BC CHILDREN'S HOSPITAL BioBank

# Annual Report

## BC Children's Hospital BioBank

APRIL 1, 2021 – MARCH 31, 2022

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## 1.0 Overview

This is the seventh annual report of the BC Children's Hospital BioBank (BCCHB), which has been operational since January 1, 2015 and made possible by a generous contribution from Mining for Miracles - the BC mining community's longstanding fundraising campaign for BC Children's Hospital. This report will cover operations and finance from April 2021 – March 2022.

The mission of the BCCH BioBank is to provide a comprehensive service for the collection, processing, storage, rapid access and retrieval of biospecimens and clinical information for research projects using a professional and compassionate approach to patient consenting that adheres to the highest standards of research ethics and patient privacy.

The BCCHB has a two-pronged approach to supporting research, "general biobanking" and "PI-driven research". In the general biobank, specimens are collected under the mandate of the BCCHB for future research. For PI driven research the BCCHB provide researchers with specified services to enable their own research.

Pages 12 – 15 of this report refer to projects that have utilized specimens from the general biobank. The BCCHB has released specimens to a range of projects from antibody research, immunity and responses to infections, cancer and rheumatic diseases.

Pages 16 – 20 describe the extensive list of PI driven studies that the BCCHB has been able to support over the years.

Dr. Vercauteren has continued to participate in a Pediatric Special Interest Group that she formed at the International Society of Biological and Environmental Repositories (ISBER). This is an international group, which is leading discussions specifically about pediatric biobanking.

Below are data and other achievements from April 2021 – March 2022.

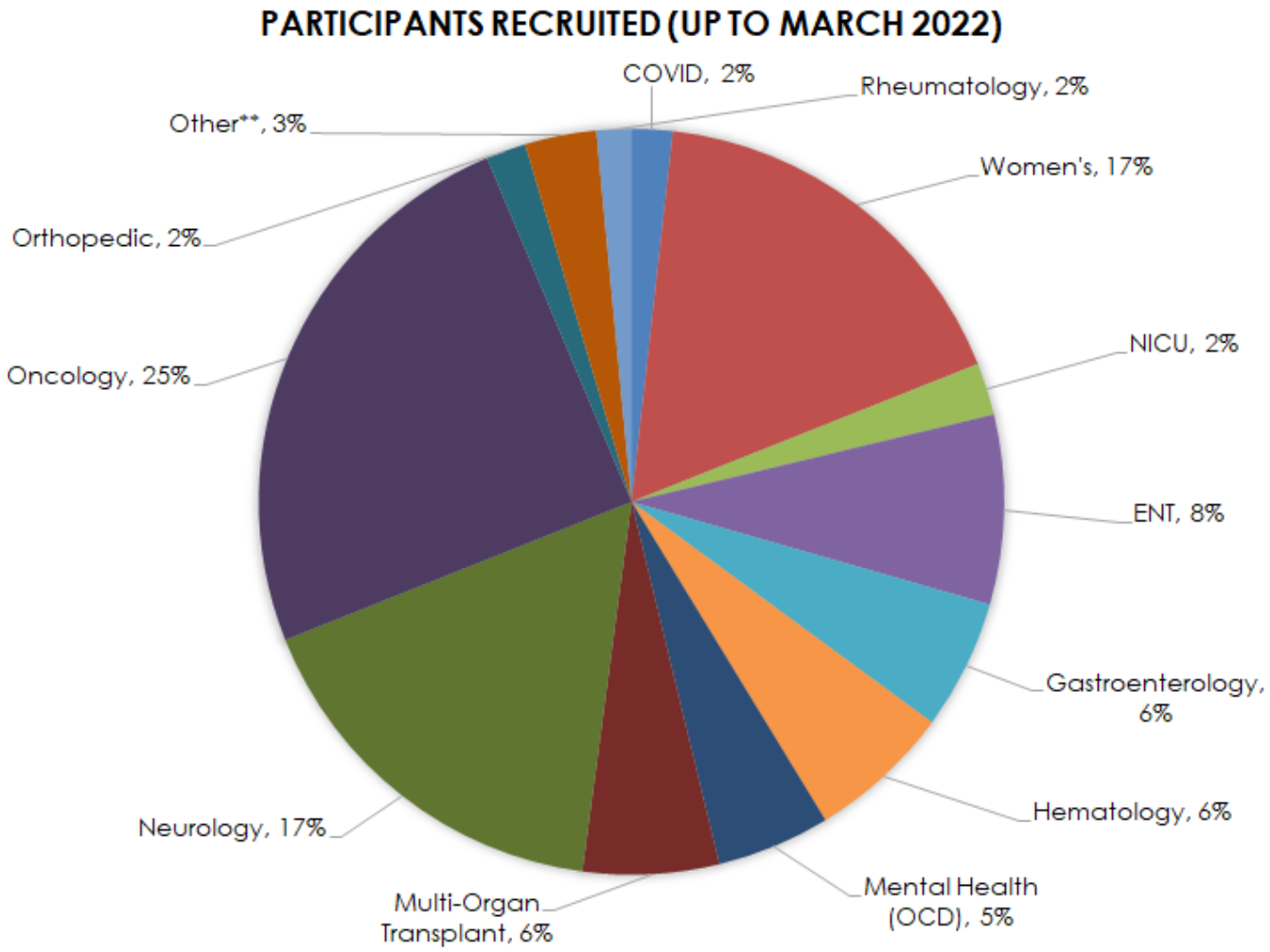
## 2.0 Participation Rate – General BioBank

| | BCCH+ | | BCWH* | | COVID-19 | | Total (BCCH + BCWH) | |
|---|---|---|---|---|---|---|---|---|
| | This Year | Total | This Year | Total | This Year | Total | This Year | Total |
| **Consent Obtained** | 146 | 1956 | 17 (13 NICU) | 444 (51 NICU) | 9 | 40 | 172 | 2440 |
| **Capacity to Consent** | 18 | 121 | -- | | 3 | 3 | 21 | 124 |
| **Declined⌂** | 2 | 77 | 0 | 1 | 0 | 1 | 2 | 79 |
| **Withdrawn/Revoke** | 1 | 32 | 0 | 0 | 0 | 0 | 1 | 32 |
| **Consent rate** | 98.0% | 95.0% | -- | | -- | | -- | |

*BCWH recruitment has been minimized until a demand in maternal samples is observed.
+BCCH and BCWH recruitment volume was lower than previous years due to COVID-19 patient interaction restrictions.
⌂Decline total counts have increased compared to the 2020-2021 Annual Report due to a change in practice in auditing and therefore affecting the overall consent rate. Consent rates for the period of 2021-2022 have not been affected.

