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St. Clair Centre for the Arts

201 Riverside Drive W., Windsor Ontario

ABSTRACTS & AWARDS

ABSTRACTS

RAPID-FIRE ORAL PRESENTATIONS – TOP AWARDS

ABSTRACT 002  Sponsored by UWindsor Faculty of Science

ADDRESSING CHILD LITERACY CONCERNS IN WINDSOR-ESSEX COUNTY THROUGH A PLACE-AND-EQUITY BASED CRADLE-TO-CAREER APPROACH


Caitlyn Massad

St. Clair College

Co-Authors: Beckie Berlasty, Kathryn Markham-Petro, Alexandra Fabrotta, Shamus Caplin

Keywords: Social Determinants

48% of Canadians have literacy skills that fall below a high school level, which negatively affects their ability to actively engage in the workplace, school, society, and in personal settings (ABC Life Literacy Canada, 2022). The research project, Addressing Child Literacy Concerns in Windsor-Essex County Through a Place- and Equity- Based Cradle to Career Approach, is a cross-sector collaborative effort to address early literacy gaps and challenges amongst vulnerable communities in Windsor-Essex County. The project's partner is ProsperUs Windsor-Essex, as one piece of ProsperUs' Cradle-to-Career strategy, to support youth from birth, through education, career, and life. Together, our team was successful in obtaining a College and Community Social Innovation Fund grant from the National Science and Engineering Council of Canada, in order to support early literacy amongst vulnerable populations, here in Windsor-Essex. As we approach the third year of the project, the team has worked to collect data on priority neighbourhoods through asset mapping, gather and analyze resident's perspectives and insights through qualitative semi-structured interviews, as well as explore solutions for change. The next year will see the research team implement a community literacy pilot in combination with several local partners, to help children receive literacy interventions early, recognizing literacy as a critical poverty reduction strategy and through an intersectional lens. The research highlights an asset approach to parent education, and the value of a community literacy for those most vulnerable.

ABSTRACT 008  Sponsored by UWindsor Faculty of Science


NURSES' EXPERIENCE OF PATIENT AND FAMILY-CENTERED ROUNDS IN THE INTENSIVE CARE UNIT

Kaitlyn Sheehan

University of Windsor

Keywords: Education, Systems, Workforce, Wellness, COVID-19

Implementation of family-centered rounds within the context of the adult ICU remains slow to adopt in Canada, despite evidence that open visitation and family presence offers many benefits to improve the delivery of quality care and satisfaction with the overall patient experience. The COVID-19 pandemic has further complicated the ability of the healthcare team to effectively include patients and families into their daily multidisciplinary rounds. Restricted visitation policies, infection control and social distancing concerns, physician variability, and a healthcare staffing crisis are amongst a few barriers to practice that hinder the ability to re-integrate families into a process that was once successful pre-pandemic. This qualitative study uses a phenomenological approach using the underpinnings of Merleau-Ponty to examine the lived experiences of frontline ICU Nurses in the rounding process of an adult ICU in Southwestern Ontario. Three themes have emerged and provide a pre-pandemic and post-pandemic view from the perspective of participants. Recommendations for future implications and additional research is explored, including leveraging the use of technology via iPads and conferencing software to conduct virtual rounds and create a hybrid model of family-centered care.

