Centre for **Probe Development** and **Commercialization**

ANNUAL REPORT 2009 -2010




A PROVINCIAL RESOURCE WITH NATIONAL IMPACT

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CPDC: A Provincial Resource With National Impact

WHAT WE DO:

The Centre for Probe Development and Commercialization (CPDC) discovers, develops and distributes molecular imaging probes for:

- The early diagnosis and staging of diseases;
- To advance drug development;
- To assess the effectiveness of treatments.

An important part of Ontario's health care system, CPDC provides a reliable, daily supply of imaging probes to hospitals across the province. CPDC also works collaboratively with industry and academic partners, offering the research, manufacturing and regulatory expertise needed to move innovative probe technology and new imaging biomarkers for drug discovery from concept to clinical use.

HOW WE DO IT:

CPDC bridges the gap between basic probe research conducted at universities and institutions; and the clinical need for new probes by health care and commercial sectors.
Our comprehensive teams provide the expertise, infrastructure and industry know-how to identify promising new technologies, spur on probe development and commercialize and distribute new probes to the market.

HOW WE'RE FUNDED:

CPDC is a not-for-profit centre of excellence in research and commercialization that is funded by a five-year, $14.95-million grant from the Government of Canada through the Network of Centres of Excellence (NCE) program and a $4-million grant from the Province of Ontario through the Ontario Institute for Cancer Research.

CPDC also receives key funding and in-kind support from Cancer Care Ontario, GE Healthcare, VWR and CPDC's host institution—McMaster University.

OUR PARTNERS

Canada
Ontario Institute for Cancer Research
McMaster University
Inspiring Innovation and Discovery
GE Healthcare
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VWR

CPDC: A Provincial Resource With National Impact

How can cancer be detected earlier, diagnosed more accurately and treated more effectively to provide better outcomes for patients? These are tough questions that researchers and health care providers have been struggling to answer for decades.

Every patient has a different experience with cancer. This variability means that we must adopt a personalized approach to diagnosis and treatment that considers the unique conditions of each individual when we attempt to solve these questions.

CPDC's molecular imaging probes can help. The probes provide information about disease at a cellular level so physicians can see how each patient's cells are affected by disease, how quickly disease is progressing, and how well the patient is responding to treatment. Since the mid-90s molecular probe technology has been evolving quickly, providing new compounds, new equipment and new hope for many.

In only two years, CPDC has grown to be a vital resource for discovering, developing and distributing probes and probe expertise throughout Canada and to a broader global community. 2009 was an important year in CPDC's growth. We increased the ranks of our scientific, production and quality teams and have doubled the number of staff since year one. Our teams made significant strides in advancing several promising probe candidates;

completed retrofits and upgrades to our radiopharmacy; and implemented a fully automated production process for Glucovision® (FDG). We also worked with McMaster University to secure $22 million in funding from the federal Knowledge Infrastructure Program to begin construction of a 28,000-square-foot expansion of our radiation research facilities, which we will occupy in the spring of 2011.

Our talented people have facilitated the rapid development of our scientific and commercial programs and have brought CPDC into a number of pioneering projects that could provide opportunities to dramatically improve patient care and capture global interest. For example, CPDC with funding from the Ontario Institute for Cancer Research (OICR), brought together McMaster University, Hamilton Health Sciences and GE Healthcare to collaborate at the first site to evaluate GE's cutting-edge molecular breast imaging (MBI) technology.

This device offers greater patient comfort, superior detection over conventional mammography, and an opportunity for CPDC to develop new probes that can further improve the effectiveness of MBI technology.

CPDC is also playing a key role in finding solutions to the global medical isotope shortage, generating non-reactor produced isotopes for probes such as sodium fluoride for bone scans and iodo-hippuric acid for assessing kidney function in cancer patients.

CPDC's four major divisions have experienced incredible growth and

John Valliant,
CEO and Scientific Director

John Babich,
Chair, Board of Directors

success in the past year thanks, in large part, to the talented staff the centre has been able to hire. CPDC has become a key provincial resource for imaging probes for cancer programs. We have also made significant advances in research and in bringing new opportunities to Ontario to improve health care and spur on economic growth. This effort not only includes the introduction of new probes, but also existing probes that are successfully used outside of Canada and are not yet approved for use here. As new probes are approved, CPDC will coordinate with regional health care providers to ensure that they are universally accessible for diagnosis of patients throughout Ontario.

We're excited about the opportunities that lie ahead for 2010. With our teams in place, our facilities finely tuned, and our partners eager to move forward, CPDC will focus on developing the next generation of molecular imaging probes.

2010 will be a year of innovation. CPDC scientists will work to develop probes that can measure the aggressiveness of tumours and the likelihood of tumours to spread throughout the body. We will also expand our support of colleagues at research centres to help them translate their novel probes out of the lab and into the clinic.

CPDC has been fortunate to have strong support from leaders in industry, academia and health care and major investments from all levels of government and industry partners. Success going forward will be through the further development of strategic partnerships with key public and private sector partners who can benefit from the unique talents and capabilities available at CPDC.

