize that biomarkers will be viable to disrupt the BBB and stay longer to be modeled for kinetics for diagnosis and therefore may help in the discoveries of new biomarkers.

Poster: 35

Makenzie Dye and Vijay Rings

Incidence of 4% Articaine-Induced Neurological Abnormalities Associated With Dental Procedures

Dye M, Rings V, Wang A, Voiers S

Mentor: Alexander Wang, MD (Affiliation: University of Cincinnati)

Department: Anesthesiology

Abstract: Introduction: Title: Incidence of 4% articaine induced neurological abnormalities associated with dental procedures

Poster: 36

Oumou Fofana and Ashley Hughes

Standardization of Narcotic Prescriptions in General Surgery Procedures

Leon A, Robbins J, Hughes A, Fofana O, Crayton C, Shugar S, Walk C, DeGroat M, Woods R

Mentor: Justin Robbins, MD

Department: Surgery

Abstract: Introduction: The opioid crisis in the United States is a major public health issue. Postoperative opioid prescription plays a central role in the opioid epidemic. Several studies have demonstrated a trend toward excess prescribing of narcotic pain medications following outpatient surgeries. Many institutions have implemented a standardized prescribing protocol to decrease unnecessary opioids that funnel into the community. The objective of this study was to create a standardized pain protocol for common outpatient surgical procedures to reduce narcotic over-prescription and assess postoperative pain control.

Poster: 37

Sana Shameem and Michael Harrington

Relationship between Obesity and IDD in an Ohio Telepsychiatry Clinic: A Retrospective Review

Gainer D, Nahhas R, Gentile J, McCormack J, Hatesohl M, Shameem S, Luft M, Harrington M

Mentor: Danielle Gainer, MD

Department: Psychiatry

Abstract: Introduction: The prevalence of a comorbid diagnosis of intellectual/developmental disability (IDD) and overweight/obesity (OW/OB) is an important consideration of Intellectual/Developmental Disability (IDD) psychiatric care. Awareness of medical comorbidities associated with these conditions can guide clinicians, caretakers, and researchers towards pharmacologic options, behavioral interventions or utilization of preventative medicine to minimize complications associated with OW/OB. Currently, gaps within the literature exist regarding the complex relationship between overweight/obesity and co-occurring diagnoses of Autism Spectrum Disorder (ASD) and IDD.

Poster: 38

Joshua Jantzi

Examining Opioid Prescribing Differences Among Urban and Rural Clinicians Pre and Post PRESTO Training

Jantzi J, Hershberger P, Castle A, Crawford T, James A, Bricker D

Mentor: Paul Hershberger, PhD

Department: Family Medicine

Abstract: Introduction: Purpose: Determine differences between urban and rural providers in opioid prescribing habits before and after training in PRomoting Engagement in the Safe Tapering of Opioids (PRESTO), an approach based upon motivational interviewing.

Poster: 39

Sabrina Kaul

Monitoring TSH Over Time May Not Be Necessary in Patients with Thyroid Nodules

Kaul S, Gupta A.

Mentor: Ankur Gupta, MD, FACE, ECNU

Department: Internal Medicine

Abstract: Introduction: Patients with thyroid nodules frequently receive blood thyroid stimulating hormone (TSH) monitoring after initial diagnosis. However, American Thyroid Association guidelines do not specify recommendations on follow-up TSH testing for patients with thyroid nodules who have no history of conditions or medications known to affect thyroid hormone levels. Literature supporting long-term TSH monitoring in these patients is lacking. Our aim was to evaluate the change in blood TSH in these patients over time and determine if repeat TSH testing is needed. We hypothesized that repeat testing is not required in these patients. Patients could avoid the financial, physical, and time-consuming burden of repeat blood TSH testing if the hypothesis is supported.

Poster: 40

Benjamin Kleeman

Clinical and Resource Outcomes of Necrotizing Soft Tissue Infections Using a Skin Sparing Approach

Hess J, Johnson C, Kleeman B, Parikh P, Perry T

Mentor: Travis Perry, MD

Department: General Surgery

Abstract: Introduction: Necrotizing soft tissue infections (NSTIs) remain a formidable and debilitating disease process characterized by rapid clinical progression and extensive tissue destruction. Mortality rates have decreased in the acute management of NSTIs due to early recognition, resuscitation, surgical exploration, and broad-spectrum antibiotics. However, long-term care of these complex morbid wounds remains a daunting task in allocating resources to their ongoing surgical and medical management. The purpose of this study was to review the skin and soft tissue sparing (SSS) approach to NSTIs and assess outcomes of surgical data, mortality rate (MR), length of stay (LOS) and hospital care cost (HCC).

Poster: 41

Taylor Malchow

Application and Survival Outcomes of Landmark Prostate Specific Antigen Screening Trial Protocols in an Urban Healthcare System

Malchow T, Corsi N, Stephens A, Davis M, Rakic I, Arora S, Sood A, Cole A, Trinh QD, Rogers C, Abdollah F

Mentor: Dr. Firas Abdollah, MD

Department: Henry Ford, Urology

Abstract: Introduction: It is often debated how frequently men over the age of 45 should receive prostate specific antigen (PSA) screenings. Three screening patterns are found in the literature: PLCO (annual screening), Goteborg (biennially screening), and ERSPC (screening every 3-4 years). Our objective was 1) to analyze the utilization of trial-like screening protocols in an urban healthcare system (real clinical practice); and 2) to determine whether a certain screening pattern had improved survival outcomes.

