



# Research Reporting

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## What a Difference a Decade Makes

**Celebrating ten years of incorporation as a society, the Child & Family Research Institute looks to a future of accelerated expansion and growth, including the development of a new building that will double the institute's facilities.**

The summer of 2005 marks an especially significant anniversary for the Child & Family Research Institute: in July 1995 the institute – then named the BC Research Institute for Child and Family Health – was incorporated as a society. This in itself followed an earlier 10-year anniversary. The first of the institute's buildings, the Variety Club Research Centre, officially opened in 1985.

Since those first beginnings the institute, now named the Child & Family Research Institute (CFRI), has more than tripled its external research funding, and nearly doubled its number of investigators.

Over the last several years in particular, CFRI's increasing success and growth has outstripped available space and, in the coming years, that trend is expected to escalate. To accommodate the boom, a new \$38.9 million complex is being added to the existing site, effectively doubling the institute's size. The new facility, projected to open in 2007, is designed to cultivate increased collaboration among the institute's basic, clinical and population health researchers.

And the collaboration is not simply among investigators. The institute's primary supporter, BC Children's Hospital Foundation, will be moving into the new complex and working side by side with CFRI administration. The foundation has provided the institute with millions of dollars in operating funds for the past several years.

### Poised to recruit

"The institute's had many major funding successes, especially over the last few years," says Dr. Geoff Hammond, CFRI Scientific Director. "The research programs are growing, and there are lots of recruitment opportunities."

**"The research programs are growing and there are lots of recruitment opportunities."**

Dr. Hammond says the institute's Oncology Program and its Reproductive Health Program are currently actively recruiting, and the Centre for Molecular Medicine and Therapeutics is seeking candidates for a BC Leadership Chair and for two Canada Research Chair positions. He adds, "The Diabetes Research Program is also poised to recruit."

The Diabetes program has been successful in attracting funding from the University of British Columbia and the Canadian Diabetes Association to support scientists working in a Centre for Research in Childhood



Dr. Bruce Verchere, head of the CFRI Diabetes Research Program, is anxious for the CFRI model to become reality, giving research programs the state-of-the-art facilities needed to support research excellence.

Diabetes, to be located at the Child & Family Research Institute. Dr. Bruce Verchere, head of the CFRI Diabetes Research Program, and nine other investigators have previously been awarded \$7 million in infrastructure funding from the Canada Foundation for Innovation and the BC Knowledge Development Fund to develop the centre.

Dr. Verchere says that the program will bring on new recruits when the new building expansion is complete. "We're excited about the expansion and the

opportunities to grow the program. We'll bring in new scientists who have complementary expertise and new ideas and techniques to collaborate with those already here."

One floor of the new four-storey building is slated for the Centre for Research in Childhood Diabetes. Layout of that space – with labs constructed on an open model, with bigger bays, and equipment tucked away into alcoves – will serve as the prototype for other floors.

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## Research Institute Celebrates A Bold, New Image

The BC Research Institute for Children's & Women's Health has taken on a new name and a new look fit for the future. The research institute, which celebrates its 10th year of operation in 2005, will now be known as the Child & Family Research Institute – CFRI – and is sporting a dynamic new logo.

"We're bursting at the seams in terms of space. We're also bursting with pride over our success rates, and with enthusiasm about our new brand," says Dr. Stuart MacLeod, Executive Director, Child & Family Research Institute.

The new brand has been developed in conjunction with plans to build an expansion that will almost double the institute's available research space, making CFRI the largest research institute of its kind in Western Canada. ✎

# Brain Teasers: Unravelling the Riddle of Mental Retardation

The Child & Family Research Institute is home base for a national platform using the most advanced molecular cytogenetics technology towards understanding mental retardation.

