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ABOUT JCHP CCRE

The Jefferson College of Health Professions Collaborative Capstone and Research Exchange, sponsored by the JCHP Research Council, and established in 2022, is an annual event featuring podium and poster presentations showcasing research/scholarship conducted by both students and faculty. This event provides an opportunity for students, faculty, and alumni across the college's diverse programs and departments to develop and refine their ability to disseminate research in a professional environment, gaining constructive feedback from experienced faculty, clinicians, and scholars, while fostering interdisciplinary collaboration. JCHP CCRE is an essential part of the JCHP Research Council's commitment to creating a rich scholarly environment that generates innovative research questions and supports the development and continuation of curious, confident, and collaborative future leaders in healthcare.

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Podium Presentation Abstracts

Integrating Doulas into Maternity Care: A Qualitative Study on Collaboration and Care Experiences in Black Maternal Health

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PD1

- DHSc Program Research Project

Abstract:

Black birthing people in the U.S. experience alarmingly high maternal mortality rates. Culturally congruent doula care may help, but knowledge on doula integration into hospital care teams is limited. This qualitative study explores the experiences of doulas at a safety net hospital in Philadelphia. Findings may guide improved teamwork and outcomes for Black birthing persons.

Implementing Effective Care by Improving Attendance to the Comprehensive Postpartum Visit in an Urban Hospital Practice

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- Capstone

PD2

Abstract:

Approximately 40% of postpartum patients do not return for comprehensive postpartum visits. Up to 20% of postpartum patients suffer from depression or anxiety. One-third of deaths related to pregnancy occur between 7 days to 1-year postpartum. Only 27% of new moms returned for comprehensive postpartum or check-in visits during the first 3 weeks postpartum. The providers did not perform depression screening for these postpartum outpatients. This quality initiative aimed to provide effective care by increasing postpartum follow-up to 80% in 90 days.

De-Stigmatization for Individuals with Severe Mental Illness and Substance Use Disorder: A Multi-Method Approach to the Development of the Biondo REACH Training Program for Healthcare Students

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- Applied Research

Abstract:

Despite the development of de-stigmatization training programs, individuals with severe mental illness (SMI) and/or substance use disorder (SUD) continue to face profound levels of stigmatization from their healthcare providers (HCPs). Stigmatizing behaviors exhibited by HCPs exacerbate dehumanizing and devaluing experiences and inhibit people with SMI and SUD from seeking services. Moreover, recipients of stigmatization from HCPs experience poorer physical and mental health outcomes, self-esteem, and self-efficacy, and overall quality of life. Although some de-stigmatization trainings have shown to be useful in reducing stigmatizing beliefs, there is a need to address the primary concerns expressed both by healthcare students and individuals with SMI and/or SUD. We employed a multi-methods study to: (1) understand the lived experience of individuals with SMI and/or SUD and their interactions with HCP, (2) examine self-reported perceptions of healthcare students' stigmatizing beliefs towards individuals with SMI and/or SUD, and (3) develop preliminary goals towards creating a collaborative training program co-taught with people with lived experience (PWLE) of SMI and/or SUD. We collected quantitative data from healthcare students at an urban university using the Attribution Questionnaire and lived experiential qualitative data from individuals with SMI and/or SUD through focus groups. Results showed that healthcare students primarily exhibit pitying and helping stigmatizing behaviors, while PWLE feel dehumanized, devalued, and excluded from their treatment. Our training program—Rehumanization, Empathy, Attunement, and Compassion in Healthcare (Biondo REACH)—will be developed and co-taught by PWLE, focusing on the identified gaps in healthcare services between PWLE and HCP.

PD3

Infertility Screening in the Caribbean: A Scoping Review Protocol

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- DHSc Program Research Project

Abstract:

The study aims to synthesize existing evidence on healthcare providers' perspectives regarding infertility screening tools in the Caribbean. Using an evidence synthesis approach guided by the Joanna Briggs Institute framework, the study will examine qualitative and mixed-methods research and relevant grey literature involving physicians, nurses, midwives, and other reproductive health providers. The review will describe the types of infertility screening tools used in Caribbean healthcare settings, how these tools are applied in practice, and providers' perceptions of their utility and effectiveness. In addition, the study will identify systemic and sociocultural factors that influence the availability and use of infertility screening. The findings are expected to provide an overview of current screening practices, highlight barriers and facilitators to implementation, and inform future research, policy, and practice aimed at improving infertility detection and reproductive health care in the Caribbean.

Mental Health Disparities in the SGD Community: Relationship Between Disability and Mental Illness

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- DHSc Program Research Project

Abstract:

Sexually and gender diverse (SGD) people and people with disabilities separately show increased mental illness prevalence and substance use, potentially due to the impacts of minority stress, discrimination, and reduced access to resources. However, research on mental health outcomes for individuals who are both SGD and disabled is limited, particularly regarding disaggregated, specific SGD identity groups. The purpose of this study is to examine mental health disorder prevalence among disaggregated SGD communities with and without disabilities.

This project utilized data from 44,595 SGD participants in the All of Us research program. Participants were sorted based on whether they identified with at least one disability category, including mental, physical, and emotional conditions. The prevalence of anxiety, depression, eating disorders, and substance use disorders was compared between disabled and nondisabled participants disaggregated by specific SGD identity using chi-squared analyses.

Disabled SGD participants in nearly every subgroup showed higher frequencies of mental health conditions than participants without disabilities. Disaggregation and analysis by specific identity groups revealed one difference that was obscured when SGD participants were analyzed as a single group: disabled transgender women did not show higher frequency of depression than those without a disability.

This study reflects a disparity in mental health outcomes indicating a need for improved awareness of the mental health needs of disabled SGD Americans. More research is necessary to better understand the experiences and health needs of SGD individuals with disabilities disaggregated by sexual orientation and gender identity, particularly targeting SGD communities that are underrepresented in research.

Poster Presentation Abstracts

Dental Hygiene Alumni Descriptions of Clinical Experiences

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- DHSc Program Research Project

Abstract:

Purpose: Despite evidence that clinical instructors play a crucial role in student success within dental hygiene programs, the clinical experience of students in the context of fulltime vs parttime faculty remain under explored in the existing research. The purpose of this qualitative descriptive study is to explore how dental hygiene alumni describe their experiences with the clinical education component of their dental hygiene program, at Manor College in Jenkintown, PA, in relation to the differences among clinical faculty.

Methods: This study used a qualitative descriptive research design with a purposive sample of dental hygiene alumni from Manor College. An emailed online anonymous survey was sent out to all 2023, 2024, and 2025 alumni. The survey opened in July 2025 and closed in October 2025. To provide rich insights into students' experiences with faculty of different statuses, Braun & Clark's thematic analysis was utilized, which is commonly used in qualitative analysis. This method enables the researcher to identify and interpret themes within data (Braun & Clark, 2006). Survey responses were extracted into a cohesive transcript and reread multiple times to ensure accuracy. The data was organized using a qualitative research software, Dedoose. Responses were coded and organized into defined themes. A second-coder was used to establish validity and reliability.

Results: Eighteen dental hygiene alumni from Manor College participated in the study. The themes identified were Faculty to Student Dynamics, Support and Mentorship, Faculty Roles and Structural Demands, and Educational Quality and Real-Life Practice.

Conclusion: Differences among faculty based on status may influence clinical experiences in dental hygiene programs. Implications include implementing a mentoring program with faculty development opportunities, as well as and policy recommendations to enhance clinical experiences for students. Additional studies identifying differences among dental hygiene faculty age and experience in clinical education are needed.