As we grow and continue to gain recognition for our achievements and capabilities, CPDC will work to establish Ontario as an international destination for probe development and imaging-based clinical trials. To meet this goal, CPDC is forming an international network of collaborators with leading academic institutions and pharmaceutical companies. This best-in-class network will enable sites to access the latest imaging probe technologies, participate in transformative clinical trials and share in best practices employed by global leaders. It will also bring new ideas, technology and jobs to Ontario that will improve our health care system and strengthen our economy.

John Babich
Chair, Board of Directors

John Valliant
CEO and Scientific Director

- About one in four Canadians will die from Cancer.
- Ontario currently spends $2 billion per year on cancer treatment and services.
- Loss of productivity accounts for another $5 billion.

- Nearly 50% of cancers can be prevented or detected early.
- Early detection can dramatically improve treatment outcomes.
- CPDC is working with OICR and other partners to develop new imaging and screening technologies that will detect tumours as small as 1 mm.
- PET imaging and CPDC's Glucovision® (FDG) aids early detection, showing the biochemical activity of growing tumours before CT, X-ray or MRI can show anatomic changes.

What is Molecular Imaging?

Molecular imaging is a rapidly advancing area of science and medicine that enables physicians to non-invasively see the biochemical activity of cells and diagnose disease at its earliest stages.

Imaging probes, also called imaging biomarkers or tracers, are used in combination with imaging techniques like positron emission tomography (PET) or single photon emission computed tomography (SPECT) scanners. Molecular probes are designed to seek out sites of disease, such as cancer, heart disease, Alzheimer's disease, and disorders of bones, kidneys and liver. The probes carry a short-lived, radioactive isotope to the site and bind to targets at the site of disease or injury. The probes emit a signal to imaging devices that indicate areas of unusual cellular activity and alert physicians to potential disease.

Since changes in biochemistry occur before diseases reach an advanced stage, molecular imaging can reveal abnormalities long before conventional imaging devices such as X-ray or MRI can detect anatomical changes. This enables physicians to detect diseases earlier and provide more personalized care based on the type of tumour, its aggressiveness and response to treatment.

The dark spots in the PET image show tumours in the torso that are consuming Glucovision® (FDG), a probe derived from sugar and manufactured by CPDC. Tumours grow faster than healthy cells and they consume more of the sugar-based probe, resulting in a higher concentration of the molecular probe in diseased tissue.

Image courtesy of T. Locascio, K. Zukotynski and A. D. Van den Abbeele
Dana-Farber Cancer Institute,
Harvard Medical School, Boston

Investing in the Future of Ontario's Health Care System and Economy

The use of positron emission tomography (PET) imaging in Ontario is dotted with a string of successes and challenges since the technology was first introduced to the province as a research tool back in the early 1980s. Recently, the Ontario government announced that it would provide reimbursement for PET imaging, starting in October 2009. Reimbursement is currently offered to patients with one of nine specific conditions where PET scans have been shown to be the ideal diagnostic technology and positively impact patient treatment and outcomes. Ontario is now among six other provinces that publicly fund the scans.

The decision to fund PET scans follows the province's evidence-based approach for the introduction of new technologies. This approach is based on clinical studies and is designed to show that conducting PET scans will improve diagnosis and treatment for certain diseases as compared to other tests. It is designed to ensure that patients will have access to the best possible care, that health care funding will be allocated to the most appropriate diagnostic technologies and that the scans will provide an accurate diagnosis while minimizing false positive and false negative results.

Fluorodeoxyglucose (FDG) is the most widely utilized molecular imaging agent for PET scans; used to detect and stage a broad range of diseases. FDG is composed of a sugar molecule with a radioactive fluorine atom attached to it. The fluorine atoms are generated in a cyclotron, a type of particle accelerator. Since FDG has a very short half-life—only about 110 minutes—it must be manufactured relatively close to the point of use and must be used within about 10 hours of production.

CPDC: Ontario's Source for FDG

In the past, obtaining adequate supplies of imaging probes was one of the biggest challenges faced by Ontario PET centres. FDG was made at out-of-province commercial facilities or at academic labs, where the production was shared with academic research projects. In some cases, producers lacked the expertise or resources to ensure that probes were made according to current Health Canada regulations. Some of these sites also were unable to ensure that FDG could be distributed throughout the province, which is critical to avoid any regional disparities in access to care.

CPDC plays a key role in supporting Ontario's health care system with a reliable, high-quality supply of Glucovision® (FDG).

The Centre's state-of-the-art radiopharmacy manufactures and delivers Glucovision to about a third of Ontario's imaging centres on a daily basis. CPDC has also secured a Health-Canada approved back-up supply of fluoride—a key ingredient for manufacturing Glucovision—to ensure reliable, uninterrupted deliveries of FDG to Ontario PET centres.