Poste: 42

Arjun Minhas

The Influence of Guidelines on Opioid Prescribing Practices After Pediatric Anterior Cruciate Ligament Reconstruction

Hudson T, Berkay F, Minhas A, Huff S, Henningsen J, Erb E, Froehle AW, Albert MC

Mentor: N/A

Department: Orthopaedic Surgery

Abstract: Introduction: Report opioid prescription patterns after pediatric anterior cruciate ligament reconstruction (ACLR) and identify if the implementation of the Opioid Prescribing Guidelines (OPG) modified these patterns.

Poster: 43

Hanna Peterson, Annika Kisha, and John Terry, MD

FLAIR Vascular Hyperintensity as a Marker of Incomplete Recanalization in Acute Ischemic Stroke Post-Thrombectomy

Peterson HJ, Kisha AF, Terry JB

Mentor: John Terry, MD

Department: Neurology

Abstract: Introduction: Stroke is a common diagnosis and reason for hospitalization in the United States and can result in significant residual deficits, impairment in functional status, and death. Imaging is a major tool for guiding management and prognosis in patients with stroke. MRI fluid attenuated inversion recovery (FLAIR) sequences can demonstrate patent vasculature via flow voids in which blood flow appears dark and conversely, FLAIR vascular hyperintensity (FVH) is an indicator of slow blood flow in areas surrounding an arterial occlusion and can be seen on MRI in patients with stroke. FVH has been studied in stroke patients and has been shown to correlate with clinical outcomes. However, despite the progress made in recent years to uncover the clinical application of this imaging finding, the exact use of

FVH has not yet been fully elucidated although there appears to be some role for FVH in prognostication of post-AIS and post-endovascular intervention patients. Additionally, FVH has not been extensively studied in patients after endovascular intervention. This study investigates the utility of fluid-attenuated inversion recovery (FLAIR) vascular hyperintensities (FVH) to serve as a marker on post-intervention MRI of slow blood flow and therefore, inadequate reperfusion in acute ischemic stroke patients with large vessel occlusion who underwent endovascular thrombectomy. We hypothesize that there is an inverse relationship between reperfusion, quantified by the thrombolysis in cerebral infarction (TICI) scale, and FVH post-thrombectomy, quantified by a novel FVH scoring system. A retrospective chart review was conducted of approximately 50 patients diagnosed with acute ischemic stroke who underwent endovascular recanalization and had post-procedure MRI. The FVH scoring system was applied to each post-procedure MRI to establish an FVH score for each patient. This FVH scoring system used to score each MRI includes identifying three MRI slices based on anatomy, in which FLAIR vessel hyperintensities are most likely to be seen in middle cerebral artery territory. The number of FLAIR vessel hyperintensities were counted on each of the three slices and added together to obtain the total FVH score. Patients were excluded if they did not undergo post-procedure MRI, if they received tissue plasminogen activator or tenecteplase prior to thrombectomy, and if they had a basilar artery occlusion. Statistical analysis will be conducted to establish what correlation exists between TICI scale on angiogram post-thrombectomy and FVH score on MRI post-thrombectomy. Future studies should be aimed at establishing a correlation between FVH score and clinical outcomes specifically in post-thrombectomy patients.

Poster: 44

Brian Schutter, Ann Smith, DPT, Mike Albert, MD

Analysis and outcomes of graft selection in pediatric and adolescent patients after ACL repair

Schutter, B. Weimar, D, Szeltner, D, Smith, A, Albert, M

Mentor: Smith, Ann DPT; Albert, Mike MD

Department: Orthopedic Surgery

Abstract: Introduction: The purpose of this study is to examine a single center's experience and outcomes with ACL reconstruction (ACLR) surgery in pediatric and adolescent patients utilizing one of the following surgical approaches: bone-tendon-bone (BTB), hamstring tendon (HS), quad tendon (QT) or iliotibial band.¹ Research relating to ACL reconstruction in children and adolescents has been increasing in recent years, but there is a need for further research regarding outcomes following ACL reconstruction.² A rupture of the ACL is a common sports injury in the adolescent population and the course of treatment is still heavily debated. In the literature, there are numerous opinions for the best surgical technique and graft selection in skeletally immature patients but no generalized consensus.^{3,4} This study is a collaboration between the Orthopedic and Orthopedic Rehabilitation Department at Dayton Children's. Dayton Children's performed 195 ACL reconstruction surgeries between January 2010 – January 2018 and have performed 82 ACL surgeries between January 2019 – December 2020. Our cohort includes many patients who were skeletally immature at the time of surgery in the greater Dayton area. Based on our retrospective findings, we propose to continue this study prospectively following a large cohort of pediatric patients that have undergone an ACL reconstruction. Since August 2021, we have enrolled about 30 pediatric and adolescent patients in our

prospective cohort. We plan to evaluate the impact of graft selection on graft failure and overall biomechanical outcomes, and also compare this data to our original retrospective cohort.

Poster: 45

Raghav Talreja and Laura D. Fonseca

Intracranial arachnoid cyst in children who underwent surgical treatment: Natural history and clinical presentation

Talreja R, Fonseca LD, Chikkannaiah M, Goenka A, Kumar G

Mentor: Gogi Kumar, MD

Department: Pediatrics

Abstract: Introduction: Intracranial Arachnoid Cysts (IAC) in children are a common incidental finding on imaging. Most IACs are asymptomatic and can be monitored, however, a small percentage may enlarge and require surgical intervention.

