Six Years of Research Excellence

women & children's
health research institute

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The Women & Children's Health Research Institute (WCHRI) supports ground breaking multidisciplinary and transdisciplinary research through grant competitions, ongoing research funding, professional development and expert resources.

Our academic membership is made up of over 300 leading researchers, clinician-scientists, academics, health-care professionals and service providers from academic and community settings. All bring valuable perspectives and contributions to the issue of women and children's health.

WCHRI was founded in 2006 as the shared vision of the University of Alberta (UAlberta) and Alberta Health Services (AHS), with core funding from the Stollery Children's Hospital Foundation (SCHF) and the Royal Alexandra Hospital Foundation (RAHF). Through the generous contributions of both Foundations, WCHRI has been able to support the hiring, research excellence, training and development activities of investigators from a wide range of clinical and academic disciplines, all focusing their efforts on improving health outcomes for women and children in our province.

WCHRI offers:

The ability to attract top-ranking research recruits

Grants and research funding for transdisciplinary, collaborative research

Highly qualified and experienced personnel to support researchers each step of the way

Invaluable opportunities for networking, knowledge exchange and research partnerships

Opportunities for training, education and mentorship

Vision

Improved outcomes for women and children through health research

Mission

To effect meaningful health outcomes through cutting-edge transdisciplinary research

Director's Message

WCHRI has undergone a year of change and excitement. Starting with my appointment as the new Director, WCHRI has a completely new administrative team. In consultation with our boards and working committees, the WCHRI Executive team is developing new initiatives and looking toward the future with optimism and enthusiasm, supported by stakeholder involvement. By developing a WCHRI community, we intend to provide the infrastructure and foundation from which our members can not only continue their own important work, but also create an environment where interdisciplinary research is able to thrive.

As part of our on-going commitment to the WCHRI community, we hosted our first All Members Meeting in June 2012. The feedback from that meeting was extremely positive and useful and has helped to develop our strategies moving forward.

2012 also saw the launch of our WCHRI Lunch & Learn Series. The first of this series, titled "Developing Resources for Pediatric & Women's Genetics" was held in June 2012, and brought together 20 researchers with an on-going interest in developing a core resource for the collection and storage of blood samples that could be shared among researchers. The second Lunch & Learn held in November 2012, was entitled "Putting your Research Findings to Work: An Introductory Workshop on Knowledge Translation". We will continue to present lunch & learn sessions on a quarterly basis on a range of topics of interest to our membership.

We recently developed a number of new partnerships and contributed to several new provincial initiatives. Many of these partnerships are listed at the end of this document.

Our strategic planning continues with the advice and support of our committees and members. We are committed to open and consistent communication with our stakeholders in order to deliver support and programs that will allow WCHRI to achieve its vision and mission.

Sincerely,

Dr. Sandy Davidge
Director, Women & Children's Health Research Institute

Our Path of Research Endeavours

2006 2006 2006 2006 2006 2006

2006

2006 was a huge building year for WCHRI. During this first year we worked to create our grant and research support infrastructure including the development of our core services. The first of these cores was the Biostatistics Consulting Group (now the Biostatistics Service Core).

From our first endowed Chair in 2006 to our most recent Chair in 2012, WCHRI has supported hundreds of investigators, trainees, students and community-groups in improving the health outcomes of women and children in Alberta and Canada.

Chronicling WCHRI's research support path from 2006 through 2012, this booklet highlights our successes by offering a few specific examples of the research excellence of our member investigators and supported projects, as well as the impacts and health outcomes of that research.

We spent much of 2006 establishing our membership. In six short years, our membership has grown to include 286 academic members, 257 trainee members and 65 non-academic members, including collaborators, organizations and community members.

WCHRI promotes the full spectrum of biomedical, clinical and translational research through the following three resources: Research Support, Research Grants and Investigative Core Resources.

As Chair, Dr. Zwaigenbaum has helped to establish the Autism Research Centre (ARC) at the Glenrose Rehabilitation Hospital and University of Alberta. As an internationally recognized centre, the ARC has fostered capacity building, training opportunities and community partnerships.

Dr. Lonnie Zwaigenbaum is the Stollery Children's Hospital Foundation's Chair in Autism Research.

Dr. Zwaigenbaum and his team focus on early development in Autism Spectrum Disorder (ASD). ASD is a form of disability that affects a person's ability to communicate, interact with other people and understand social expectations, and is associated with obsessive interests and repetitive behaviours. This research is aimed at better understanding the developmental course of this disorder, with the ultimate goal of identifying better ways to support families and help children with ASD reach their full potential.