ABSTRACT 009  Sponsored by UWindsor Faculty of Science

RETROSPECTIVE CHART REVIEW TO IDENTIFY BASELINE DATA IN PATIENTS WHO ARE AT RISK FOR SUBSTANCE ABUSE

Zayya Zendo

Schulich School of Medicine & Dentistry

Co-Authors: Robert McKay, Caroline Hamm, Emma Mineau, Nainika Venugopal

Keywords: Systems, Mental Health

Background: Substance use disorders are a major cause of morbidity and mortality across various patient populations and are a growing contributor to increased health care utilization, lost productivity, and criminal justice costs. In 2017, substance use in Canada carried a cost of \$46.0 billion across all measured categories. There is a growing need for targeted and timely addiction and harm reduction services for individuals experiencing substance use disorders. A key area of interest is the emergency department, which is a location that sees a high frequency of patients experiencing substance use disorders. Methods: A retrospective chart review of patient cases at the emergency departments of the Windsor Regional Hospital. 36 individuals were identified for inclusion in the chart review. These patients presented to the emergency room with features that may suggest a substance use disorder. These include opioid overdose, endocarditis, cellulitis, bacteremia, or osteomyelitis. Additionally, this list includes patients admitted to the Intensive Care Unit from the emergency department. Data was collected on how often these patients were discharged on opioid substitution therapy, how many patients left the hospital before they saw an addiction medicine physician, the rate of referral to addiction medicine services, and the time to access those services. We are currently collecting data, and are expecting to have preliminary results by October 2022. This research is the first step of a larger program aimed at developing an intervention tool for clinicians to intervene during a patient's presentation to the hospital and positively impact the person's life trajectory.

POSTER SESSION – TOP AWARDS

ABSTRACT P08 - Sponsored by Cancer Research Collaborative Fund

REAL WORLD EXPERIENCE: STOPPING STUDY IN CHRONIC MYELOID LEUKEMIA – DEFINING A NEW PARADIGM FOR ONTARIO CML1

Waffa Bakheet, Siri Ravipati, Rasna Gupta, Indryas Woldie, Sindu Kanjeekal, Mohammad Jarrar, Caroline Hamm

University of Windsor

Keywords: Clinical Trials, Cancer

Objectives: We aim to test a new paradigm for safely stopping tyrosine kinase inhibitor (TKI) treatment in chronic myeloid leukemia (CML) patients by monitoring molecular response every 6 weeks for 6 months instead of the recommended 4-week intervals. **Methods:** A prospective pilot cohort study was conducted to assess the outcome of cessation of TKI treatment in chronic-phase CML patients. Patients' polymerase chain reaction (PCR) for BCR-ABL was tested every 6 weeks for 36 weeks to ensure ongoing major molecular response (MMR). Withdrawal syndrome, psychological effects, and quality of life as per the EORTC Global Quality of Life (QoL) scoring system were assessed during each visit every 6 weeks for 36 weeks. **Results:** 18 consenting patients were enrolled, 3 were eliminated from data analysis as additional time is required to assess their molecular responses after stopping. 12 of the 15 enrolled participants were able to successfully stop TKI therapy and remain in remission, yielding an 80% success rate in safely stopping TKI therapy. 3 patients had relapsed and successfully regained MR with resumption of TKI therapy. **Conclusion:** According to literature, the successful stopping rate in CML is 50%. The 80% success rate may be attributed to the longer duration of treatment and being a first stopping study opportunity for patients in Windsor. Limitations of this study include a small sample size. We hope to expand this study in Ontario and test this real-world paradigm of testing CML patients who stop their TKI every 6 weeks, in larger populations in the future.

ABSTRACT P45 - People's Choice Sponsored by WE-SPARK

DISSECTING THE ROLE OF TUBERIN IN THE SUBCELLULAR LOCALIZATION OF THE G2/M CYCLIN, CYCLIN B1

Adam Pillon, Jessica Dare-Shih, Jackie Fong, Elizabeth Fidalgo da Silva, Lisa A. Porter

University of Windsor

Keywords: Cancer, Life Sciences

Tuberin is a critical regulator of cell cycle progression and protein synthesis in its role as a major component of the protein synthesis regulatory unit, the Tuberous Sclerosis Complex. Mutations in the Tuberin gene, TSC2, can lead to the formation of a variety of benign tumours across multiple organ systems and is the common cause of the Tuberous Sclerosis Complex disorder. Genotypes of these clinical manifestations can range from point mutations to large deletions in the TSC2 gene, which have been characterized as phenotypes ranging from skin lesions to large brain tumours. Our lab has previously shown that Tuberin can directly bind and regulate the timing of nuclear transport of the G2/M cyclin, Cyclin B1. In this work, we study the consequences of a clinically relevant truncation in the Tuberin protein on cell cycle function. Exogenous expression of this truncation, which lacks a large portion of the C-term domain of the protein, alters the localization of Cyclin B1 and increases cell proliferation. This investigation adds to the body of information about the residues responsible for Tuberin-Cyclin B1 interaction and supports clinical patients harbouring large deletion mutations in Tuberin.