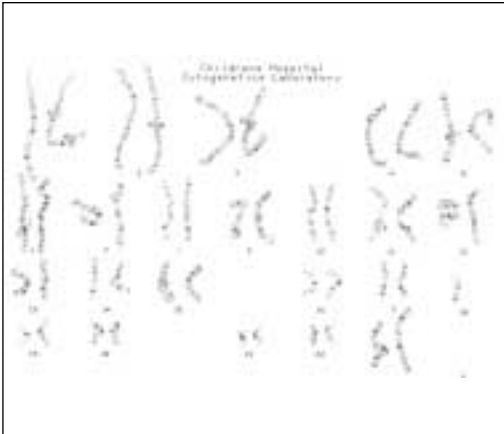


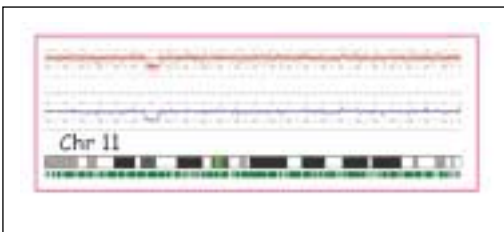
Image : Patrice Eydoux

Standard cytogenetic techniques include banding, where cells are cultured, stopped in metaphase, spread on a slide, and stained with a suitable dye. This example of a normal human karyotype shows how the dyed bands distinguish segments of chromosomes from adjacent segments, revealing additions or deletions. However, an abnormality less than 5,000,000 bases can't be seen using this technique.



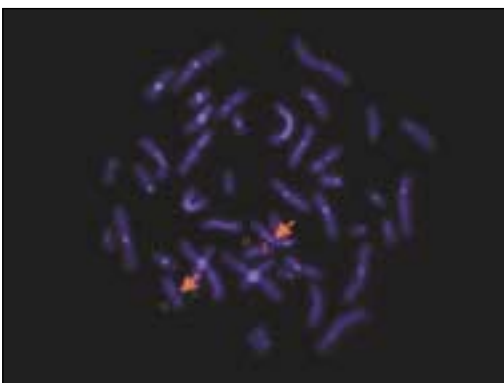
Courtesy: Irene Li, Genome Sciences Centre

With molecular cytogenetic techniques such as microarray hybridization, scientists are able to view much smaller duplications or deletions. This image shows microarray hybridization results on a patient with developmental delay who had a normal chromosome analysis but was found to have a submicroscopic deletion of chromosome 11. Here is the array result for the entire karyotype, made up of more than 50,000 data points measuring copy number at different locations in the genome. The abnormality is shown in the oval.



Courtesy: Irene Li

A blow-up of chromosome 11 shows the deletion as a dip in the line, indicating one copy instead of two of the affected region. The red dots are the actual data points; the blue line shows a moving average of the estimated copy number. A cartoon of chromosome 11 is shown beneath the data for orientation. This deletion was then confirmed by FISH using a probe specific for the affected region.



Courtesy: Patrice Eydoux

FISH (fluorescence in situ hybridization) is the most commonly used molecular cytogenetic technique to view missing or extra pieces of a chromosome at a higher resolution. The technique involves preparing probes (short sequences of single-stranded DNA) complementary to the sequences being examined. These probes hybridize to the complementary DNA, and because they are tagged with fluorescent molecules, allow researchers see the specific location of the desired DNA sequence. Here, an example of FISH showing a deletion.

The idea for a national infrastructure platform bringing together the “most advanced molecular cytogenetics technology available” was hatched at a brainstorming session, says Dr. Jan Friedman. The project leader for the Canadian Molecular Cytogenetics Platform explains that members of the CIHR Institute of Genetics, Clinical Genetics Planning and Priorities Committee were trying to develop clinical genetics research across the country. “We wanted to find ways to bring together molecular genetics and genomics with clinical genetics, to get them talking more to each other,” he adds.

The response was tremendous. “We called a meeting. More than 30 people from across the country came though there was only two weeks’ lead time,” says Dr. Friedman. Then a funding application to the Canada Foundation for Innovation (CFI) was put together within six weeks.

The successful infrastructure application was awarded \$4.5 million through the CFI Innovation Fund in the spring of 2004. A month later, Genome Canada also announced \$5.5 million awarded to Dr. Friedman and Dr. Marco Marra (of the Genome Sciences Centre) for their research program, Genomic Tools for Diagnosis and Evaluation of Mental Retardation. “I’ve been interested in better cytogenetics for a long time, but the technology hadn’t existed,” says Dr. Friedman. “Now molecular cytogenetics is ripe.”

Most of the leading-edge molecular cytogenetics technology in Canada has been devoted to studying chromosomal abnormalities in cancer cells. The Canadian Molecular Cytogenetics Platform harnesses the technology for determining causes of mental retardation, which affects more than 300,000 Canadians. The causes of most mental retardation currently remain unknown, though chromosomal abnormalities are the most frequent recognized cause. The platform will enable scientists to learn more about abnormalities that cannot be seen by standard chromosomal analysis but are detectable only with advanced molecular cytogenetic technologies. “Clinical implementation of the research is a must,” adds Dr. Friedman.