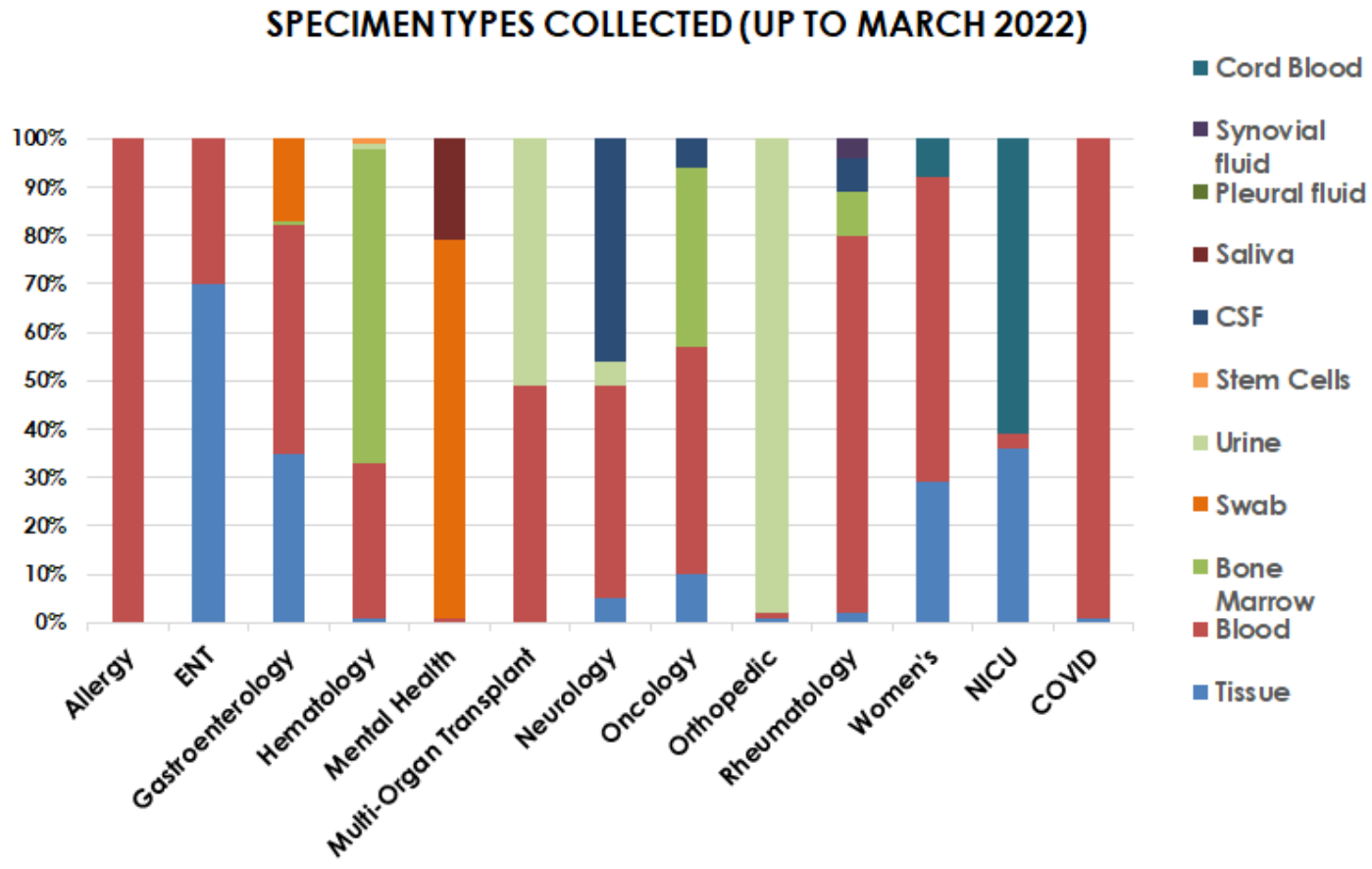
As per PHSA Privacy Guidelines, the BCCHB has moved to obtain full informed consent from all participants who are 14 and over as opposed to obtaining assent where applicable.

## 3.0 Clinic Representation – General BioBank

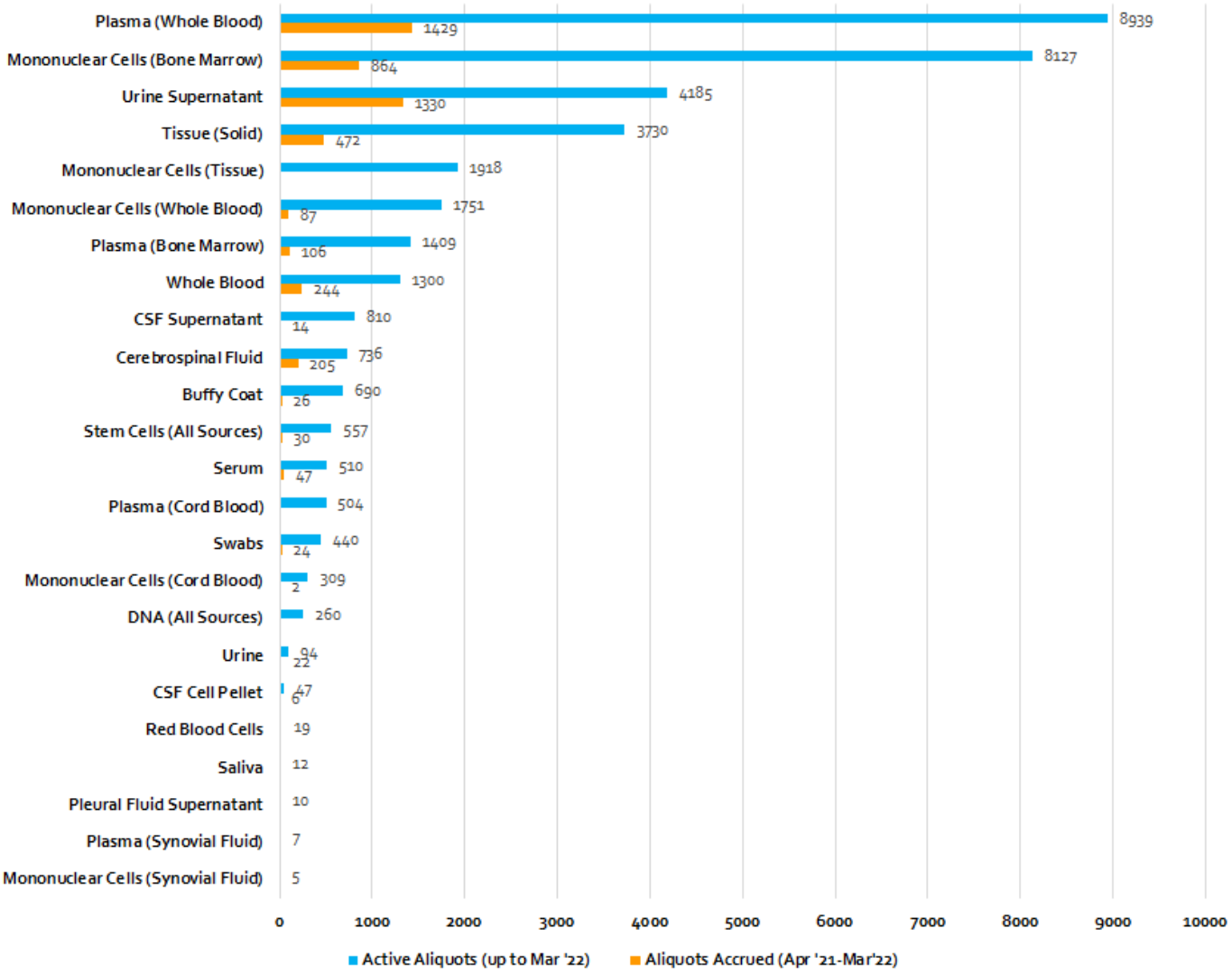



**Other clinics include Allergy, BCCH ER, BCCH Clinic, Cardiology, Endocrinology, General Pediatrics, Medical Genetics, and Offsite clinics which have lower clinic representation compared to the above listed.

## 4.0 Specimen Collections – General BioBank



## 5.0 Aliquots Accrued and Aliquot Availability – General BioBank



## 6.0 BioBank Oversight Committee (BOC)

| | |
|---|---|
| **Suzanne Vercauteren Chair of BOC** | **Co-Director, BCCH BioBank** |
| **Jonathan Bush** | Co-Director, BCCH BioBank |
| **Cheryl Wellington** | Vice Chair of Research, Department of Pathology and Laboratory Medicine, UBC - *beginning Mar 1 2022* |
| **Kathryn Dewar** | Senior Research Manager, WHRI |
| **Ellen Giesbrecht** | Department of Obstetrics and Gynecology, UBC (BCWH Site Head) |
| **Michelle Demos** | Representative for the Head of Pediatrics, UBC |
| **Peter Watson** | External Biobank Expert |
| **Erik Skarsgard** | Head of Department of Surgery at BCCH |
| **Quynh Doan** | BCCHR Director of Clinical Research |
| **Mike Burgess** | External Ethics Expert |
| **David Goldfarb** | Associate Head of Pathology and Laboratory Medicine at C&W (starting July 1, 2020) |
| **Anthony Bailey** | Professor and Chair of Child and Adolescent Psychiatry, UBC |
| **Brenda Jackson** | Representative for the Provincial Laboratory Medicine Services |
| **Alice Virani** | Director of the Clinical Ethics Service, PHSA |
| **Ashton Ellis** | Research Coordinator, BCCH BioBank (ex-officio) |