P1

The Role of Identity Intersectionality in Healthcare Stigmatization

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- DHSc Program Research Project

Abstract:

The phenomenon of stigmatization can be conceptualized as the act of people altering their behavior toward individuals possessing characteristics that are societally minoritized, manifesting in stereotyping, exclusion, and microaggressions. Stigmatization has been studied in healthcare settings to understand how it emerges, is experienced, and contributes to health disparities for populations with frequently stigmatized characteristics. Within healthcare, these characteristics include ethnoracial identity, gender, sexual orientation, and socioeconomic status (SES), also referred to as the “big four” of intersectionality. Additionally, certain diagnoses, such as severe mental illness (SMI) and substance use disorder (SUD), are frequently stigmatized in healthcare. Stigmatization is especially prevalent when an individual identifies with more than one of these characteristics. Little is known regarding the minoritization of the “big four” characteristics as it intersects with a diagnosis of SMI and/or SUD. Moreover, it is unknown if and how this may manifest in experiences of healthcare stigmatization. Exploring the effects of intersectionality is crucial for a deeper understanding of SMI- and/or SUD-based stigmatization. The purpose of this qualitative phenomenological secondary analysis of focus group data is to understand how experiences of healthcare stigmatization for individuals with SMI and/or SUD intersect with ethnoracial, gender, sexual orientation, and/or SES minoritization in the Philadelphia, Pennsylvania area. A total of 40 individuals with a diagnosis of SMI and/or SUD participated in one of six focus groups that comprised the data for the original study, which were used in our secondary analysis. The data were analyzed using Braun and Clarke’s (2019) reflexive thematic analysis, producing themes representative of the participants’ voices. Emerging themes in the data are (1) complexity of emotional evocation related to healthcare and intersectionality, (2) lacking or missing components of healthcare, (3) deterrence from healthcare seeking for individuals with intersecting identities, (4) contributing factors that support healthy patient-provider relationships, (5) interpersonal deficits between healthcare providers and patients, and (6) additional burdens that are placed on patients with intersecting identities. Emergent results suggest that individuals with intersectional identities experience profound and complex stigmatization when seeking healthcare services, which inhibits service-seeking, accessibility of services, healthcare equity, and relational dynamics within these populations. These findings may inform the development of training and interventions that support greater awareness and foster change in healthcare professional behavior.

P2

Community, Belonging, and Intimacy for Individuals Who Are Societally Dehumanized: A Scoping Review

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- DHSc Program Research Project

Abstract:

Dehumanization, the denial of uniquely human qualities, is a phenomenon shown to have negative consequences, including exacerbated social exclusion, poor mental health, diminished self-worth, stigma, and discrimination. Populations who experience historical and ongoing dehumanization include but are not limited to individuals who are incarcerated, immigrants and refugees, individuals who are unhoused, individuals of higher weights, and individuals who are racially and gender minoritized. Although the repercussions caused by dehumanization are well documented, the existing literature has not yet offered a comprehensive overview of the effects of societal dehumanization. Therefore, the objective of this scoping review to identify and map the impact of dehumanization on individuals' sense of community (individuals' perception of connection and shared identity within a group), belonging (feelings of acceptance and inclusion), and intra- and interpersonal intimacy (physical and emotional closeness in relationships). The review was conducted using the Joanna Briggs Institute (JBI) methodology and adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-ScR) guidelines. Covidence was used as the bibliographic software and data management tool. Two independent reviewers screened 256 articles at the title and abstract level, 79 full texts, and extracted data from 41 studies. Analysis of these articles is ongoing; however, we have identified the following emergent themes: (1) discrimination and marginalization; (2) re/integration; (3) symbolic violence; (4) institutional and interpersonal settings; (5) intersectionality; and (6) disrupted belonging and social isolation. Final synthesis of the studies may provide direction for recommendations for future interventions, training, and research aimed at rehumanization and improving outcomes for individuals who have been societally dehumanized. Moreover, indications of necessary policy changes may be offered.

P3

How Perfusion Graduates Describe Clinical Training in Perfusion Education: A Qualitative Descriptive Study

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- DHSc Program Research Project

Abstract:

A deeper understanding of the clinical experiences of perfusion graduate students is essential to provide insights into the challenges and successes of their training. The purpose of this qualitative descriptive study is to explore how perfusion graduates describe their clinical training experiences in graduate school. Using a qualitative descriptive design, nine certified cardiovascular perfusionists with 1–5 years experience were interviewed using semi-structured interviews. The interviews were transcribed verbatim and analyzed using Braun and Clarke's (2009) 6-step process. The four major themes to how perfusionists described their clinical training include: the value of experiential learning, experiential learning promotes workforce readiness, the impact of preceptor-student relationship, and the stress and challenges of clinical experiences. Despite method of clinical training, TCT versus SBT, perfusionists described workforce readiness being impacted by experiential learning, formed relationships with clinical preceptors, and learning how to adapt to the stresses and challenges of the clinical environment. Insights from this study may guide educators and accrediting bodies, such as the AC-PE, in refining clinical curricula, integrating simulation effectively, and strengthening workforce readiness in the evolving field of perfusion education.

P4

It Takes a Village: How Black Birthing People Perceive their Experiences with Doulas

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- DHSc Program Research Project

Abstract:

Black birthing individuals are disproportionately affected by maternal health disparities and maternal mortality. Doula care is speculated to help mitigate the effects of existing inequities to improve Black maternal health; however, it is not known how Black birthing people perceive their experiences with doulas throughout their pregnancy, birthing, and postpartum periods. The purpose of this qualitative descriptive study is to explore how Black birthing people at a safety net hospital in Philadelphia, PA, perceive their experiences with doulas. Participants enrolled in the Change of HEART study at Temple University will be recruited using purposive sampling. Participants include those who have had at least two prenatal doula visits, one postpartum doula visit, are 18 years or older, and are fluent in English. The participants' doulas may or may not have been present at their births. Data will be collected through semi-structured interviews and analyzed using Braun and Clarke's six step process for reflexive thematic analysis. Understanding the patient perspective of doula support may help explore whether this intervention can improve maternal health outcomes of Black birthing people and reduce the health inequities experienced by this population. Data collection is currently in process, and findings will be reported following data analysis.

P5

Investigating the Relationship Between Practice-level Medicaid Proportion to Patient-perceived Primary Care Access: A Correlative Study

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- DHSc Program Research Project

Abstract:

Patient-perceived primary care access (PPPCA) is a measure that reflects patients' individual experience of access to primary care. Importantly, PPPCA has not been explicitly evaluated in relationship to health insurance coverage despite evolving care delivery dynamics. This study is a first step to fill this gap by determining if and to what extent the percentage of Medicaid recipients in a medical practice relates to PPPCA of Jefferson Primary Care practices. Findings suggest that Medicaid coverage persists as a barrier to PPPCA, revealing inequities and underscoring the importance of incorporating patient perceived access to inform insurance policy reform.