Poster: 46

Kevin Wu

Examining Trends in Implantable Doppler Usage Amongst North American Microsurgeons: A Survey Study

Langenfeld TL, Wu KG, Anderson SR, Reece MKJ, Puscas L, Wax MK, Johnson RM, Kadakia SP

Mentor: Sameep Kadakia, MD

Department: Surgery, Orthopaedic & Plastic Surgery

Abstract: Introduction: Background: The implantable Cook-Doppler is a device used to monitor free flap anastomoses for patency as a marker for postoperative flap compromise. Since its inception in 1984, the implantable Doppler has established a reputation as a reliable monitor for flap integrity. Previous literature has demonstrated its incredible sensitivity, specificity, positive predictive value, and negative predictive value when detecting flap compromise. Currently, however, there is a lack of consistent protocol or algorithm for Doppler usage, especially with respect to the duration of monitoring and response to signal compromise.

Poster: 47

Elise Yoshinaga

Exploring Differences in Opioid Prescribing Practices Based on Years of Experience, Pre- and Post- PRESTO Training

Yoshinaga EE, Bricker DA, Crawford TN, Castle A, Hershberger PJ

Mentor: Paul Hershberger, PhD

Department: Family Medicine

Abstract: Introduction: Treatment for chronic pain often appropriately includes prescription opioids or benzodiazepines. Given the ample evidence that opioid prescriptions increase the risk of developing an opioid use disorder, it is alarming how many providers prescribe such medications without an exit

strategy. The CDC recommends close follow up during the first month of opioid use and shares guidelines for the treatment of opioid use disorder if diagnosed. However, there is a dearth of guidance for how to address the medication tapering process with patients, who may resist the reduction of their medication.

Poster: 48

Roselle Bea Almazan

A Structured Approach to Increasing Diversity, Equity, and Inclusion Aspects of Surgery Residency Applicants

Almazan RP, Gerardo R, Walk CT, Parikh P

Mentor: Priti Parikh, Ph.D.

Department: Surgery

Abstract: Introduction: Racial, cultural, and gender disparities exist within various medical specialties, particularly in surgery. One method of addressing these disparities is through improving diversity, inclusion, and equity (DEI) within residency recruitment, with several residency programs utilizing social media to emphasize their commitment to DEI. However, the data is limited on the impact of social media use in increasing the diversity of residency applicants. The purpose of this study was to develop a structured approach to attracting residency applicants who are underrepresented in medicine (URM) using social media, and to assess the applicant demographic data before and after these interventions.

Poster: 49

Maria Anderson

Motivational Interviewing with No Motivation: An Analysis of Internal Medicine Resident

Motivational Interviewing Skills

Anderson M, Hershberger P, Crawford T, Bricker D, Castle A

Mentor: Paul Hershberger, PhD

Department: Family Medicine

Abstract: Introduction: This research study examined motivational interviewing skills among first- and third-year internal medicine residents via ReadMI (Real-time Assessment of Dialogue in Motivational Interviewing) sessions. We compared the percent of time the doctor spoke, the number of open-ended and closed questions, and the number of reflective statements among PGY1 and PGY3 residents at their first and fourth ReadMI sessions. Motivational interviewing knowledge and confidence of MI skills after ReadMI sessions were assessed.

Poster: 50

Lyndsay Boyd

Creation of an Application to Increase Surgical Resident Operative Case Coverage

Robbins J, Boyd L, Gilbert M, Rieken H, Shugar S, Rhodes Z, Tuttle R, Woods R

Mentor: Justin Robbins, MD

Department: General Surgery

Abstract: Introduction: Studies have shown that the confidence of surgical residents to perform procedures after completing residency can be affected by their volume of operative experiences. Many surgical residency programs span multiple hospitals with a multitude of attending surgeons providing additional educational opportunities available via cross-coverage. The purpose of this study was to evaluate the use of a mobile application for operative cross-coverage to improve surgical opportunities in a large surgical residency program and decrease the number of cases uncovered.

Poster: 51

Carson Clark, Isabella Benintendi, Alexis Westrick

Impact of Incoming MCAT and Self-Assessed Medical School Confidence on End-of-Module Exams

Clark, CB, Benintendi, IG, Westrick, AR, Silva, AMS, Stolfi, A.

Mentor: Adrienne Stolfi, PhD

Department: Medical Education

Abstract: Introduction: Confidence in the medical academic setting is potentially a strong predictor of preclinical and clinical performance.¹ Existing research suggests that clinician confidence can play a major role in clinical outcomes.^{1,2} These studies have focused on confidence in clinical situations,³ while the interplay between confidence and preclinical performance remains scarcely studied. Improving our understanding of the confidence-performance relationship can better inform medical education interventions and assessments.

Poster: 52

TC Frommeyer, Michael Gilbert, Garrett Brittain

A Cohort-Control Study Assessing the Impact of Anki as a Spaced-Repetition Tool on Academic Performance in Medical School

Frommeyer TC, Gilbert, Brittain GV, Stewart NA, Turner TM, Stolfi A, Parmelee DX

Mentor: Dean Parmelee, MD

Department: Medical Education

Abstract: Introduction: Anki is an application that capitalizes upon the techniques of spaced-repetition and is increasingly utilized by medical students for examination preparation. This study examines the impact of Anki usage in a medical school curriculum on academic performance. Secondary objectives analyzed individual Anki utilization and a qualitative assessment of Anki use.

Poster: 53

Betsy Gauthier

Evidence-Based Medicine in the Ob-Gyn Clerkship: A Novel Student Project

Saeed Z, Mathess J, Kindig M, Maxwell, R

Mentor: Marilyn Kindig, D.O., Rose Maxwell, Ph.D., MBA

Department: Obstetrics and Gynecology

Abstract: Introduction: To assess the effectiveness of an evidence-based medicine (EBM) project for third-year Ob-Gyn clerkship students.