ABSTRACT P14 - Sponsored by Faculty of Arts, Humanities, & Social Science, University of Windsor

THE ROLE OF DISCLOSURE AND SOCIAL SUPPORT ON QUALITY OF LIFE IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

Noelle Citron, Carly Biderman, Kendall Soucie

University of Windsor

Keywords: Social Determinants, Women's Health, Wellness

Polycystic Ovary Syndrome (PCOS) is the most common hormonal disorder in women of reproductive age, with prevalence rates up to 21%. Symptoms include ovarian cysts, menstrual irregularities, and possible infertility, as well as hirsutism, alopecia, and weight gain/obesity. These symptoms are distressing for many, and lead to psychological distress, poor body image, and reduced quality of life. They also may also cause feelings of social rejection, shame/embarrassment, and stigma which can complicate avenues for disclosure and social support, which are crucial in mitigating distress. The purpose of this qualitative study was to explore women's experiences disclosing their PCOS diagnosis to others, and to understand how disclosure experiences impact social support, quality of life and general life satisfaction. I conducted semi-structured interviews

with 28 PCOS-diagnosed participants (age range, 19-43; M=28.17, SD=6.03) and through a reflexive thematic analysis of interview transcripts, four themes represented the typical trajectory of how disclosure and social support intersect and unfold over time, and across contexts: broaching PCOS with others, the building blocks of support, maintaining meaningful conversations, and dead ends. Findings of this study highlight the complexity of PCOS disclosures and social support experiences, while also providing tangible avenues of supports to improve quality of life. This study has direct implications for future research within the field of disclosure and chronic illnesses and has the potential to inform the development of services aimed at supporting women with PCOS.

ABSTRACT P41 - Sponsored by St. Clair College Alumni Association

PREVENTING THE SPREAD OF COVID-19 THROUGH EDUCATION: UNIVERSITY STUDENTS' VACCINATION CONFIDENCE, PERCEIVED EFFICACY OF REGULAR, ON-CAMPUS SCREENING EFFORTS

Ryan Palazzolo, Aya El-Hashemi, Moneeza Sami, Jesse Scott, Loretta Sbrocca, Jackie Fong, Alexandra St. Louis, Janet MacIsaac, Monica Staley-Liang, Yufeng Tong, Lisa A. Porter, Sarah J. Woodruff, Kendall Soucie, Dora Cavallo-Medved
University of Windsor

Keywords: COVID-19, Public Health, Vaccines

The outbreak of COVID-19 continues to spread around the world and has had a profound impact on the lives of individuals and communities. Since the introduction of COVID-19 vaccines in late 2020, infection rates, hospitalizations, and deaths have decreased substantially. However, despite these positive reports, vaccine hesitancy and resistance still run rampant. Although a commonly disregarded population, students harbor strong opinions, attitudes, and beliefs about vaccination, which impacts both safety and return to campus initiatives. Discriminant Function Analysis results from a survey administered from August 2021 to September 2021, in a sample of over 1100 university students, found clear differentiation among three subtypes of students in relation to their beliefs about COVID-19 vaccination and adopting regular testing/screening on campus. While the degree of COVID specific anxiety did not differentiate the groups, vaccinated students were most informed, had highest concern for COVID spread, were least likely to endorse misinformation, and held positive beliefs about on-campus screening. The vaccine hesitant group held more doubts about the efficacy of vaccines. However, the vaccine-resistant group had the lowest concern with COVID spreading on campus, poor confidence in screening, and held most beliefs in misinformation. Our team developed a knowledge translation plan to address the hesitations identified in our survey. This was in the form of webinars, social media campaigns, resource dissemination and community-outreach. We also made a collaboration with Multicultural Council of Windsor to target racially- and ethnically- diverse populations, which were found to have lower rates of COVID-19 vaccine uptake and confidence.