Located at Hamilton's McMaster University campus, CPDC is strategically located within a few hours travel to nearly every imaging centre in the province. This proximity enables CPDC to quickly and easily respond to the demand for imaging probes and provide daily deliveries for critical imaging procedures.

High-tech Manufacturing

Recognizing the growing demand for current and emerging PET probes, CPDC moved quickly to complete comprehensive upgrades and retrofits of its radiopharmacy in 2009. The upgrades elevated the facilities, operating procedures and quality control measures to standards that meet or exceed Health Canada requirements. Incorporating strict good manufacturing practices (GMP), the radiopharmacy is equipped with the most advanced synthesis, analysis and manufacturing equipment and produces probes that are among the purest and of the highest quality in the industry.

To strengthen its position as a competitive producer of high-quality probes, CPDC submitted a Supplementary New Drug Submission to Health Canada in 2009 for approval to manufacture FDG using an automated process. Now fully implemented, the automated process has enabled CPDC to nearly double its yield of FDG, reduce production time by more than 60% and reinforce its assurance of consistent product quality to customers.

Supported by world-class production personnel, regulatory specialists and research scientists, CPDC is ready to meet the needs of a growing PET market and lead the development of the next generation of molecular imaging probes.

Achieving the Highest Manufacturing Standards

CPDC is Ontario's first manufacturer of imaging probes to achieve full compliance and certification from Health Canada for good manufacturing practices (GMP) as defined by new standards.

This high standard of production assures CPDC customers that products consistently meet stringent standards for quality, purity and safety.

It also ensures that CPDC production staff is following the safest industry standards for handling, transportation and disposal of probes.

Filling Critical Gaps and Reinvesting in our Province

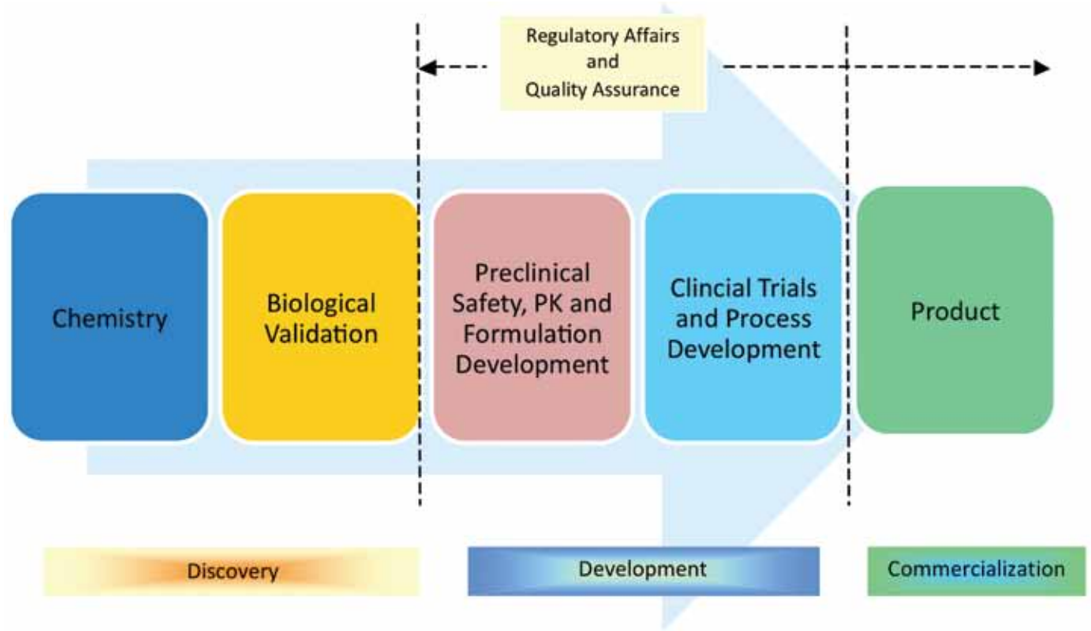
Most research programs do not have the appropriate infrastructure, funding or expertise needed to translate innovative probes to clinical trials or to establish commercial probe production activities that meet GMP standards. In addition, traditional radiopharmaceutical supply companies have generally been unwilling to become involved in probe development initiatives in Ontario or to create new probes to expand the list of diseases that can be diagnosed using molecular imaging. The CPDC was created to fill these gaps.