Poster: 54

Nickolas Stewart, Donald Hefelfinger, Garrett Brittain, Timothy Frommeyer

The Increasing Trend in the Number of Publications and Research Projects Among Orthopedic Residency Applicants: A Retrospective Analysis

Stewart N, Hefelfinger D, Brittain G, Frommeyer T, Stolfi A, Krishnamurthy A

Mentor: Anil Krishnamurthy, MD

Department: Orthopedic Surgery

Abstract: Introduction: Orthopedic surgery is amongst the most competitive specialties and is becoming increasingly more competitive as exhibited by rising United States Medical Licensing Examination (USMLE) scores, overall grades, and number of research publications. Thus far, the USMLE Step 1 score has been a significant factor in applicants screening. With Step 1 converting to pass/fail, students may try to stand out by focusing on other areas of their application. Research is a component that applicants have placed increased focus on as noted by the drastic rise in publications (including abstracts and presentations) from 2007 to 2022. What is not clear is whether this increase in research significantly impacts orthopedic applicant match rates. This study aims to describe the trends in research among orthopedic residency applicants and analyze the relationship between match rates and research.

Poster: 55

Hayden Jaworski and Winston Owens

USMLE Step 1 Transition to Pass/Fail: Perception of Medical students and Residency Program Faculty

Jaworski H, Owens W, Parikh, P

Mentor: Priti P. Parikh, Ph.D.

Department: Surgery

Abstract: Introduction: Transition of USMLE Step1 score to a pass/fail has brought many questions and uncertainties for medical students and residency program. This study assesses the perceptions of both students and faculty on this policy change along with its impact on matching into competitive specialties.

Poster: 56

John Kearfott

Motivational Interview Skills Training in Medical Students and Residents

Kearfott J, Castle A, Crawford T, Hershberger P.

Mentor: Angie Castle, MA

Department: Family Medicine

Abstract: Introduction: Motivational Interviewing (MI) is a patient-centered counseling approach used to elicit behavior change by helping patients explore and resolve their ambivalence to change. MI was developed in the early 1980s by psychologist William Miller, Ph.D., as a novel therapeutic approach to help patients with alcohol use disorder. This study aimed to compare the MI conversational skills of third-year medical students and residents before and after training, as prior research had yet to examine if resident physicians and medical students differed in their approaches to patient behavioral change.

Poster: 57

Ariel Lanier, Daniel Perry, Julie Slyby, Allie Peebles, Marilyn Kindig, DO.

Using Interactive Modules to Improve OB/GYN Clerkship

Lanier, A.L., Perry, D., Slyby, J., Peebles, A., Kindig, M.

Mentor: Marilyn Kindig, DO

Department: OB/GYN

Abstract: Introduction: Articulate is an innovative software for creating interactive courses. With the software, educators are able to transform traditional lectures into interactive learning modules for students. Articulate modules utilize engaging features such as flash cards, term matching, fill in the blank questions, multiple choice questions, interactive scenarios, and more. At Wright State Boonshoft School of Medicine, the OB/GYN clerkship was traditionally taught using a combination of in-person and online lectures. The online lectures were available to students online through Panopto, a video software. Students were able to access the online lectures at any time. These lectures will soon no longer be available as Wright State BSOM is discontinuing the system for Panopto. In addition, the lectures are older and difficult to update as the entire lecture must be replaced. Although lectures are a sufficient way to convey information to students, previous research suggests that interactive methods of learning provide better educational outcomes. There is currently limited literature available regarding the use of interactive online modules as a method of teaching medical education. . We theorize that using interactive modules in replacement of lectures will result in improved student outcomes and student enjoyment.

Poster: 58

Paige Lewis

Using Artificial Intelligence to Assess the Difficulty of Motivational Interviewing Training Cases

Lewis P, Hershberger P, Crawford T, Castle A

Mentor: Paul Hershberger PhD, Angie Castle MA

Department: Family Medicine

Abstract: Introduction: Using Real-time Assessment of Dialogue in Motivational Interviewing (ReadMI) technology, third-year family medicine clerkship medical students had the opportunity to practice their motivational interviewing (MI) skills while getting real-time feedback. Motivational interviewing was practiced by pairs of students using four different clinical scenarios, with each student being in the role of physician for two of the cases. The purpose of this study was to assess the "difficulty" of the four case scenarios using the metrics generated by the ReadMI technology.

Poster: 59

Jeannette Manger, PhD

Study habits in first-year medical students.

Manger, JM, Benedik, L, Johnson, S, Journell, L, Reser, R

Mentor: N/A

Department: Medical Education

Abstract: Introduction: Active learning is a growing and vital component of medical education. Such learning modalities often require students to complete assigned readings before class. However, many students prefer third-party resources to complement or frequently replace the assigned readings. Common misconceptions regarding studying and content retention are possible causes of this divergence from suggested readings to relying upon third-party resources. Additionally, metacognition, or the awareness of one's thinking, is particularly challenging for students.

To better understand differences in the use of study materials, we investigated the resources students used to prepare for class, including what and how they were used, students' perceptions of their value, and if these variables correlated with measurable student performance. We conducted semi-structured interviews with 30 first-year medical students to explore their study habits and resources used for class and exam preparation. We used constant comparative analysis to explore emergent themes in study habit trends. Subsequently, grades will be reviewed to determine trends in performance as it correlates with specific study behaviors.