P6

UTX Inhibition Alters Myofibroblast Mechanosensing Without Eliminating Cell Persistence in Fibrosis

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- Basic Research

Abstract:

P7

Fibrosis is a progressive disease characterized by excessive deposition of fibrous connective tissue driven by alpha smooth muscle actin–positive (α SMA+) myofibroblasts and mechanical feedback signaling. Previous work identified UTX, an H3K27me3 demethylase, as a key regulator that maintains chromatin in a decondensed state, enabling activation of fibrotic gene programs following lens injury. Inhibiting UTX after fibrosis induction halted further myofibroblast differentiation and extracellular matrix production; however, preexisting myofibroblasts persisted. This study investigated whether these remaining cells retain the mechanical properties necessary to drive fibrosis. An ex vivo post-cataract surgery lens explant model that mimics posterior capsule opacification was used. Explants were treated on day 6 with either vehicle or 7.5 μ M GSKJ4 to inhibit UTX activity. Cultures were fixed three days later and immunolabeled for α SMA, talin, actin, and nuclei, then imaged using fluorescence microscopy. RNA sequencing data were also analyzed to identify differentially expressed genes and associated gene ontology pathways. Vehicle-treated myofibroblasts displayed talin-rich focal adhesions connected to actin stress fibers, consistent with normal mechanosensing. In contrast, GSKJ4-treated cells showed redistribution of talin from basal adhesions to apical surfaces, indicating disrupted focal adhesion organization. RNA sequencing revealed downregulation of cytoskeletal and actin-related pathways, including SRF, ITGB3, ACTC1, and SMTN. These findings demonstrate that UTX inhibition alters mechanosensing and cytoskeletal organization in persistent myofibroblasts without eliminating them. This suggests that targeting UTX weakens fibrotic mechanical signaling while leaving residual cells with altered functional capacity, highlighting its potential as a therapeutic strategy.

Strengthening Urban Neighborhoods: Enhancing Household Emergency Preparedness in Philadelphia, PA

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- Applied Research

Abstract:

Urban communities face increasing environmental, infrastructure, and public health threats that demand effective household emergency preparedness (HEP). Socioeconomic disparities, housing conditions, and health vulnerabilities compound risk in all communities which necessitates the understanding and requisite actions for household resilience. This study utilizes an augmented Household Emergency Preparedness Instrument (HEPI) to compare household preparedness between two diverse Philadelphia neighborhoods. Our findings demonstrate multi-faceted challenges that constrain household emergency preparedness. Interventions must inform households of not only what to have to be prepared but also how to prepare for disasters.

Optimal Management of Embedded Unexploded Ordnance: A Scoping Review

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- Applied Research

Abstract:

The use of explosive weapons in modern warfare is widespread and yields longstanding physical and psychological impacts. Embedded unexploded ordnance (UXO) is a rare but potentially hazardous incident for patients and care providers. Understanding the approach to planning, identification, and management of injuries involving embedded UXO is critically important for the safety of care providers and patient outcomes.

Breaking Barriers: Harnessing Collaboration Between Individuals with Disabilities and Emergency Management in New Jersey

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- Capstone

Abstract:

This capstone examines the challenges and barriers faced by Core Advisory Groups (CAGs) in New Jersey, which aim to foster collaboration between individuals with disabilities and emergency management. It finds that while CAGs are conceptually strong and have increased inclusion, their effectiveness is limited by insufficient stakeholder participation, lack of government support, resource constraints, and implementation gaps. The author recommends greater engagement, support, and investment from local governments to make emergency management more inclusive for people with disabilities.

Parent and Caregiver (Guardian) Perceptions of Their Collaboration with Schools in Supporting Neurodiverse Youth

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- DHSc Program Research Project

Abstract:

P11

Existing literature suggests that family-school collaboration can significantly improve the educational experience for students with ASD and other neurodevelopmental conditions that fall into the broader category of “neurodiversity” (Blair et al., 2011; Fernández Cerero et al., 2024; Garbacz et al., 2016). However, the experiences of neurodiverse students and their families at specialized private schools for this unique population are not well understood. The purpose of this quantitative descriptive study is to explore how guardians (parents and caregivers) of neurodiverse students evaluate family-school collaboration at an independent, private school for neurodiverse youth in the southeast region of Pennsylvania. Participants will be recruited using a combination of purposive and convenience sampling and will include guardians of neurodiverse students who are currently enrolled at the school, as well as those whose children were previously enrolled. Participants will receive a survey that includes four domains from the validated Family–School Relationships Survey developed by Panorama Education, as well as an additional domain created by the research team in partnership with the school (Gehlbach et al., 2025). This study is currently under IRB review, and we expect data collection to commence shortly. Findings from this study may inform school-level practices aimed at strengthening family engagement in specialized private settings. Results may contribute to the limited body of research on family-school collaboration within private neurodiverse educational environments and support future qualitative investigations in this area.

Navigating Real-Life Caregiving Experiences in Brain Injury Rehabilitation: A Qualitative Study of Psychosocial Impacts and Community Contexts in Ireland

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- DHSc Program Research Project

Abstract:

Caregivers of people with severe acquired brain injury (sABI) play a vital role in rehabilitation and patient well-being, yet often encounter significant emotional, social, and practical challenges. In Ireland, the organization and availability of rehabilitation services may place additional demands on caregivers. While existing research has explored caregivers' experiences during the acute phase of rehabilitation, there remains a gap in understanding the needs of this population during the chronic phases of care. This poster highlights key findings from a qualitative descriptive study exploring the lived experiences of familial and kinship caregivers of people with chronic sABI in Ireland. Findings will be presented through concise thematic summaries and illustrative quotations, with attention to implications for rehabilitation practice, caregiver support, and community-based services. The poster format will prioritize clarity, accessibility, and visual organization to support knowledge translation for interdisciplinary audiences.

Prevalence and Correlates of Pre-Exposure Prophylaxis (PrEP) Use among Adults in Urban Primary Care Settings: A Retrospective Exploratory Analysis

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- Capstone Research Project

Abstract:

P13

The purpose of our study is to identify the prevalence of adults prescribed pre-exposure prophylaxis (PrEP) to treat Human Immunodeficiency Virus (HIV), exploring the role of primary care providers in HIV treatment and disease management. Sociodemographic and health correlates among adults prescribed (PrEP) in urban primary care settings within the Jefferson Enterprise will be identified using a retrospective exploratory analysis on patient data in EPIC. Findings will be used to explore unique correlates among adult primary care patients and implications for PrEP administration, HIV treatment, and comprehensive management in urban primary care settings.

Analyzing the Role of NELFE in Pancreatic Ductal Adenocarcinoma

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- Basic Research

Abstract:

P14

Pancreatic ductal adenocarcinoma (PDAC) is an aggressive cancer with a poor prognosis and a high prevalence of oncogenic KRAS mutations, which activate the transcriptional programs that promote tumor growth, survival, and metastasis. RNA-binding proteins (RBPs) have emerged as important regulators of cancer progression due to their transcriptional and post-transcriptional activities. Negative elongation factor E (NELFE), a subunit of the NELF complex, has been identified as an oncogenic RBP that affects MYC signaling in hepatocellular carcinoma; however, its significance in PDAC remains unknown. In this study, we look at the functional role of NELFE in KRAS-driven pancreatic cancer and evaluate its therapeutic potential. Endogenous NELFE has been substantially decreased in KRAS-mutant Panc-1 PDAC cells using an auxin-inducible degron (mAID) system, resulting in fast and reversible proteasomal degradation. Western blot analysis was used to assess the impact of NELFE loss on KRAS expression, MYC signaling, and the stability of additional NELF complex subunits (NELFA, NELFB, and NELFC/D). Additionally, KRAS knockdown experiments were carried out to investigate the link between oncogenic KRAS signaling and NELFE expression. We suggest that NELFE is essential to sustain oncogenic transcriptional programs downstream of mutant KRAS, and that its absence affects MYC signaling and malignant phenotypes in PDAC cells. This work intends to characterize NELFE as a critical regulator of KRAS-dependent transcription and assess its potential as a non-oncogene addiction factor and therapeutic target in PDAC.

Functional Characterization of Human *RAD52* isoforms in *Saccharomyces cerevisiae*.