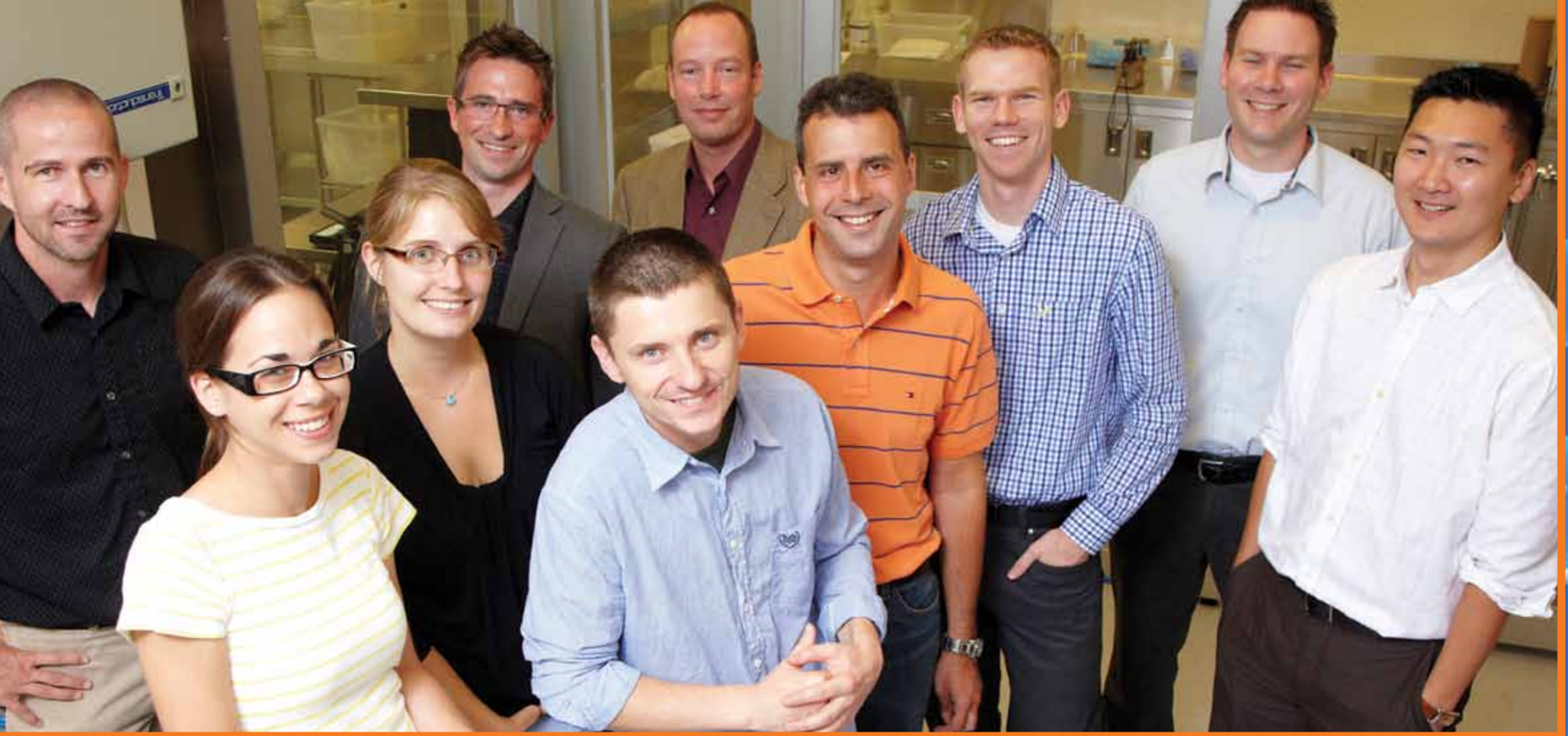
The key stages of molecular imaging probe development are shown below. The first phase involves what is considered basic research—a very active area in Ontario. Unfortunately, major obstacles are encountered when groups attempt to move beyond the discovery stage towards commercialization or when clinical programs attempt to access emerging agents or radiopharmaceuticals for small patient populations.

CPDC uses revenue from the sale of its products to address these shortcomings. The Centre has launched programs to help advance emerging probes and to provide physicians with access to critical agents. The Investigator Sponsored Research Projects (ISRP) program, for instance, enables groups from across Canada to get assistance to translate agents from the lab to clinic or for physicians to access PET radiopharmaceuticals for small patient populations and preliminary pilot studies.

CPDC differentiates itself not only in terms of reliability of supply and the quality of its products, but also in how it is reinvesting in the community to help foster the growth of the field and ensure Ontario physicians and patients can get access to the latest imaging probes.

The Key Stages of Molecular Probe Development





CPDC's expertise in probe development, regulatory approvals and clinical trial management is attracting significant interest from national and international pharmaceutical companies for various probe and drug development projects.

Rather than create in-house probe research and manufacturing capabilities, pharmaceutical companies are choosing to partner with CPDC and benefit from its experience, world-class facilities and proven capabilities.

CPDC's radiolabeling services play an important role in the drug development process—helping pharmaceutical companies validate drug effectiveness in the early R&D stages. Radiolabeled drug candidates can be easily tracked with a PET scanner as they travel through a subject, providing important information about how much of the drug reaches the target, how the drug is metabolized and how it is impacting the site of disease.

This information helps companies decide which drug candidates are the most promising and which ones should advance to more costly late-stage trials.