One project, the "Infant Sibling Study," involves younger siblings of children with ASD. Research has shown that the siblings are at an increased risk of developing ASD, and other difficulties such as language delay. The team's goal is to develop better strategies for early detection, diagnosis and intervention.

Dr. Zwaigenbaum has also partnered with leading ASD scientists across the country to lead the global effort in the discovery of genes that cause or contribute to the risk of ASD. There has been exciting progress over the past year. Several genes have been identified as having a role in susceptibility to ASD, based on variations in the DNA sequence. A databank has been established to support research into genetic influences on outcomes of infants at increased risk of ASD. The development of genetic testing strategies based on these discoveries has the potential to transform clinical practice, improving development, outcomes and quality of life for the many individuals and families affected by ASD.

STOLLERY CHILDREN'S HOSPITAL FOUNDATION

The Stollery Children's Hospital Foundation is dedicated to raising funds for specialized equipment, sub-specialty medical education to train the best of the best research to pave the way to the discovery of new treatments or cures for child health issues, and specialized programs that improve patient and family outcomes at the Stollery Children's Hospital.

The Foundation recognizes the tremendous impact that research has on disease prevention, treatment and improved health outcomes, which is why it is providing $30 million to support WCHRI's mission to support leading-edge research on children's and women's health. Through its donors, the Foundation has committed to fund these critical research programs with approximately $3 million annually from 2006 to 2016.

2007

Unlocking the riddles of childhood asthma and allergies—Dr. Piush Mandhane

"I trained to become a clinician scientist because I wanted to do something about asthma," says Dr. Mandhane.

The Canadian Health Infant Longitudinal Development (CHILD) study is shedding light on asthma and allergies by following 5,000 children in Edmonton, Vancouver, Toronto and Winnipeg from before birth to age five. Dr. Piush Mandhane, a pediatric respirologist at the University of Alberta and a principal investigator on a national study into environmental factors related to asthma and allergies in children, with WCHRI's help, has recruited 850 families in Edmonton for the study.

Children participating in the comprehensive study were tested for immune, endocrine and pulmonary function, infections and allergies. Their family history was assessed in extensive questionnaires that looked at demographics, genetic predisposition, diet, activity, stress and the psychosocial environment. Exposure to indoor and outdoor pollutants was also measured. Detailed home inspections evaluated ventilation, heating and cooling systems, the condition of basements, chemical contaminants, gas-burning appliances, dust, allergens, pollens and cleanliness. Outdoor air quality was also measured regularly in each city.

"WCHRI's collaborative recruitment process has been a huge help in enlisting participants," says Dr. Mandhane. WCHRI's Clinical Research Coordination Core played a role in recruiting pregnant mothers for CHILD and two other studies through a combined recruitment campaign at participating medical clinics in the Edmonton area. WCHRI's Lois Hole Clinical Research Unit collected samples for the study.

The team now has 40,000 biological samples stored for analysis. So far, the preliminary data has shown that almost 20 percent of the CHILD study children (nationally) at one year of age have positive skin allergy tests, with 13.5 per cent responding to a food allergen and 8.2 per cent to peanuts. This information will help health care practitioners to better design treatments for these children.

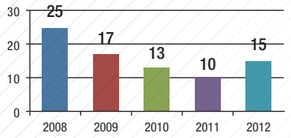
Dr. Kozyrskyj's findings have advanced researchers' understanding of a complex chronic lung condition that now affects nearly 600,000 Canadian children.

What causes asthma?—Dr. Anita Kozyrskyj

WCHRI's Research Chair in Maternal-Child Health and the Environment, Dr. Anita Kozyrskyj, has made headlines worldwide with her innovative research on childhood asthma. Her studies have linked rising asthma rates to fast food consumption, low family income, early vaccinations and antibiotic use in infancy.

Dr. Kozyrskyj and her team were looking for a better understanding of the many factors that impact this complex condition, including poor diet, antibiotic use and low family income, to find a better treatment for the thirteen per cent of Canadian children who suffer from asthma. Using data from the Community Perinatal Care Trial in Calgary on 791 mothers and their children, and supported by a 2009 Norlien Foundation/WCHRI grant, the team found evidence that postpartum depression is associated with the development of wheeze in preschool girls. They also found an association between maternal street drug use and wheeze in preschool girls that could not be accounted for by maternal distress, smoking or alcohol use during pregnancy. While these results require confirmation in other studies, treatment of drug addiction and stress during pregnancy, as well as during the postpartum period, has multiple benefits for the long term health of these children.