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- Basic Research

P15

Abstract:

Homologous recombination (HR) is a DNA repair pathway required for genome stability, tumor suppression, and viability in humans. HR depends on conserved proteins that function in the repair of spontaneous and environmentally induced DNA damage, such as DNA double-strand breaks (DSBs) created by ionizing radiation. Despite the high level of conservation in this apparatus throughout phylogeny, evolutionary diversification has produced distinct protein interactions and DNA repair mechanisms. RAD52 is a structurally and functionally conserved HR protein found in a diverse range of eukaryotic organisms, from humans, *Homo sapiens* (Hs), to the budding yeast, *Saccharomyces cerevisiae* (Sc). In budding yeast, ScRad52 works with its paralog, ScRad59, to repair DSBs by single-strand annealing (SSA), a mechanism of HR that does not conserve genome structure. Humans lack a clear RAD59 ortholog, but it has been reported that alternative splicing of HsRAD52 transcripts generates isoforms with truncated C-termini whose biological significance remains poorly understood (Kito et al. 1999). Intriguingly, the N-termini of HsRAD52 and ScRad52 share significant amino acid homology with ScRad59, which has a truncated C-terminus, suggesting that HsRAD52 isoforms may possess a similar function in human cells. In this study, we are confirming the generation of the HsRAD52 isoforms in irradiated human fibroblast cells by Western blot. Additionally, we are investigating whether heterologous expression of HsRAD52 isoforms can functionally substitute for ScRad59 in SSA within budding yeast cells, perhaps revealing how isoform diversity in humans fulfills a role analogous to gene duplication in budding yeast. The results are expected to advance our understanding of the mechanisms involved in DNA repair that are key components of genome maintenance in BRCA1/2-deficient cancer cells.

Exploring the Perceptions of Black and Latinx Women and Community Health Workers in Maternal Healthcare

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- DHSc Program Research Project

Abstract:

P16

The purpose of this qualitative descriptive study is to explore how Black and Latinx birthing women and their community health workers (CHWs) perceive their dyadic relationship. This project is utilizing a secondary reflexive thematic analysis to explore the experiences of seven Black and Latinx mothers and four CHWs from Chester County, Pennsylvania.

English Proficiency and Patient Satisfaction in Jefferson Primary Care (JPC) Settings: A Correlational Study

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- Capstone Research Project

Abstract:

Non-English speakers in the United States (US) face significant language barriers, especially in healthcare settings. Previous studies have shown that language concordance plays a crucial role in effective communication and fostering trust and safety between patients and providers. Language barriers, however, hinder patient-provider communication and rapport building, and ultimately lead to lower patient satisfaction during a healthcare visit. Different communities have different linguistic profiles which clinics must equitably serve. However, to date, no studies have examined patient satisfaction in conjunction with the linguistic diversity of a clinic's location.

To address this gap, the current study evaluated how the percent of non-English spoken at home within the practice's geographic location related to patient satisfaction across 64 Jefferson Primary Care (JPC) clinics in Philadelphia, PA. Patients completed the Person-Centered Primary Care Measure (PCPCM), which included 11 questions about patient satisfaction after a healthcare visit. We retrieved the 2023 "percent language other than English spoken at home" for each clinic's corresponding zip code from the U.S. Census database. A Pearson correlation revealed no association between patient satisfaction and the percent non-English spoken at home ($R(df) = -0.037, p = 0.77$), suggesting that the linguistic diversity of the local community may not impact patient satisfaction in JPC clinics. Given the lack of association, future research should investigate other social determinants of health and patient inequities, such as race, ethnicity or income, that may contribute to lower patient satisfaction.

P17

Perceptions of Implicit Bias in Maternity Care: A Qualitative Study of Black/African American Women

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- Capstone

Abstract:

Black/ African American women in the United States experience disproportionately high rates of maternal morbidity and mortality, with structural racism and provider implicit bias identified as contributing factors. However, limited research explores how Black women perceive implicit bias during pregnancy and the postpartum period and how these perceptions influence their care experiences. This qualitative descriptive study will use semi-structured interviews with 10-15 self-identified Black/ African American women who are pregnant or within 12 months postpartum. Interviews will be analyzed using inductive thematic analysis to examine how perceived implicit bias relates to trust, satisfaction with care, and care-seeking behaviors. Findings are aimed at advancing maternal health equity.

P18

Recreational Runners Describe their Experiences of Interprofessional Collaboration in Chiropractic Care

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- DHSc Program Research Project

Abstract:

Interprofessional Collaboration (IPC) occurs when multiple health workers from different professional backgrounds work together to deliver the highest quality of care (WHO, 2010). Studies have shown that IPC is valued and desired by professional athletes (Eindhoven et al., 2022), yet the experience of recreational runners (RRs) with IPC has not been described in the literature. It is anticipated that investigation of RRs and IPC in chiropractic care may guide health care providers' practice patterns to improve patient satisfaction, compliance, and healthcare and performance outcomes. This qualitative descriptive study included a purposive sample of 10 participants with whom semi-structured interviews were conducted. Preliminary data analysis is underway. Emerging themes include (1) RRs' perceived benefits of IPC in chiropractic care include speed of recovery, diagnosis confirmation, and confidence/trust in the treatment plan, and (2) Barriers to IPC were described as provider territoriality, the lack of acceptance of chiropractic, and the limitations of the US healthcare system.

P19

Lysosomal Transporter SLC29A3 regulates Endosomal TLR-Driven Dendritic Cell Activation

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- Basic Research

Abstract:

Mutations in SLC29A3 (ENT3) cause SLC29A3 diseases (H syndrome), which are characterized by the contradictory pairing of hyperinflammation and immunodeficiency. Dendritic cells (DCs) are at the core of this issue because they transform innate sensing into T-cell-directed adaptive immunity via maturation, antigen presentation, and cytokine release. Recent research from our lab indicates that SLC29A3 is recruited to mature DC phagosomes and supports adequate phagosomal acidification, enabling antimicrobial programs that include NF- κ B-linked inflammatory outputs (e.g., IL-6, IL-12, CCL22) and efficient MHC-II antigen presentation. These findings lend validity to a hypothesis in which SLC29A3 functions as a lysosome/phagosome-localized regulator of solute and pH homeostasis, shaping compartment-dependent innate signaling. Therefore, we hypothesized that SLC29A3 preserves lysosomal pH and solute balance to promote DC maturation and inflammatory programming in a pathway-specific way, so that signaling driven by an endosome-dependent nucleic acid-sensing pathway differs from signaling initiated by a surface-based bacterial pattern-recognition pathway. This is because Toll-like receptor (TLR) outcomes rely on receptor localization and endolysosomal biology. To test this hypothesis, SLC29A3-sufficient and SLC29A3-deficient DCs were stimulated with a bacterial lipopolysaccharide (LPS) that activates a surface TLR pathway, and with a chemically produced small-molecule agonist (R848) that activates an endosomal TLR Pathway. We used flow cytometry to measure the expression of activation markers (CD40 and CD86) in CD11c⁺ DCs, indicating their maturity. In parallel, culture supernatants are collected, and IL-12 is measured using ELISA as a functional cytokine output associated with T-cell activation. The approach described here directly investigates whether SLC29A3 preferentially changes maturation kinetics and cytokine amplitude based on the compartment where TLR signaling occurs. Preliminary 6 and overnight stimulation experiments indicate the variations in the frequency of CD40⁺CD86⁺ dendritic cells following LPS and R848 treatment. SLC29A3-deficient splenic dendritic cells exhibit an increased frequency CD40⁺CD86⁺ cells compared with wild-type controls. Together, our investigations aim to characterize how SLC29A3 innate signaling in DCs and provide insight into lysosome-associated processes that determine inflammatory and adaptive immune responses.