Several large pharmaceutical companies initiated or investigated projects with CPDC in 2009, recognizing the Centre's ability to assist with a number of research and commercial needs including:

- Contract manufacturing of molecular imaging probes;
- Radiolabeling of drug candidates for preclinical and clinical trials;
- Obtaining regulatory approvals;
- Facilitating and managing clinical trial studies at hospitals across Ontario.

In 2009, CPDC completed its retrofit and upgrade of its labs to meet GMP requirements and developed quality assurance and quality control procedures to support PET and contract manufacturing programs.

EXTENDING LOCAL SUCCESS TO A GLOBAL NETWORK

In addition to providing an expanded menu of radiopharmaceuticals, CPDC is committed to establishing Ontario as an international destination for probe development and imaging-based clinical trials. To meet this goal, CPDC is forming an international network of collaborators with leading academic institutions and pharmaceutical companies. This best-in-class network will enable sites to access the latest imaging probe technologies, participate in transformative clinical trials and share in best practices employed by global leaders.

Innovative Research for a Healthier Ontario

CPDC was created to tackle Canada's growing health care needs and to introduce new, groundbreaking innovation to the field of nuclear medicine. Our growth and our progress has been staggering since we opened our doors in 2008 with a small staff and shared laboratories at McMaster University.

Today, the expansions of CPDC facilities are well under way. The number of staff has doubled since our first year, we're building new research and production labs and the horizon holds an incredible spectrum of new discoveries and opportunities.

In 2009, CPDC research scientists moved forward on a number of projects. Our work focused on identifying target receptors in diseased cells and developing probes that can bind to the receptors and highlight areas of disease using molecular imaging.

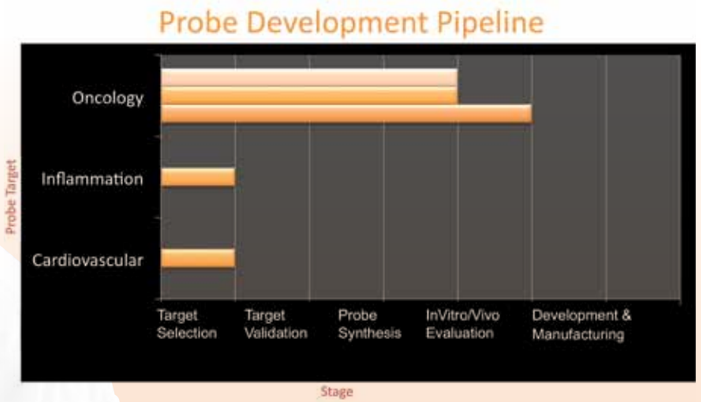
BREAST CANCER

Tackling one of the most prevalent cancers in women, CPDC scientists are working to develop a new probe that will specifically target breast tumours and provide a high degree of sensitivity in detecting the tumours. Scientists have successfully identified a target site on the tumours and completed early stage testing in cell cultures to validate the target. Validation work will continue, and promising results will enable advancement to the next step—developing a superior probe for the detection and staging of breast cancer.

METASTATIC MARKERS

Assessing the aggressiveness of tumours and their likelihood to spread throughout the body is a critical step in determining the best course of treatment.

CPDC scientists have completed testing of a new probe that can assess the metastatic potential of cancers such as breast, pancreatic and prostate. Currently, preparations are being made to begin preclinical trials. This technology could further enhance the ability of our health care system to personalize care and provide the most appropriate and most responsive treatment for cancer patients according to how the disease is progressing.



CPDC scientists have identified target receptors that are over expressed on various types of diseased cells and are developing imaging probes to diagnose the conditions. Development for oncology targets is focused on markers of tumour aggressiveness and on early detection and therapy.

Tackling Current and Future Challenges

From reliably meeting daily demands for FDG, to developing new molecular probes, to helping Canadians cope with shortages of medical isotopes, CPDC is critical to assuring the future of high quality health care. In 2009, CPDC made significant strides in the areas of research, commercialization and investment to address current challenges and to prepare for the future.

SOLUTIONS TO MITIGATE THE MEDICAL ISOTOPE SHORTAGE

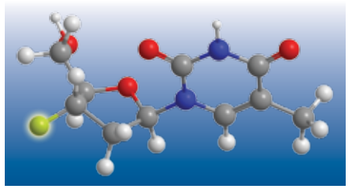
The global supply of medical isotopes has been in a fragile state since 2007 when Canada's Chalk River reactor was shut down for maintenance and repair. In late 2008, five of the world's main isotope-producing reactors were unavailable for various reasons. Chalk River was once again offline in 2009, raising major concerns about the reliability of the world's technetium supply and producing serious gaps in patient care as many procedures were cancelled or delayed.

CPDC is working to develop alternatives to technetium-based imaging probes, turning instead to cyclotrons to reliably produce agents for local imaging centres. In 2009, CPDC achieved significant milestones in developing and distributing alternative probe technologies.