## 7.0 BioBank Executive Committee (BEC)

| | |
|---|---|
| **Jonathan Bush**<br>**Chair of BEC** | Co-Director, BCCH BioBank |
| **Suzanne Vercauteren** | Co-Director, BCCH BioBank |
| **Caron Strahlendorf** | Member of Research Ethics Board |
| **Wendy Robinson** | Member of BCCHR |
| **Sheila O'Donoghue** | Representative from Biobanking and Biospecimen Research Services (BBRS) |
| **Anna Lee** | Pediatric and Perinatal Pathologist, Anatomical Pathology, BCCH |
| **Tanya Nelson** | Member of Pathology and Laboratory Medicine at C&W |
| **Luis Nacul** | Member of WHRI, Medical Director CCDP at BCWH |
| **Gregor Reid** | Member of BCCHR |
| **Jennifer Claydon** | Manager, Clinical Research Support Unit, BCCHR |
| **Ashton Ellis** | Research Coordinator, BCCH BioBank (ex-officio) |

## 8.0 BioBank Biospecimen Advisory Committee (BAC)

| | |
|---|---|
| **William Gibson (Chair of BAC)** | Member of BCCHR |
| **Suzanne Vercauteren** | Co-Director, BCCH BioBank |
| **Jonathan Bush** | Co-Director, BCCH BioBank |
| **David Cabral** | Member of BCCH |
| **Helene Cote** | Member of UBC |
| **Jacob Rozmus** | Member of BCCH |
| **Anthony Cooper** | Member of BCCH |
| **Wee-Shian Chan** | Member of BCWH |
| **Clare Beasley** | BC Mental Health and Addiction Services |
| **Isabel Jordan** | Founder of Rare Disease Foundation parent advocacy group |
| **Jefferson Terry** | Member of the Department of Pathology and Laboratory Medicine |
| **Veronica Chow** | Laboratory Manager, BCCH BioBank |

## 9.0 Staff

| | |
|---|---|
| **Suzanne Vercauteren** | Co-director |
| **Jonathan Bush** | Co-director |
| **Veronica Chow** | Laboratory Manager |
| **Ashton Ellis** | Research Coordinator |
| **Vi Nguyen** | Research Technician |
| **Kendall Plant** | Research Technician |
| **Sadaf Sediqi** | Research Technician (CITF Project) |
| **Qudrat Aujla** | Undergraduate Research Assistant |
| **Iryna Kayda** | Research Technician (End August 2021) |
| **Lise Rutherford** | Summer Student (May – August 2021) |
| **Jaeden Moerike** | Summer Student (May – August 2021), Volunteer (End Sept 2021) |
| **Sebastian Kondratowski** | Co-op Student (begin January 2022) |

## 10.0 Applications & Biospecimen Release

Between April 2021 and March 2022, the BCCH BioBank has received nine new applications for biospecimens. Applicants and their research project titles are displayed below.

1. Role of SLC43A3 in the therapeutic efficacy and adverse effects of 6-mercaptopurine. Dr. James Hammond – specimens granted. ***12 mononuclear cell samples from B-ALL patients.***

   Lay Summary: Acute Lymphoblastic Leukemia (ALL) is the most common malignancy in pediatric patients from the developed world. Despite improvements in treatments there are still about 20% of patients who face relapse and lower survival rates due to a lack of response to treatment and this statistic increases with age. 6-mercaptopurine (6-MP) is a common chemotherapy drug for ALL patients, however, in spite of consistent dosage, the plasma bioavailability of 6-MP varies between patients. Dr. Hammond's study hypothesizes that the transporters encoded from gene SLC43A3 are vital to 6-MP treatment efficacy. SLC43A3 gene expression is shown to vary between pediatric patients, with lower gene expression affecting the ability of 6-MP chemotherapy to enter cells. This study will screen bone marrow mononuclear cell samples for the expression of SLC43A3, along with other genes linked to 6-MP effectiveness. These expression levels will then be correlated to the therapeutic outcome and to patient specific factors such as age, sex, remission/relapse times and chemotherapy dosage.

2. Can extracellular vesicles be used to detect high-risk pediatric acute lymphoblastic leukemia? Dr. Sherri Christian – specimens granted. ***5 plasma and mononuclear cell samples from B-ALL ETV subtype patients, 3 plasma and mononuclear cell samples from B-ALL Ph-like subtype, and 6 healthy plasma and mononuclear cell samples.***

   Lay Summary: Minimal Residual Disease (MRD) is defined as the amount of cancerous leukemia cells present in the bone marrow, which are undetectable through microscopic examination. MRD is a major factor in evaluating a B-ALL patient's risk for relapse. Among patients with relapse, the survival rate is only 30-50%. While current MRD detection techniques are costly and complicated to access, this study proposes that a single blood draw can be used as a more accessible detection method. Dr. Christian's study hypothesizes that the small vesicles secreted from tumour cells can be identified in a variety of bodily fluids such as blood and cerebrospinal fluid, allowing clinicians to better identify cerebral spinal fluid disease- a disease state not accessible to systemic chemotherapy. This study will isolate vesicles from the blood of two B-ALL subtypes, high risk Ph-like and lower risk ETV6-RUNX1, and compare the miRNA profiles in order to identify specific signatures and indicators of high-risk disease.

3. Epigenetics of OCD in response to CBT treatment. Dr. Evelyn Stewart – specimens granted. ***126 salivary swabs.***

   Lay Summary: To date, available treatments for obsessive-compulsive disorder (OCD) are poorly understood. This study aims to identify if Cognitive Behavioural Therapy (CBT) causes any dynamic changes in childhood and adolescent patient epigenetic markers. Changes in epigenetic markers can be correlated to changes in OCD severity over the course of treatment. The epigenetic markers in question are genome wide DNA methylation events that can be characterised with the Illumina Infinium

Methylation Array. Dr. Stewart's study seeks to extract DNA from the buccal swabs of participants throughout CBT therapy in order to identify potential changes in epigenetic loci. The results of this study will allow an examination of deviations in patient's epigenetic age to be associated with CBT interventions.

4. Assessing the immunopathogenesis of novel germline variants in IKZF2. Dr. Stuart Turvey – specimens granted. ***2 control peripheral blood mononuclear cell samples.***

   Lay Summary: Patients with primary immunodeficiency or inborn errors of immunity are considered to have rare genetic disorders in which key elements of the immune system are absent. Patients with these conditions provide a rare opportunity to identify which genes are key players in immune responses through whole genome sequencing. Dr. Turvey's team identified an immunodeficiency patient with a hyperactive phenotype of T-cells and impaired *IKZF2* gene function. This gene encodes a protein and transcription factor called Helios, which plays a regulatory role in immune function. They hypothesize that this variant of impaired Helios protein causes dysregulated binding of gene promoter sites, resulting in an enrichment of proinflammatory pathways over tolerogenic pathways. The study team will carry out single cell RNA sequencing and compare the genetic differences between the Helios-deficient patient and the healthy controls.

5. Single cell profiling of hematopoietic stem and progenitor cells in pediatric aplastic anemia. Dr. Derek Chan – specimens granted. ***10 mononuclear cell samples from Aplastic Anemia patients.***

   Lay Summary: Aplastic Anemia (AA) in children predisposes the affected individuals to a heightened risk of mortality, relapse, and infections due to a lack of blood cells produced by the bone marrow. Current research believes AA is caused by the T-cell mediated autoimmune destruction of blood stem and progenitor cells. This study aims to uncover the underlying intrinsic defects within this primitive cell population. Since the majority of AA research has historically been done on adults, Dr. Chan's study has a goal of bridging the knowledge and clinical care gap for affected children. Using mononuclear cells from AA patients this study will map the biological pathways involved in blood cell production, alongside single cell RNA-sequencing, compared to healthy participants. Results from this study have the potential to address the sources of stem cell failure and how to provide longer term survival for affected children.

