


## 2020 WOMEN'S HEALTH RESEARCH INSTITUTE CATALYST GRANT RECIPIENTS

The Women's Health Research Institute (WHRI) is very pleased to congratulate the recipients of the 2020 Women's Health Research Institute Catalyst Grants. This competition was funded thanks to the dedicated support of the BC Women's Health Foundation.

This grant competition provides support for pilot studies in women's and newborn's health, which aim to generate preliminary data; test new approaches, methodologies or tools; bring new teams together; and/or support new research in women's and newborn's health from established researchers.

This competition has two applicant streams which are evaluated separately from one another: the Academic Researcher stream and the Clinician Investigator stream.

### ACADEMIC RESEARCHER STREAM RECIPIENTS

 <p><i>Kristin Campbell</i></p>	<p><b>PROJECT TITLE:</b> Targeted physical activity to improve mobility and falls risk in women living with ovarian cancer</p>
	<p><b>PRINCIPAL INVESTIGATOR:</b> Kristin Campbell, Professor, UBC Department of Physical Therapy</p>
	<p><b>CO-INVESTIGATORS:</b> Anna Tinker, Gillian Hanley, Cheri Van Patten, Dawn Mackey, Iris Lesser, Linda Trinh</p>
<p><b>SUMMARY:</b> Reduced physical function is common in women living with ovarian cancer and increases their risk of decreased bone density, and negatively impacts their cardiovascular health, muscle strength and muscle mass. Our team recently reported that women with a prior diagnosis of ovarian cancer are also more likely to die from falls compared with similarly aged women in the general population. In older women, specially designed physical activity can improve physical function and reduce risk of falls. This has not been tested in women with ovarian cancer. This project will test the feasibility of delivering a virtual physical activity program and its effect on mobility, balance, muscle strength, and fitness in women with ovarian cancer. Participants will be referred by their medical oncologist to take part in a 12-week virtual, supervised physical activity program completed at home using a videoconferencing system. Classes will include aerobic and muscle strengthening exercises and patient education on relevant health topics, along with activities to foster group connection and peer social support. This virtual program has the potential to reduce key barriers to physical activity programming in cancer care, providing greater access to programming for women, especially those who do not live in city centres. Additionally, it will provide a referral pathway for oncologists to recommend programming delivered by exercise professionals familiar with cancer. The project has strong potential to positively impact the lives of women living with and beyond ovarian cancer, and support women's health in British Columbia.</p>	



*Travis Hodges*

**PROJECT TITLE:**

The role of neuroinflammation in adolescent female negative cognitive bias

**PRINCIPAL INVESTIGATOR:**

Travis Hodges, Postdoctoral Fellow, UBC Department of Psychology

**CO-INVESTIGATORS:**

Liisa Galea

**SUMMARY:**

Major depressive disorder (MDD) affects 20% of the population, and women are twice more likely than men to have MDD. Women exhibit more severe cognitive symptoms of depression, including negative cognitive bias, the increased perception of neutral situations as negative. Further, negative cognitive bias in at-risk adolescent girls predicts future depressive episode onset. Current treatments to reduce MDD symptoms are only effective for a subset of the population and are not effective for reducing negative cognitive bias, thus discovering mechanisms of negative cognitive bias may allow for improved treatments for MDD and MDD symptom prevention. MDD is associated with increased inflammation in the brain, including in the hippocampus, amygdala, and frontal cortex. Further, increased neuroinflammation is associated with MDD and cognition disruption via impairment of pattern separation, which is required for cognitive bias. We will test the hypothesis that proinflammation in the brain regulates negative cognitive bias in adolescent female rats. Adolescent female rats will undergo chronic unpredictable stress, a procedure that elicits depressive phenotypes in rodents, and a fear-based cognitive bias task. We will determine the involvement of proinflammatory cytokines in the hippocampus, amygdala, and frontal cortex in negative cognitive bias via electrochemiluminent assays. We will also test whether negative cognitive bias is dependent on proinflammation by blocking the activity of the cytokine IL-1 $\beta$  via the antagonist Anakinra. Ultimately, we hope that determining the association between proinflammation and negative cognitive bias will result in tailored precision treatments for cognitive dysfunction in young women at risk for MDD.



*Jerilynn C. Prior*

**PROJECT TITLE:**

Phase II 6-month Cyclic Progesterone/Spironolactone Pilot Therapy Trial in Polycystic Ovary Syndrome—pre-post one-arm feasibility study

**PRINCIPAL INVESTIGATOR:**

Jerilynn C. Prior, Professor, UBC Department of Medicine


**CO-INVESTIGATORS:**



Joel Singer, Azita Goshtasebi, Marshall Dahl, Sonia Shirin, Dharani Kalidasan, Faye Murray

**SUMMARY:**

Androgenic Polycystic Ovary Syndrome (PCOS) creates physical/emotional burdens in 4-20% of premenopausal women living with PCOS (WLWP) including: few menstruations per year, subfertility, hirsutism/acne and low quality of life by validated PCOS Questionnaire (PCOSQ). Combined hormonal contraceptives (CHC), the current standard-of-care, improve PCOSQ only 16%; with stopping CHC, benefits disappear within 6-months. We hypothesize too-fast brain/luteinizing hormone (LH) pulses cause PCOS. Progesterone (P4) slows LH when testosterone (FreeT) is normal. Combining two approved medications, Cyclic P4 with anti-androgen, Spironolactone (Sp), will likely provide effective, durable benefits. WLWP lit-review suggested significant P4 7-14-day benefits. A 6-month prospective feasibility study of CyclicP4/Sp is necessary.

