



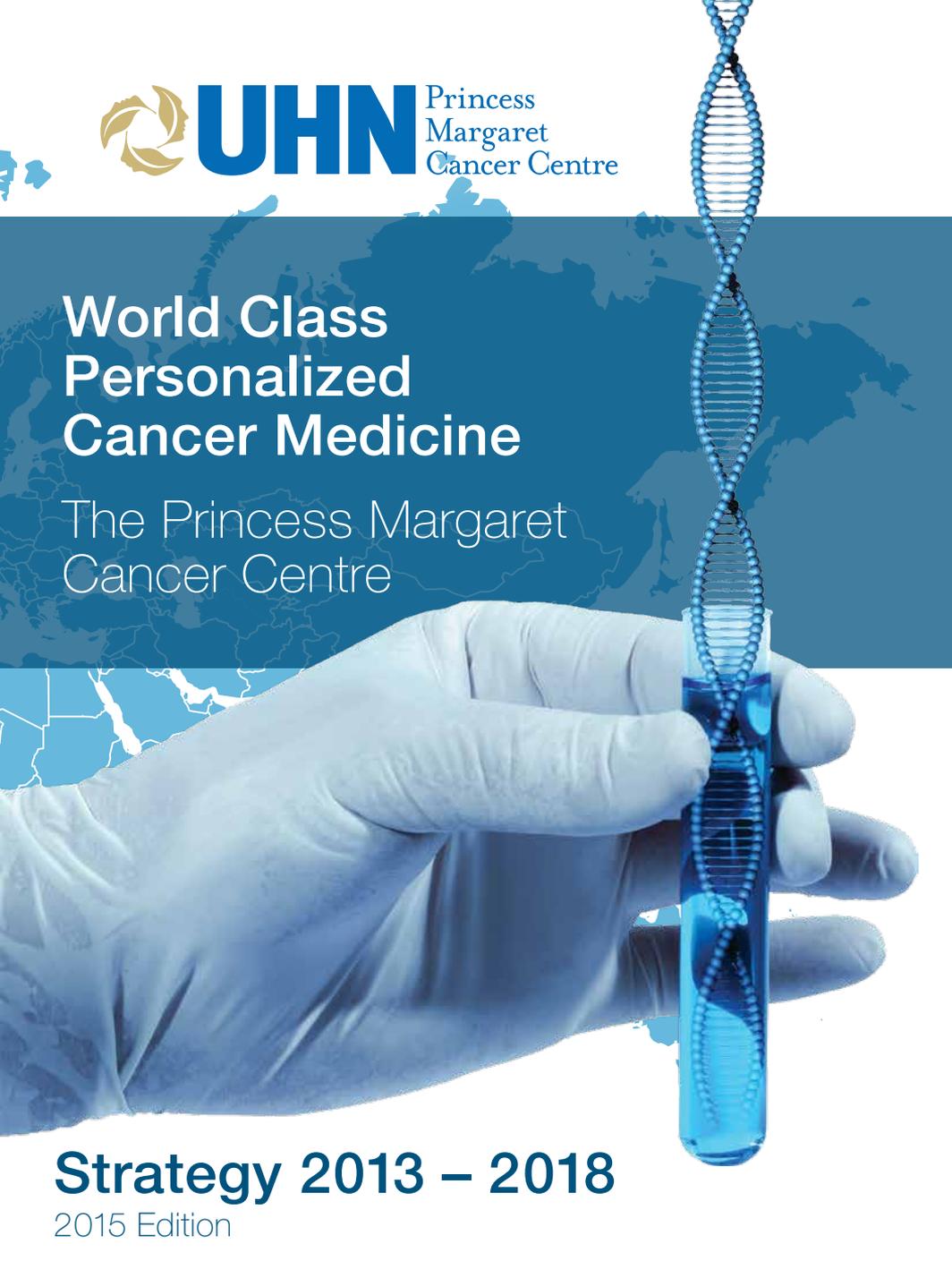
UHN Princess
Margaret
Cancer Centre

World Class Personalized Cancer Medicine

The Princess Margaret
Cancer Centre

Strategy 2013 – 2018

2015 Edition





Contents

4	The Princess Margaret Cancer Centre
6	Accountability
7	Our Core Activities and Resources
7	Clinical Care
8	Research
8	Education and Outreach
9	Major Trends in Healthcare and Cancer
10	Achieving Our Vision: One Strategy, Five Themes
17	Transform Patient Care
25	Augment Correlative Cancer Biology
33	Accelerate Guided Therapeutics
41	Expand Novel Therapeutics
51	Drive Outreach and Education
56	Closing Message



We are pleased to present the 2015 edition of the Princess Margaret Cancer Centre Strategy 2013-2018: “World Class Personalized Cancer Medicine”. Our 2015 edition adds specificity and precision to our directions, provides more detail on the activities that help us make progress towards our strategic goals, further integrates the activities of our research program, and demonstrates the momentum already gained in executing our strategic plan.

Launched in 2013, our “World Class Personalized Cancer Medicine Strategy” summarizes our shared goals across five key strategic themes: Transform Patient Care; Augment Correlative Cancer Biology; Accelerate Guided Therapeutics; Expand Novel Therapeutics; and Drive Outreach and Education. It is a continuation of the achievements of our 2008-2015 strategy: “Translating the Science of Cancer into Practice”. These include the redesign of our ambulatory care model, establishment of our Phase I clinical trials unit, development of our translational image-guided operating rooms, establishment of the Techna Institute for the Advancement of Technology for Health, international programs including partnership with Kuwait, and major advances in precision medicine within our research program.

The Princess Margaret Cancer Centre Strategy 2013–2018

Our strategy, developed through extensive internal and external consultations, takes into account major trends in healthcare, cancer care and personalized medicine. In developing our strategy we ensured alignment with the updated strategic plans of the University Health Network, the Ontario Cancer Plan and the University of Toronto. Our plan is also aligned with and supported by the Princess Margaret Cancer Foundation's "Believe It" campaign for personalized cancer medicine.