6. Genomic and epigenomic sequencing to understand resistance and relapse in AML. Dr. Aly Karsan – specimens granted. ***20 mononuclear cell samples from Acute Myeloid Leukemia (AML) patients, and 3 mononuclear cell controls.***

   Lay Summary: For patients with AML, disease relapse and resistance is impacted by factors including epigenomic and epitranscriptomic changes, as well as the immune micro-environment. Single-cell therapies combined with high dose chemotherapy only provide minor prolongation of survival due to the heterogeneity of AML and the varied immune environments of the patient. Dr. Karsan's study hypothesizes that single cell RNA-sequencing will allow researchers to better identify patients at risk to

disease relapse or resistance. In the future, such predictive information could be combined with therapy for a more effective treatment of AML. Using mononuclear cells from AML patients at the time of diagnosis and relapse, this study will look for modifications to mRNA that contribute to leukemic progression. Further, the study will use DNA-sequencing to identify gene variants that are recurring within myeloid cells as a potential contributor of recurrent relapse.

7. Prevalence of A1AT deficiency variant alleles in pregnancies affected by COVID-19 syndrome. Dr. Andre Mattman – specimens granted. ***2 serum samples from pregnant women infected with COVID-19.***

   Lay Summary: Individuals who are pregnant have shown an upregulation of serum A1AT as a physiological change. Interestingly, A1AT deficiency is hypothesized to be a risk factor for contracting SARS-CoV2 viral infection. This study seeks to examine the possibility that pregnant adults with upregulated A1AT would have added protection from infection. However, pregnant adults with an A1AT "Z" variant may not have the same protection as the normal variant patients. Dr. Mattman's study will use serum from pregnant individuals with COVID-19 infections to identify the "Z" allele variant frequency and compare any findings to the provincial rates of "Z" alleles in SARS-CoV2 infected pregnancies.

8. Biomarker development for clinical diagnosis of stage and response to treatment in inflammatory bowel diseases. Dr. Kevan Jacobson – specimens granted. ***50 control plasma samples.***

   Lay Summary: Patients affected by Inflammatory Bowel Disease (IBD) face a condition which is currently not curable, and often very unpredictable. Current therapies for IBS do not provide every patient with the same remission times or reduction of symptoms. This study seeks to identify biomarkers that could be used as an assessment of disease activity in order to provide more personal and strategic therapies. Dr. Jacobson's study will use plasma samples to identify novel biomarkers for IBD using HPLC/Mass Spectroscopy that would predict disease stage and progression, in a minimally invasive way for patients.

9. Evaluation of the impact of chronic graft versus host disease and graft versus leukemia on the marrow microenvironment after hemopoietic stem cell transplant in pediatric ALL patients. Dr. Kirk Shultz – specimens granted. ***17 mononuclear cells from stem cell transplant patients with ALL.***

   Lay Summary: For patients will ALL, hematopoietic stem cell transplants (HSCT) serve as a potential therapy when conventional chemotherapy or CAR-T therapies fail. HSCT is however limited by chronic graft vs host disease (cGvHD) which puts patients at risk for disability and increased mortality. cGvHD is immune mediated but poorly understood, however, this team has previously identified unique populations of Treg, NKreg and transitional B-cells that correlate strongly with cGvHD. The goal of Dr. Shultz's study is to better understand the immune environment of this disease in order to reduce the burden on transplant patients. Using mononuclear cells from ALL patients this study will correlate the post HSCT bone marrow micro-environment with the development of cGvHD and relapse.

Over the period of April 2021 and March 2022, the following three projects requested additional specimens for their studies which had previously been approved.

1. Personalize Molecular Characterization. BRAvE. Dr. Gregor Reid, Dr. Chris Maxwell, Dr. James Lim, Dr. Kirk Schultz and Dr. Philipp Lange - specimens granted. ***23 cerebrospinal fluid samples and 13 mononuclear cell samples from B-ALL patients.***

   Lay summary: The aims for this study are to procure viable HR tumor tissues, B- and T- acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) bone marrow, and PDX samples available through BCCH BioBank. The requested samples will include those obtained at diagnosis and, if available in the BioBank, later points during therapy. This will enable assessment of the robustness of original targetable lesions and identification of new targets arising during treatment. The study team will extract DNA and RNA as per standard protocols and perform targeted sequencing for selected genomic alterations (e.g., single-nucleotide variant, INDELS, fusion mutations) and gene expression changes known to be associated with pediatric cancers.

2. Enhanced immune monitoring in pediatric kidney transplant recipients (EnMo I). Dr. Tom-Blydt-Hansen - specimens granted. ***32 plasma samples and 81 urine samples from solid organ transplant patients.***

   Lay summary: Urinary biomarkers such as CXCL10 have been validated for their ability to predict acute organ rejection, but not tested yet for clinical utility. These markers must build upon the existing framework for clinical decision-making to be useful as clinical tools. For the diagnosis of rejection, they must be superior to existing surveillance at indicating a need for biopsy, such that they may reduce the requirement for biopsy surveillance. To address the efficacy of urinary biomarkers, an adapted clinical trial design is required. The interpretation of a biomarker level will be made in the context of existing clinical information. The biopsy result will be used to determine the accuracy with which rejection is predicted. Prior to conducting a clinical trial, preliminary data is needed to guide trial design. The study team proposes a pilot feasibility study to establish the groundwork for a definitive clinical trial in children with kidney transplantation to test the hypothesis that real-time, enhanced monitoring with urine biomarkers is superior to standard monitoring for identifying risk of rejection.

3. Childhood Leukemia: transcriptomics-based point of care rapid diagnosis. Dr. Cielle Wachnian – specimens granted. ***24 mononuclear cell samples from B-ALL patients.***

   Lay summary: Leukemia genomics are used for diagnosis, and are required for risk stratification and may provide evidence to support targeted therapy that may improve survival. A fast, low-cost, and accurate point of care method of detecting RNA/DNA rearrangements would allow for risk stratification, and the potential of added targeted therapy in patients with high-risk disease in low-income countries. This project aims to create a low-cost, accurate, and efficient point of care test, using Nanopore sequencing, to diagnose and provide genomic information on acute leukemia. By extracting RNA from leukemia samples, this project will demonstrate that Nanopore sequencing can be used to recognize B-cell, T-cell, or myeloid leukemia, and will identify common driver genomic events.

## 11.0 PI Driven Studies

## Closed Studies:

| # | Study Name | PI | Services Provided | Sample Processing | Storage |
|---|---|---|---|---|---|
| 1. | Adult SLED (study closed) | Dr. Jan Dutz | Receiving, labeling, recording, and processing the specimen Long-term storage | Serum Plasma Buffy Coat PBMC | - 80°C Liquid Nitrogen |
| 2. | Epilepsy & Genomics (EpGen) (study closed) | Dr. Michelle Demos & Dr. Mary Connolly | Receiving, labeling, recording, and aliquoting the specimen Long-term storage | DNA Extraction | - 80°C |
| 3. | SWAVE-U (study closed) | Dr. Jefferson Terry | Consenting patients and delivering the placenta to Anatomical Pathology | None | Store in the BioBank box in AP |
| 4. | mTOR (study closed) | Dr. Rebecca Deyell | Receiving, labeling, recording, and processing the specimen | Protein Lysate (PBMC) | Temporary storage only (-80°C) |
| 5. | UST1D (study closed) | Dr. Jan Dutz | Receiving, labeling, recording, and processing the specimens Long-term storage | Serum Plasma PBMC Whole blood | - 80°C Liquid Nitrogen |
| 6. | Genome wide assessment of genetic alterations in pediatric acute leukemia (LBRWN) (study closed) | Dr. Lindsay Brown | Consenting and data collection | None | None |
| 7. | TREASuRE (study closed) | Dr. Suzanne Vercauteren | Consenting | None | None |
| 8. | Vitamin B12 status in South-Asian and European pregnant women and their newborns (study closed) | Dr. Hilary Vallance | Labeling, recording, storage | None | - 80°C |