The platform is an infrastructure partnership of 13 major research facilities and supports the members of the Canadian Molecular Cytogenetics Research Consortium, which unites almost all leading clinical investigators and basic scientists in the field in Canada. The participating clinical centres already provide cytogenetic analyses for more than 21,000 prenatal diagnostic procedures and more than 13,000 children with mental retardation and other birth defects each year. However, no single facility was able to set up the infrastructure required for a project of this scope, says Dr. Friedman.

**The platform will improve the speed, efficiency and safety of cytogenetic services and enable more accurate prognosis, and therefore more appropriate educational and social interventions, for those affected by mental retardation.**

The sharing of resources and the refinement of techniques made possible through the platform will allow for significant savings to the health care system; project applicants estimate savings of tens of millions of dollars a year in diagnostic testing costs. As well, the platform will improve the speed, efficiency and safety of cytogenetic services, and enable more accurate prognosis, and therefore more appropriate educational and social interventions, for those affected by mental retardation.

The platform incorporates core centres, distributed across the country, that will focus on different technologies and techniques, including microarray CGH, 3D imaging of chromosomes in cell nucleus, high end FISH analysis, and PRINS techniques. Also included in the platform are a national database of clinical and cytogenetic research data on individuals who have undergone cytogenetic testing, as well as a national cell and DNA bank. An Informatics Governance Facility will ensure nationwide exchange of clinical research data and specimens in an appropriate legal, ethical and social context.

One research project being done in Vancouver will assess, for first time anywhere, the clinical utility and cost-effectiveness of a variety of advanced molecular cytogenetics methods. Other projects made possible by the platform will employ techniques never used before in studies of this kind, or perform studies that cannot be done anywhere else in the world.

The Child & Family Research Institute acts as the coordinating centre for the platform, as well as providing both dry and wet lab space. The institute also provided advance funding to put together the initial components of the infrastructure. A number of the applicants on the CFI proposal, including Drs. Sylvie Langlois, Patrice Eydoux, Evica Rajcan-Separovic, Brett Casey, and Wendy Robinson, were already working at the institute, so it made sense that it would serve as the platform’s home base.

As leader of the platform, Dr. Friedman moved his offices to the research institute in the spring of 2005, and he’s been appointed Program Head of the institute’s Genetics Program. Internationally known for his studies on genetic epidemiology, Dr. Friedman is a Professor of Medical Genetics at UBC, and served as Head of UBC’s Department of Human Genetics for 10 years. He’s already developed some of the world’s largest databases for his areas of research interest, which include neurofibromatosis (he developed the largest NF database in world), and teratogens (the TERIS database Friedman developed on the drug-related fetal risks contains information on 1200 agents and is used by clinicians around the world.)

# New FASD Research Network Draws Expert North

The Canada Northwest FASD Research Network will help link the expertise and knowledge among researchers, service providers, policy makers, and families and individuals affected by FASD.

Alcohol's effects on the developing embryo and fetus do not limit themselves to any one organ system, nor do they always follow set patterns – this is something Dr. Sterling Clarren, one of the world's foremost experts on Fetal Alcohol Spectrum Disorder (FASD), has repeatedly observed over his thirty-year career.

“We can't just treat FASD with medication. We're talking about a condition that causes brain damage with multiple cognitive characteristics and numerous behavioural challenges,” says Dr. Clarren. Fetal alcohol exposure is the leading known cause of mental and physical birth defects. It can cause mental retardation, facial deformities, stunted physical and emotional development, behavioural problems, memory deficiencies and attention deficits, impulsiveness, inability to reason, and a variety of other problems.

Treatment and prevention of FASD requires a multidisciplinary systems approach, with a team of professionals working in a coordinated effort with affected individuals. Such an approach must also be reflected and supported in the larger context – hence, the recent development of a new Canada Northwest FASD Research Network, of which Dr. Clarren is CEO and Scientific Director.