We look forward to continuing to achieving our goals in the years to come and to delivering world class personalized cancer medicine at the Princess Margaret Cancer Centre.



A handwritten signature in black ink that reads "Marnie Escaf".

MARNIE ESCAF, MHA, HBBA
Executive Lead, Princess Margaret Cancer Centre
Senior Vice President, University Health Network



A handwritten signature in black ink that reads "Mary Gospodarowicz".

MARY GOSPODAROWICZ, MD, FRPC, FRCR (Hon)
Medical Director, Princess Margaret Cancer Centre
University Health Network



A handwritten signature in black ink that reads "Bradley G. Wouters".

BRADLY G WOUTERS, PhD
Director, Research (Interim), Princess Margaret Cancer Centre
University Health Network

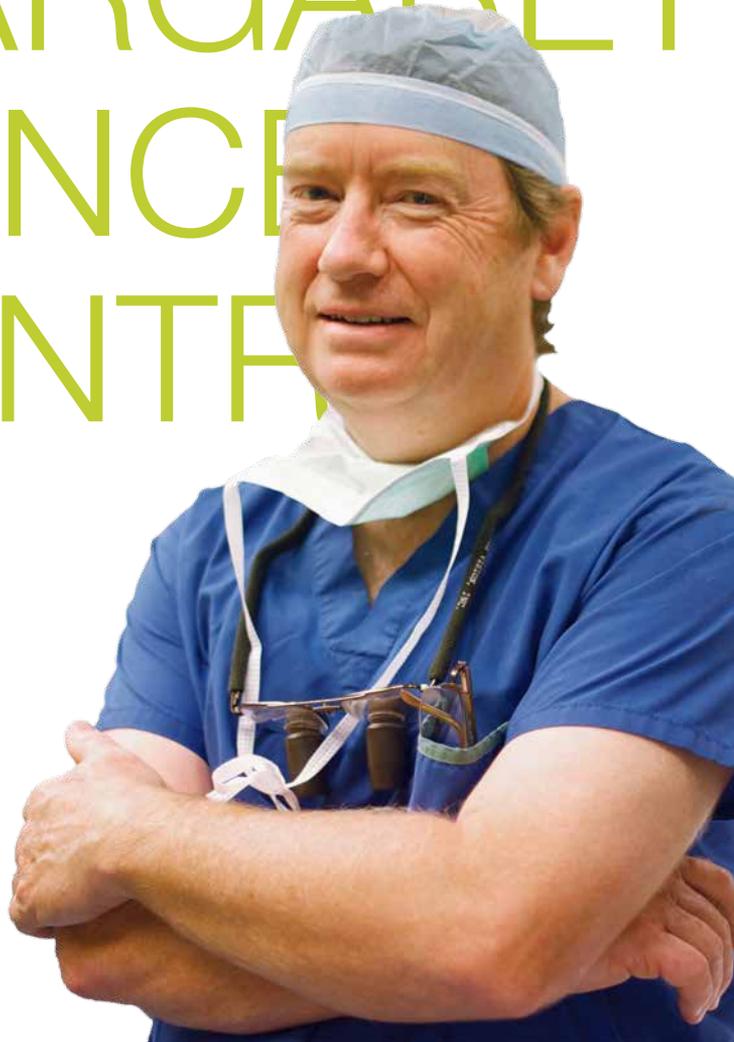
The Princess Margaret Cancer Centre at the University Health Network (UHN) in Toronto, Canada, is a comprehensive cancer centre that offers a full suite of cancer services at the community, regional, provincial, national and international levels. We are a key resource for complex cancer care spanning the continuum from diagnosis to palliation and survivorship and across all disease sites.

Under the auspices of Cancer Care Ontario, the Princess Margaret provides leadership to the Toronto Central South Regional Cancer Program, which includes the Princess Margaret and UHN, Mount Sinai Hospital, St. Joseph's Health Centre, St. Michael's Hospital and Women's College Hospital, in collaboration with the Toronto Central Community Care Access Centre and the Toronto Central Palliative Care Network.

The Princess Margaret is organized by multidisciplinary disease site groups and clinical departments including: Surgical Oncology, Medical Oncology and Hematology, Radiation Oncology, Surgical Oncology, and Cancer Nursing and Supportive Care, that includes Psychosocial Oncology, Palliative Care, and Survivorship.

The Princess Margaret Cancer Centre

PRINCESS MARGARET CANCER CENTRE



As a comprehensive cancer centre, the Princess Margaret is accountable to its patients, the provincial government, its donors and other external funders. We are part of the University Health Network, a fully affiliated University of Toronto teaching hospital.

We are responsible for quality of care and equity imperatives and are committed to meeting provincial targets for access to care, treatment volumes and financial benchmarks.

With the increase in the Toronto and Greater Toronto Area patient population, it is expected that our cancer centre will continue to grow at a rate of approximately 1-3% per year for the foreseeable future; we strive to secure adequate resources required to deliver the highest quality care as safely and efficiently as possible.



Accountability



Clinical Care

The Princess Margaret cancer centre has **202 inpatient beds** and **400 ambulatory clinics**. Over **3,000** staff, comprised of **2,900** employees, **170** oncologists and **400** volunteers provide care and support to our patients. Our 2014 clinical activity is summarized below:

2014 Volume

New Patients	17,460
Cancer Surgeries	6,201
Outpatient Chemotherapy Treatments ..	34,851
Courses of Radiation Treatment	10,383
Stem Cell Transplants	368

We opened **167** clinical research studies in 2014 and **7,129** patients participated in clinical research at the Princess Margaret during that period. As a result, **20%** of our patients are enrolled in clinical trials. Surgical care is provided at Toronto General Hospital, Toronto Western Hospital and Princess Margaret Hospital sites.