Preliminary findings indicated a wide range of time spent studying and students' perceptions of the effectiveness of their time. We found that a juxtaposition exists between the perception of "covering" content versus mastery of content which highlights a possible disconnect between how students perceive success and the goals of active learning educators. Although a cross-sectional design limits the scope of our findings and invites potential bias in the interpretation of results, we minimized these limitations by using validated measures and methods for ensuring trustworthiness. To develop generalizable results, we recommend future studies employ a longitudinal design and include students from other institutions. The optimal combination of time, resources, and strategies is not an exact formula but if faculty can create scaffolding for students in how they approach reading materials for active learning, students can implement effective study plans for meaningful content mastery.

Poster: 60

Chasity B. O'Malley, PhD

An Introduction to the Community College Anatomy and Physiology Education Research (CAPER) Project: Teaching Practices for Anatomy and Physiology

O'Malley CB, Bell K, Cromwell C, Farr M, Gerrits R, Hood S, Hull K, Rands V, Smith D, Jensen M

Mentor: N/A

Department: Medical Education

Abstract: Introduction: In order to support faculty teaching at community colleges in their adoption of active learning, the Community College Anatomy and Physiology Education Research (CAPER) project has been initiated. Adoption of active learning modalities has been encouraged through national reports and the scientific literature (Missett and Foster, 2015; AAAS, 2010; Olson and Riordan, 2012), yet the

majority of the human anatomy and physiology courses are still taught in a lecture-based format at community colleges across the country (Smith and Cardaciotto, 2011). The CAPER project is a 5-year NSF funded project designed to provide a transformative experience for community college A&P instructors to facilitate adoption of active learning in their classrooms and change their perceptions and practices related to teaching and learning.

The CAPER project uses an evidence-based teaching approach to provide community college (CC) A&P instructors with useful techniques for enhancing engagement in their classrooms. Participants partake in 2 professional development courses in the first year. The first course covers topics such as social constructivism, assessment techniques, DEI inclusive teaching, and evidence based instructional practices. The second course focuses on educational research. In the second year of the program the participants will conduct a classroom-based research project and present their data at a professional meeting.

Individual instructors collect data on their participating students based on their specific research aims and data is also collected from all participating students on learning and anxiety to expand on these topics and the effects of various teaching interventions through surveys. The participants (instructors) are also being studied through a series of interviews aimed at assessing their approaches to education. Participant data will be evaluated using a mixed methods approach following the conclusion of cohort 4.

This is an ongoing study that will provide quantitative data through the survey responses and qualitative data through the instructor participant interviews.

The CAPER project provides support for community college instructors to engage in active learning in their classrooms and to develop and implement an educational research project related to active learning. This poster will highlight aspects of the overall CAPER project.

Poster: 61

Alaina O'Rourke, and Paul J. Hershberger, PhD

Assessment of Student Motivational Interviewing Skills Throughout the Clerkship Year

O'Rourke A, Hershberger PJ, Castle A, Crawford T

Mentor: Paul J. Hershberger, MD

Department: Family Medicine

Abstract: Introduction:

Introduction: Motivational interviewing (MI) is an effective approach to supporting patients in making health behavior changes for chronic disease management. Despite improved MI awareness and training, studies illustrate inconsistencies in the implementation and sustained practice of MI in clinical settings. Many health professions schools now include some form of MI training in their curricula. MI skills could be practiced on clinical rotations, but the absence of incentives or modeling of MI may preclude skill development. The study objective was to determine whether snapshots of third-year BSOM students MI skills differ as they progress through their clerkship year. The hypothesis was that students whose MI skills are assessed later in the clerkship year will have more clinical experiences and will therefore earn more MI-consistent scores than those whose skills are assessed earlier in the year.

Poster: 62

Samantha Roberts

Can Residents be Productive in a Month Research Rotation? Impact of a Dedicated Research Rotation on Resident Productivity and Attitudes Towards Research

Posid T, Roberts, SA, Scimeca A, Khuhro A, Diab D, Denis-Diaz D, Ballinger J, Moore C, Sharp D, Lee C

Mentor: Tasha Posid PhD

Department: Urology

Abstract: Introduction: Urology residents are expected to be clinician-scientists actively involved in research while honing their surgical skills. Proposed methods to increase resident research productivity include longitudinal mentoring, protected time, financial incentives, and formal curricula. Our residency program launched a month-long research rotation for PGY2-4 annually. The goal of this rotation was to expand knowledge of the research process, provide dedicated time for research, and increase scholarly output. We assessed the impact of this new research rotation on resident research productivity and attitudes toward research.

Poster: 63

Zenab Saeed and Azl Saeed

Implementing a novel student-led review session for clerkship final exam preparation

Saeed Z, Saeed A, Kindig M, Towers G

Mentor: Marilyn Kindig, DO

Department: Obstetrics and Gynecology

Abstract: Introduction: Final examinations, usually in multiple-choice format, are used to assess knowledge in an objective manner, constitute part of clerkship grades during clinical years, and offer insight for board examination preparedness at many medical schools. Due to the high volume of information in medical school, students may struggle to identify topics to review for examinations. Review sessions allow students to practice test-taking strategies and identify areas for study focus. Peer-led sessions specifically may offer these benefits while simultaneously allowing practicing of skills related to teaching and medical education. The purpose of the current research was to assess the effectiveness of a review session for third-year clerkship students in preparation for the final OB/GYN examination.