P20

Enhancing Radiotherapy via Caloric Restriction in Lung Adenocarcinoma

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- Basic Research

Abstract:

Lung cancer remains the leading cause of cancer-related deaths worldwide. Radiation therapy is clinically effective; however, radioresistance can lead to poor outcomes. Metabolic dysfunction has been shown to worsen treatment outcomes in cancer patients. Caloric restriction (CR), a daily 30% reduction in caloric intake, has been shown to alter metabolic processes, downregulate cell survival pathways, and enhance radiotherapy outcomes. Therefore, we hypothesized that CR in combination with radiation therapy (RT) improves tumor control in non-small cell lung cancer (NSCLC). This was evaluated using a mouse model with A549 human lung adenocarcinoma cells (NSCLC) subcutaneously injected into the flank. Mice were then treated with CR, RT, or a combination of CR and RT. Radiation therapy and caloric restriction alone both reduced tumor volumes by 23.7% and 46% respectively compared to the ad libitum (AL) group. The combination of caloric restriction and radiation therapy significantly decreased tumor volumes by 87% compared to those of AL. Additionally, CR and CRRT groups both exhibited reduced body weight compared to the AL and RT groups. RNA analysis demonstrated that metabolic drivers involved with CR and tumor progression showed differential expression. Caloric restriction, capable of altering tumor biology and improving treatment outcomes, may potentially serve as a novel therapeutic approach to improve radiation outcomes for NSCLC.

P21

Environmental Hexavalent Chromium Increases the Risk of Cardiovascular Disease

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- Basic Research

Abstract:

Hexavalent chromium [Cr (VI)] is a toxic environmental contaminant produced in industrial processes such as welding, metal plating, and manufacturing. While Cr (VI) exposure increases oxidative stress, inflammatory responses, and cellular dysfunction which are increasingly recognized as key contributors to the development of atherosclerosis, few studies have addressed the impact of Cr(VI) on endothelial cell (EC) dysfunction and atherosclerosis development. In addition, endothelial-mesenchymal transition (EndMT)- a process in which endothelial cells acquire mesenchymal characteristics-promotes plaque growth and instability. It remains unknown whether Cr(VI) induces endothelial cell dysfunction via EndMT. In this study, apolipoprotein E-deficient (Apo E ^{-/-}) mice in the background of C57BL/6 were intranasally exposed to ZnCrO₄ suspension at a concentration of 1.0mg/mL or saline once a week for 16 weeks. All mice were fed with a high fat diet. The mice were sacrificed after 16 weeks, and aortic roots and hearts were isolated and fixed for Oil Red staining. The result showed that inhalation of Cr(VI) accelerated atherosclerosis development in atherosclerosis prone mouse models. We also conducted in vitro study using human umbilical vein endothelial cells (HUVECs). The cells were treated with Cr (VI) (K₂CrO₄) in a time-dependent manner. EndMT-related biomarkers were evaluated by Western blotting and quantitative RT-PCR. Mesenchymal markers N-cadherin, fibronectin, and an EndMT relevant transcription factor Zeb1 were upregulated in HUVECs when treated with Cr (VI) for 72 hours. Cr (VI)-induced EndMT may represent a potential underlying mechanism that warrants further investigation. In conclusion, Cr (VI) exposure increases the risk of CVD and EndMT might be the mechanism of Cr (VI)-induced endothelial dysfunction for atherosclerosis development.

P22

Optimization of CLDN6-Targeted CAR-T Cells Reveals the Impact of scFv Orientation and Intracellular Signaling Domains on Antitumor Activity

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- Basic Research

Abstract:

P23

Chimeric antigen receptor (CAR) T cell therapy has shown great clinical success in hematologic malignancies; however, its efficacy in solid tumors limited by antigen heterogeneity and suboptimal CAR design. Claudin-6 (CLDN6), an oncofetal tight junction protein highly expressed in multiple solid tumors, such as ovarian cancer, yet largely absent in healthy adult tissues, represent a potential target for CAR-T cell therapy. Improving therapeutic effectiveness depends on optimizing the structural configuration of CARs and the intracellular signaling domains. In this study, we evaluated CLDN6-targeting CAR-T cells incorporating a variable light–variable heavy (VLVH) single-chain variable fragment configuration. CAR constructs were generated from primary human T cells and engineered to signal through either a killer immunoglobulin-like receptor (KIR) domain coupled to the signaling adaptor DAP12 or the conventional CD3ζ signaling domain with costimulatory domains. Cytotoxic activity was assessed using both a flow cytometry-based endpoint killing assay and a conventional in vitro cytotoxicity assay, and a real-time eSight dynamic killing assay to quantify tumor cell clearance kinetics. Comparative functional analysis revealed that the light chain-first configuration outperformed the heavy chain-first orientation. In addition, CD3ζ-based 28 CAR constructs exhibited superior activity compared to KIR-based CAR designs. These findings highlight the importance of intracellular signaling structure in optimizing CAR-T cell design. Together, this work contributes to the rational design of next-generation CLDN6-directed CAR-T therapies for solid tumor applications.

Immune Mediated Fibrosis in Lamin Cardiomyopathy

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- Basic Research

Abstract:

Mutations in the Lmna gene are a significant cause of inherited cardiomyopathy with highly variable age of onset, severity and extent of fibrosis. While cardiomyocyte specific depletion of Lamin A/C leads to rapid cardiac dysfunction and pathological fibrosis, the contributions of non-myocyte specific cell types to disease progression remain poorly defined. Prior work done by our lab suggests a counterbalance between Cardiac Myocytes (CM) and Cardiac Fibroblasts (CF). Simultaneous deletion of Lmna in both CM and CF delayed disease progression, improved cardiac function and significantly prolonged survival in mice compared to CM specific deletion alone. This suggests a critical role of Lmna deletion in CF towards disease progression and severity. To explore the underlying mechanisms, we assessed how Lmna deleted CFs affect immune population in CM, CF and CM/CF Lmna deletion mouse models. To corroborate our in vivo data, we also performed secretome profile of Lamin A/C depleted Cardiac Fibroblasts in vitro. Our results profiling the secretome in vitro show an alteration in immune markers which are supported by the characterization of immune populations in vivo. This suggests that Lmna deletion in CF may play a role in better survival and delayed disease progression by immune mediated fibrosis.

P24

CRM1- Mediated Nuclear Export Regulates Production of Fibrotic Extracellular Matrix in Response to Lens Injury.

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- Basic Research

Abstract:

P25

Fibrosis arises when normal wound-healing processes become dysregulated, resulting in excessive tissue growth and scarring. RNA sequencing (RNA-seq) analysis using a chicken ex vivo lens injury repair model revealed upregulation of G0-associated pathways linked to nuclear export during fibrotic repair compared to normal regenerative healing. This study investigated the role of nuclear export in directing reparative versus fibrotic responses following lens injury. Ex vivo chick lens explants were generated from lenses isolated from embryonic day 14 (E14) chicken embryos. In this model, wound healing is monitored as cells migrate across the denuded lens capsule, while fibrosis is identified by cells that move beyond the capsule into the extracapsular zone (ECZ). Explants were treated on day 0 (D0) or day 1 (D1) with the nuclear export inhibitor Leptomycin B, which specifically blocks CRM1-mediated nuclear export, at concentrations of 5 nM, 10 nM, or 20 nM, or with vehicle control. Treatments were replenished daily. Brightfield images were captured daily from D0 to D3, the time by which wound closure is typically complete, and wound area measurements were used to calculate percent closure. Phase-contrast images documented ECZ formation. On D3, explants were fixed and immunolabeled for fibrotic extracellular matrix markers, including fibronectin and pro-collagen I. Results demonstrate a specific role for CRM1-directed nuclear export in regulating fibrosis without impairing wound closure. While leptomycin B treatment did not significantly alter wound healing rates, it produced a dose-dependent reduction in pro-collagen I and fibronectin expression. These findings indicate that CRM1-mediated nuclear export is required for fibrotic matrix production following lens injury.