Our Core Activity and Resources

Research

Research at the Princess Margaret Cancer Centre is carried out by 65 principal investigators, 780 research staff and 376 scientists. Our scientists lead transdisciplinary cancer research across 10 major thematic areas: Immune Therapy; Stem Cells; Genomics, Epigenetics, and Diagnostics; Proteomics and Computational Biology; Cancer Imaging and Image Guided Therapy; Cancer Metabolism and Microenvironment; Cancer Models and Drug Development; Cancer Targets and Pathways, Cancer Predisposition and Prevention, and Supportive Care. Our scientists have made major discoveries in each of these areas, and have been repeatedly recognized through national and international awards.

In 2014, our researchers produced 1,224 publications and secured \$150,000,000 in external funding.

Education and Outreach

At the Princess Margaret Cancer Centre, we provide comprehensive and integrated education to undergraduate, graduate and post-graduate trainees in medicine, nursing, allied health and other healthcare specialties. Continuing education is provided across health professions. Training is delivered across the clinical disciplines of pathology, imaging, surgical oncology, cancer genomics, radiation medicine, oncology nursing, medical oncology, psychosocial oncology and palliative care, as well as survivorship and patient education. In 2014, we trained over 100 clinical fellows, 169 nursing students and 173 residents. We also provided training to 180 other students, including trainees in disciplines of physics, social work and others.

Our research program also provides education at the undergraduate, graduate and post-graduate levels. It houses the Department of Medical Biophysics of University of Toronto, and trains graduate students in a large number of other faculties and departments.

Our plan leverages and addresses major trends and driving forces in healthcare with a particular focus on cancer. The key emerging trends include:

- » **Empowering patients as partners in care**
- » **Team-based care, research, education and management**
- » **Next generation sequencing, point-of-care precision diagnostics and tumor profiling technologies**
- » **New molecular and biological therapeutics, treatments harnessing the immune system and ultra-minimally invasive interventions**
- » **Informatics enabling research, personalized care and learning**
- » **Democratization of technology and access to information; digitally enabled medicine**
- » **Focus on economics and value in healthcare**
- » **Open collaboration platforms and non-traditional partnerships**

Major Trends in Healthcare and Cancer

Our World Class Personalized Cancer Medicine Strategy summarizes our goals across five key strategic themes with a vision to **Achieve Global Impact as a Top 5 Comprehensive Cancer Centre in the World.**

From **Detection**, to **Diagnosis**, to **Treatment** and **Support**, our plan gives patients the promise of well-documented, best possible outcomes, with the broader goal of conquering cancer.

Achieving Our Vision: One Strategy, Five Themes

1 Transform
patient care

2 Augment correlative
cancer biology

3 Accelerate guided
therapeutics

4 Expand novel
therapeutics

5 Drive outreach
and education

Strategizing for a Top 5 Comprehensive Cancer Centre

Requires focus, attention and integration
across core areas of patient care, research,
and education and outreach.



PATIENT CARE: Delivering comprehensive high-quality cancer care to our patients:

- » Ensuring 24/7 access to reliable, high-quality and safe patient care
- » Expanding our expertise and infrastructure for specialized programs, including management of rare cancers
- » Promoting service excellence

RESEARCH: Continuing basic, translational and clinical cancer research:

- » Continuing and augmenting our basic research capacity to develop new understanding of cancer biology and treatment response
- » Translating the new knowledge into interventions through better integration of basic and clinical research
- » Expanding the breadth and depth of our clinical research program
- » Advancing innovation and adoption of technologies to better detect, diagnose and treat cancer

EDUCATION AND OUTREACH: Training professionals and building partnerships to address current and emerging needs in cancer care:

- » Expanding our education capacity and knowledge management programs to train an increasing number of oncology professionals
- » Embedding effective inter-professional practices into clinical teaching, continuing education and professional development opportunities
- » Establishing collaborative partnerships with external partners in cancer control
- » Exchanging our knowledge and expertise locally and globally to support development of cancer care beyond our catchment area

In order to excel in our core areas and achieve our transformational vision we must also improve and augment essential assets and enablers for a high-performing healthcare organization:

PEOPLE: Be an employer of choice for cancer professionals through continued efforts to enhance staff wellness and engagement and by creating work environments that promote excellence and innovations in practice, education and research.

SPACE AND FACILITIES: Provide modern space, facilities and technologies to improve patient, caregiver, and staff experience, to build capacity for growth in demand for cancer care, to promote interprofessional and inter-organizational collaboration, and to augment research, education and innovations in clinical care.

QUALITY PROGRAMS: Embed a comprehensive and reliable quality and patient safety program specific to cancer and regular monitoring and transparent reporting with comparison to our peers to foster a culture of continuous improvement.

PROCESSES AND SYSTEMS: Implement clear, effective and efficient structures, processes and systems essential for excellence in planning, decision making, execution, evaluation, communication and organizational learning.

ONE VISION...

World Class Personalized Cancer Medicine

WITH 5 THEMES...



INTEGRATED ACROSS 3 CORE AREAS...



AND SUPPORTED BY OUR ESSENTIAL ASSETS AND ENABLERS



World Class Personalized Cancer Medicine



The Princess Margaret Cancer Centre Strategy 2013 – 2018

Transform Patient Care

We will transform patient care by empowering patients to be partners in care, continuous quality improvement, developing new models of inter-professional care, offering support through all the aspects of cancer care, and customizing support for unique and vulnerable populations.

Directions

- A** Empower patients to become partners in care
- B** Support patients, families and caregivers throughout the cancer journey
- C** Create patient-centered ambulatory clinics
- D** Discover and implement new models of supportive care
- E** Address equity and the specialized needs of patients
- F** Engage patients in the cancer program

A Empower patients to become partners in care

Rationale

Informed patients are engaged in their care, leading to improved treatment compliance, outcomes and satisfaction. Enhanced communication and education tools empower patients to become active partners in their health and recovery.