Poster: 64

Amber Todd, PhD and William Romine, PhD

Using Rasch Measurement to Visualize How Clerkship and Extracurricular Experiences Impact Preparedness for Residency in an Undergraduate Medical Program

Todd A, Romine W

Mentor: N/A

Department: Medical Education

Abstract: Introduction: National survey data provided to institutions are often only used for reporting purposes and not typically used for secondary data analysis to provide actionable changes. We describe

the use of Rasch analysis on data from the AAMC GQ from one allopathic undergraduate medical school to determine the impact of the clinical clerkship experience and participation in extracurricular activities on perception of preparedness for residency. We show how to use Rasch analysis to elucidate the types of activities that could be beneficial to students given their clerkship experience and how other institutions can do the same to help inform curricular changes.

Poster: 65

Colette Beard

The Future of Correctional Healthcare: A Literature Review & Call to Action

Beard C , Iversen P

Mentor: P. Iversen

Department: Psychiatry

Abstract: Introduction: This project highlights the current state of healthcare in correctional facilities in the United States and discusses how training for this setting may be incorporated into the modern era of medicine in efforts that those who are locked up or locked out of mainstream society are not forgotten. The U.S. has a higher rate of incarceration than any country in the world. In the U.S. today, there are 2.3 million people in jails and prisons and twice as many people on probation or parole. This public health issue has become known as mass incarceration. Racial disparities have grown particularly stark for Black Americans in the setting of systemic racism. Medical care in correctional facilities in the U.S. is informed by the legal case of *Estelle v. Gamble, 1976*. The Supreme Court deemed that deliberate indifference to serious illness or injury in a prisoner can be considered cruel and unusual punishment in violation of the 8th Amendment. Cases following this ruling have upheld the right to access to care that has been ordered by a health professional. When Congress authorized the creation of Medicare and Medicaid in 1965, it prohibited the programs from paying for health care in the nation's jails and prisons. This inmate exception, has led to an under-resourced correctional health care system isolated from mainstream medicine and from external quality oversight. Patients suffer the consequences.

Poster: 66

Andrea Costin

Air Pollution and Social Determinants of Health throughout U.S. Counties

Costin, A., Clark, A.

Mentor: Jeannette Manger, PhD

Department: Medical Education

Abstract: Introduction: Environmental factors play a crucial role in the health of the public. Air pollution is a major cause of mortality and morbidity, especially for children. Exposure levels need to be further evaluated relating to the socioeconomic status of residents. This report describes the most recent data on air pollution exposure and available county data on social determinants of health.

Poster: 67

Brooklynne Dilley

Sammy Roberts

Childhood Underinsurance During the COVID-19 Pandemic

Dilley, B. A., Roberts, S., Stolfi, A., Eberhart, G., & Pascoe, J.

Mentor: Dr. John Pascoe, MD

Department: Pediatrics

Abstract: Introduction: Access to health insurance plays a vital role in children's health. The significant disparity in children's health insurance affects their access to quality health care. Earlier work has found no effect of the Affordable Care Act on children's underinsurance status in southwestern Ohio. This study examines childhood underinsurance in southwestern Ohio during the COVID-19 pandemic.

Poster: 68

Eshita Garg

Racial Bias and Abortion Stigma: Assessing the Association of the Stigmatizing, Attitudes, Beliefs, and Actions Scale (SABAS) and the Racial Implicit Association Test (IAT) in Medical Learners

Garg E, Reisinger-Kindle K

Mentor: Keith Reisinger-Kindle, DO, MPH, MS

Department: Department of Obstetrics and Gynecology

Abstract: Introduction: Patients report that discussing abortion during primary care visits helps reduce stigma and create positive decision-making. Thus, abortion-related stigma can create negative experiences for patients and inter-professional colleagues. Individuals who are affected by abortion stigma experience other forms of discrimination as well, further reinforcing their marginalization in society. To reduce abortion stigma and provide safer abortion access, all levels and types of biases, including racism, must be addressed. Hence, we aim to analyze the relationship between abortion stigma and racial bias in medical learners to clarify the role of intersectionality in developing meaningful patient-clinician interactions.

Poster: 69

Monica George and Estelle Viaud-Murat

Global Healthcare Corruption & the Patient Experience: Insight from Two Decades of Literature

George, M., Viaud-Murat, E., Ali, M.

Mentor: Mohammed Ali, MD

Department: Emory University Hubert Department of Global Health

Abstract: Introduction: Patients across the world are plagued by corruption within the healthcare system. From bribes, kickbacks, false claims, misutilization, ethical breaches, to poor process, corruption affects patients in a multitude of ways. While the existing body of literature extensively describes corruption in healthcare, the impact on the individual patient is poorly understood. Our aim is to clarify what healthcare corruption means for the individual, and hopefully serve as an impetus to address its coercive effects.

Poster: 70

Brittany Hugue, Rose Maxwell, PhD, Keith Reisinger – Kindle, DO, MPH, MS

From Listening to Action: Improving Breastfeeding Among Black-Identifying Women in Dayton, Ohio

Hogue B, Maxwell R

Mentor: Rose Maxwell, PhD

Department: Obstetrics and Gynecology

Abstract: Introduction: Black identifying women have lower rates of initiating breastfeeding and have substantially lower rates of continuing breastfeeding through 6 months than other racial groups. This project builds upon the results of 3 focus groups about breastfeeding (challenges and facilitators) among Black identifying women by extending the conversation to the communities serving these women. The purpose of this project is to develop an overarching framework for community action for improving breastfeeding among Black identifying women and to develop an intervention consistent with the theoretical framework and the needs of the community.