2008 2008 2008 2008 2008 2008 2009



Internal and Innovation grants began in 2008 to support research excellence for projects directly related to women's and children's health promotion, prevention of disease and treatment. So far, we have supported 80 projects for a total of approximately $2.5 million.

2008

"We want to reduce the number of pokes that babies are subjected to; because pokes are painful. We want to make testing less stressful for babies and for their parents," says Dr. Lacaze.

At home testing with non-invasive device takes away the pain of jaundice screening—Dr. Thierry Lacaze

The premise is simple, practical and best of all painless. A community-based Edmonton clinic is now using a non-invasive tool to screen newborns for jaundice. The transcutaneous bilirubinometre eliminates painful heel pricks to draw blood samples that have to be sent to the lab for testing.

The high-tech device provides bilirubin readings right on the spot. High readings alert caregivers that the baby likely has jaundice. Biliburin is a natural pigment created when the body breaks down old red blood cells, but when it builds up, it becomes toxic.

"We believe that this system offers a better screening process to pick up jaundice at an earlier stage, so that babies don't become severely ill and risk brain damage," says Dr. Thierry Lacaze, inaugural Director of WCHRI from 2006-2010, who is heading the study funded by a 2008 WCHRI Internal Grant.

"Jaundice is the most frequent reason newborns are readmitted to hospital," says Dr. Lacaze. Although jaundice is common and usually disappears on its own, it is not always a benign condition. In severe cases, it can, if left untreated, cause cerebral palsy, hearing loss and brain damage. The most obvious symptom of jaundice is the yellowing of skin that occurs with the build-up of bilirubin.

"This is the first North American randomized trial using bilirubinometres in the community," says Dr. Lacaze. The trial confirmed his suspicions. The team found that using the device decreased the amount of painful blood samples in the infants without compromising the accuracy of the jaundice screening.

Parents "looking for the best hand" when managing pediatric weight issues—Drs. Geoff Ball & Mandi Newton

With more than thirty per cent of children in Canada considered overweight or obese, parents have a critical role to play in the success of pediatric weight management. One of the challenges parents face is the difficulty they encounter in communicating about weight and health with health care professionals. Drs. Geoff Ball, Mandi Newton, and their graduate student Carla Farnesi, with the support of a WCHRI Internal Grant in 2008, completed a qualitative study with parents and health care professionals in a "one size does not fit all" study to develop an effective tool to initiate conversations around, and come up with appropriate solutions for, this sensitive topic.

The team came up with "Conversation Cards©," a unique deck of cards that can help break down the communication barriers. The cards were designed to help parents identify the issues most relevant to their situation. For example, they may pick cards with statements that say: "Shopping for food is hard," "My child doesn't like sports," or "My kids don't listen to me." Using these statements, health care professionals can then determine the best way to help. Parents are given a deck when they come in for a clinical appointment and are asked to pick four or five cards that are most relevant to their situation.

Ball based the Conversation Cards© on a model that was successfully used in Britain with adults who had type 2 diabetes. As the name implies, the cards put patients, or in this case parents, in charge of the agenda when they walk into a doctor's office or clinic. Now that the cards have been developed and successfully piloted at the Pediatric Centre for Weight and Health at the Stollery Children's Hospital, Drs. Ball and Newton will be working with a new PhD student in early 2013 to plan a follow-up study testing the effectiveness of the cards in promoting a positive relationship between parents and health care professionals in primary care and public health care settings.

Within the pilot study, the cards were very well received by families and health care professionals. Ball and his team are currently working with the Canadian Obesity Network and a local Edmonton designer to develop an updated version of the Conversation Cards© that will be used in further research.

Dr. Ball is also one of the first recipients of WCHRI's Emerging Research Team Grant Program. His project, entitled "Pediatric Weight Management: Advancing the Evidence in Family-Centred Care" focuses on managing childhood obesity within the health setting and working with parents to address this critical health issue.

In 2009, the Faculty of Medicine & Dentistry (FoMD) and AHS, in partnership with WCHRI, announced the second competition of an Emerging Research Team Grant Program. The competition reflected the increasing emphasis that has been placed on multi- and trans-disciplinary health research, which allows researchers to target complex health issues that cannot easily be addressed by researchers working in isolation. For the 2009 competition, five grants were awarded for a total of $1,500,000.