Current Activities

- » Establish a patient engagement strategy
- » Enhance provision of comprehensive, user-friendly, and accessible patient education and self-care materials and tools throughout their cancer journey
- » Roll out digital portals that allow patients to access to their health information
- » Augment online communities through social media, virtual self-management programs, and survivorship programs

Appointments summary

Bern Test's Appointments Summary

DATE/TIME	APPOINTMENT TIME	LOCATION	PHONE
06 Nov 2016 11:15 MRI	WBC ANTIBODY + HR/CT/MRI Imaging	Toronto General Hospital, Medical Imaging	(416) 943-2011
14 Dec 2016 01:00 MRI	EPIDERMAL GROWTH FACTOR RECEPTOR INHIBITOR	Toronto General Hospital, North Building 7th floor	(416) 363-6028
21 Nov 2016 10:30 MRI	HEAD INPATIENT SCANS, OFFICE PRACTICES	Toronto General Hospital	
22 Apr 2016 11:15 MRI	EPIDERMAL GROWTH FACTOR RECEPTOR INHIBITOR	Toronto Western Hospital, East Wing, 4th Floor West	(416) 925-5194

Showing 1 to 10 of 16 entries

Important information about your appointments

- Since not all of UCLW's systems are connected to the myUCLW Patient Portal, some of your appointments may not be listed.
- Please follow the instructions in your appointment letter or from your clinic. If you don't find any, please arrive and check-in 15 minutes before each appointment.
- If you need to cancel your appointment, please call at least 48 hours before your appointment time.
- For radiation therapy appointments, myUCLW Patient Portal will display only appointments for the upcoming week.
- For medical imaging appointments, the appointment time you see in myUCLW Patient Portal may not be the time you need to arrive. Please check the time, at myUCLW. That your Health Care provider told you or sent you, in a letter.

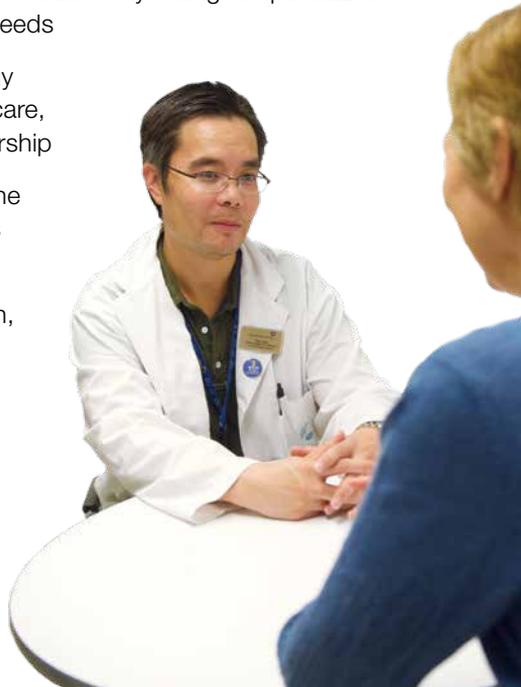
B Support patients, families and caregivers throughout the cancer journey

Rationale

Providing support and tools to patients, their families and caregivers throughout detection, diagnosis, treatment and survival helps to reduce stress, improve patient experience and quality of life.

Current Activities

- » Develop navigation support tools from basic wayfinding to specialized support for patients with complex needs
- » Develop the supportive care strategy with strategic priorities in palliative care, psychosocial oncology, and survivorship
- » Design a systematic approach for the integration of cancer rehab services
- » Enhance access to survivorship programs that facilitate rehabilitation, and facilitate self-management
- » Utilize telemedicine and telecommunication tools to facilitate care at home



C Create patient-centered ambulatory clinics

Rationale

Optimal care delivery is dependent on improving existing processes. Efficient team-based and inter-professional care, integrated with research and education is critical in enhancing patient and family experience.

Current Activities

- » Improve patient-referrals and initial encounters
- » Optimize clinical operations around patients
- » Deploy disease site-specific, rapid, personalized and integrated on site diagnostic approaches
- » Implement an integrated clinical documentation system



D Discover and implement new models of supportive care

Rationale

Innovative practices will contribute to improved patient experience, efficient processes and increased capacity to care for growing numbers of patients.

Current Activities

- » Develop and evaluate new interventions to preserve quality of life in advanced and terminal disease, to minimize the effect of treatment and to manage symptoms of cancer and treatment in patients and families
- » Evaluate virtual and satellite clinic models through demonstration projects
- » Operationalize the Global Institute for Psychosocial, Palliative and End of Life Care
- » Design a world leading palliative care clinic and a collaborative psychosocial oncology care model



E Address equity and the specialized needs of patients

Rationale

Specialized populations with cancer require personalized support, information, and services.

Current Activities

- » Design, operationalize and enhance patient-centred programs for specialized populations including adolescents and young adult, geriatric, and other groups
- » Address the language and translation needs of our catchment population



F Engage patients in the cancer program

Rationale

Designing and delivering a patient-centred cancer program requires involving patients as advisors and partners in shaping and making changes in our care, operations, academic priorities and external partnerships.

Current Activities

- » Embed patient support groups in clinics
- » Include patients in Princess Margaret governance and operational committees and as advisors on new initiatives
- » Partner with patient support organizations





Augment Correlative Cancer Biology

Understanding patient-specific aspects of cancer biology at the molecular, cellular and tumor levels is critical to diagnosis, monitoring treatment response and developing new precision therapeutic strategies that are safer and more effective.

Directions

- A** Invest in multidisciplinary site-specific translational research programs
- B** Accelerate collection, quality control, and availability of patient bio-specimens coupled to a functional, relational clinical and bio-specimen database with clinical outcomes
- C** Implement advanced cancer genomics and precision diagnostics to guide therapeutic intervention as part of care
- D** Advance understanding of cancer pathways to identify new targets
- E** Expand discovery platforms in proteomics, bioinformatics and computational systems

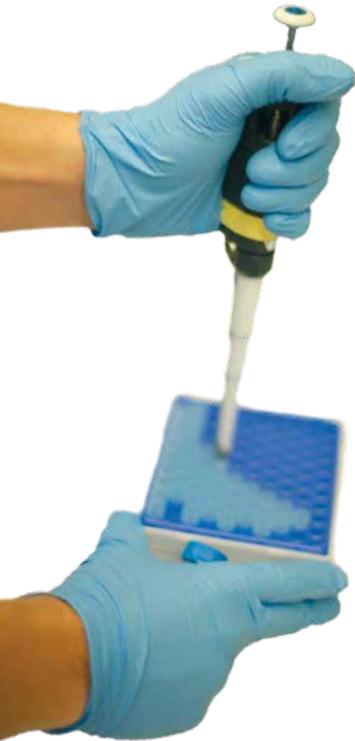
A Invest in multidisciplinary site-specific translational research programs

Rationale

Translational research accelerates our ability to implement biological discoveries into clinical practice. Cancer specific disease teams composed of biologists, clinicians, and other specialists design and evaluate effectiveness of therapies at the individual patient level.