Poster: 71

Hayden Jaworski, Joseph Stefko, and Charles Cush

Increasing Incidence of Lower Trunk Fractures in the Very Elderly Population in the United States in the Last Decade

Jaworski H, Stefko J, Cush, C, Lyons, J

Mentor: Joseph Lyons MD

Department: Orthopedic Surgery

Abstract: Introduction: Elderly individuals (80+ y/o) are especially prone to fragility fractures, and the burden of geriatric fractures is expected to increase accordingly. Previous research suggests that fractures of the lower trunk are the most common types of fractures in the elderly. This study investigates the incidence and demographics of US elderly patients with lower trunk fractures during the most recent decade.

Poster: 72

Clara Joseph

The Impact of Education and Motivational Interviewing on Rates of Flu Vaccination in Primary Care

Joseph C, Conway, K

Mentor: Katherine Conway, MD

Department: Family Medicine

Abstract: Introduction: Historically, Influenza vaccination has been shown to lower the rates and severity of infection with the flu. This widely accepted view on vaccinations does not always translate over to vaccination rates among patients. The U.S. influenza vaccination rate was 49.4% in 2021-2022. While in Ohio, this rate was slightly lower at 47.6%, and even lower in certain regions of the state.¹ To address vaccination rates, a quality improvement project was conducted in a family practice office.

Poster: 73

Serena Kaul

Increasing Preparedness of Providers at Roche Health Center in Rural Tanzania to Recognize Signs of Domestic Violence Among Their Female Patients

Kaul S, Burbage M, Doarn C

Mentor: Michelle Burbage, PhD and Charles Doarn, MBA

Department: Environmental and Public Health Sciences

Abstract: Introduction: Domestic violence (DV), also known as intimate partner violence (IPV), is a serious health issue with a prevalence reported to be up to 30% worldwide. There is a much higher prevalence in Tanzania (65%) where it is compounded by socio-economic and cultural issues. Despite the United Nations efforts in clearly defining DV as abuse that can be physical, sexual, emotional, economic, or psychological, regional socio-cultural factors severely obscure the recognition of acceptable versus unacceptable practices in the community.

Poster: 74

Alexis Marrin and Amanda Hinson-Enslin, Ph.D., M.P.H., C.H.E.S.

Assessing Readability of Online Resources About Depression

Hinson-Enslin AM, Cai S, Idrees A, Marrin AP, James AM

Mentor: Amanda Hinson-Enslin, Ph.D., M.P.H., C.H.E.S.

Department: Population and Public Health Sciences

Abstract: Introduction: Many people turn to the internet for health information, including resources on mental health, and mental health promotion materials are offered online from countless organizations. However, the reading level of these materials can impact the accessibility of this information for the general public, who read at a 7th to 8th grade level on average. The purpose of this study was to determine the readability of mental health promotion materials related to depression offered online by non-profit and non-government organizations.

Poster: 75

Arjun Minhas

Socioeconomic Deprivation is Predictive of Postoperative Loss to Follow-Up in Patients with Tibial Shaft Fractures

Berkay F, Reichard A, Minhas A, Froehle AW, Horne BR

Mentor: n/a

Department: Orthopaedic Surgery

Abstract: Introduction: Socioeconomically disadvantaged communities demonstrate higher rates of healthcare utilization, morbidity, and mortality than the national average. The Area Deprivation Index (ADI) is a metric that utilizes U.S. Census data to quantify socioeconomic disadvantage for a region of interest. A higher ADI indicates an area of higher socioeconomic deprivation. Patients who sustain operative traumatic orthopaedic injuries are at risk for nonunion, malunion, infection, and wound

complications if not recognized and addressed in the acute postoperative period. The purpose of this study was to determine if ADI may predict noncompliance with postoperative follow-up visits after intramedullary (IM) nailing for fractures of the tibial diaphysis.

Poster: 76

Emma Newman and Erika Nguyen

Increasing Awareness of T2DM Risk Factors through an Online Diabetes Screener in Nicaragua: A Promising Modality in a Post-COVID World

Newman E, Nguyen E, Lee J

Mentor: Jennifer Lee, DO, MPH

Department: Family Medicine

Abstract: Introduction: The International Diabetes Foundation identified diabetes mellitus (DM) as the second leading cause of death and second most common non-communicable chronic disease in Nicaragua in 2021.¹ It is estimated that 44.8% of Nicaraguans have undiagnosed DM, versus 12.5% of Americans,^{2, 3} contributing to their 211 million dollars in DM-related mortality expenditure in 2021.^{2, 4} Nicaragua's transition to universal health care coverage in 2010 reduced many health care barriers, yet is estimated to provide only 57.2% effective, essential health services to all citizens.⁵ The primary objective of this study was to analyze survey results from the online promotion of a novel type II diabetes mellitus (T2DM) risk screener. The screener was modified from the standard American Diabetes Association for OneWorld Health ambulatory care patients in Nicaragua, and performed with near equal sensitivity, specificity, and odds ratio of predicting prediabetes and diabetes risk.

Poster 77

Noah Parker and Kristen Waters

Low-Acuity Pediatric ED Utilization: Caregiver Motivations

Parker, N, Bufi, K, Waters, K, Almeda, J, Stolfi, A, Ziemnik, L.

Mentor: Lisa Ziemnik, MD

Department: Pediatrics

Abstract: Introduction: Proper ED utilization is a hallmark of population health. ED overcrowding due to non-urgent visits causes increased stress to healthcare staff, higher costs, and longer wait times for more urgent cases. This study seeks to better understand post pandemic reasons caregivers have when bringing in their children for non-urgent visits and devise effective interventions to improve caregiver choice for non-ED care for nonurgent conditions.