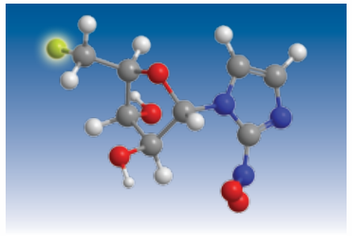
1. **Sodium Fluoride (NaF):** CPDC distributes NaF to imaging centres for performing bone scans. NaF is a reliable, effective alternate PET agent for bone scans when technetium-based probes are not available during an isotope shortage. NaF, like the corresponding agent technetium, is used to detect cancer that has metastasized to bone or other bone injuries. CPDC has also obtained approval from Health Canada for a back-up supply of fluoride for the production of NaF and Glucovision® (FDG). This ensures an uninterrupted supply of these critical imaging tools.
2. **Iodo-hippuric Acid:** A grant from the Canadian Institutes of Health Research (CIHR) and the Natural Sciences and Engineering Research Council of Canada (NSERC) is funding the development of an agent for imaging kidney function. Radiolabeled with iodine, the iodo-hippuric acid probe provides an alternative to technetium-based technologies and ensures hospitals can continue to offer kidney scans during isotope shortages.

DISCOVER, DEVELOP AND DISTRIBUTE NEW PROBES IN ONTARIO

CPDC's comprehensive research, regulatory and production capabilities enable the organization to bring proven probe technology from other parts of the world to Canadians. In 2009, CPDC identified, and began the process to bring, two important PET probes to the province.



Fluorothymidine (FLT): Used to monitor tumour proliferation, FLT has potential to be an important agent for assessing the success of chemotherapy. In 2009, CPDC became Ontario's first GMP manufacturer of FLT for Health-Canada approved clinical trials. CPDC was granted approval following a rigorous process to develop the manufacturing process, validate quality control methods and perform product stability testing. FLT uptake slows in tumours that are favourably responding to treatment, providing important information to physicians much sooner than CT can show changes in tumour size.



Fluoroazomycin Arabinoside (FAZA): Rapidly growing, malignant tumours often become hypoxic, a condition where the tumour outgrows its blood supply and is difficult to treat and monitor. CPDC is working to make FAZA available for clinical trials in Ontario hospitals. The probe will help physicians to accurately visualize tumour hypoxia and provide valuable information for individual treatment planning, monitoring and prognosis. Following successful chemical synthesis, product validation and stability testing, CPDC will develop an automated manufacturing process to produce larger volumes of high-quality FAZA for use at Ontario PET centres.

THE NEXT GENERATION OF MOLECULAR IMAGING PROBES

An aging population and the growing needs of our modern health care system demand new technologies to improve the diagnostic capabilities and therapeutic applications of nuclear medicine. CPDC is working closely with its academic and commercial partners to identify promising new probes, move them through the research process to validate their effectiveness and advance them to clinical use.

A key initiative to identify new probes is CPDC's Investigator Sponsored Research Program (ISRP), a program that invites researchers from around the world to leverage world-class probe development and commercialization services to bring new probes to market.

Globally recognized leadership in cyclotron-produced isotopes.

Continued shortages of reactor-produced isotopes such as technetium, are compelling the nuclear imaging industry to look at cyclotrons as a viable alternative for a temporary or permanent source of isotopes.

CPDC is a world leader in discovering, developing and distributing cyclotron-produced imaging probes.

A cyclotron is a type of particle accelerator that accelerates protons in an expanding spiral path. The particles collide with material in a target to make positron emitting secondary particles.

These particles are attached to special molecules that are designed to bind to target sites of disease.

Positron Emission Tomography (PET) scanners can detect the radioactive emission of the isotope and produce an accurate diagnostic image of tumours.

Partnerships: Achieving Success Together

Partnerships are a cornerstone of CPDC's success—providing access to expertise, knowledge and funding that are facilitating many mutually beneficial, collaborative opportunities for CPDC and its customers.

WORLD'S FIRST CLINICAL TRIALS OF NEW BREAST CANCER IMAGING TECHNOLOGY

In early 2009, CPDC brought together OICR, McMaster University, Hamilton Health Sciences and GE Healthcare to conduct a two-year evaluation of cutting-edge molecular breast imaging (MBI) technology. The study is specifically focusing on the early detection of breast cancer in high-risk women.

MBI technology is being compared against conventional mammography, which does not detect all breast cancers and can produce an unacceptable number of false positive results. These false positives can cause additional stress for patients, expose patients to unnecessary procedures and substantially increase the cost of health care.

In conjunction with the trials, CPDC scientists have also been working on the next generation of breast cancer imaging probes for the MBI scanner and complementary PET technology known as positron emission mammography (PEM). Once fully developed, new probes could be advanced to the MBI clinical trials, potentially redefining how breast imaging is identified and staged.

CO-OPERATIVE DISCOVERY

The Investigator Sponsored Research Program (ISRP) helps researchers at not-for-profit institutions gain broader exposure for their developing technology and take their work to the next level by leveraging CPDC's probe development and commercialization services. Through the ISRP, researchers can access the latest molecular imaging probes to support their clinical research programs or take advantage of CPDC's expertise to advance their own molecular probes and drug candidates.