Current Activities

- » Further our understanding of site-specific cancer biology at molecular, cellular, tumour, and patient levels through establishment of expert disease based teams
- » Develop approaches to implement precision medicine in patient subsets, and mapping of treatment response and toxicity
- » Expand curative treatments through translational research activities in oligometastases



B Accelerate collection, quality control, and availability of patient bio-specimens coupled to a functional, relational clinical and bio-specimen database with clinical outcomes

Rationale

Biological specimens taken from cancer patients and healthy individuals are essential to gain critical information for patient- and tumor- specific characteristics and response to current and experimental treatments. Accurate and efficient connection of bio-specimen data with clinical data provides a wealth of information that can be used by researchers to understand cancer, treatment effects/outcomes and develop novel therapies.

Current Activities

- » Expand a fully operational and robust BioBank to support collection, quality control, processing and storage of full bio-specimen sets across disease sites at Princess Margaret
- » Implement robust stewardship of biospecimen use by cancer group sites and streamline user-friendly search, retrieval and usage enabled by technology
- » Establish an integrated database to link clinical outcomes and biospecimen data in order to enable research
- » Drive a robust and user-friendly process for prospective collection of key patient data linked with clinical outcomes to enable future research



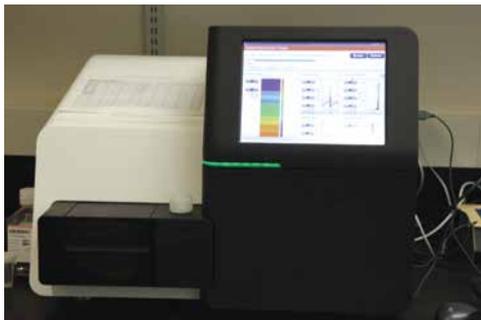
C Implement advanced cancer genomics and precision diagnostics to guide therapeutic intervention as part of care

Rationale

Individual tumours develop through acquisition of unique sets of genomic and epigenetic alterations. Precision medicine will be enabled through deep characterization of individual tumours using advanced sequencing technologies.

Current Activities

- » Enhance capacity and speed of CLIA-certified genomic profiling to enable patients to receive emerging precision therapies matched to underlying mutational patterns
- » Implement molecular signature driven clinical trials across multiple disease sites
- » Develop new approaches for molecular characterization, therapy response, and disease progression based on blood based analyses



D Advance understanding of cancer pathways to identify new targets

Rationale

Effective new therapies will exploit the unique features of individual tumours based on central cellular signalling pathways. Understanding the molecular mechanisms responsible for the behaviour and survival of tumour cells will reveal new targets for further therapy development.

Current Activities

- » Invest in new research and technology to understand pathways driving tumour development and therapy response in specific cancer types
- » Expand efforts to understand the biochemical and molecular signalling pathways affected in individual cancers and their contribution to tumour growth, metastasis and response to treatment
- » Accelerate structure based understanding of proteins in key cancer signalling pathways

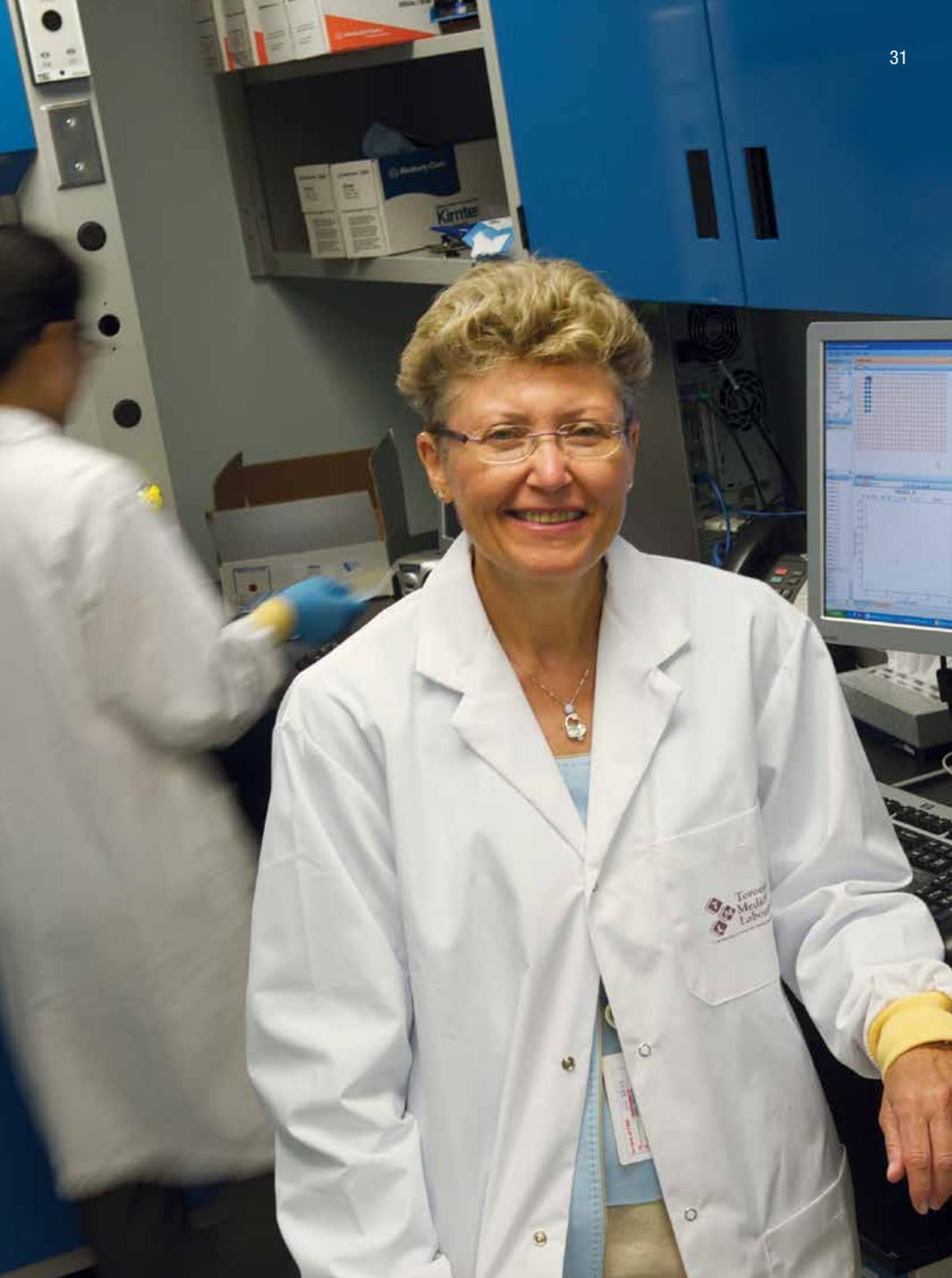
E Expand discovery platforms in proteomics, bioinformatics and computational system