The Canada Northwest FASD Research Network is a collaborative undertaking by seven provinces and territories: BC, Alberta, Saskatchewan, Manitoba, Nunavut, Yukon, and the Northwest Territories. It was developed, with support from the Michael Smith Foundation for Health Research, to address high-priority research questions in order to devise better FASD prevention and support strategies. BC's Provincial Health Services Authority (PHSA) has been chosen to serve as the network's host agency and administrative centre.

Dr. Clarren, who recently relocated from the University of Washington in Seattle to head up the network, brings with him the breadth and depth of experience required to lead such a venture. His pioneering research in this field of study began in the 1970s when he worked with Dr. David Smith, who first described FASD. Dr. Clarren wrote the first articles on the neuropathology of Fetal Alcohol Syndrome (FAS), and also developed the first nonhuman primate model of FAS. This model provided invaluable data on alcohol dose response, and through it Dr. Clarren was also able to confirm the type of damage alcohol does to the fetal brain. “Using the standard clinical tests, the brain of someone with FAS appears structurally normal. However, we discovered that, at the microscopic and microcellular level, fetal alcohol exposure results in multiple tiny lesions all over the brain,” says Dr. Clarren. “And there is a variability of damage, with different patterns of severity.”

Dr. Clarren's research has also been key in identifying the characteristic facial malformations of FAS, and the specific timing of alcohol exposure during embryo development that results in such deformities. He also coined the term fetal alcohol effects (FAE). Physical abnormalities may not be present in children affected by FAE, but brain damage has still occurred.

The first clinical models for treating FAS were also developed by Dr. Clarren, and he set up one of the first pediatric clinics focused on the diagnosis of FAS. It was here that he recognized that FASD is a condition requiring a multidimensional team approach for

diagnosis, as well as treatment and intervention. Such treatment must occur across the lifespan – during infancy, childhood, youth and through the transition to adulthood. “These include social and educational interventions, to address very specific individualized patterns of deficit,” says Dr. Clarren.

In addition, Dr. Clarren was the first clinical head of the Fetal Alcohol Syndrome Diagnostic and Prevention Network – a network of seven comprehensive clinics in Washington State, each offering the same consistent approach to FAS diagnosis and treatment and outreach to the birth mothers to prevent recurrence – and he has trained other sites across North America in FASD diagnostics. He is one of the co-authors of the 4-Digit Diagnostic Code for FAS and related conditions.

There are four elements of FASD research and treatment that Dr. Clarren says are inseparable, and that the Canada Northwest FASD Network will focus on: prevention, prevalence, diagnosis, and intervention. 2005 is a planning year for the network, says Dr. Clarren. “Our next steps are to ask, what do each of these elements mean and entail? How do we get experts and communities involved? How do we alert folks to services and opportunities? We also have to consider the geographic challenges. How can we make interventions available in rural and remote



World-renowned FASD researcher and recent recruit to the Child & Family Research Institute, Dr. Sterling Clarren is excited by the collaborative research environment he's found in Canada.

“This is the first place in the world to take this (FASD) on holistically.”

communities?” He adds, “This is the first place in the world to take this on holistically.”

To ensure that the network maintains and is able to act with a broad mandate, it is governed by a board of directors appointed by the ministers of the seven provincial and territorial governments responsible for creating the network.

Dr. Clarren emphasizes that “the timing for the network is right. There are folks banging on the doors for services, and a cadre of professionals available to provide them.” He adds there are a number of

researchers and experts already working in BC, and lots of small intervention programs, and a variety of data sets being collected. Says Dr. Clarren, “The key is to bring them together.”

The network will help link the expertise and knowledge among researchers, service providers, policy makers, and families and individuals affected by FASD. It will also provide a means to engage in research directly with communities. Adds Dr. Clarren, “It's such a wonderful environment to collaborate in. There so many people like me who want to help, and there's enormous energy and excitement.”

## BC home to several new networks

The Canada Northwest FASD Research Network is just one of several recently created research networks. The Michael Smith Foundation for Health Research has allocated \$3 million to support the development of eight provincial research networks related to the health of populations. The networks will facilitate collaboration and the creation of ideas as well as the sharing of infrastructure. The networks are:

- BC Aboriginal Peoples' Health Research Network
- BC Mental Health and Addictions Research Network
- BC Network for Aging Research
- Women's Health Research Network
- Child and Youth Health Research Network
- Disabilities Health Research Network
- Rural and Remote Health Research Network
- Environmental and Occupational Health Research Network

# Wait Lists Long for Mini Med School

CFRI's Mini Med School demystifies science, giving investigators the rare opportunity to make science fun for an enthusiastic and appreciative public audience.