| | | | | | |
|---|---|---|---|---|---|
| 9. | A randomized controlled pilot study to examine the effects of goal-directed fluid therapy on post-operative outcomes in children undergoing scoliosis repair (study closed) | Dr. Zoe Brown | Labeling, recording, storage | None | - 80°C |
| 10 | Kingella Kingae (study closed) | Dr. Ghada Al-Rawahi | Identifying eligible patients, deliver kits, consent patients | None | None |
| 11 | Broady Lab (study closed) | Dr. Raewyn Broady | Labeling, recording, storage | None | Liquid Nitrogen |
| 12 | EoE (study closed) | Dr. Edmond Chan | Labeling, recording, storage | Freezing Tissue<br>Whole Blood<br>Plasma<br>PAX gene | - 80°C |
| 13 | AKI (study closed) | Dr. Cherry Mammen | Processing, aliquoting, labeling, recording, storage | Urine (aliquoting) | - 80°C |
| 14 | POG cf DNA (study closed) | Dr. Ryan Morin | Processing | Plasma<br>Buffy Coat | - 80°C |
| 15 | BC-SICR (study closed) | Dr. Srinivas Murthy | Labeling, recording, storage & processing | Whole blood aliquoting<br>PBMC<br>Plasma<br>DNA | - 80°C<br>Liquid Nitrogen |
| 16 | CAN-TBI (study closed) | Dr. William Panenka | Labeling, recording & processing<br>Long-term storage | Plasma<br>PBMC | - 80°C<br>Liquid Nitrogen |
| 17 | CROPS (study closed) | Dr. Jan Dutz and Dr. Kevan Jacobson | Labeling, recording, storage & processing | Serum<br>Plasma<br>PAX gene<br>PBMC | - 80°C<br>Liquid Nitrogen |
| 18 | iPSC (study closed) | Dr. Francis Lynn | Labeling, recording, storage & processing | PBMC | Liquid Nitrogen |
| 19 | Rheumatology (study closed) | Dr. David Cabral and Dr. Kelly Brown | Labeling, recording, storage & processing | Whole blood aliquot<br>Plasma<br>PBMC | - 80°C<br>Liquid Nitrogen |
| 20 | ABLE-Glyconet (study closed) | Dr. Kirk Schultz | Consenting and coordinating | None | None |

| | | | | | |
|---|---|---|---|---|---|
| **21** | SPACEY<br><br>(study closed) | Dr. Sian Spacey | Labeling, recording, storage & processing | Whole Blood<br>DNA extractions | - 80°C |
| **22** | PRISM<br><br>(study closed) | Dr. Vilte Barakauskas | Storage, coordinating | None | - 80°C |
| **23** | P²RISM<br><br>(study closed) | Dr. Kate Chipperfield | Consenting, coordinating, labeling, recording & storage | Plasma | - 80°C |
| **24** | PRIMED<br><br>(study closed) | Dr. Vikram Sabhaney | Labeling, recording, storage & processing | Tempus<br>Plasma<br>Serum<br>Urine (supernatant) | - 80°C |
| **25** | OncNut<br>(study closed) | Dr. Paul Rogers | Labeling, recording & storage | Whole Blood | - 80°C |
| **26** | CUDDLE<br><br>(study closed) | Dr. Wee-Shian Chan | Consenting and Coordinating | None | None |
| **27** | AbCellera (pediatric)<br><br>(study closed) | Dr. Dewi Schrader | Consenting, coordinating, labeling, recording, storage & processing | Serum<br>Plasma<br>PBMC | - 80°C<br>Liquid nitrogen |
| **28** | DBS<br><br>(study closed) | Dr. David Goldfarb | Labeling, recording, storage & processing | Serum<br>Plasma<br>Bloodspotting | - 80°C |
| **29** | SLED<br><br>(recruitment paused) | Dr. Dina Panagiotopolous & Dr. Megan Levings | Receiving, labeling, recording, & processing the specimen<br>Long-term storage | Serum<br>Plasma<br>Buffy Coat<br>PBMC | - 80°C<br>Liquid Nitrogen |
| **30** | CAUSES<br><br>(study closed) | Dr. Jan Friedman | Receiving, labeling, recording, and aliquoting the specimen<br>Long-term storage | Storage of whole Blood | - 80°C |
| **31** | Understanding the risk of sudden death in families: cascade screening in CPVT (CARDIO) | Dr. Shubhayan Sanatani | Coordinating the collection of patient blood samples to FTA blood spot cards<br>Long-term storage | Blood spot card<br>DNA extractions | Room Temp<br>- 80°C |

## Ongoing Studies:

| # | Study Name | PI | Services Provided | Sample Processing | Storage |
|---|---|---|---|---|---|
| 1. | Overcoming the barriers to successful immune therapy for acute leukemia | Dr. Gregor Reid (Dr. Nina Rolf) | Consenting | None | None |
| 2. | PedVas | Dr Kelly Brown | Aliquoting, labeling, recording, Long-term storage | None | - 80°C<br>Liquid Nitrogen<br>Room Temp. |
| 3. | VIRTUUS | Dr. Tom Blydt-Hansen | Labeling, recording, storage & processing | Urine (supernatant, cell pellet) | - 80°C |
| 4. | PROFYLE | Dr. Rebecca Deyell | Labeling, recording, storage & processing | Urine (supernatant, cell pellet)<br>Tissue<br>Plasma<br>Buffy coat<br>PBMC | - 80°C |
| 5. | Biobank for Skin and Adipose Tissue | Dr. Sarah Hedtrich | Consenting and coordinating | None | 4°C |
| 6. | FASCD | Dr. Crystal Karakochuk | Labeling, recording, storage & processing | Whole Blood<br>Plasma<br>Seru,<br>Buffy Coat | - 80°C |
| 7. | UST1D Phase 2 | Dr. Jan Dutz | Labeling, recording, storage & processing | Plasma<br>PBMC<br>Whole Blood<br>Tempus<br>Feces | - 80°C<br>Liquid nitrogen |
| 8. | CAR-CF | Dr. Mark Chilvers | Labeling, recording, storage & processing | Serum | - 80°C |
| 9. | HiRO + ARVC-B | Dr. Shu Sanatani | Labeling, recording, storage & processing | Serum<br>Whole Blood | - 80°C |
| 10 | CITF | Dr. Pascal Lavoie | Labeling, recording, storage & processing | Serum | - 80°C |
| 11 | Abcellera Adult | Dr. David Goldfarb | Labeling, recording, storage & processing | Serum<br>Plasma<br>PBMC | - 80°C<br>Liquid nitrogen |
| 12 | PREVent | Dr. Megan Levings | Labeling, recording, storage & processing | Serum<br>Plasma<br>PBMC | - 80°C<br>Liquid nitrogen |
| 13 | PREVent-Peds | Dr. Hana Mitchell | Labeling, recording, storage & processing | Serum<br>Plasma<br>PBMC | - 80°C<br>Liquid nitrogen |
| 14 | UCAN CAN DU | Dr. Lori Tucker | Processing | Whole Blood | 4°C |

| | | | | | |
|---|---|---|---|---|---|
| 15 | CKD/BCCBN | Dr. Darryl Knight | Labeling, recording & storage | Serum | - 80°C |
| 16 | Schizophrenia BI | Dr. Diane Fredrikson | Processing | Serum | |
| 17 | VitDalize | Dr. Srinivas Murthy | Labeling, recording, storage & processing | Serum Urine | - 80°C |
| 18 | Kovaltry | Dr. Mark Belletrutti | Labeling, recording, storage & processing | Plasma | - 80°C |
| 19 | Merck | Dr. Mark Chilvers | Processing | Serum | - 80°C |
| 20 | AFII | Dr. Jefferson Terry | Labeling, recording, storage & processing | Plasma | - 80°C |