Rationale

New bioinformatics and computational approaches provide a powerful means for integration of large and diverse data from genomic and proteomic analyses and will lead to unprecedented insights into cancer diagnosis and therapy effectiveness.

Current Activities

- » Develop and utilize advanced proteomic approaches for discovery of novel biomarkers and characterization of individual cancers
- » Build new capacity for interrogation of big cancer data using machine-learning and other advanced computational methodology
- » Implement computational approaches to discover new biology and new patient-specific therapeutic approaches





Accelerate Guided Therapeutics

Continuous innovation, adoption and evaluation of technologies, supported by a robust foundation of informatics and quantification, enables personalized cancer detection, diagnosis and treatment.

Directions

- A** Expand a coordinated multi-disciplinary and multi-modality innovation environment
- B** Create a state-of-the-art molecular imaging capability for clinical and research programs
- C** Accelerate development and implementation of image-guided interventions
- D** Enhance capacity in robotics and minimally invasive surgery
- E** Invest in the development and evaluation of particle therapy
- F** Develop and utilize informatics and technology infrastructure to support a learning organization

A Expand a coordinated multi-disciplinary and multi-modality innovation environment

Rationale

Accelerating advancements in guided therapeutics requires strong engagement of clinicians supported by expertise to move novel technologies from research and development stages to implementation and practice change.

Current Activities

- » Expand global connections, recruit academic clinicians and build an engaged and strong transdisciplinary leadership team at the Techna Institute to support deployment of new technologies to support cancer care and research
- » Accelerate productization of medical technology supported by expertise in engineering and technology development in a clinical setting



B Create a state-of-the-art molecular imaging capability for clinical and research programs

Rationale

Molecular imaging promises to enable minimally-invasive characterization of the disease state within the human body to better design and direct interventions. State-of-the-art cancer interventions will be personalized and based upon molecular signatures from tissue and imaging.

Current Activities

- » Recruit molecular imaging faculty and team with clinical, translational and basic research expertise and formalize a molecular imaging program
- » Operationalize the cyclotron and radiochemistry facility, MR/PET and NanoMed Fabrication Centre for design, development and evaluation of molecular imaging and treatment agents
- » Advance translational research in hypoxia and radiolabelled antibodies
- » Accelerate development of tools for standardized measurement, quantification and image analysis



C Accelerate development and implementation of image-guided interventions

Rationale

The use of advanced imaging during or immediately before or after a procedure enables guidance, navigation and orientation in interventions such as surgery, radiation therapy, interventional radiology and drug delivery. In conjunction with minimally invasive and robotic technologies, image-guided interventions promise more accurate focal treatment while reducing treatment-associated damage to healthy tissues.

Current Activities

- » Continue to advance the multi-disciplinary Guided Therapeutics Program for innovations in imaging, therapeutics, and computer and robotic assistance in surgery and interventional radiology
- » Operationalize Magnetic Resonance Image Guided Radiation Therapy for innovations in real time, precise and accurate radiation therapy techniques
- » Further our translational research in adaptive radiotherapy and image- and omic-based radiotherapy



D Enhance research and clinical capacity in robotics and minimally invasive surgery

Rationale

Minimally invasive surgeries and interventions take advantage of advances in computer imaging and robotics to provide effective treatment through enhancing specificity while sparing healthy tissue. Robotic-assisted and minimally invasive surgeries are a standard of care for a large number of cancer surgeries and are utilized across major cancer centres.

Current Activities

- » Establish a clinical centre of excellence to offer high-volume and high-quality image-guided, minimally invasive robotic assisted surgery and interventions as standard of care
- » Develop and evaluate clinical evidence for emerging minimally invasive and robotic technologies to inform policy



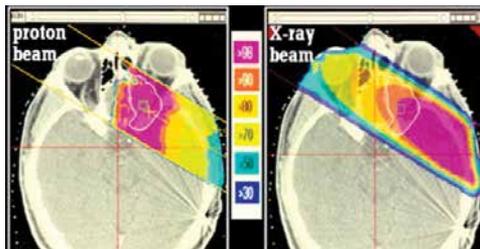
E Invest in the development and evaluation of particle therapy

Rationale

Protons or charged particles such as carbon ions are a more precise and less harmful form of radiation therapy. Adoption by leading cancer programs throughout the world has demonstrated the capacity to reduce long-term side effects of the disease and treatment. There is a compelling case for establishing a particle therapy facility in downtown Toronto, the first of its kind in Canada.

