SPRING 2025 | WWW.BCCHBIOBANK.CA

BCCHB NEWSLETTER

OFFICIAL UPDATES FROM THE BC CHILDREN'S HOSPITAL BIOBANK

What's inside this issue:

WE CURRENTLY COLLECT:

BLOOD
BONE MARROW
TISSUE
SALIVA
STEM CELLS
URINE
PLACENTA
CEREBROSPINAL FLUID
CORD BLOOD

HAPPY SPRING FROM THE BCCH BIOBANK!

Wishing you a wonderful spring season from the BCCH BioBank! Thank you for your ongoing support of the BioBank and for your involvement in research.

BC CHILDREN'S HOSPITAL BioBank

STUDY HIGHLIGHT: EPIC UPDATES

LOOKING AT DR. WENDY ROBINSON'S EPIC STUDY - EPIGENETICS OF PLACENTA IN COMPLICATIONS OF PREGNANCY

Dr. Wendy Robinson is a senior scientist at the BC Children's Hospital Research Institute who studies genetics and epigenetics related to fetal development. The abnormal development of the placenta can result in pregnancy complications, such as pre-term birth and maternal pre-eclampsia, as well as impacting fetal growth and organ development. A possible explanation for these pregnancy complications is the placenta does not function as well as it should to feed and support the baby due to genetic and molecular changes.

Dr. Wendy Robinson

The BCCH Biobank currently helps to support the Robinson Lab's EPIC study, which is interested in studying the role of genetics and gene expression in normal development compared to more complicated pregnancies. This study hopes to learn more about what the placenta can tell us about fetal wellbeing and neonatal health, with the long-term goal of improving diagnosis, prognosis, and treatment of babies pre and post delivery.

The BCCH Biobank has been working in collaboration with theEPIC study since January 2018, helping to recruit patients and collect placental samples. In addition, the Biobank has provided advice for consent forms and other data collection instruments, which were important steps for obtaining ethics approval for the study. More recently, with new changes to the hospital system, BCCH Biobank staff have also helped to edit study protocols and suggested ways to incorporate study recruitment and collection protocols into the new hospital systems.

"The recruitment job is a very hard one and requires a great deal of patience and empathy to achieve the goals and to be able to obtain all the necessary information to complete the consent ... [The BCCH Biobank Staff] have great knowledge of how hospital systems and services are organized, ... and have shown great flexibility in their work supporting the Robinson Lab"

- Dr. Wendy Robinson

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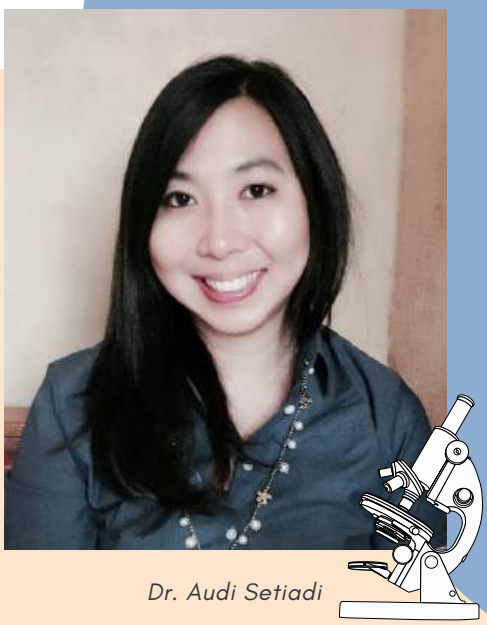
NEW STUDY ALERT!

COMPARING AND MEASURING CYTOKINES IN PATIENTS TO IMPROVE TREATMENT OF CYTOKINE RELEASE SYNDOME



Dr. Audi Setiadi

"I have had the pleasure of working with the BCCH Biobank team for my cytokine study, and I cannot speak highly enough of their outstanding support. The team is incredibly pleasant and approachable, always creating a positive and collaborative atmosphere. Their patience and willingness to assist with any challenges I encountered made the research process much smoother. Whether it was answering detailed questions or providing helpful insights, the Biobank team has been an invaluable resource. They consistently go above and beyond to ensure the success of the project, displaying a level of dedication that truly sets them apart. Go Biobank Team!!"