The notice in red on the website this spring said it all: Registration has closed but we have an active waiting list.

For the fifth time in two years, registration was cut off well in advance of the start date for the Child & Family Research Institute's Mini Med School. The biannual free public lecture series runs for six weeks and the lecture theatre holds more than 200 participants, but there usually isn't an empty seat when the popular public education outreach program begins.

"Mini Med fills the house," says Kristiann Allen, Manager, Research Education Program. "Medical science is compelling to the public. There is a huge thirst for this knowledge."

The Mini Med School concept was first developed in Colorado in 1990 and has since been fostered by the NIH's Science Education Initiative. There are now Mini Med Schools offered at universities and teaching hospitals worldwide.

Vancouver's first ever Mini Med School Series was launched in the spring of 2003, organized by CFRI's Research Education & Support Services. Topics follow the institute's research themes, with the spring 2005 series being "Child Health and Development: What's 'normal' got to do with it?"

Previous offerings have focused on infection and immunity, genetics and genomics, reproductive health, and diabetes.

Dr. Wendy Robinson, head of CFRI's Reproductive Health Research Program and Professor, Department of Medical Genetics, University of British Columbia, studies the genetics of infertility, pregnancy loss and placental complications of pregnancy. She was Dean for the series on reproductive health, "The Facts of Life: 2004 Edition."

"It is interesting and scary and hard to bring loaded topics to the public. I realized that scientists really use a lot of technical jargon so it was incredibly educational for us to present to people outside the field," says Dr. Robinson.

"We worked hard to make the sessions entertaining... to make the science understandable and fun. What surprised me was how bright the audience was, especially the high school students. They asked amazing questions."

Making it entertaining is the job of the investigators and trainees in each program and they put considerable time and thought into development of the six evening presentations. The result has been described as "the Massey Lectures meet the Discovery Channel."

Each series uses catchy titles to humanize scientific topics. For example, topics in the reproductive health series, "The Facts of Life: 2004 Edition," were:

- "Sugar and Spice, Snips and Snails: What are boys and girls made of?" discussed hormones and reproductive development.
- "Mergers and Acquisitions: Getting down to business" looked at ovarian function, ovulation, implantation and placentation
- "High Tech Babies" covered assisted reproduction and life-saving fetal interventions
- "The Secret World of the Fetus" was all about fetal development
- "Pickles and Ice Cream" explored the effects of changes in maternal physiology
- "Birthmarks" talked about high-risk birth outcomes and fetal determinants of adult health

The typical audience for Mini Med School is made up of adult learners, hospital clinical staff, and highly motivated high school students (see sidebar), including a loyal band of about 20 participants, who register for every series. "Some parents come with their kids, some teachers come with students, treating it as professional development. There are also some retired couples. But mostly the attendees are people with a special interest in the specific topic," says Ms. Allen.

The next Mini Med School, slated for the fall of 2005, will be a 'best of' series, showcasing sessions from each of the previous series. ✎



Mini Med School includes interactive elements that allow members of the public to engage directly with the science.



Photos: C&F Research Education & Support Services



An attentive audience at a Mini Med session. "Medical science is compelling to the public," says Kristiann Allen, Manager, CFRI Research Education.

Photo: C&F Research Education & Support Services

## Students Vie for Unique Opportunity

Child & Family Research Institute faculty can count on facing at least 50 bright, young minds when they step up to the Mini Med School podium. And that's by design.

In the belief that Mini Med School is a tremendous opportunity to engage outstanding students, all Vancouver high schools are offered two reserved seats. Each school's science department nominates its two most motivated students, based on criteria of its own design.

The competition is brisk, because winning the nomination to attend Mini Med School leads to another unique opportunity. Students who attend all sessions of the series are eligible to compete for two scholarships to work in one of the labs of Mini Med School faculty during the summer break. The scholarships offer a stipend and a summer project, and the successful high school students work under the mentorship of senior graduate students, postdoctoral fellows and technical staff in the labs. Faculty and students have raved about the experience of the Mini Med Summer Studentship program, and a few of the successful students have been asked to stay on to work in the lab afterwards. ✎

# Pioneering Research into Pediatric Palliative Care

Dr. Hal Siden is principal investigator for the Transitions in Pediatric Palliative and End of Life Care project recently awarded a CIHR New Emerging Teams Grant. The five-year grant is the first of its kind and the studies undertaken will be among the largest in the world.