Current Activities

- » Conduct a feasibility study and engage stakeholders and partners with the goal to establish the first comprehensive and hospital-based particle therapy program in Canada
- » Build partnerships for establishment of a particle therapy centre



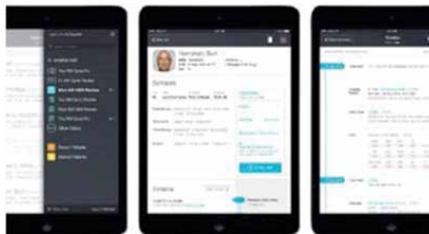
F Develop and utilize informatics and technology infrastructure to support a learning organization

Rationale

Medical and technological advances are providing a wealth of new information that can and must be effectively used for cancer research and intervention.

Current Activities

- » Implement and scale an integrated, comprehensive and user-friendly cancer informatics platform
- » Establish standardized screening, synoptic reporting, and patient outcome capture tools
- » Build linkages to relevant data bases for integrated learning and innovation





Expand Novel Therapeutics

We will expand support for leading edge research for discovery of new targets and therapeutic approaches based on a better understanding of cancer biology. This effort will provide patients with access to emerging treatments incorporating molecular imaging and genomic signatures and will improve outcomes for cancer patients globally.

Directions

- A** Promote drug development and research
- B** Accelerate advancements in immune-based therapies
- C** Translate stem cell and biology discoveries into therapies
- D** Develop novel combined modality approaches to therapy
- E** Develop approaches to target or exploit tumour microenvironment
- F** Seed innovative approaches for cancer prevention
- G** Invest in patient-matched cancer models for drug discovery

A Promote drug development and research

Rationale

A robust program encompassing all phases of drug development will ensure access to the newest drugs. Integration of basic and clinical research programs will lead to improved outcomes for cancer patients.

Current Activities

- » Enhance infrastructure and research capacity for biologics and small molecules, including laboratories, inpatient drug development, and patient-matched cancer models
- » Enhance relationships with other academic and commercial partners to develop and test new biologics and small molecules
- » Augment the interface between basic science, translational and clinical teams
- » Build informatics systems to support complex clinical trials
- » Further understanding of sensitivity and resistance to novel anti-cancer agents



B Accelerate advancements in immune-based therapies

Rationale

Immune therapy utilizes the patient's own biological systems to fight cancer, and has emerged as a new pillar in cancer therapy. Recent advances in understanding of the immune system make this an area of great promise. These approaches include both adoptive cell therapy as well as novel drugs targeting the immune system.

Current Activities

- » Expand a diverse team to support leading-edge immunotherapy research to translate discoveries to clinical evaluation
- » Establish a lab to provide routine immune monitoring for patients on treatment and create dedicated inpatient and ambulatory facilities
- » Implement immunotherapy trials

C Translate stem cell and biology discoveries into therapies

Rationale

The growth and sensitivity to treatment of both tumours and normal tissues are driven by subsets of stem cells with unique and overlapping biological properties. An understanding of these properties will lead to new therapies that specifically target cancer stem cells, improved use of normal stem cells in stem cell transplants and tissue regeneration following high dose therapies.

Current Activities

- » Expand our program in normal and cancer stem cell biology
- » Support new translational programs to identify and target stem cells in multiple cancer types
- » Create cord blood and other hematopoietic stem cell transplant programs
- » Establish a translational regenerative radiation medicine research program that harnesses discoveries in stem cell tissue regeneration and reversal of fibrosis to prevent and manage radiation induced toxicities in patients



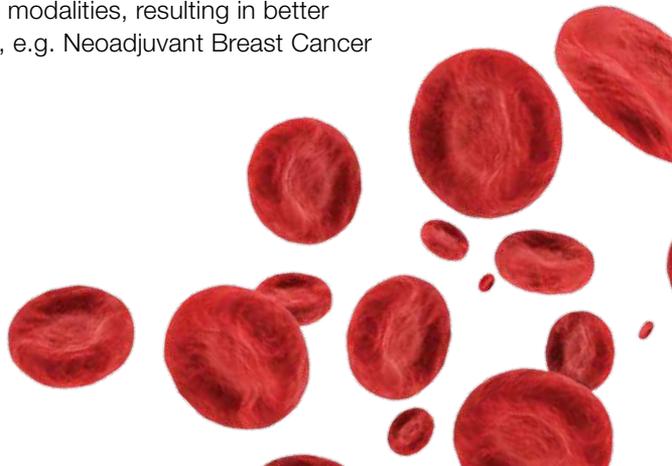
D Develop novel combined modality approaches to therapy

Rationale

Combining novel agents and approaches and integrating them with established local and systemic therapies will result in new treatment methods with better outcomes. The genetic heterogeneity of cancer is such that combined approaches will be required.

Current Activities

- » Enhance imaging capabilities for early detection of metastatic disease
- » Develop a program to study the combination of radiation with targeted agents
- » Implement programs that deliver timely, and patient centered care across disciplines and modalities, resulting in better outcomes for patients, e.g. Neoadjuvant Breast Cancer Therapy Program



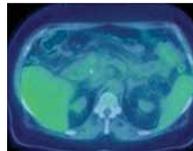
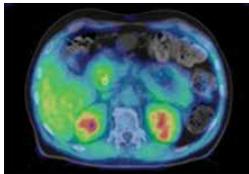
E Develop approaches to target or exploit tumour microenvironment

Rationale

The tumour microenvironment plays a key role in cancer development, progression, and response to treatment. Within this microenvironment, hypoxia, stroma, and a variety of other cell types influence the biological behaviour of the tumour cells in adverse ways. Thus, the microenvironment is an emerging target for therapy.