-Dr. Audi Setiadi

We are excited to announce a new pilot study in collaboration with Dr. Audi Setiadi (Hematopathologist), Dr. Amanda Li (BMT physician), and Dr. Vilte Barakauskas (Clinical Biochemist) at BC Children's Hospital. The BCCH Biobank will work to recruit patients and process samples for this pilot study, which will investigate various disorders under the umbrella of Cytokine Release Syndrome (CRS), including post-CAR-T cell infusion, hemophagocytic lymphohistocytosis (HLH), and sepsis. Cytokines are small proteins produced by immune and non-immune cells, and CRS occurs when the immune system responds more aggressively than normal, resulting in the release of high amounts of cytokines. CRS is a common side effect seen in patents with acute leukemia who undergo CAR-T therapy. The symptoms of CRS are often similar to those of sepsis and HLH, and it is essential to correctly identify each condition as they should be treated differently. This pilot study aims to compare cytokines from different patient groups to learn more about cytokine patterns and explore if cytokine measurements can help to distinguish different conditions.

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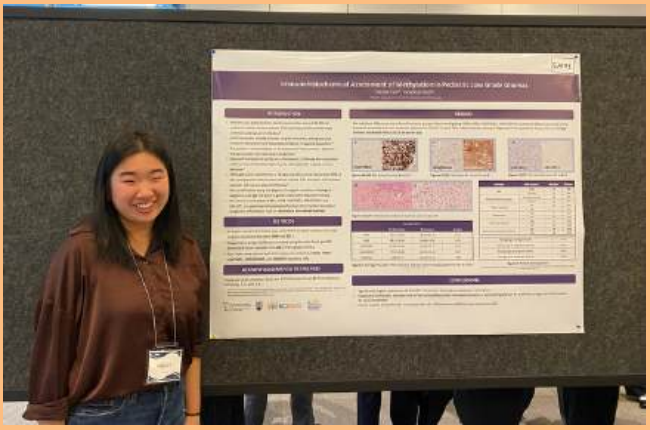
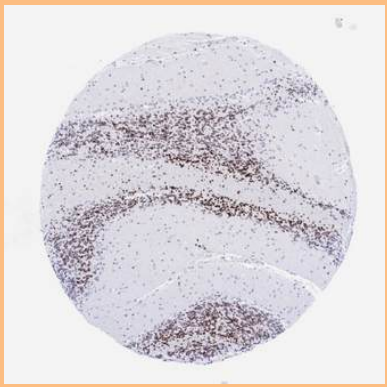
PEDIATRIC LOW GRADE GLIOMA PROJECT

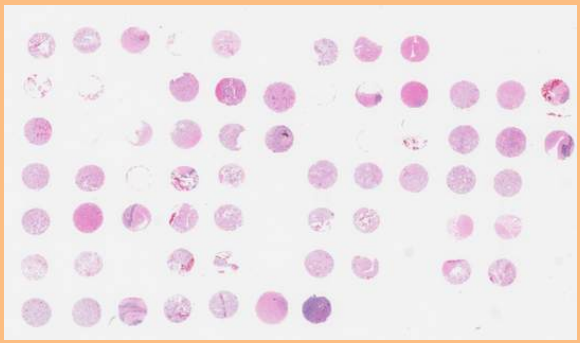
NEW BIOMARKER IN PEDIATRIC LOW GRADE GLIOMA THAT PREDICTS TUMOUR RECURRENCE



Nicole presented findings to her peers at UBC's Multidisciplinary Undergraduate Research Conference this spring



1 of 79 stained tumour cores from the pLGG tissue microarray that was constructed. A TMA is a grid of different tumour sample cores from different patients which have been punched into a paraffin (wax) block. We take slices of this block and stain it using antibodies.