Photo: CBW Media Production & Services

Dr. Siden and his collaborators are using a metaphor of prisms to describe their research: they'll study the spectrum of factors involved with pediatric palliative care and the areas where those are refracted and overlap.

**P**ediatric palliative care and adult palliative care share many of the same words. “But,” says Dr. Hal Siden, “they’re significantly different in practice.”

Most folks rarely even consider “pediatric” and “palliative” as words that go together – we don’t want to think of kids and the end of life in the same sentence. But as Medical Director of Canuck Place Children’s Hospice, North America’s first free-standing hospice for kids, Dr. Siden knows the reality: many children are afflicted with life-threatening diseases and require specialized palliative services.

Dr. Siden is also the principal investigator for a large research project focusing on pediatric palliative care that was recently awarded a New Emerging Teams (NET) Grant from the Canadian Institutes of Health Research (CIHR). “CIHR put out a call for its Palliative and End-of Life Care Initiative. It was the first time such a call had been issued. Our group is the only one studying pediatric care.”

There are several differences between adult and pediatric palliative care practice, explains Dr. Siden. “First, pediatric palliative care is not ‘about dying.’ Rather, it’s about helping kids and families who are living with a life-threatening illness. And their life span, when they enter the system, can range from days to decades.”

Children requiring or benefiting from palliative care include those with neuromuscular and neurodegenerative diseases, rare metabolic disorders and genetic syndromes, or cellular diseases. Some have illnesses that can be cured, like cancer, but have a possibility of death. Some have diseases like cystic fibrosis or muscular dystrophy that benefit from intensive treatments or in which symptoms can be managed, but ultimately have no cure and lead to limited life expectancy.

“Because of the long period of time over which many of these diseases run their course, families are often invested in seeking curative treatments,” says Dr. Siden.

**“We want to build an infrastructure for research into pediatric palliative care... there are a lot of unanswered questions.”**

“Pediatric palliative care helps to balance the desire for a cure with supporting the child and family through the dying process.”

Children and their families living with life-threatening diseases experience a number of transitions, including when the first tests are done and a diagnosis is made, and when there are subsequent changes in health, such as movement into a wheelchair. Then there are the transitions when a child is referred to a hospice such as Canuck Place, at the time of death and during bereavement.

It is these transitions that Dr. Siden and his collaborating team will investigate. The project, called Transitions in Pediatric Palliative and End of Life Care, will focus on child-centred research in collaboration with children, their families, caregivers, and healthcare providers. The multi-center project brings together a core team of two physicians, two nurses, and a social worker. They will focus on three thematic research areas – biomedical/clinical (e.g. physical and physiological processes, such as pain, nutritional health and respiratory symptoms); psychosocial (e.g. impact on, and of, families & social network); and health services (e.g. services, systems and policies) – and the intersections and transitions between. The team is using a metaphor of prisms to describe their work: they will study the spectrum of factors involved with pediatric palliative care and the areas where those are refracted and overlap.

The five-year grant is the very first large grant of its kind, and Dr. Siden believes the studies undertaken will be some of the largest in the world. “We want to build an infrastructure for research into pediatric palliative

care. There’s been a lack of research into this area, and there are a lot of unanswered questions. Most palliative care strategies focus on adults,” says Dr. Siden.

For their first pilot study and collaboration, they’re looking at the transition as kids are admitted into a hospice program. The team is also busy setting up a collaborative environment – a virtual laboratory called CoLab – since the collaborators are in different locations.

“We’re not talking just email,” says Dr. Siden. “This is a shared virtual workspace, containing a library, all our files, blogs and bulletin boards.” The team members will also utilize videoconferencing technology.

A significant portion of the team’s energy will be invested in building training and mentorship opportunities, recruiting researchers and securing a future grant base.

In addition to the core team, the study will bring together a team of 16 collaborators from Canada, the US and the UK. Fourteen partners (seven health care settings and programs, seven pediatric/palliative care organizations) have also committed to the project.

“The pediatric palliative care movement is gaining momentum. Our goal is to set up a research shop that supports research of everyone in this field. We want this research program to be permanent.”