2009

"Many of the families that our clinical team works with have had negative experiences in talking with health care professionals about weight-related issues," says Dr. Ball.

Helping our babies breathe —Dr. Bernard Thébaud

2009 2009 2009 2009 2009 2009

WCHRI provides start-up and operational funding for new UAlberta research recruits working in women and children's health to aid in the establishment of their laboratory and/or research programs. From 2006 to 2012, WCHRI provided or committed 37 researchers with approximately $7.2 million from this program.

Bronchopulmonary dysplasia is a chronic lung disease that can lead to breathing failure in preterm infants and is a major complication in today's neonatal intensive care units. This disease is a major risk factor for blindness and poor brain growth. The long-term consequences include asthma, early onset emphysema and pulmonary hypertension, an abnormally high blood pressure in the arteries of the lungs.

Another major cause of child death and disability is Congenital Diaphragmatic Hernia, a common birth defect affecting 1 in 2000 infants that can also trigger pulmonary hypertension. Babies with this defect have a hole in their diaphragm that causes the organs in the belly to move up into the chest. They also have difficulty breathing at birth because of small lungs and hypertension.

Dr. Bernard Thébaud and his team are focused on finding treatments for these incurable lung diseases. With research support from both a WCHRI Recruitment and Retention Grant in 2008 and an Innovation Grant in 2009, they found that cells like the ones that make blood vessels, exist in the growing lung and they help the lung grow. They discovered these cells do not work properly in experimental animal models that mimic either disease. This may explain why in these cases the lung is smaller and why these babies have pulmonary hypertension. They then took the same type of cells from human cord blood and showed that these cells can make the lung grow and prevent or treat these diseases in animal models.

"We may have discovered a new treatment to increase lung growth and treat pulmonary hypertension to improve the outcome of babies with these devastating lung diseases" says Dr. Thébaud.

The team is now performing further testing to ensure the safety of this treatment.

"Transplanting" one kidney test for another—Dr. Manjula Gowrishankar

Since beginning our support in collaboration with the Norlien Foundation, WCHRI has supported seven researchers through this award.

Any child receiving a heart or liver transplant will need to take immune suppressants, often for the rest of his or her life. One side effect of immune suppressants is that they are very toxic to the kidneys. Therefore, children who have undergone a transplant have their kidney function measured regularly and some may need a kidney transplant as early as 10 to 15 years after their original operation.

The current "gold standard" for testing kidney function is the Glomerular Filtration Rate (GFR) Renal Scan. This test must be conducted every year using a radioactive isotope. The scan can be very difficult for patients and families as it can take quite a long time (two to five hours) and requires the child to be connected to an IV for the duration.

Dr. Manjula Gowrishankar, using support from the Clinical Research Coordination Core and a 2009 Innovation Grant, compared using Cystatin C levels, which can be measured during the patient's regular monthly blood test, to the GFR Renal Scan in children who have had heart or liver transplants. In previous studies, levels of the protein Cystatin C were shown to be an alternative measure of renal function.

As the Cystatin C test is also almost $100 cheaper per test to administer, Dr. Gowrishankar's team is now conducting a cost-benefit analysis to determine the potential financial benefits of the new test. She hopes that the cost, time and patient comfort benefits she has discovered will encourage healthcare service providers to use the new test for the majority of transplant children.

In the 59 patients she studied, Dr. Gowrishankar found that the Cystatin C test was in fact a good alternative to the currently used GFR Renal Scan in the majority of cases.

UNIVERSITY OF ALBERTA
FACULTY OF MEDICINE & DENTISTRY

It is through the continued support of the University of Alberta's, Faculty of Medicine & Dentistry (FoMD), that WCHRI can house many of its core groups and its entire administrative staff. FoMD also provides funding for WCHRI's operating expenses; without which WCHRI would not be able to manage its many grants programs and research support initiatives.

Are pregnant women getting enough folate? —Dr. Catherine Field

Folate is an essential prenatal vitamin for healthy pregnancy and infant development. Poor folate status, or low folate levels during pregnancy has been associated with a variety of birth defects in infants. To help women meet their folate recommendations, Canada fortifies its flour and health professionals recommend women take a supplement containing folate during pregnancy.