The ISRP provides in-kind support offering a number of services such as development of new labeling and analytical chemistry methods, biological testing, scale-up and validation of manufacturing processes, preparation of regulatory submissions, production of emerging PET probes and commercialization strategies.

Funding from OICR brought new molecular breast imaging (MBI) technology to Hamilton for clinical trials. CPDC scientists are also working on the next generation of breast-cancer imaging probes for the GE MBI scanner and complementary PET technology known as positron emission mammography (PEM).

LAUNCHED IN 2009, CPDC'S INVESTIGATOR SPONSORED RESEARCH PROGRAM YIELDED SEVERAL PROMISING PROJECTS IN ITS FIRST YEAR

A Novel, Patented Radiolabeled Colloid for Clinical use and Commercialization.

Principle Investigator: *Pamela Zabel (University of Western Ontario)*

Pamela Zabel has developed a new Tc-99m Rhenium Cysteine colloid to identify tumour metastases to lymph nodes in breast cancer patients. Manufactured without filtration, the colloid avoids wastage of the radioisotope Tc-99m, which is subject to supply shortages. CPDC will prepare a comprehensive business plan and market assessment for this compound, which will include an evaluation of market size, a review of competing technologies and future trends in sentinel node biopsy.

The use of Arylboronates as Precursor Radiopharmaceuticals that Capture Aqueous ^{18}F for use in PET Development.

Principle Investigator: *Dr. David Perrin (University of British Columbia)*

Dr. Perrin has developed a reproducible and reliable synthetic method for one-step radiolabeling PET tracers with Fluorine-18, using arylboronate as a captor of aqueous ^{18}F-fluoride. CPDC will test the feasibility of using this technology to perform these radiolabeling reactions and the suitability of production with microfluidics, a technology in which fluids are constrained to a small scale (typically sub-millimetre).

CIHR Team in Imaging Guidance for Prostate Cancer: Biologic Validation of Hybrid Imaging – Development of GMP ^{18}F-Fluorocholine Kits for the Tracerlab Platform.

Principle Investigator: *Dr. Michael Kovacs (University of Western Ontario)*

Dr. Kovacs is developing a kit-based approach for routine GMP radiolabeling of ^{18}F-choline (FCH), a biomarker used for staging prostate cancer and in re-staging after recurrence. CPDC will support the development of the approach and assist with its approval for human use.

Commercialization and Clinical Advancement of a Modular Multifunctional Liposome Imaging and Therapy Platform

Principle Investigator: *Dr. Christine Allen (University of Toronto)*

Dr. Allen and Dr. David Jaffray have developed technology that enables the entrapment of contrast agents or radioisotope in liposomes, enabling the use of a single imaging agent for multiple imaging modalities. The process could potentially be used in image registration and guidance applications in radiation therapy, cardiovascular imaging and image-based disease diagnosis. CPDC will prepare a plan to map out the development activities necessary for a regulatory filing for clinical trials in Canada.

Building Infrastructure for the Future

McMaster University, with the support of CPDC, secured a $22 million grant from the federal Knowledge Infrastructure Program (KIP) to upgrade the nuclear facilities at the university.

The KIP program awarded grants according to projects that could quickly and effectively generate economic activity and support job creation. Projects were also required to enhance research capacity, support the recruitment of new students and provide a better educational experience for the highly skilled workers of tomorrow.

Construction is already underway for a new 28,000 sq. ft. research and radiopharmaceutical manufacturing facility, providing much needed space for CPDC's rapidly growing staff, probe research and production needs. The expansion will also include a new cyclotron, more than doubling CPDC's ability to produce isotopes for molecular imaging probes.

The additional cyclotron will boost supply reliability and safeguard the production of molecular imaging probes for Ontario hospitals.

Networking, Collaboration and Education

CPDC continues to establish strong roots within Ontario's health care community. Among its core activities, developing mutually beneficial partnerships and relationships is a vital element to the Centre's success.

In 2009, representatives from CPDC participated in several events and initiatives to boost awareness about the Centre's activities and foster new collaborative relationships.

- Keynote Lecture, Society of Nuclear Medicine – A Bridge Not Too Far, John Valliant, CEO and Scientific Director
- Fourth International Conference of Asia-Pacific Symposium on Radiochemistry
- World Molecular Imaging Congress
- Meeting of the British Nuclear Medicine Society

CPDC also held its inaugural Probe Development workshop, which brought together leading experts from academia, industry, health care, not-for-profit and government institutions to examine the future of molecular imaging and its impact on patient care. Over 150 participants gathered to hear an internationally acclaimed panel of speakers present on this increasingly important and advancing area of medicine.