## 12.0 Key Performance Indicators (KPI)

| | Key Performance Indicators | April 1, 2018 – March 31, 2019 | April 1, 2019 – March 31, 2020 | April 1, 2020 – March 31, 2021 | April 1, 2021 – March 31, 2022 |
|---|---|---|---|---|---|
| **1** | # of participants recruited | 334 per year<br>28 per month | 240 per year<br>20 per month | 163 per year<br>14 per month | 172 per year<br>14 per month |
| **2** | # of requests for specimens from general biobank | 14 per year<br>1.2 per month | 14 per year<br>1.2 per month | 14 per year<br>1.2 per month | 13 per year<br>1.1 per month |
| **3** | # of PI driven research projects supported (cumulative, some studies continue to store samples despite being closed) | 29 | 36 | 44 | 51 |
| **4** | # of aliquots released from General BioBank (per year) | 624 | 467 | 659 | 449 |
| **5** | Sample QC (two methods)<br>i) Mononuclear cells<br>*Recovery*<br>*Viability*<br>ii) DNA<br>*A260/280*<br>*A280/230* | <br><br>59.3%*<br>73.4%*<br><br>1.84<br>1.90 | <br><br>N/A*<br>N/A*<br><br>1.84<br>1.64 | <br><br>N/A*<br>N/A*<br><br>N/A+<br>N/A+ | <br><br>73%<br>92%<br><br>N/A+<br>N/A+ |
| **6** | # of successful grants for BCCHB specific projects (per year) | 4 | 1 | 0 | 0 |
| **7** | # of successful grants/awards that proposed using BCCHB (per year) | 3 | 4 | 0 | 2 |
| **8** | # of publications with BCCHB specimens/data (per year) | 4 | 3 | 3 | 3 |
| **9** | # of conference presentations/posters (per year) | 3 | 4 | 1 | 2 |

*Recovery and viability were self-reported by researchers on fewer released mononuclear cells than in previous years, and could not be accurately measured from a significantly smaller sample size.
+Studies during this fiscal year did not require Nanodrop QC readings from DNA extractions.

## 13.0 BioBank Lifetime Utilization

| Clinic | # of Participants Consented | Sample Type | Aliquots Accrued | Aliquots Available | Aliquots Released | % Utilization |
|---|---|---|---|---|---|---|
| Allergy* | 6 | Mononuclear Cells | 2 | 2 | 0 | |
| | | Plasma | 14 | 14 | 0 | |
| | | Whole Blood | 12 | 12 | 0 | |
| | | **Total Aliquots** | **28** | **28** | **0** | **0.00%** |
| Post-COVID Recovery | 40 | Frozen Tissue Block | 12 | 12 | 0 | |
| | | Mononuclear Cells | 48 | 48 | 0 | |
| | | Plasma | 131 | 131 | 0 | |
| | | Serum | 88 | 84 | 4 | |
| | | Whole Blood | 3 | 3 | 0 | |
| | | **Total Aliquots** | **282** | **278** | **4** | **1.42%** |
| ENTΔ | 185 | Buffy Coat | 1 | 1 | 0 | |
| | | Cell Culture | 13 | 11 | 2 | |
| | | DNA | 115 | 0 | 0 | |
| | | Fluid from Swab | 1 | 1 | 0 | |
| | | Frozen Tissue Block | 786 | 690 | 96 | |
| | | Mononuclear Cells | 2187 | 1649 | 538 | |
| | | Plasma | 365 | 36 | 329 | |
| | | RNA | 168 | 168 | 0 | |
| | | Serum | 47 | 19 | 28 | |
| | | Whole Blood | 32 | 16 | 16 | |
| | | **Total Aliquots** | **3715** | **2591** | **1009** | **27.16%** |
| GastroenterologyΔ | 127 | Buffy Coat | 5 | 4 | 1 | |
| | | Fluid from Swab | 45 | 43 | 2 | |
| | | Frozen Tissue Block | 188 | 151 | 37 | |
| | | Mononuclear Cells | 16 | 16 | 0 | |
| | | Plasma | 179 | 144 | 35 | |
| | | Whole Blood | 118 | 82 | 36 | |
| | | **Total Aliquots** | **551** | **440** | **111** | **20.15%** |
| HematologyΔ | 140 | Buffy Coat | 23 | 23 | 0 | |
| | | Frozen Tissue Block | 1 | 1 | 0 | |
| | | Mononuclear Cells | 846 | 828 | 18 | |
| | | Plasma | 246 | 213 | 33 | |
| | | Red Blood Cells | 9 | 9 | 0 | |
| | | Serum | 54 | 23 | 31 | |
| | | Stem Cells | 41 | 34 | 7 | |
| | | Urine | 3 | 3 | 0 | |
| | | Whole Blood | 38 | 38 | 0 | |
| | | **Total Aliquots** | **1261** | **1172** | **89** | **7.06%** |
| | | Fluid from Swab | 358 | 234 | 124 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Mental Health (OCD) | 111 | Plasma | 5 | 4 | 1 | |
| | | Saliva | 50 | 6 | 44 | |
| | | **Total Aliquots** | **413** | **244** | **169** | **40.92%** |
| Multi-Organ Transplant | 133 | Buffy Coat | 142 | 116 | 26 | |
| | | Frozen Cell Pellet | 1 | 1 | 0 | |
| | | Frozen Tissue Block | 12 | 10 | 2 | |
| | | Mononuclear Cells | 457 | 449 | 8 | |
| | | Plasma | 2299 | 2262 | 37 | |
| | | Serum | 10 | 10 | 0 | |
| | | Urine | 102 | 69 | 33 | |
| | | Urine, Supernatant | 3596 | 2884 | 712 | |
| | | Whole Blood | 3 | 3 | 0 | |
| | | **Total Aliquots** | **6622** | **5804** | **818** | **12.35%** |
| Neurology∆ | 380 | Buffy Coat | 9 | 9 | 0 | |
| | | Cerebrospinal Fluid | 466 | 466 | 0 | |
| | | Cerebrospinal Fluid, Supernatant | 5 | 5 | 0 | |
| | | DNA | 70 | 70 | 0 | |
| | | Frozen Cell Pellet | 1 | 1 | 0 | |
| | | Frozen Tissue Block | 21 | 21 | 0 | |
| | | Mononuclear Cells | 82 | 60 | 22 | |
| | | Plasma | 290 | 148 | 142 | |
| | | Serum | 17 | 7 | 10 | |
| | | Urine, Supernatant | 38 | 38 | 0 | |
| | | Whole Blood | 411 | 400 | 11 | |
| | | **Total Aliquots** | **1410** | **1225** | **185** | **13.12%** |
| Oncology | 557 | Buffy Coat | 181 | 178 | 3 | |
| | | Cerebrospinal Fluid | 20 | 17 | 3 | |
| | | Cerebrospinal Fluid, Cells | 15 | 14 | 1 | |
| | | Cerebrospinal Fluid, Supernatant | 588 | 552 | 36 | |
| | | Mononuclear Cells | 6823 | 6083 | 740 | |
| | | Fixed Tissue Block | 14 | 14 | 0 | |
| | | Frozen Cell Pellet | 41 | 38 | 3 | |
| | | Frozen Tissue Block | 550 | 506 | 44 | |
| | | Plasma | 4087 | 4366 | 261 | |
| | | Pleural Fluid | 5 | 5 | 0 | |
| | | Pleural Fluid, Cells | 4 | 4 | 0 | |
| | | Pleural Fluid, Supernatant | 9 | 9 | 0 | |
| | | RNA | 1 | 1 | 0 | |
| | | Serum | 16 | 14 | 2 | |
| | | Stem Cells | 496 | 453 | 43 | |
| | | Whole Blood | 201 | 197 | 4 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **Total Aliquots** | **13051** | **12451** | **1140** | **8.73%** |
| Orthopedic∆ | 39 | Frozen Tissue Block | 4 | 0 | 4 | |
| | | Mononuclear Cells | 3 | 3 | 0 | |
| | | Plasma | 8 | 6 | 2 | |
| | | Urine, Supernatant | 269 | 269 | 0 | |
| | | **Total Aliquots** | **284** | **278** | **6** | **2.11%** |
| Rheumatology∆ | 34 | Buffy Coat | 10 | 10 | 0 | |
| | | Cerebrospinal Fluid | 20 | 20 | 0 | |
| | | Cerebrospinal Fluid, Cells | 4 | 4 | 0 | |
| | | Cerebrospinal Fluid, Supernatant | 15 | 15 | 0 | |
| | | Frozen Tissue Block | 2 | 2 | 0 | |
| | | Mononuclear Cells | 43 | 43 | 0 | |
| | | Plasma | 87 | 82 | 5 | |
| | | Whole Blood | 14 | 14 | 0 | |
| | | **Total Aliquots** | **195** | **190** | **5** | **2.56%** |
| Other | 64 | Buffy Coat | 5 | 5 | 0 | |
| | | DNA | 3 | 3 | 0 | |
| | | Frozen Tissue Block | 43 | 33 | 10 | |
| | | Mononuclear Cells | 125 | 112 | 13 | |
| | | Plasma | 122 | 119 | 3 | |
| | | Serum | 5 | 5 | 0 | |
| | | Stem Cells | 7 | 7 | 0 | |
| | | Whole Blood | 49 | 1 | 48 | |
| | | **Total Aliquots** | **359** | **285** | **74** | **20.61%** |
| Women's∆ | 388 | Buffy Coat | 5 | 5 | 0 | |
| | | Frozen Tissue Block | 1265 | 1265 | 0 | |
| | | Mononuclear Cells | 276 | 273 | 3 | |
| | | Plasma | 497 | 487 | 10 | |
| | | Serum | 155 | 136 | 19 | |
| | | Whole Blood | 53 | 53 | 0 | |
| | | **Total Aliquots** | **2251** | **2219** | **32** | **1.42%** |
| NICU | 51 | Frozen Tissue Block | 116 | 116 | 0 | |
| | | Mononuclear Cells | 47 | 47 | 0 | |
| | | Plasma | 221 | 221 | 0 | |
| | | **Total Aliquots** | **384** | **384** | **0** | **0.00%** |