With the help of a 2009 WCHRI Innovation Grant, Dr. Catherine J. Field and the APrON (Alberta Pregnancy Outcomes and Nutrition) study team studied folate intake and status in pregnant women, specifically the first 600 APrON participants. They found that folate intake from various food sources remained the same before and during pregnancy, with over half of women unable to meet current recommendations from diet alone. However, 95 per cent of the APrON women took a supplement containing folate during pregnancy. Taking the supplement ensured most of the women met current folate recommendations and the team confirmed this by measuring red blood cell folate (a biological marker for folate status). Interestingly, the study showed that a large proportion of the women may, in fact, be taking too much folate.

Although high folate intake is not generally considered to be of concern in healthy women, the high concentrations in red blood cells found in many of their pregnant women requires more study.

Interestingly, the study showed that a large proportion of the women may, in fact, be taking too much folate.

2010

Can being too small lead to obesity? —Drs. Sandy Davidge & Jason Dyck

2010 2010 2010 2010 20

Chronic disease is expected to remain one of the leading challenges for healthcare professionals in the future. Researchers are learning that many chronic diseases can be related to factors existing even before an individual is born. This is called fetal programming.

Babies born from complicated pregnancies are generally smaller and more prone to developing metabolic and cardiovascular diseases later in life. Children are increasingly exposed to unhealthy habits such as poor nutrition and low physical activity; consequently, there is an alarming rise in the occurrence of obesity in these children. Research shows that obesity and aging share traits that link complicated pregnancies and exposure to unhealthy habits, with the development of diabetes and heart diseases.

Dr. Sandy Davidge, Dr. Jason Dyck and their team, supported by a 2009 WCHRI Innovation Grant, proposed that children born from complicated pregnancies may have an increased risk of obesity and, therefore, may be at a higher risk of developing diabetes and heart diseases at an early stage in life. To test this hypothesis they used animal models that simulate pregnancy-related complications and, after birth, they fed the offspring a high fat diet similar to what is common in western societies. They found that offspring born small have a greater risk for abdominal obesity and dyslipidemia, an abnormal amount of lipids in the blood, along with insulin resistance and glucose intolerance (signs of the metabolic syndrome that occurs prior to onset of diabetes).

The team then demonstrated that Resveratrol, a natural compound produced by plants, applied insulin-sensitizing effects, preventing this metabolic syndrome. Their studies show that being born from a complicated pregnancy results in an increased susceptibility to other risk factors (such as poor diet) which can be prevented by after birth treatment.

Dr. Davidge and her team hope to leverage the WCHRI grant to renew her Canadian Institutes of Health Research (CIHR) grant in 2013.

Physicians will better understand the treatments these newborn babies may require while they are still in the womb; helping to substantially reduce the likelihood of risk factors for future cardiovascular disease and diabetes.

2011

Getting pregnant mothers' arteries to "just relax" —Dr. Denise Hemmings

2011 2011 2011 2011 20

To ensure her baby receives the necessary oxygen and nutrients, blood vessels in a pregnant woman adapt to provide increased blood flow to the uterus throughout her pregnancy. This happens by both an increase in total blood volume and in the relaxation of the mother's arteries. If neither of occurs, the baby's growth and development can be limited. The failure of arteries to relax properly can also increase the mother's blood pressure and lead to a disorder called preeclampsia, a condition that occurs in about seven per cent of pregnancies.

Using a 2011 WCHRI Innovation Grant, Dr. Denise Hemmings has focused on what signals occur in a pregnant mother's blood vessels to produce normal changes during pregnancy and how these signals can sometimes fail. Using previous knowledge that the hormone estrogen is important in the relaxation of these arteries, Dr. Hemmings and her team are studying the role of estrogen in producing a potent messenger called sphingosine 1-phosphate (S1P). S1P is known to increase relaxation of the artery.

This study emphasizes that research is often more complicated than we expect. Dr. Hemmings has since discovered that too much of an increase in S1P can actually allow leakage of constricting factors through the artery wall to the surrounding muscle cells.

This causes the artery to constrict; the exact opposite of what the team is trying to accomplish. This finding has led Dr. Hemmings into a second stage of her research.

The second stage of the study looks at the role of S1P in controlling leakiness of the mother's blood vessels that control her blood pressure and also the ones that feed her baby. They will also look at the role of S1P in controlling relaxation compared to constriction in these vessels and how inflammation that occurs during infections can change normal responses.