Mapping Concepts and Terminology Surrounding Social Therapeutic Horticulture in Youth Populations: A Scoping Review

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- DHSc Program Research Project

Abstract:

Nature-based interventions (NBIs) have been utilized to improve mental health and well-being through intentional engagement with the natural environment. A specific NBI, social therapeutic horticulture (STH), has emerged as a mental health and well-being intervention for youth populations. STH has been implemented in some clinical and educational settings due to its promising benefits for youth development and well-being. However, inconsistent terminology and conceptual framing across research and practice contexts presents challenges for synthesizing the existing evidence base. Due to this gap, STH is not consistently understood or implemented. Festina Lente, our global research partner, echoed this need based on their field knowledge and practical experience administering STH. With their guidance, and in accordance with the JBI methodology, this scoping review aims to synthesize the associated terminology and concepts surrounding STH interventions in youth populations. The databases ERIC, PubMed, Scopus, and PsycINFO were used without restriction of publication date or type (e.g., grey literature, primary/secondary sources, pilot studies, etc.). This review included English language studies restricted to youth populations aged 18 years and younger. Using scoping review software, Covidence [Veritas Health Innovation, Melbourne, Australia], two researchers independently performed both the pilot and official article screening process for the title and abstract. The third researcher resolved any conflicts. The research team will then perform the full-text phases with the same sequence. Following full-text screening, data will be extracted and presented via tables and narrative summaries. Findings from this review will map a clear and consistent understanding of STH with the intent of informing future STH practices and research.

P26

Chromosomal Insertion of mTurquoise Reporter Gene to Rhizobium for Multicolor Bacterial Imaging

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- Basic Research

Abstract:

Nitrogen fixation is a fundamental biological process that plays a critical role in sustainable agriculture by converting atmospheric nitrogen (N₂) into ammonia (NH₃), a bioavailable form essential for plant growth. This process is carried out through a highly specialized symbiotic interaction between leguminous plants and nitrogen-fixing soil bacteria known as rhizobia.

P27

Fluorescent reporter proteins such as GFP and RFP are widely used to visualize and compare two distinct bacterial populations during root colonization, as their emission spectra do not overlap. However, assessing a third bacterial population requires an additional fluorescent marker with clearly separated spectral properties. In this project, we propose the construction of an *E. meliloti* strain expressing the cyan fluorescent protein mTurquoise2, which shows minimal spectral overlap with GFP and RFP, enabling simultaneous multicolor imaging. To ensure stable expression of the fluorescent marker, the mTurquoise2 gene will be introduced into the *E. meliloti* chromosome using the Mini-Tn7 transposon system. This chromosomal integration approach provides greater genetic stability than plasmid-based expression, which can be lost under the stressful environmental conditions commonly encountered by bacteria during plant colonization. Following construction of the fluorescent strain, *M. truncatula* seedlings will be inoculated and analyzed approximately 21 days post-inoculation using confocal microscopy to visualize infection threads, nodule colonization, and bacterial distribution within nodules. This strategy will enable a robust and stable multicolor analysis of rhizobial populations during legume–rhizobium symbiosis.

Targeting the CDK6 Dependencies of Acute Myeloid and Lymphoid Leukemias with a Novel Proteolysis Targeting Chimera (PROTAC)-based Cytotoxic Therapy

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- Basic Research

Abstract:

P28

Acute lymphoblastic leukemia (ALL) is a fast-growing blood and bone marrow cancer most diagnosed in children. Philadelphia chromosome-positive (Ph⁺) ALL is characterized by the t(9;22) translocation, creating the BCR-ABL1 fusion gene. Acute myeloid leukemia (AML) is the most common acute leukemia in adults due to the transformation of early hematopoietic progenitor cells (HPCs) through acquired molecular and karyotypic abnormalities. AML and Ph⁺ ALL and cells have high dependency on cyclin-dependent kinase 6 (CDK6) expression which regulates the G1-to-S cell cycle transition through phosphorylation and inactivation of the retinoblastoma protein, RB. In addition to essential role in cell cycle progression, CDK6 and the highly-related kinase CDK4 proteins exert a broader range of cellular functions including modulation of tumor cell metabolism and immune cell activity. Given that CDK6 may carry out some of its functions in a kinase-independent manner, selective CDK6 degraders such as proteolysis targeting chimeras (PROTACs) may be more effective than kinase inhibitors as anti-tumor agents. We have identified proteolysis-targeting chimeras (PROTACs) that inhibit and selectively degrade CDK4/6. The PROTAC molecule being studied, identified as JG-05-193A, is comprised of a CDK6 targeting ligand derived from the CDK4/6 inhibitor palbociclib and a cereblon (CRBN) E3-ligase-recruiting ligand. PROTAC JG-05-193A exhibited a marked suppression of S-phase cells with preferential degradation of CDK6 over CDK4 in AML and ALL cells in vitro and sustained anti-tumor activity in in vitro and in vivo models of acute leukemia.

Comparative Analysis of CAR-T Manufacturing Unit Operations as Process Development Leverage Points

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- Basic Research

Abstract:

Chimeric antigen receptor T (CAR-T) cell manufacturing consists of a sequence of interconnected unit operations, including apheresis processing, T-cell enrichment and activation, genetic modification, expansion, harvest, and cryopreservation. Within each unit operation, process development (PD) teams identify and refine key process parameters that may become critical process parameters (CPPs) once linked to critical quality attributes (CQAs) such as cell yield, viability, phenotype distribution, transduction efficiency, and functional potency. Although CAR-T workflows share common foundational steps, variation in activation strategies, transduction approaches, culture conditions, and expansion platforms introduces measurable trade-offs that must be systematically characterized to ensure robustness, scalability, and product consistency. This project examines CAR-T manufacturing from a process development perspective, focusing on how leverage points across unit operations are evaluated within an integrated system rather than in isolation. Using published comparative studies of CAR-T expansion platforms as a representative case example, the work illustrates how platform selection influences total nucleated cell yield, process variability, differentiation state (naïve/stem-like versus effector memory populations), and metabolic programming. These findings are interpreted within a broader framework of process characterization, demonstrating how upstream decisions constrain or amplify downstream outcomes. The poster presents a non-proprietary, literature-based framework that reflects how PD teams assess risk, evaluate interactions among process variables, and balance biological quality with operational control to support overall process robustness and control strategy development.

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Characterization of a Novel Bacterial Fusion Membrane Machine

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- Basic Research

Abstract:

Chlamydia trachomatis (Ct) is the most common sexually transmitted obligate intracellular bacterium infecting over 129 million people each year worldwide. Ct establishes a membrane bound parasitic organelle allowing replication and survival in host cells, called the inclusion. Host cells infected by multiple bacteria will have multiple inclusions that eventually fuse into a single inclusion through a process called homotypic fusion. Importantly, non-fusogenic clinical isolates exhibit decreased pathology and disease severity compared to fusogenic isolates, indicating the importance of this event. Although homotypic fusion has been shown to be mediated by the Ct inclusion membrane protein IncA, the regulatory events surrounding this process remain unknown. The lab recently demonstrated that prior to fusion, the inclusion membranes form a membrane interface called inclusion contact sites (ICSs). These ICSs are enriched in a unique composition of Ct proteins, including IncA, and other host proteins and lipids. The lab demonstrated that the host lipid sphingomyelin (SM) plays a significant regulatory role in homotypic fusion. When SM transport and synthesis is inhibited, IncA clustering in the ICS is inhibited, leading to a delay in homotypic fusion. We decided to investigate whether components of the sphingolipid trafficking pathway are implicated in regulating homotypic fusion. Specifically, Rab14, a host Rab-GTPase involved in vesicular sphingolipid transport, and the chlamydial inclusion membrane protein CpoS, which has previously been shown to recruit Rab14 to the inclusion membrane. Here we demonstrate that both Rab14 and CpoS cluster in the ICS and knocking down Rab14 or CpoS impacts homotypic fusion. Overall, this data identifies new regulatory agents in an increasingly complex bacterial membrane fusion system.