∆ Samples from these clinics were re-aliquoted in-house and returned to BCCHB inventory.

* A new referral department which we would not anticipate a high utilization rate at this time.

## 14.0 BCCHB Publications

Tarling TE, Goldenberg A, Ellis A, Chow V, Velenosi A, Vercauteren SM. Ethical Challenges for Pediatric Biobanks, Biopreserv Biobank. 2021 Apr 12 ;19(2):101-105. doi: 10.1089/bio.2020.0116

Kong MC, Shih J, Tarling TE, Kong CC, van Tassel H, Dittrick M, Vercauteren SM. BioBank Awareness Changes Opinions of Adolescents and Parents on Participation and Practices. Biopreserv Biobank. 2021 June 28. doi: 10.1089/bio.2020.0157 Online ahead of print. PMID: 34319789

Dr. Vercauteren is co-editor on a special pediatric edition of Biopreservation and Biobanking, which was published in the spring of 2021.
https://www.liebertpub.com/doi/10.1089/bio.2021.29083.djc

A paper about the patient survey at BCWH that gathered opinions about consenting, biobanking, and research is currently being written and expected to be completed by winter 2022.

A paper about the creation and implementation of the BCCHB e-consent platform is currently being written, and expected to be completed by winter 2022.

## Publications Acknowledging the BCCHB

The following peer-reviewed publications have acknowledged the BCCHB for the utilization of general biobank specimens and clinical data in their research.

Rolf N, Liu LYT, Tsang A, Lange PF, Lim CJ, Maxwell CA, Vercauteren SM, Reid GSD. Cytometry Part A. June 2021. doi httpsdoi.org10.1002cyto.a.2

Majdoubi A, Michalski C, O'Connell SE, Dada S, Narpala S, Gelinas J, Mehta D, Cheung C, Winkler DF, Basappa M, Liu AC. A majority of uninfected adults show preexisting antibody reactivity against SARS-CoV-2. JCI insight. 2021 Apr 22;6(8).

Williams BA, Mayer C, McCartney H, Devlin AM, Lamers Y, Vercauteren SM, Wu JK, Karakochuk CD. Detectable Unmetabolized Folic Acid and Elevated Folate Concentrations in Folic Acid-Supplemented Canadian Children With Sickle Cell Disease. Frontiers in Nutrition. 2021 Apr 21;8:175.

The following posters and abstracts have acknowledged the BCCHB for the utilization of biobank services in their research:

Barakauskas VE, Sun K, Tran A, Ellis A, Dittrick M, Osiovich H, Vercauteren S, Adeli K, Chan WS, Jung B. (2021) Reference intervals for hs-cTnT, NT-proBNP and plasma lactate in Vancouver mothers

near the time of delivery. Poster presented at the Annual Meeting of the American and Canadian Societies for Clinical Chemistry, Atlanta GA and Virtually, September 2021.

Tran A, Barakauskas V, Jung B, Au N, Chipperfield K, Ellis A, Dittrick M, Vercauteren S , Osiovich H, Adeli K, Chan WS. (2021). Peripartum Reference Intervals for Coagulation Parameters Derived in a Healthy, Multicultural Cohort of Mothers as part of the Pregnancy Reference Intervals for Safe Medicine (PRISM) Study. Poster presented at the Annual Meeting of the American and Canadian Societies for Clinical Chemistry, Atlanta GA and Virtually, September 2021.

Kung S, Kinsella M,Chan WS, Chipperfield K, Barakauskas VE. Engaging mothers and newborn babies in laboratory reference interval studies.

## Research Activities

The BCCHB is currently conducting a survey aiming to gather secondary school students' perceptions on current events and topics related to COVID-19. Data collection will continue until the end of the 2022 school year. Data analysis will happen over the summer.

## 15.0 Relationships and Networks

The BCCHB aims to be a collaborative resource both locally and abroad. Over the years, we have established professional relationships with various research groups. We look forward to continued partnerships.

- **BC COVID Biobank Network (BCCBN):** a province-wide network of partner biospecimen collection sites. Biospecimens with annotated data related to COVID-19 are formally coordinated together as one unified resource. (https://crci.med.ubc.ca/bc-covid-19-biobank-network/)

- **BCCHR Clinical Research Support Unit:** an institutional initiative that provides consultative and practical support for researchers conducting sponsor-initiated or investigator-initiated clinical trials (https://www.bcchr.ca/about-us/how-we-support-research/clinical-research-support)

- **Maternal Infant Child and Youth Research Network (MICYRN):** a federal not-for-profit, charitable organization founded in 2006 to build capacity for high-quality applied health research. It now links 21 maternal and child health research organizations based at academic health centres in Canada; is affiliated with more than 20 practice-based research networks; provides support to new and emerging teams; and has established strong national and international partnerships. (https://www.micyrn.ca/)

- **Pediatric Outcome imProvement through Coordination of Research Networks (POPCORN):** a large collaboration of pediatric researchers across Canada using serology testing combined with contemporaneous rates of transmission, hospitalization, vaccination and use of public health measures, to inform public health policy.

- **PRecision Oncology For Young PeopLE (PROFYLE):** a pan-Canadian project that gives eligible patient access to tumour molecular profiling that improves and expands their treatment options and may change the outcome of their cancer. (https://www.tfri.ca/profyle)

- **UBC Women's Health Research Cluster**: an international network of multidisciplinary professionals that collectively strive to create a future where women can live equitably healthy lives from birth to old age. We promote, expand and catalyze women's health research because we believe it holds the key to better lives—not just for women, but for all people. (https://womenshealthresearch.ubc.ca/)

## 16.0 Grants (awarded in 2021/2022)

While there were no grants awarded specifically to the BCCHB, the BC Children's Hospital Research Institute contributed $200,000 to support biobanking operations on campus.