Dr. Hemmings was able to leverage the 2011 Bridge Funding for the second part of this research to obtain a Canadian Institutes of Health Research (CIHR) grant to allow further investigation of her study.

WCHRI provides bridge funding on a competitive basis with the expectation that researchers would obtain sufficient additional data to re-submit grants not previously successful with the Canadian Institutes of Health Research. Of the three researchers supported by Bridge Funding in 2011, two have leveraged these funds into CIHR grants.

"Knowing what happens in normal pregnancy and during inflammation will help to develop methods to improve growth of the unborn baby and prevent high blood pressure in the mother," says Dr. Hemmings.

2012

Dr. Sue Ross: Cavarzan Chair in Mature Women's Health Research & Innovation

2012 2012 2012 2012 20

Dr. Sue Ross has 20 years experience in clinical research. As a health services researcher, Dr. Ross has spent most of that time conducting clinical trials, mainly surgical in nature. Her goal is to improve clinical and patient outcomes; though the main theme of her research is providing evidence to support clinician and patient decision making, or studying "real decisions in real clinical situations."

Under the umbrella of research evidence, Dr. Ross has a number of different interests. Her multi-disciplinary team (which includes clinicians, researchers and economists) has evaluated a number of surgical treatments for stress urinary incontinence and pelvic organ prolapse. She has ongoing Canadian Institutes of Health Research (CIHR) funding to perform a 5-year follow-up study and economic evaluation of her research of two surgical devices for treating stress incontinence.

Patient goals and decision making are also of interest to Dr. Ross. She plans to look into how well informed patients are about their procedures and if they fully understand all the risks. As part of this research, she plans to continue her work in developing and testing decision aids for patients choosing treatment options that best suit their condition.

On July 1, 2012, Dr. Ross was appointed the Cavarzan Chair in Mature Women's Health Research & Innovation supported by the Royal Alexandra Hospital Foundation. She will be working primarily out of the Lois Hole Hospital for Women.

"It was great to find a Foundation [RAHF] that really supports women's research," says Dr. Ross, "and I now have the opportunity to perform studies province wide."

Dr. Ross will be performing similar research in menopause as part of her new position. She will be looking into patient goals, fears, expectations and the impacts of a variety of treatments chosen by the patients.

For 2012/2013, WCHRI approved approximately $650,000 to support 43 per cent of applicants to this year's Innovation Grant competition. Of the 15 grants in total, 2 grants are in support of women's research, 11 grants are in support of children's research and 2 are both women's and children's research.

"The power of evidence is not as strong as we think," says Dr. Ross. "More needs to be considered about how research is used."

WCHRI Chairs

WCHRI collaborates with the Royal Alexandra Hospital Foundation to support three endowed Research Chairs in women's health. These include Ovarian Cancer Research, Lois Hole Hospital Chair and Cavarzan Chair in Mature Women's Health Research & Innovation. We have also collaborated with the Stollery Children's Hospital Foundation to endow the Stollery Children's Hospital Foundation's Chair in Autism Research and a Chair in Maternal-Child Health and the Environment. These Chairs have acted as an attractor for new talent and provide a stable source of multi-year research support.

Facilities

WCHRI has embraced a truly integrated approach in its use of facilities. By uniting multiple sites under a single organizational umbrella, WCHRI is able to embed itself in numerous sites across the UAlberta campus and the city of Edmonton. This maintains proximity to relevant scientists, subjects and core services while avoiding duplication of infrastructure.

Katz Group-Rexall Centre for Pharmacy and Health Research Building

This laboratory space—completed in 2011—houses developmental biology, pathology and translational research specialists. It includes electrophysiology, molecular biology, stem cell research and physiological measurement labs, as well as up-to-date imaging and experimental research equipment. Proximity to the nearby, world-class Alberta Diabetes Institute, the Mazankowski Alberta Heart Institute and other medical institutes also encourages a rich exchange of knowledge and the creation of research partnerships.

Edmonton Clinic Health Academy

The Edmonton Clinic Health Academy (ECHA) is home to a community of researchers, educators and students from across many faculties, working to improve health outcomes for all Canadians. Building on the university's history of success in world-class research, education and patient care, faculties and stakeholders work side by side, sharing space, ideas and innovations. Many WCHRI groups have called ECHA home since the building's opening in the fall of 2011, including WCHRI Administration and the Research Support and Grants Administration Core, Clinical Research Coordination, Biostatistics and Clinical Research Informatics Cores.