CPDC CEO Named One of Canada's Top 40 Under 40

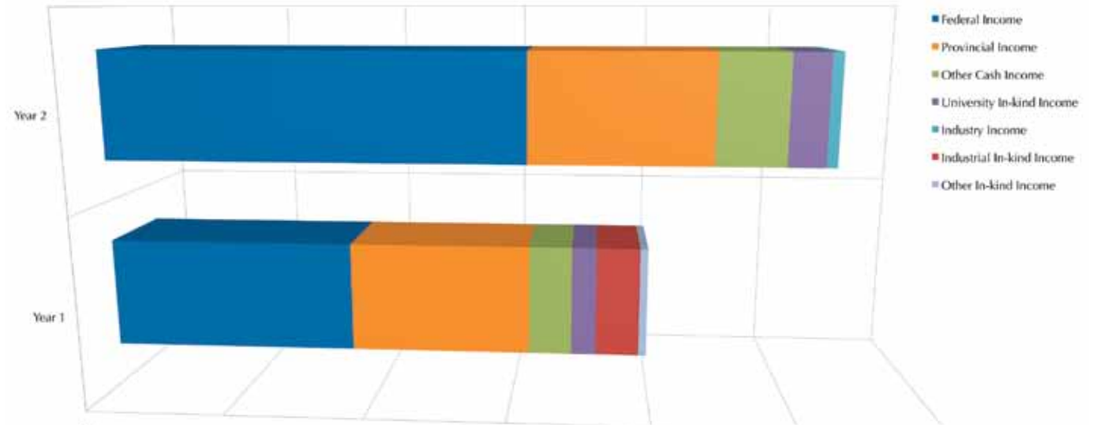
Dr. John Valliant was named one of Canada's Top 40 Under 40 for 2009. This distinction recognizes his exceptional work at CPDC and McMaster University to advance molecular probe technology, improve patient care and spur on economic growth. It also acknowledges his commitment to education and training at McMaster and within the imaging industry.

John Valliant, CEO and Scientific Director

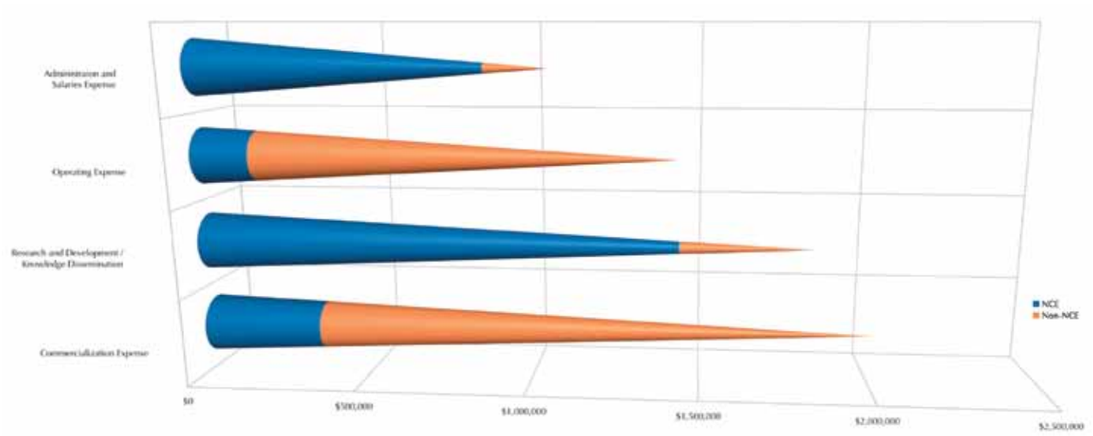
Financial Report (Summary)

For an audited CPDC financial statement, visit www.imagingprobes.ca or contact CPDC.

INCOME COMPARISON - YEAR 1 N= $3,987,017/ YEAR 2 N = $5,288,848



YEAR 1 / 2 CUMULATIVE EXPENSES - APRIL 1/08 - MARCH 31/10 - NCE, NON-NCE, IN-KIND FUNDS



Board of Directors

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Peter Robertson	Vice-Chair, CPDC; General Manager, GE Healthcare Canada
Elsie Quaite-Randall	Secretary-Treasurer, CPDC; Executive Director, McMaster Industry Liaison Office
John Valliant	CEO and Scientific Director, CPDC
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Jerry Battista	Department Chair, Medical Biophysics, University of Western Ontario
Mo Elbestawi	Vice President, Research and International Affairs, McMaster University
Stuart Foster	Senior Scientist, Sunnybrook Health Sciences Centre
Brigitte Guérin	Professor, Université de Sherbrooke
Mark Henkelman	Director, Mouse Imaging Centre, Hospital for Sick Children
Thomas Hudson	President and Scientific Director, Ontario Institute for Cancer Research
Damian Lamb	Managing Director, Genesys Capital
Timothy McCarthy	Senior Director, Molecular Medicine- Imaging Group, Pfizer Inc.
George Mills	Vice President, Perceptive Informatics
Thomas Ruth	Senior Research Scientist, TRIUMF; Senior Scientist, BC Cancer Agency
Bob Sutherland	Senior Investment Officer, Ontario Institute for Cancer Research
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