ABSTRACT P58 - Sponsored by the St Clair Alumni Association

NURSE PERSPECTIVES ON FAMILY-CENTRED ROUNDS IN ADULT CRITICAL CARE UNITS

Felicia Varacalli

University of Windsor

Keywords: Patient Experience, Systems, Education

Background: In critical care settings, many patients are unable to speak for themselves, highlighting the importance of family involvement in care. Since families assume a key role in care planning and decision-making in these situations, family-centred care is essential in this setting. Family-centred rounds are often seen as a component of family-centred care. Nurses have an important role in implementing family-centred rounds and their active participation is crucial. Purpose: This literature review explores nursing perspectives of family-centred rounds in adult critical care units. The results of this review will be used to inform my thesis, which is currently in progress, and investigates nursing perspectives of family-centred rounds in six adult critical care units across four Southwestern Ontario hospitals. Results: There is a lack of literature that strictly explores nursing perspectives of family-centred rounds in adult critical care areas, and much of the present literature lacks rigour. Additionally, the perceived benefits and barriers are inconsistent across sources. Some studies suggest that nurses are open and welcoming to family-centred rounds, while others disagree with this practice. Nursing workload, rounding time, and family understanding are some topics that are affected by family-centred rounds. Nursing perspectives can be affected by their level of nursing experience and their experience of having family present at rounds. Family perspectives on family-centred rounds are considerably more positive and consistent across the literature. More research is needed to explore nursing perspectives of family-centred rounds in adult critical care areas since nurses are foundational to successful implementation.

ABSTRACT P51 - Sponsored by the University of Windsor Faculty of Science

"I TOLD MYSELF, 'I'LL FIX IT LATER'": TRANSITION-AGED YOUTH'S STORIED EXPERIENCES OF MENTAL HEALTH AND HELP-SEEKING DURING THE COVID-19 PANDEMIC

Jesse Scott, Lindsey Jaber, Jennifer Voth, Jennifer Cordeiro, Jesse Myers, Jivan Chandan, Leslee Ward, Samalia Williams

University of Windsor

Keywords: Wellness, COVID-19, Mental Health, Social Determinants, Promotion

Despite the prevalence of mental health issues, many young people do not seek formal help. This mixed-method study explored current barriers and facilitators to help-seeking within this age group during the COVID-19 pandemic. Transition-aged youth (18-24 years old) from Windsor-Essex County were recruited from the University of Windsor and community mental health service networks to diversify sample characteristics and maximize the generalizability of findings. The quantitative phase of the project consisted of an online survey (N = 101) to assess how the pandemic impacted aspects of participants' lives, including their mental health and relationships, and explore intention and barrier domains of help-seeking. The qualitative phase involved follow-up interviews with a subsample of participants (n = 15), which were analyzed using thematic analysis framed by Rickwood and colleagues' help-seeking process model (2005). Results offer insight into the types of mental health challenges young adults within the community experienced throughout the pandemic. Participants also shared stories of internalized and externalized stigma as well as having faced notable barriers to accessing support services. Implications of this work include practical strategies for adjusting mental health support service delivery for a traditionally hard-to-engage target population. The presented recommendations apply to current contexts and are intended to remain useful during future public health emergencies.

ABSTRACT P56 - Sponsored by the University of Windsor Faculty of Science

DESIGN AND DEVELOPMENT OF A VOLATILE ORGANIC COMPOUND CONCENTRATOR AUTOMATED TEST APPARATUS (VOCCATA)

Dora Strelkova, Aya Abu-Libdeh, Matthew Santos

University of Windsor

Keywords: Innovation

The Volatile Organic Compound Concentrator Automated Test Apparatus (VOCCATA) was engineered to increase the concentration of volatile organic compounds (VOCs) and quantify their concentration as a function of time, temperature, and flow rate. VOCs exist naturally in trace amounts that demand expensive, precision sensing solutions and are difficult to detect considering resolution limits of conventional MEMS gas sensors. The VOCCATA addresses this problem by pre-concentrating a target analyte in a Carbon Nanotube (CNT) foam-filled chamber, overcoming measurement limitations of off-the-shelf gas sensors. This allows improved detection of breath biomarkers (VOCs) in diagnostics applications for cancer and other diseases. This device supports UWindsor's e-MINDS research team and works by first adsorbing ambient gasses in a small chamber filled with CNT foam. The chamber is then heated according to the end-user's specified temperature profile for a specified desorption time. As a result of heating, gas is de-adsorbed in a greater concentration and released to a flow rate sensor via passive flow for volume compensation before reaching the end-user's VOC gas sensor that quantifies the now amplified VOC concentration. The device features a custom printed circuit board interfaced through a Raspberry Pi for heater control, temperature, and flow rate sensing, as well as a gas chamber and MEMS gas sensor block that allows easy filter and MEMS sensor customization. The proposed design achieves process repeatability, user adjustability and control, low power consumption, accurate heating up to 300°C, temperature sensing with $\pm 5^\circ\text{C}$ accuracy, and flow rate sensing with an error of less than 1%.