Current Activities

- » Advance experimental and clinical approaches for profiling hypoxia and other key aspects of the tumor microenvironment
- » Explore new therapeutic approaches that target the host-tumour interface
- » Identify and translate vulnerabilities in tumour cells conferred by unique aspects of the tumour microenvironment into new experimental therapies



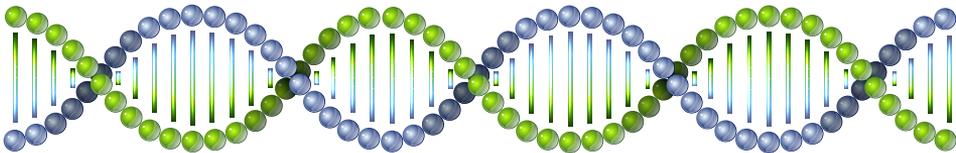
F Seed innovative approaches for cancer prevention

Rationale

Personalized approaches to identify risk factors for cancer development or progression from early stage disease have the potential to transform patient care. Discovery of genetic and other molecular biomarkers will lead to new opportunities to evaluate new models of care in select patient populations.

Current Activities

- » Develop pharmacogenomic predictors of response to new targeted therapies within clinical trial settings
- » Uncover mechanisms and interventions that regulate risk of cancer development, progression, or recurrence
- » Test and implement clinical approaches to prevent early disease progression and improve patient outcome



G Invest in patient-matched cancer models for drug discovery

Rationale

Precision medicine requires new drug development and evaluation in model systems that reflect the genetic and molecular complexity of individual patient tumours.

Current Activities

- » Establish and characterize patient-derived xenograft models that encompass the known genetic heterogeneity present across all disease sites
- » Generate innovative 3D cellular models that capture essential features of individual patient tumour biology for use in discovery and evaluation of new therapies
- » Enable standardized procedures for rapid pre-clinical evaluation of new biologics and small molecule targeted therapies in genetically annotated models





Drive Outreach and Education

Strengthen our impact and reputation by contributing to our communities, improving care and research, and exchanging knowledge through education and outreach, as well as through global and local collaborations and partnerships.

Directions

- A** Continue our engagement and knowledge exchange with partners in the Toronto Regional Cancer Program
- B** Utilize national partnerships to foster collaborative programs across the full spectrum of cancer care
- C** Expand international programs
- D** Drive Innovation in education and knowledge transfer

A Continue our engagement and knowledge exchange with partners in the Toronto Regional Cancer Program

Rationale

As a leading institution within our local ecosystem and given our scale and breadth, we must continue to actively partner to exchange knowledge in cancer care, research and education within our region.

Current Activities

- » Implement communities of practice and virtual multi-disciplinary cancer conferences to promote knowledge sharing and collaborative care
- » Continue to provide leadership within Cancer Care Ontario to address local and regional cancer issues and priorities
- » Support delivery of high quality cancer services through adherence to provincial standards
- » Continue to engage primary care clinicians in the community by providing customized education and efficient referral practices



**Toronto Central
Regional Cancer Program**
in partnership with Cancer Care Ontario

B Utilize national partnerships to foster collaborative programs across the full spectrum of cancer care

Rationale

Fostering national collaboration will support overall improvements in cancer service quality across our nation's communities. Research cooperation at all levels will provide the Princess Margaret with a larger population of patients for clinical trials and amplify research outcomes.

Current Activities

- » Collaborate with the Canadian Partnership Against Cancer to implement Canada's cancer control strategy at a local, regional, and national level
- » Continue to lead The Princess Margaret Phase II Consortium to improve access to new NCI anti-cancer drugs



C Expand international programs

Rationale

International collaborations allow us make an impact beyond our borders and continuously learn and enrich our internal expertise and knowledge. Building a global partnership network will also strengthen our reputation as a world-leading comprehensive cancer centre.

Current Activities

- » Develop a global capacity building outreach program to foster international cancer control and improve cancer care provision worldwide
- » Expand active academic partnerships with cancer centres to cultivate a worldwide network of partners, focusing on research, education and cancer care diagnostics and therapeutics
- » Establish international consulting arrangements to impact cancer care globally, while supporting our local programs through enhanced learnings and resources
- » Enable an active alumni network to support partnerships with other cancer institutions and develop fellowship exchanges to strengthen international outreach and knowledge sharing



D Drive Innovation in education and knowledge transfer

Rationale

Development and dissemination of innovative models of education and training will allow us to train and retain world class talent, while impacting the quality of cancer care provision globally. To continue to innovate in the education realm, we must imagine a new space for education and improve access to educational resources. We believe in continuous lifelong learning, and to enable that, comprehensive education programs are a necessity.

Current Activities

- » Embed interprofessional practice and team-based care in all education initiatives
- » Enrich education programs across the spectrum of health professions to include formative and transformative education
- » Design innovative new education outreach programs, including personalized learning programs
- » Foster collaborations with strategic partners to push the boundaries of e-education
- » Innovate through education research to advance the discourse of globalization in medical education



Closing Message

Our strategic plan lays out a comprehensive set of goals to increase the Princess Margaret Cancer Centre's capacity to deliver on its vision to **Achieve Global Impact as a Top 5 Comprehensive Cancer Centre in the World.**

It will require continuous optimization of our resources and the engagement of every staff member in the organization to achieve the proposed activities. We have and will continue to develop and implement these specific initiatives with benchmarks, timelines and metrics to monitor our progress against the goals listed for each theme.

As with all plans, this strategy sets the overall direction and focus for the Princess Margaret; however, its success will depend on flexibility in its implementation. The comprehensive set of themes and priorities identified in the plan will be adapted according to our resources and talent.

Our strategic plan will drive us toward our goal of accelerating personalized cancer medicine through world class cancer care, and conquering cancer in our lifetime.

This updated plan represents major contributions and input from staff and would not have been possible without significant participation from every level and department within the Cancer Centre and the members of the Princess Margaret Cancer Centre leadership.

2015 Edition Steering Committee



Mary
Gospodarowicz



Marnie
Escaf



Bradly
Wouters

2015 Edition Contributors

Fatima Sheriff
Azi Bloorchi
Rama Khokha
Justin Young
Jessica Blackman
Caitlin Doherty

Acknowledgements