Lois Hole Hospital for Women—Women's Clinical Research Unit

WCHRI's Women's Clinical Research Unit at the Lois Hole Hospital for Women focuses on women's and neonatal health research. Located in the Robbins Pavilion at the Royal Alexandra Hospital, the unit is home to diverse clinical research studies and the Lois Hole Clinical Research Unit.

Stollery Children's Hospital Clinical Investigation Unit

To be located on the second floor (2E) of the Stollery Children's Hospital, the Stollery Children's Hospital Clinical Investigation Unit will be part of the new Stollery Children's Ambulatory Care, Education and Clinical Research Centre. This centre will be a consolidated, integrated interdisciplinary, family centered facility dedicated to excellence in clinical care.

WCHRI Research Day

The annual WCHRI Research Day brings our membership together to share our common interests and research outputs on women and children's health. It is also a great opportunity for our trainees to communicate their recent work, discuss their research and network with colleagues

This interactive day gives us the opportunity to celebrate our breakthroughs in health research that impact the lives of women and children. By networking with researchers, trainees and community members we can find new opportunities to join together for further research development which will spread our reach to touch more lives. This event also encourages trainees and researchers to network, exchange ideas and to discover the richness of the local research community.

WCHRI marked the fifth annual Research Day in November 2012. Over 300 WCHRI members, trainees and partners packed into the second floor of the Westin Hotel. Our very full day started with project updates from WCHRI's 2009 Emerging Team Grant recipients and professional development seminars from our guest speakers.

WCHRI Research Day highlighted our trainees, with increased oral presentations and poster viewing time. Approximately 135 undergraduate students, graduate students, Postdoctoral Fellows, professors, residents and trainees had the opportunity to practice their presentation skills during the oral and poster presentation competitions.

Dr. Susan Ozanne, our lunchtime Keynote speaker, enlightened and educated us on her research of the effects of prenatal nutrition on the health of offspring later in life.

Keynote Speaker

Dr. Susan Ozanne is a British Heart Senior Fellow and Reader in Developmental Endocrinology in the Institute of Metabolic Science Metabolic Research Laboratories at the University of Cambridge. Her research interests are focused on understanding the relationship between suboptimal early nutrition and growth and risk of diseases such as type 2 diabetes, obesity and cardiovascular disease in later life. Her presentation was entitled: *Early nutrition and long term health—does mum hold the key?*

Our Team & Core Services

Administrative Team

WCHRI has a new (2012) administrative team who has worked to increase efficiency in WCHRI's current processes and to redefine our organizational structure. Under the direction of the Finance and Operations Officer, the administrative team coordinates the day-to-day functions of WCHRI including membership, core services and financial accountability.

Communications

WCHRI, as a virtual institute, faces challenges in establishing an identity and strong reputation that remains cohesive across sites, services and research teams. WCHRI utilizes a Communications Coordinator to generate content and to collaborate with communications professionals from the UAlberta, AHS and community foundations as required, as well as enhance communications among researchers, decision-makers and the community, thereby bridging the gap between the research and its potential impacts.

Research Support and Grants Administration

The Research Support and Grants Administration Core provides WCHRI members with assistance and educational support to help researchers craft high-quality grant applications, develops and administers award competitions and works with members to identify strategic research needs and priorities. This resource can be particularly helpful to junior researchers, those new to the Alberta research environment, as well as researchers at all levels who are submitting proposals to major funding agencies.

Clinical Research Informatics

The Clinical Research Informatics Core offers expertise in advanced electronic data capture and survey solutions to ensure researchers obtain high-quality, statistically sound and verifiable data. This group also plays a key role in helping investigators minimize costs by training and supporting research assistants and graduate students in the use of the software and supports WCHRI members in their research through the provision of information technology based services.

Clinical Research Coordination

WCHRI offers a pool of clinical research staff to meet investigators' needs for skilled, versatile research personnel on a part-time and/or temporary full-time basis. The team collaborates extensively with AHS to offer services at the UAlberta/Stollery Children's Hospital, Royal Alexandra Hospital, Grey Nuns Community Hospital and Misericordia Community Hospital.

Biostatistics Service Core

The Biostatistics Service Core works with researchers to produce high quality research based on sound research methods. The Core staff is typically involved in the planning of a study and data work occurs once the data has been collected and is ready for analysis.