ABSTRACT P27 - Sponsored by the University of Windsor Faculty of Science

FROM LAB-ON-A-CHIP TO LAB-IN-THE-BODY: ENHANCING THE BIOCOMPATIBILITY OF BIOSENSORS IN POINT-OF-CARE DIAGNOSTICS

Anita Hu

University of Windsor

Keywords: Cancer, COVID-19, Infectious Disease, Technologies, Physical Sciences, Public Health

Biomolecules are the foundation of life. DNA, proteins, and other analytes govern all biological processes—from those sustaining life to those causing diseases. Detection of these biomolecules is thus critical to monitor patients' various health conditions. Electronic devices, such as thin-film transistors, are one tool to efficiently sense biomolecules of interest. Although silicon is the most common semiconducting material in transistors, recent advancements in materials chemistry are promoting organic semiconducting polymers for biosensors, given these conjugated polymers' low cost, scalable manufacturing, and mechanical properties that allow for the creation of conformable soft electronics. Currently, important investigations are being conducted to make biosensors further compatible with the human body using a novel type of transistor called organic electrochemical transistors (OECTs). OECTs rely on low-voltage, ionic solutions, similar to biological fluids, to elicit ON/OFF current

responses in the presence of protein-protein interactions or other physicochemical changes. This presentation will focus on our group's recent efforts to develop novel biosensors, combining materials design with electronic testing. In the first part, a protein-sensing organic field-effect transistor, which successfully detected varying concentrations of ubiquitin-specific protease 8, will be discussed. Then, our ongoing fabrication of OECTs will be presented, highlighting our recent efforts to produce soft electronics capable of measuring protein-protein interactions directly at the point-of-care. This project presents a revolutionary new platform for point-of-care diagnostics and disease monitoring by efficiently and organically sensing biomolecules of interest. Our designs will lead a future of implantable electronic biosensors, making diagnostics all the more precise and accessible.

ABSTRACT P60 - Sponsored by the University of Windsor Faculty of Science

RISKS FOR RE-ENROLLMENT TO CARDIAC REHABILITATION: A RETROSPECTIVE STUDY OF ONTARIO-BASED CARDIAC REHABILITATION PROGRAMS

Leslee Ward, Jennifer Voth, Cayla Wood, Clinton A. Brawner, Melvyn Rubenfire, Neville Suskin, Kevin Milne, Cheri McGowan

University of Windsor

Keywords: Cardiovascular, Rehabilitation, Promotion, Systems, Life Sciences

Cardiac rehabilitation (CR) reduces recurrent cardiac events, and cardiovascular disease-related mortality, and increases overall quality of life among individuals with heart disease. Some participants experience recurrent cardiac events and require re-referral to CR; however, it is not known whether the risk for recurrent events can be predicted and possibly mitigated. Thus, the purpose of this study was to describe CR re-referral and subsequent re-enrollment rates and determine factors associated with re-enrollment within five years of initial encounter. In this study, we used data from individuals who were referred to CR (N=1535, 72% male) and individuals who enrolled (N=870, 73% male) at two Southwestern Ontario hospitals in 2012. CR re-referral was defined as a second event within five years of initial discharge in 2012 that may or may not have resulted in re-enrollment, whereas re-enrollment was defined as a second enrollment to CR within 60 days of re-referral. Time to re-referral and re-enrollment by hospital site was described using Kaplan Meier curves and long-rank test. Of the 870 participants who enrolled in 2012 (56.7% of individuals referred to CR), 23 (2.6%) participated in CR a second time. The time of re-enrollment was influenced significantly by hospital site with one site having more re-enrollments over five years (M=4.89 years, 95% CI 4.84-4.95, p<0.00) than the other (M=4.96 years, 95% CI 4.93-5.00). Findings suggest that individuals who participate in CR the first time have a low rate of re-enrollment. However, CR program site may play a role in recurrent events & re-enrollment.