P30

Prodrug Activation with the FrmB and GloB Enzymes in *Staphylococcus aureus* Isotypes

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- Basic Research

Abstract:

Staphylococcus aureus is a prominent global pathogen responsible for a wide range of infections and significant mortality. It is notorious for its high adaptability, including becoming resistant to current antibiotic treatments such as methicillin. However, enzyme-activated antimicrobial prodrugs represent a promising alternative therapeutic strategy by exploiting bacterial enzymes for selective drug activation. The carboxylesterase FrmB is conserved across *S. aureus* strains and is capable of activating esterified prodrugs; however, the functional impact of FrmB sequence variation among clinical isolates remains unclear. This study investigates whether natural FrmB sequence differences influence enzymatic activity and susceptibility to a FrmB-activated prodrug. Clinical *S. aureus* isolates containing distinct FrmB alleles will be evaluated using minimum inhibitory concentration (MIC) and IC50 assays. Together, these experiments aim to determine whether FrmB-mediated prodrug activation is conserved across diverse *S. aureus* strains and to inform the development of broadly effective, enzyme-targeted antimicrobial therapies.

P31

Redefining Single-Cell Analysis Through Conventional, Spectral and Imaging Flow Cytometry.

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- Basic Research

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Abstract:

Flow cytometry is a powerful and widely used technology for cellular phenotyping, functional analysis, and cell isolation. In this technique, cells are labeled with fluorophore-conjugated antibodies targeting specific antigens. As individual cells pass through laser beams, fluorophores are excited and emit light at characteristic wavelengths, which is detected and converted into quantitative, single-cell measurements. Conventional flow cytometers, such as filter-based BD platforms, detect fluorescence within defined wavelength ranges using optical filters and photomultiplier tubes. This robust and established approach supports reliable immunophenotyping and biomarker analysis in applications including immune profiling and cancer research. However, increasing panel complexity leads to greater spectral overlap between fluorophores, requiring compensation and potentially limiting sensitivity and marker resolution, particularly in autofluorescent or heterogeneous samples. Full-spectrum (spectral) flow cytometry, such as the Cytex Aurora, addresses these limitations by capturing the complete emission spectrum of each fluorophore across multiple detectors. Signals are mathematically unmixed using reference spectra, enabling improved separation of overlapping fluorophores and modeling of cellular autofluorescence. This supports higher-parameter panel design and enhanced resolution of complex immune populations, although it requires rigorous controls and quality assurance. Fluorescence-activated cell sorting (FACS) extends flow cytometry by enabling physical isolation of defined cell populations. Cells meeting gating criteria are deflected into collection vessels using electrostatic forces, allowing downstream applications such as functional assays, gene expression analysis, and cell culture. Instrument selection ultimately depends on experimental goals, panel complexity, and whether quantitative analysis or viable cell sorting is required.

Point of Care Testing Utilization Via Smartphone and Machine Learning

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- Basic Research

Abstract:

Modern smartphones possess advanced computational capabilities and high-fidelity sensors, rivaling traditional stand-alone computers. When combined with cloud-based processing, these devices offer a powerful and accessible platform for data acquisition and analysis. This research project leverages these capabilities to develop a novel, non-invasive tool for personal health monitoring. Specifically, this study investigates the use of a smartphone's integrated camera for the colorimetric analysis of urine. Smartphone image sensors are sufficiently sensitive to detect and quantify spectral information beyond the range of human vision. This project will utilize this sensitivity to design a standardized protocol for capturing images of urine samples. Through custom-developed software, the images will be processed to extract and quantify red, green, and blue (RGB) color values and their respective intensities. The core objective is to correlate these precise colorimetric data with the presence and concentration of specific urinary biomarkers. By establishing these correlations, the smartphone-based system aims to provide a reliable method for patients to monitor key indicators of kidney function from their homes. The resulting data will be compiled to identify trends over time, offering patients and medical professionals' valuable insights for the ongoing management of renal health.

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The Relationship Between Advocacy and Patient Satisfaction of Care at Jefferson Health Primary Care: A Correlational Analysis

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- DHSc Program Research Project

Abstract:

Greater patient confidence in their healthcare provider is associated with improved patient medication adherence, utilization of preventative screenings, and other positive health outcomes. While provider advocacy has been defined in the literature, it is still unknown how patient-perceived provider advocacy influences patient satisfaction of care. The purpose of this quantitative correlative study is to evaluate the relationship between Jefferson Health patients' perceived provider advocacy and patient satisfaction using the Person-Centered Primary Care Measure (PCPCM) and Press Ganey surveys. Perceived advocacy was quantified using PCPCM item #7 "My doctor or practice stands up for me". Patient satisfaction was quantified using "Likelihood to recommend" from the Press Ganey survey. A Spearman's rank coefficient test was conducted with the variables of patient-perceived physician advocacy and satisfaction of care which showed that it was statistically significant. These findings are consistent with the hypothesis that there is a positive correlation between patient-perceived provider advocacy and satisfaction. This adds to the current literature on the role of provider advocacy in the patient experience and underscores patients' desire for advocacy from their providers. Furthermore, these findings suggest that patients value advocacy and may support investment of time and resources into advocacy training throughout medical education and training. The relationship between patient-perceived advocacy and satisfaction with care elevates advocacy efforts from more than just social responsibility to a targeted way for Jefferson Health to improve patient satisfaction metrics.

P34

Mental Health Disparities in the SGD Community: Relationship Between Disability and Mental Illness

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- DHSc Program Research Project

Abstract:

Sexually and gender diverse (SGD) people and people with disabilities separately show increased mental illness prevalence and substance use, potentially due to the impacts of minority stress, discrimination, and reduced access to resources. However, research on mental health outcomes for individuals who are both SGD and disabled is limited, particularly regarding disaggregated, specific SGD identity groups. The purpose of this study is to examine mental health disorder prevalence among disaggregated SGD communities with and without disabilities.

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This project utilized data from 44,595 SGD participants in the All of Us research program. Participants were sorted based on whether they identified with at least one disability category, including mental, physical, and emotional conditions. The prevalence of anxiety, depression, eating disorders, and substance use disorders was compared between disabled and nondisabled participants disaggregated by specific SGD identity using chi-squared analyses.

Disabled SGD participants in nearly every subgroup showed higher frequencies of mental health conditions than participants without disabilities. Disaggregation and analysis by specific identity groups revealed one difference that was obscured when SGD participants were analyzed as a single group: disabled transgender women did not show higher frequency of depression than those without a disability.

This study reflects a disparity in mental health outcomes indicating a need for improved awareness of the mental health needs of disabled SGD Americans. More research is necessary to better understand the experiences and health needs of SGD individuals with disabilities disaggregated by sexual orientation and gender identity, particularly targeting SGD communities that are underrepresented in research.