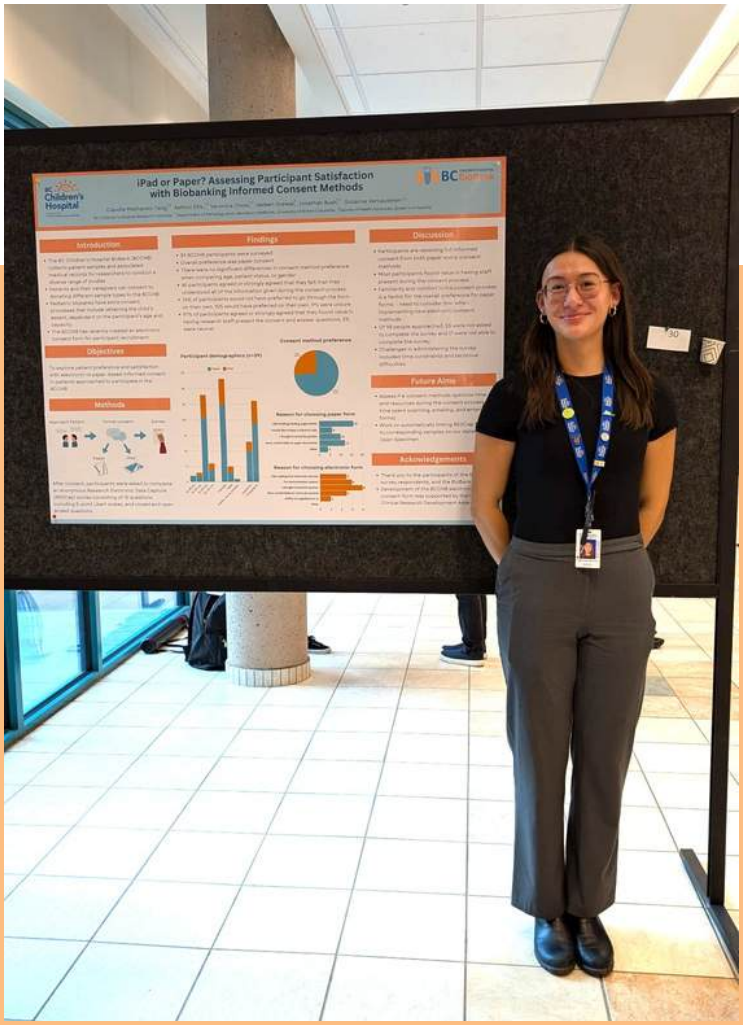
Hemotoxylin and eosin staining was used to stain cell nuclei with blue and cytoplasm with pink

Biobank co-op student Nicole Tam undertook a project that investigates Pediatric Low Grade Glioma (pLGG), the most common type of brain tumour in children. Working alongside BioBank Co-Director Dr. Jonathan Bush, Nicole constructed a tissue microarray (TMA) block containing different pLGG samples to identify potential biomarkers that result in pLGG recurrence using antibody staining. Nicole determined the number of cells in each patient sample that were positive for specific biomarkers of interest and compared that to whether patients had experienced a pLGG recurrence or not. She found that a specific marker she explored was associated with patients that experiences a recurrence of pLGG, which may indicate a more aggressive form of tumour. Nicole's work has the potential to be used in risk stratification at the time of pLGG diagnosis and may also indicate which patients need more intense adjuvant therapy or increased post-operative surveillance. Nicole presented findings to her peers at UBC's Multidisciplinary Undergraduate Research Conference this spring.

IPAD OR PAPER?

ASSESSING PARTICIPANT SATISFACTION WITH BIOBANKING INFORMED CONSENT METHODS

The BioBank recently created an electronic consent form for participant recruitment, which BioBank staff have been using as an alternative option to paper consent forms. After participants selected their preferred consent method, they were offered to complete the survey to elaborate on their choice. Out of 39 participants surveyed, the overall preference (74%) was for paper consent. There were no significant differences in consent method preferences when comparing age, patient status, or gender. Familiarity and comfort in the consent process was a factor for this overall preference for paper forms, which is something that needs to be considered when implementing new electronic consent methods. The survey also asked participants about other aspects of the consent process. We found that regardless of consent method, participants are receiving full informed consent, and that most participants found value in having staff present during the consent process.



Research assistant Claudia Makhanko-Tang presented the findings of a survey previously conducted by summer student Jasleen Grewal, exploring patient preference and satisfaction with electronic vs paper-based informed consent in patients approached to participate in the BioBank

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