Abstract P66 - Sponsored by the University of Windsor Faculty of Science

GOT SPIT? DEVELOPING A SCREENING PLATFORM TO MONITOR COVID-19

Jackie Fong, Brayden Labute, Jesse Scott, Qiudi Geng, Kyle Lago, Ryland Corchis-Scott, Farinaz Ziaee, Ana Maria Podadera Gonzalez, Farzaneh Jouyandeh, Sarvnaz Sadeghi, Maria Badalova, Caroline Hamm, Pooya Moradian Zadeh, Kenneth Ng, Robert Michael McKay, Kendall Soucie, Lisa Porter, Yufeng Tong

University of Windsor

Keywords: COVID-19, Screening, Innovation

At the beginning of the COVID-19 pandemic, testing capacity for this novel disease was severely limited and unable to meet the sudden surge in demand. University of Windsor researchers combined their existing expertise to overcome this challenge from multiple disciplines. We began to develop a cost-effective and rapid testing platform to alleviate the pressures on the community and keep people safe as they returned to in-person activities on campus. The platform consists of four key parts: (1) saliva screening of individuals; (2) wastewater surveillance of buildings and the community; (3) next-generation sequencing of saliva and wastewater samples; and (4) an interactive dashboard to display the findings. In particular, the saliva screening study was developed heavily with psychosocial and behavioural studies in mind due to its voluntary nature. It was vital to understand the motivators of voluntarily testing weekly, and participation satisfaction was paramount. Saliva sampling was adopted as an alternative to NPS swabs for screening because its collection is non-invasive, fast, and easy. We have identified approximately 40 cases of COVID-19 from over 1000 saliva samples by developing cost-effective RNA extraction and qRT-PCR testing. This includes cases detected from participating varsity sports teams, preventing intra and inter-university spread of COVID-19 amongst athletes. The establishment of our screening platform will prepare our region to better detect novel pathogens and monitor pathogens of concern. Importantly, we have built a diverse team with different disciplines, experience levels and backgrounds who are well-equipped to work with complex teams to tackle any challenge.

ABSTRACT P54 - Sponsored by the University of Windsor Faculty of Science

CONTROL OF STEMNESS IN GLIOMA VIA NANOPARTICLE-MEDIATED REGULATION OF CD44 RECEPTOR

Alexandra Sorge, Dorota Lubanska, Sami Alrashed, Gage T. Mason, Fatima Nadeem, Angela Awada, Mitchell DiPasquale, Aleena Malik, Monika Kojic, Mohamed A. R. Soliman, Ana C. deCarvalho, Abdalla Shamisa, Swati Kulkarni, Drew Marquardt, Lisa A. Porter, Simon Rondeau-Gagné.

University of Windsor

Keywords: Cancer, Technology

Glioblastoma, also known as glioma or GBM, is the most common and aggressive malignant primary brain tumor which continues to puzzle researchers as decades of efforts to find an effective therapy has proven to fail. Barriers to success of the available treatment include impermeability of the blood brain barrier (BBB), tumor heterogeneity and existence of aggressive and resistant Tumour Initiating Cells (TICs). Collaborative studies in our lab show that conjugated polymer nanoparticles (CPNs) can serve as a potential therapeutic approach to overcome these barriers. CPNs are labeled with Hyaluronic acid (HA-CPNs) which is a ligand for one of the most prominent receptors found on TICs, CD44. Our data to date have demonstrated that HA-CPNs cause selective decrease in proliferation, migration potential and expression of markers of aggressiveness and self renewal in CD44+ glioma cells. My project investigates the mechanism by which HA-CPNs exert their effects and how the uptake of the nanoparticles is regulated. We study the status of CD44 receptor on the protein and mRNA levels as well as and how manipulation of its levels affects glioma aggressiveness. We explore inhibition of Clathrin Mediated Endocytosis as responsible for the uptake of HA-CPNs and use it to validate selected effects of HA-CPNs. In summary, my project will reveal molecular mechanism behind HA-CPN anti-glioma effects which will further contribute to more in- depth evaluation of this nanoparticle system as a potential therapy for patients with GBM.