Professional Purpose, Health, and Stress of Educators Working with Trauma-Affected Youth: A Quantitative Comparative Study

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- DHSc Program Research Project

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Abstract:

Teaching is a profession characterized by high stress and increased risk of burnout, particularly for those working with trauma-affected youth (Christian-Brandt et al. 2020; Fleckman et al., 2022). Although numerous studies have examined the general impact of exposure to students with trauma backgrounds on teachers, far less attention has been given to how these experiences differ by gender (Berger, 2023; Sprang et al., 2025). Understanding gendered patterns of stress, wellness, and professional purpose is critical, as male and female educators may respond to trauma-related demands in distinct ways. Therefore, the purpose of this quantitative comparative study is to examine how gender affects the professional purpose, health, and stress of K-12 educators working with trauma-affected youth. This study analyzed data collected from a survey that was sent to the administrators of a geographically random selected group of K-12 schools in the state of Pennsylvania in 2022. Participants were asked to respond to questions regarding sense of professional purpose, perceived health and wellness, and stress level. Results were then analyzed using a Welch Two-Sample t-test. This study revealed that while male and female respondents' levels of professional purpose were significantly different ($p = 0.05$), females reported significantly more of an impact on their health and wellness ($p = 0.04$) and stress levels than males ($p = 0.04$). These results indicate that females face more hardship than males when working with youth who have experienced trauma. This suggests that it would be beneficial for academic institutions to introduce counseling or specific trauma-informed training catered to female educators to help them manage the emotional, mental, and physical impacts of their work.

Exploring the Implications of Culture in Integrated Primary Care: Perspectives of Behavioral Health Consultants

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- DHSc Program Research Project

Abstract:

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Cultural adaptations to Integrated Primary Care (IPC) models have impacted behavioral health outcomes in Black, Indigenous, and People of Color (BIPOC), with varying results. However, researchers have yet to determine which culturally sensitive approaches in IPC have the greatest impact. Furthermore, no study has explored culture in the context of IPC or how cultural context shapes behavioral health processes for BIPOC patients, who are overrepresented in behavioral health diagnoses and underrepresented in services in the United States. This phenomenological study used semi-structured interviews to explore Behavioral Health Consultants (BHCs) definition of culture and how culture shaped screening, assessment, and treatment of behavioral health conditions in BIPOC patients in IPC settings. Thematic analysis revealed endorsement of White male cisgender heteronormative and use of White authoritarianism in medicine, both of which reportedly contributed to poor conceptualization of BIPOC patients' symptoms. Use of culturally sensitive and responsive frameworks in IPC, tailored to contextual factors that shape behavioral health outcomes in BIPOC patients were encouraged. Themes support an ongoing need to identify how culturally-sensitive and responsive frameworks are defined in IPC settings and the efficacy of these frameworks in reducing structural barriers across all levels of health systems. In doing so, cultural adaptations to existing models and interventions can be made to improve behavioral health outcomes for BIPOC patients.

Safety and Clinical Outcomes of MRI in Pediatric Patients with Cardiac Implantable Electronic Devices: A Scoping Review Protocol

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- DHSc Program Research Project

Abstract:

Objective: This scoping review aims to map the extent of available evidence on the use of magnetic resonance imaging (MRI) on pediatric patients with cardiac implantable electronic devices (CIEDs), focusing on safety outcomes and data, protocol variability, and clinical guidance.

Introduction: Historically, MRI was contraindicated for patients with implanted pacemakers and defibrillators. Evolving device designs and safety protocols have since allowed MRI access for adult patients with CIEDs, however pediatric-specific safety data remains limited. This scoping review aims to address this critical knowledge gap to inform clinical practice and policy development.

Inclusion criteria: The review will include studies involving pediatric patients (0-18 years) with CIEDs undergoing MRI, the institutional protocols under which these scans occur, and any safety outcomes. Studies focusing on adult populations, animal studies, or ex-vivo studies will be excluded.

Methods: A structured search will be performed using the National Library of Medicine's (NLM) database of citations and abstracts for biomedical literature (PubMed), Elsevier Co.'s abstract and indexing database (Scopus), and the Cumulative Index to Nursing and Allied Health Literature (CINAHL). In keeping with the JBI approach for scoping reviews, data charting will be used to systematically organize and summarize the findings from all selected sources. This process will aim to provide a clear and structured account of all the evidence that addresses the review's objectives, specifically to identify potential safety risks, consolidate relevant clinical guidelines, and explore reported outcomes related to MRI use in pediatric patients with CIEDs. The data yielded will be synthesized descriptively and used to form thematic groupings of safety considerations and clinical guidelines or circumstances that influence variation in practice relevant to the use of MRI in pediatric populations with CIEDs.

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MCU Depletion Alters Mitochondrial Flicker Dynamics Under ATP Synthase Inhibition

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- Basic Research

Abstract:

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Our lab seeks to understand the mechanisms that drive stress signaling in response to defective oxidative phosphorylation. Recently, we discovered that mitochondria that cannot take up calcium fail to mount an integrated stress response (ISR). It's known that depolarization of mitochondrial membrane potential triggers the ISR, and calcium uptake triggers membrane depolarization. Therefore, to understand why the absence of mitochondrial Ca²⁺ uptake blunts the ISR, we hypothesized that removing mitochondrial calcium uptake would stabilize membrane potential under stressful conditions. To test this, we used HeLa cells, either control or acutely depleted of MCU, the major pore-forming subunit of the calcium uptake machinery, using siRNA. As a measure of depolarization, we were interested in sharp depolarization/repolarization events called flickers. Control and knockdown HeLa cells were loaded with a fluorescent dye that measures mitochondrial membrane potential (TMRE). To induce mitochondrial stress, cells were treated or untreated (control) with an inhibitor of the ATP synthase (oligomycin). The membrane potential indicated by fluorescence was measured via confocal microscopy, and images were subsequently analyzed using ImageJ. Specifically, we measured flickers according to Booth et al. 2022 (STAR Protocols, DOI: 10.1016/j.xpro.2021.101119); Dr. Booth is a member of our research center. Overall, three independent experiments with both control and knockdown were analyzed. Cells not treated with oligomycin did not display flickers, as previously published. Cells treated with oligomycin did display flickers, also as previously published. In each experiment, we analyzed 20 mitochondrial events. For two out of three experiments, the flicker frequency and duration were decreased in MCU knockdown cells. This result tentatively supports our hypothesis. However, suggests that more experiments are needed. (Funding to ELS: NIH R01 GM146116).

The Relationship between Advocacy and Patient Satisfaction in Primary Care at Jefferson Health: A Correlational Analysis

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- DHSc Program Research Project

Abstract:

In the United States, Black and African American and Hispanic and Latino women experience higher rates of maternal mortality compared to non-Hispanic white women, highlighting structural and social disparities. While previous research has found associations between social determinants of health and maternal health outcomes, particularly among marginalized populations, less is known about how structural determinants are defined, applied, and measured in maternal morbidity and mortality (MMM) research. To address this gap, researchers conducted a scoping review using the Joanna Briggs Institute framework and Preferred Reporting Items for Systematic Reviews and Meta-Analyses-Scoping Review Extension guidelines. Authors conducted a search in Ovid, EBSCO, CINAHL, and SCOPUS for studies published within the past five years using the Population, Concept, Context framework. References were managed in Covidence and screened by two authors, with a third to settle discrepancies. Extracted data included participants (females > 18 y/o), concept (MMM), and context (SSDOH). Most studies focused on social determinants of health and maternal morbidity in Black and African American or non-Hispanic White women. Four articles defined social determinants of health while no articles defined structural determinants of health. Governmental policies, structural racism, healthcare quality, support, living conditions, environment, adverse events, and access were associated with MMM. Consistent with prior studies, most studies focused on social determinants without investigating underlying structural factors. Limitations include restriction to studies published within five years limiting foundational research, selection bias, and exclusion of adolescents. Future research should explore structural determinants of health on maternal mortality, specifically in at-risk minority groups.

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