Poster: 78

Josef K Rivera, Sydney Silverstein, PhD, Danielle Gainer, MD

Contemplating treatment: A qualitative study on the trajectories of people with OUD after incarceration's

Fazel S, Yoon IA, Hayes AJ, Green TC, Clarke J, Brinkl

Mentor: Sydney Silverstein, PhD; Danielle Gainer, MD
Department: Population and Public Health Sciences; Psychiatry

Abstract: Introduction: Among the 2.3 million incarcerated individuals in the U.S., about 65% has an active substance use disorders (SUDs), and approximately 1 in 3 incarcerated individuals have been diagnosed with opioid use disorder (OUD). Moreover, studies have found that fatal overdose is often preceded by incarceration episodes. Numerous studies have demonstrated the benefits of medications for OUD (MOUD) for incarcerated individuals. Despite the evidence, many individuals are not treated with MOUD because it is typically not standard-of-care among jails and prisons across the US.⁴ While there have been qualitative studies that have analyzed the perceptions of post-incarcerated people on their current MOUD treatment, our knowledge is limited on the thoughts, beliefs, and motivations of people while incarcerated and transitioning out of prison/jail.⁵ Reflections about this transition period, and the factors influencing decisions to seek treatment, attempt sobriety, or return to use are crucial to contextualizing the subsequent trajectories stemming from these choices. This study will explore how these post-incarceration trajectories highlight the various barriers to treatment.

Poster: 79

Samantha Roberts and Brooklynne Dilley
Children and COVID-19: A Primary Care Perspective

Roberts SA, Dilley BAS, Stolfi A, Eberhart G, Pascoe J

Mentor: John Pascoe MD, MPH

Department: Pediatrics

Abstract: Introduction: The COVID-19 pandemic has negatively impacted many children and their families. This study documents several aspects of caregivers' (CGs) perspectives of COVID-19's putative effects on children and their families. Study surveys were administered as children visited their child's primary care pediatrician.

Poster: 80

Samantha Roberts

Considering Patient-Perceived Barriers to Urologic Healthcare Access from the Perspective of Elderly Patients in a Retirement Community

Roberts SA, Denis-Diaz D, Sourial M, Moore C, Lee C, Posid T

Mentor: Tasha Posid PhD

Department: Urology

Abstract: Introduction: The elderly and individuals with significant comorbidities are commonly affected by urologic problems but are often limited in their healthcare resources, including insurance coverage and transportation. Given the lack of patient-reported barriers to seeking and accessing urologic healthcare in the scholarly literature, the objective of this study was to investigate perceived barriers specific to an elderly population currently residing in retirement homes to better describe this patient population for providers of this demographic. Findings are compared to a previously-collected sample of patients from a local underserved community clinic (N=183) and a sample of Urology patients at our large academic institution (UH; N=232, control sample).

Poster: 81

Estelle Viaud-Murat

Management of Schizophrenia and Acute Psychosis in a patient of Fulani (Peul) culture with non-English Language Preference

Viaud-Murat E, Bhatt N

Mentor: Nita Bhatt, MD MPH

Department: Psychiatry

Abstract: Introduction: Refugees are 2.9 more likely to develop Schizophrenia compared to the general population. Refugee men face an even higher risk. Disparities in both access to and quality of psychiatric care are well documented among racial and ethnic minorities in the US. This case report aims to raise awareness about culturally sensitive psychiatric care for ethnic and cultural minorities.

Poster: 82

Katherine Wilcher and Timothy N Crawford, Ph.D., M.P.H.

Engagement with Healthcare Providers and the Relationship among HIV-Related Stigma, Discrimination, and Engagement in HIV Care among Older African Americans Living with HIV in Ohio

Wilcher K, Spaulding T, Cheribin D, Crawford TN.

Mentor: Timothy N Crawford, Ph.D., M.P.H.

Department: Population and Public Health Sciences; Family Medicine

Abstract: Introduction: In the United States, older African Americans (AA) are disproportionately impacted by HIV and experience higher levels of discrimination in the healthcare setting. Research has shown that HIV-related stigma affects patient health outcomes for people living with HIV (PLWH) through decreased engagement in care (e.g., retention in care, medication adherence, viral suppression). Thus, it is pertinent to investigate how engagement with healthcare providers (HCP) impacts health outcomes for PLWH through experiences of stigma and discrimination.

Poster: 83

Elizabeth Zinn and Olivia Orshoski

Psychotic Symptoms Following Methamphetamine Use

Marco CA, Repas SJ, Clark AN, Hefner DW, Zinn EJ, Orshoski OM, Nanditha R, Ballester MJ

Mentor: Catherine A. Marco, MD, FACEP

Department: Emergency Medicine

Abstract: Introduction: Methamphetamine use is common among Emergency Department (ED) patients, and may be associated with mental health conditions, including depression, anxiety, and psychosis. This study was undertaken to describe psychotic symptoms among patients who use methamphetamine.

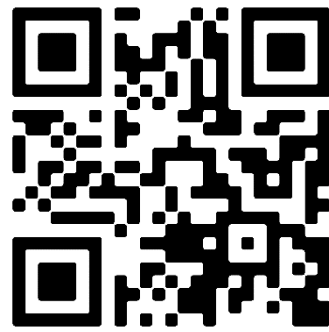
Acknowledgements

The 2nd Annual Boonshoft School of Medicine Research Symposium was made possible by the support of Dr. Valerie Weber, Dean of Boonshoft School of Medicine, and Dr. Paul Hershberger, Associate Dean of Research Affairs.

A big thank you to all of our faculty mentors.

Thank you to those who helped coordinate this event: Dr. Jeannette Manger, Jennifer Schantz, and Priya Small.

Thank you to BSOM MedOps and the American Medical Student Association for their support during the day of the symposium.



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