## CLINICIAN-INVESTIGATOR STREAM RECIPIENTS

 <p><i>Nichole Fairbrother</i></p>	<p><b>PROJECT TITLE:</b> Screening for perinatal anxiety disorders: A randomized controlled trial</p>
	<p><b>PRINCIPAL INVESTIGATOR:</b> Nichole Fairbrother, Clinical Associate Professor, UBC Department of Psychiatry</p>
	<p><b>CO-INVESTIGATORS:</b> Arianne Albert, Patricia A. Janssen, Martin M. Antony, Sara Norris, Benicio Frey, Fanie Collardeau</p>
<p><b>SUMMARY:</b> One in five pregnant and postpartum women suffers from one or more anxiety or anxiety-related disorders (AD). This is significantly greater than the number of women who suffer from depression during the perinatal period. Despite the availability of evidence-based treatments for anxiety, and the fact that perinatal AD are associated with broad-ranging and long-lasting negative outcomes for women (e.g., depression) and their offspring (e.g., low birth weight, preterm delivery, and emotional difficulties), screening for these disorders is rare. Without screening, women in distress are left untreated or misdiagnosed, and they and their infants suffer as a result. However, little is known about the impact of perinatal AD screening on mental health outcomes and treatment access. Encouragingly, perinatal women report high acceptability for screening initiatives, and active efforts to elicit anxiety symptoms are essential as women who are not questioned about their mental health are much less likely to seek help. The extant evidence tells us that screening, when combined with individualized follow up and referral, allows the majority of identified women to access treatment. The proposed study represents the first randomized controlled trial of the effect of personalized perinatal AD screening feedback and referrals on mental health outcomes, treatment seeking behaviours, and the use of mental health services.</p>	

 <p><i>Mohamed A. Bedaiwy</i></p>	<p><b>PROJECT TITLE:</b> The Impact of COVID-19 on Births Following Spontaneous Conception and Assisted Reproduction in British Columbia: A Prospective Population-Based Study</p>
	<p><b>PRINCIPAL INVESTIGATOR:</b> Mohamed A. Bedaiwy, Professor, UBC Department of Obstetrics &amp; Gynecology KS Joseph, Professor, UBC Department of Obstetrics &amp; Gynecology</p>
	<p><b>CO-INVESTIGATORS:</b> Emma Branch</p>
 <p><i>KS Joseph</i></p>	<p><b>SUMMARY:</b> Many effects of the COVID-19 pandemic have already been seen socially and economically. However, no studies have identified how the pandemic has affected fertility and reproductive issues. The negative psychological and financial impact of the pandemic could have led to a reduction in birth rates for various reasons including financial insecurity and reduced access to assisted reproductive technologies for infertile couples. On the other hand, with people spending more time at home there could be an increase in spontaneous conceptions. The aim of this study is to examine birth rates of spontaneously conceived babies and those conceived via assisted reproduction in British Columbia before and following the COVID-19 pandemic. Insight into changes in birth outcomes, following both spontaneous and assisted conception, will provide information on an important but as yet unexamined aspect of the pandemic, and potentially inform public health policy related to family structure and population growth.</p>



*Brigid Dineley*

**PROJECT TITLE:**

UP-MIFE: Understanding Patient experiences of medical vs surgical management of Miscarriage to Improve delivery and Facilitate imPLEmentation: A mixed-methods approach

**PRINCIPAL INVESTIGATOR:**

Brigid Dineley, Clinical Assistant Professor, UBC Department of Obstetrics & Gynecology

**CO-INVESTIGATORS:**

Pearl Van Dijk, Arianne Albert, Astrid Christoffersen-Deb, Paula Beattie

**SUMMARY:**

One in four Canadians will experience a miscarriage in their lifetime. Although common, the experience can be emotionally devastating. Supporting individuals in making an informed choice about managing their miscarriage while attending to their emotional needs can also be challenging for healthcare providers. This proposal aims to equip individuals experiencing a miscarriage, as well as providers, with the information needed to guide that process.

In 2018, the Early Pregnancy Assessment Clinic (EPAC) at BCWH initiated a protocol for medical management of miscarriage using mifepristone and misoprostol. The protocol was established to facilitate greater self-care for individuals wishing to avoid surgery. Medical management is offered in addition to surgical and expectant options. Working collaboratively with a patient partner, we will evaluate the efficacy and acceptability of this approach. We will compare surgical to medical management. Our primary outcome will be a negative pregnancy test 4 weeks post-miscarriage. We will collect lived experiences of individuals who have completed their miscarriage management in EPAC via interviews.

The study findings will generate patient-level feedback that we will use to enrich our current protocols. As we are the busiest EPAC center in the country, we are well positioned to carry out this study and disseminate these protocols nationally. Given the current limitations to in-person care in the setting of COVID, providing individuals with a management option that avoids hospitalization is especially important. Ultimately, our goal is to promote exemplary miscarriage care that provides choice and empowers individuals in what can be a difficult experience in their lives.