### Successful grants or awards that proposed using BCCHB

- Dr. Kelly Brown & Dr. Cherry Mammen, *'Evaluating the utility of adult-defined prognostic biomarkers: are they appropriate in childhood onset primary chronic vasculitis'*. Canadian Institutes of Health Research Project Fall 2021
- Dr. Karina Top, *'Optimizing COVID-19 immunization in patients with adverse events following immunization and patients with immunosuppression in the Special Immunization Clinic Network'*. COVID-19 Immunity Task Force Project Grant
- Dr. Jeff Terry *'Maternal Serum Biomarkers of Acute Chorioamnionitis (AFII Biomarkers).'* BCCHR Healthy Starts Grant, January 2021 (previous fiscal year, was not documented on 2020-2021 Annual Report)

## 17.0 Presentations (2021/2022)

**International Presentations:**

- Aujla, Q. *Survey of Adolescents Regarding their Opinion of Research and Vaccination During the COVID-19 Pandemic* ISBER 2021 Virtual Symposium, Poster Presentation (October 4, 2021).

- Rutherford L, Bhat T, Chow V, Vercauteren S, Lim CJ, **Bush JW**. Comparing temperature-controlled and direct-to-freezer cryopreservation on cell viability and PDX engraftment in Wilms tumor. Pediatric and Developmental Pathology. 2021; 24(6): Abstract 14. Presented at the Fall 2021 Society for Pediatric Pathology Fall 2021 Meeting (Oct 7-9, 2021) Virtual.

**Local Presentations:**

- Chow, V. Lunch and Learn Q&A BC Children's Hospital Research Institute Resources. (September 29, 2021)
- Ellis, A. BC Children's Hospital Research Institute BCCHR Resources (October 21, 2021).
- Aujla, Q. *A survey of pregnant women and new moms regarding their opinion of research, biobanking, and the consent process*. Tri-Cluster Research Day at UBC for Women's Research, Poster Presentation (November 26, 2021).

## 18.0 Communication

**Website**: www.bcchbiobank.ca
**YouTube**

- BC Children's Hospital BioBank – Superhero Video https://www.youtube.com/channel/UCS1LxeGRJTRiejLRXw9heMw
- Learn About the BC Children's Hospital BioBank https://www.youtube.com/watch?v=YaT-8dQshuQ

Our BCCHB Superhero YouTube video about the BCCHB has been viewed 3239 times since it was published on December 4, 2015. Closed captioning in Simplified Chinese and Punjabi were added in March 2022, with plans to add Arabic captions in the next fiscal year.

The Learn About the BC Children's Hospital BioBank YouTube video has been viewed 330 times since it was published on December 11, 2020.

Our newly added Placenta Processing and Storage video was published on May 18, 2021, intended for internal use and educational purposes only.

**BCCHB Newsletters**: Spring 2021, Winter 2022

**External Newsletters**:

- Maternal Infant Child and Youth Research Network (MICYRN) Autumn 2021 Newsletter (October 21, 2021)
- UBC Women's Health Research Cluster November 2021 Newsletter (November 10, 2021)

## 19.0 Financials

Full financial details for financial year ending March 2021:

| | Q1 | Q2 | Q3 | Q4 | Grand total |
|---|---|---|---|---|---|
| | *Consolidated* | *Consolidated* | *Consolidated* | *Consolidated* | *Consolidated* |
| **Opening Balance ($)** | $107,249 | $50,379 | $33,537 | $44,376 | $107,249 |
| **Total Revenue ($)** | $24,257 | $60,185 | $75,422 | $41,427 | $201,290 |
| **BCCHF grant ($)** | - | - | - | $200,000 | $200,000 |
| **Total Salaries ($)** | $71,584 | $70,952 | $56,821 | $96,030 | $295,386 |
| **Total Operating Expenses ($)** | $9,543 | $6,075 | $7,762 | $16,423 | $39,803 |
| **Total Expenses ($)** | $81,126 | $77,027 | $64,583 | $112,453 | $335,189 |
| **Unexpended Balance ($)** | 50,379 | 33,537 | 44,376 | 173,351 | 173,351 |

## Comment on Financial status:

All operating expenses and salaries are now paid for from the UBC income account.

A comparison of predicted and actual expenditure and income is shown below:

Expenditure

| | FY 2015/16 | FY 2016/17 | FY 2017/18 | FY 2018/19 | FY 2019/20 | FY 2020/21 | FY 2021/22 |
|---|---|---|---|---|---|---|---|
| Actual | 474,664 | 680,428 | 291,442 | 365,338 | 315,328 | 232,205 | 335,189 |
| Predicted | 313,000 | 592,500 | 433,200 | 415,000 | 311,897 | 358,197 | 324,619 |

Income

| | FY 2015/16 | FY 2016/17 | FY 2017/18 | FY 2018/19 | FY 2019/20 | FY 2020/21 | FY 2021/22 |
|---|---|---|---|---|---|---|---|
| Actual | 48,536 | 79,476 | 117,966 | 97,371 | 177,910 | 232,205 | 201,290 |
| Predicted | 35,000 | 70,000 | 100,000 | 140,000 | 135,000 | 130,00 | 141,103 |

## 20.0 Quality Management Activities

BCCHB conducts a series of audits throughout the year to ensure quality and accurate biobanking practices.

1. **Pending Formal Consent:** Query for consents with Formal Consent Status 'Pending'
2. **Empty Formal Consent Fields (BCCH):** Query for BCCH consents where Formal Consent Status is 'Obtained' OR 'Interrupted' OR 'Denied' OR 'Withdrawn' OR 'Not Obtained' and export as CSV file. Filter for only blank Person Consenting OR Date of Formal Consent.
3. **Empty Formal Consent Fields (BCWH):** Query for BCWH consents where Formal Consent Status is 'Obtained' OR 'Interrupted' OR 'Denied' OR 'Withdrawn' OR 'Not Obtained' and export as CSV file. Filter for only blank Person Consenting OR Date of Formal Consent.
4. **Denied Consent with Samples:** Perform checks on specific cases that should not occur. Query for all aliquots then browse consents with filter of Formal Consent Status 'Denied'
5. **Aliquot Storage Location:** Query for aliquots with In Stock as 'Yes & Available' OR 'Yes & Not Available' AND created in previous year. Export as CSV file and filter for only aliquots without storage location.
6. **Review Affected Existing Records by Open Specimen Updates:** With the creation of new fields or new mandatory fields, a good practice is to go back and update existing records to keep the data clean and organized.

   **Note: This process is not required monthly. Perform this audit with every Open Specimen update.*

| | | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **Pending Formal Consent** | | | | | | | | | | | | |
| **2** | **Empty Formal Consent Fields (BCCH)** | | | | | | | | | | | | |
| **3** | **Empty Formal Consent Fields (BCWH)** | | | | | | | | | | | | |
| **4** | **Denied Consent with Samples** | | | | | | | | | | | | |
| **5** | **Aliquot Storage Location** | | | | | | | | | | | | |
| **6** | **Review Existing Records Affected by Open Specimen Updates*** | | | | | | | | | | | | |

## 21.0 Abbreviations

**BCCHB** – BC Children's Hospital BioBank
**BCCH** – BC Children's Hospital
**BCWH** – BC Women's Hospital
**PHSA** – Provincial Health Services Authority
**UBC** – University of British Columbia
**WHRI** – Women's Health Research Institute
**REB** – Research Ethics Board
**CITF** – COVID-19 Immunity Task Force

## 22.0 Sign Off

**Report compiled for the BCCH BioBank by:**

Veronica Chow, Vi Nguyen, Kendall Plant, Ashton Ellis

**Report reviewed by:**

Suzanne Vercauteren & Jon Bush, BCCH BioBank Co-Directors

**Approved by:**

BCCH BioBank Oversight Committee

**Report signed off on behalf of the BCCH BioBank Oversight Committee by:**

Suzanne Vercauteren & Jon Bush, BCCH BioBank Co-Directors

Suzanne Vercauteren — October 4 2022
Date

Jonathan Bush — Sept 27, 2022
Date