Lois Hole Clinical Research Unit

The Lois Hole Clinical Research Unit provides support, through dedicated research nurses, to researchers who access subjects or resources for their studies from the Lois Hole Hospital for Women which is located in the Robbins Pavilion on the Royal Alexandra Hospital Campus.

Lipid & Lipid Metabolite Analysis

The Lipid & Lipid Metabolite Analysis Core assists basic and clinical researchers at the UAlberta and affiliated institutions in measuring lipid-related compounds from a variety of sources. Lipids are of particular importance in many of today's most prevalent health issues: obesity, diabetes, nutrition, neuroscience, and cardiovascular disease.

Genotyping Services

Researchers in numerous groups utilize transgenic mouse models for their experiments and these models are vital for carrying out their research goals. The Genotyping Services Core provides a skilled animal technician who ensures that animals in the associated research labs are cared for in a manner aligned with associated research and genotyping protocols.

Community-Based Research / Qualitative Research / Knowledge Translation

WCHRI has partnered with the Community-University Partnership for the Study of Children, Youth and Families at the Faculty of Extension to augment the capacity of WCHRI members to engage in Community-Based Research (CBR) and Qualitative Research. This resource offers researchers training and support to successfully undertake studies using these approaches. Recently, consultation and support in developing knowledge translation plans have been added to the core activities.

Our Partners

WCHRI collaborates with many other institutes and organizations that share our vision and commitment to improving the health outcomes of women and children through research excellence. We also partner with these institutions to provide our members with a growing variety of research services and support.

Alberta Research Centre for Health Evidence

One of WCHRI's newest collaborations is a partnership with the Alberta Research Centre for Health Evidence (ARCHE). ARCHE will provide our members with request-specific proposal development services and help in conducting systematic reviews.

Canadian Child Health Clinician Scientist Program

The Canadian Child Health Clinician Scientist Program (CCHCSP) is a transdisciplinary training program for the next generation of clinician-scientists in child and youth health research in Canada. Canadian Child and Youth Health Research Centres are dedicated to this training and recruit, train and provide financial support for trainee researchers and clinician-scientists who have an interest in child and youth health. WCHRI has partnered with CCHCSP since our inception in supporting these programs.

Council of Canadian Child Health Research

The Council of Canadian Child Health Research (CCCHR) represents all Canadian academic health science centres across Canada with a focus on child and youth health. The CCCHR and its members support child health research in Canada, helping to ensure that all children and youth enjoy the benefits of improved health through the application of research findings. The Council promotes networking, collaborations and sharing of resources between hospitals in Canada which support child and youth health research. WCHRI is an active member of the CCCHR.

Maternal Infant Child and Youth Research Network

The Maternal Infant Child and Youth Research Network (MICYRN) is a collaborative national initiative to build capacity for high quality clinical research in Canada and links 17 participating academic health centres and hundreds of investigation teams across the country. MICYRN is focusing on improving data management standards and is encouraging the adoption of REDCap by its member institutes. Since WCHRI was the first organization in Canada to adopt REDCap, we have significant experience in this area. In addition, WCHRI's Clinical Research Informatics Core (CRIC) is in the process of creating a version of REDCap for MICYRN members conducting regulated clinical trials. CRIC also provides REDCap data management administration, support and training to MICYRN members. One major project is the National Cerebral Palsy Registry.

Child Data Centre

WCHRI now has a Memorandum of Understanding (MOU) with the Alberta Children's Hospital Research Institute for Child and Maternal Health (ACHRI) and the Alberta Centre for Child, Family and Community Research (The Centre). One main goal of the MOU is the development of the Child Data Centre (CDC). This facility will house academic research data sets in one central location and increase access of this data to all researchers. WCHRI members are encouraged to both utilize and contribute to this service.

University of Alberta / Faculty of Medicine & Dentistry (FoMD) Canadian Institutes of Health Research (CIHR) Special Project

The UAlberta/CIHR Special Project provides support for researchers and trainees at the UAlberta who are submitting applications for funding to CIHR. In support of this initiative, WCHRI contributes bridge funding for CIHR applications with a primary focus on women and/or children's health and will be used to leverage additional funding from Alberta Innovates-Health Solutions (AIHS) or other institutes and Faculties.

Thank You!

The Women and Children's Health Research Institute would like to thank all of our members, reviewers, contributors and staff for all their work in helping to create and nurture WCHRI—a leading Institute in supporting cutting-edge, transdisciplinary research.

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