# What a Difference a Decade Makes

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“Our goal is to be the top childhood diabetes research centre in Canada, if not the world.”

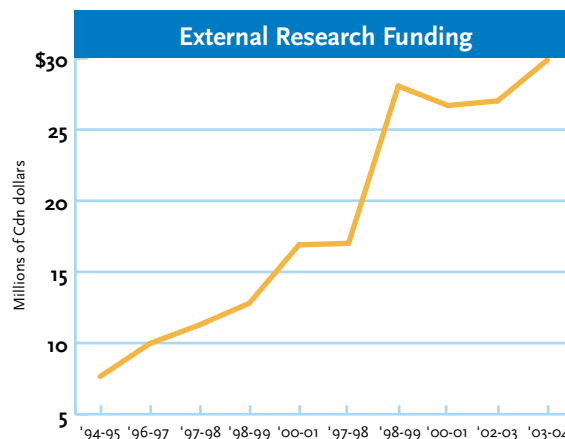
The space will also house new equipment. The Diabetes Research Program will have state-of-the-art genetics technology – allowing investigators to study genetic predisposition to diabetes – and the latest imaging equipment. A high throughput FACS (Fluorescence Activated Cell Sorter) will arrive in the fall of 2005. “We’re developing core facilities that will allow more people to conduct faster and better research,” says Dr. Verchere.

The multidisciplinary approach of the CFRI Diabetes Research Program is already unique in Canada. Investigators study both type 1 and type 2 diabetes, and are conducting research into islet cell biology, autoimmunity, genetics, and viral causes of the diseases, and emerging areas such as beta cell regeneration.

“Our goal is to be the top childhood diabetes research centre in Canada, if not the world,” says Dr. Verchere.

## Expansion & Growth

Ten years ago one of the institute’s main goals was to attract a critical mass of researchers. One of the ways it accomplished that was through expanded research facilities. Groundbreaking for the last expansion, which doubled the research facilities at the time, took place in 1996. Then in 1998, construction also started on a research education centre, which includes the institute’s



auditorium and atrium, that interfaces between the buildings.

The upcoming construction of the \$38.9 million, four-storey research complex will further link the existing research buildings and provide cohesiveness to the entire structure. The new complex will support wet bench, dry lab, clinical, and office-based research, and will provide accommodation for various programs and departments that are currently decentralized, or are in need of expanded space. “The strength of CFRI is that it promotes a multidisciplinary environment. Cures and better treatments are more frequent when a research

community is synergistic, and real excellence occurs when programs are cross-cutting. Researchers from our various programs and areas are already working together. The new complex will encourage even more of these powerful interactions,” says Dr. Hammond.

Expanded lobby space will enhance the main entrance for the entire research complex. Space for seminar and meeting rooms, which is crucial for teaching and supporting the institute’s many postdoctoral fellows and graduate and undergraduate students, has also been increased.

The BC Children’s Hospital Foundation, the institute’s long-standing primary supporter and provider of its operating funding, will move into the ground floor, sharing space with CFRI administration, and further strengthening the partnership between the institute and the foundation.

A significant amount of space will be allocated to clinical research and clinical trials to encourage greater integration between basic and clinical research. This two-way translation will allow investigators to examine research questions from a number of different angles, and creates a feedback loop that leads to more innovation, stronger research outcomes, and shorter research process times – a direct benefit to the children and families the institute serves. ✎

## Our Mission

### Mission

The Child & Family Research Institute (CFRI) conducts discovery research to benefit the health of children and families.

### Vision – Science Making Miracles

We passionately pursue discovery, knowing our achievements have the capacity to transform lives.

### Values

We work in an environment that values:

- Integrity
- Excellence
- Transformation
- Interaction
- Openness

### Research Programs

Community Child Health  
Diabetes  
Health Innovation & Improvement  
Infectious & Inflammatory Diseases  
Molecular Medicine & Therapeutics  
Oncology  
Reproductive Health

### Crosscutting Themes

Clinical Investigation  
Genetics  
Immunology & Transplantation  
Informatics  
Neurobiology & Mental Health  
Nutrition



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## Research Reporting



CHILD & FAMILY RESEARCH INSTITUTE  
950 West 28th Avenue  
Vancouver, BC Canada V5Z 4H4  
Phone: 604.875.3194 | Fax: 604.875.2496

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