



**STAND UP TO
CANCER CANADA
2017 ANNUAL
REPORT -
BACKGROUND AND
PROGRAMMES**

MISSION

Stand Up To Cancer Canada's (SU2C) mission is to raise funds to accelerate the pace of groundbreaking translational research that can get new therapies to patients quickly and save lives now. SU2C Canada strives to make cancer patients into long-term cancer survivors through accelerated, collaborative research that improves cancer treatments and outcomes for patients quickly.

SU2C Canada draws on the entertainment and media communities' resources to engage the public in supporting and contributing to these efforts to generate awareness, educate the public on cancer prevention and help more people diagnosed with cancer become long-term survivors.

HISTORY

Stand Up To Cancer Canada, launched in 2014, is a Canadian registered charity (Reg. # 80550 6730 RR0001). Stand Up To Cancer Canada raises funds to support collaborative and innovative research into the prevention, diagnosis and treatment of cancer, as well as cancer-related education and awareness programs conducted in Canada. It enters into research agreements with selected health institutions to carry out specific research projects.

Stand Up To Cancer Canada was initially founded as a programme of "EIF Canada" with assistance from the US-based Entertainment Industry Foundation (EIF), a multifaceted organisation that occupies a unique place in the world of philanthropy, founded in 1942. By mobilising and leveraging the powerful voice and creative talents of the entertainment community, as well as cultivating the support of organisations (public and private) and philanthropists committed to social responsibility, EIF builds awareness and raises funds, developing and enhancing programmes on the local, national and global level that facilitate positive social change. The Foundation supports and encourages the philanthropic efforts of all members of the entertainment community. Initial application for Canadian charity registration was made in 2013, and in 2018 was modified to Stand Up To Cancer Canada. "Stand Up To Cancer" is licensed from the Entertainment Industry Foundation, a U.S. 501(c)(3) charitable organization.

Stand Up To Cancer Canada also mobilises and leverages the powerful voice and creative talents of the Canadian entertainment and media communities, from broadcasters to performers to media platforms including TV, radio, print, online and out-of-home. The work is overseen by the Stand Up To Cancer Canada Board of Trustees, with members from the Stand Up To Cancer Council of Founders and Advisors, and from Canadian broadcasters:

Stand Up To Cancer Canada Board of Trustees

- DOUG SMITH, MB, CPA, CMA
Chair, Secretary & Director of the Board, Stand Up To Cancer Canada
VP and General Sales Manager, CBS Studios International
- MIKE COSENTINO
Senior Vice President, Programming, CTV Networks
- MARIA HALE
Senior Vice President, Global Entertainment and Content Acquisition,
Corus Entertainment
- RENA NANO
Senior Director, Finance, Canadian Broadcasting Corporation
- LISA PAULSEN
Council of Founders and Advisors, Stand Up To Cancer
- SUNG POBLETE, PhD, RN
President & CEO, Stand Up To Cancer
- SUE SCHWARTZ
Council of Founders and Advisors, Stand Up To Cancer
- JANICE SMITH
Vice President, National Sales, Rogers Communications
- PAM WILLIAMS
Council of Founders and Advisors, Stand Up To Cancer

ABOUT STAND UP TO CANCER CANADA

The purpose of Stand Up To Cancer (SU2C) Canada is to promote health by conducting and supporting innovative research into prevention, diagnosis and treatment of cancer, and provides education and awareness to the public on issues related to cancer treatment, prevention and awareness. SU2C Canada raises funds to support collaborative research teams and education and awareness programmes conducted in Canada.

The Canadian Cancer Society (CCS) and the Canadian Institutes of Health Research (CIHR) are actively collaborating with SU2C Canada. CCS is also a collaborator in the inaugural Stand Up To Cancer Canada-Canadian Cancer Society Breast Cancer Dream Team (originally launched as the SU2C Canada – Canadian Breast Cancer Foundation Breast Cancer Dream Team with support from CIBC), along with the Ontario Institute for Cancer Research (OICR). Collaborators in the inaugural Stand Up To Cancer Canada Cancer Stem Cell Dream Team include CIHR,

Cancer Stem Cell Consortium, Genome Canada, and OICR. AstraZeneca and Mastercard are the first Canadian corporate supporters of SU2C Canada.

THE PROBLEM

One in two Canadians are expected to develop cancer in their lifetimes. Each day, over 565 new cases of cancer are diagnosed in Canada, about 23 people each hour. Each year, more than 80,000 Canadians die of cancer, making it the country's leading cause of death.

OUR APPROACH

Stand Up To Cancer Canada's mission is to make cancer patients into long-term cancer survivors through accelerated, collaborative research that improves cancer treatments and patient outcomes. SU2C Canada seeks to end cancer's reign as the leading cause of death in Canada by building awareness and educating the public about cancer prevention and by raising funds to accelerate research that will transform cancer from a disease that takes far too many lives to one that many more people can survive and manage. The Stand Up To Cancer (SU2C) research model is founded on the belief that there is now sufficient knowledge of the basic science of cancer and that technologies are available to allow the focused, practical application and rapid translation of even more basic science knowledge to patients with cancer. Furthermore, the successful application of this knowledge will result in faster advances in the treatment of patients and the prevention of cancer in those who are at risk.

SU2C funds collaborative, scientifically rigorous, treatment-focused research to develop new treatments for people with cancer. We support both research on individual cancers (i.e., breast) and research on the underlying mechanisms of cancer (cancer stem cells and the immune system).

Through funding "Team Science," we are able to bring researchers together to work on particular projects across their universities, medical centers, and government-supported entities. These projects constitute the bulk of our research programs.

The purpose of SU2C Canada is to establish and support a focused and intense effort to put advances in the treatment and prevention of cancer into effect as rapidly as possible. SU2C Canada believes that it can benefit the most patients by accelerating the course of cancer research through raising philanthropic funds and utilizing its unique mechanisms to support cancer research. This novel approach funds innovative ideas in a streamlined, expedited manner.

COLLABORATION TO ACCELERATE SCIENCE

SU2C Canada fosters collaboration among the most talented and promising researchers across institutions and across the country. This multi-disciplinary, team-oriented approach promotes the sharing of information rather than competition among researchers and entails both a goal-oriented focus on key problems in cancer and measurable milestones of progress.

SU2C Canada-supported researchers benefit from collaboration with the community of SU2C-supported researchers from six other countries. This includes participation in the annual SU2C Scientific Summit, where the latest findings are presented. It also includes the opportunity to compete for Phillip A. Sharp Awards in Innovation and Collaboration, which provide support for collaboration across Dream Teams and with Innovative Research Grant awardees. These opportunities help to elevate collaboration and innovation beyond the scope of the individual SU2C Canada Dream Teams.

RIGOROUS OVERSIGHT BY WORLD-CLASS SCIENTIFIC LEADERS

SU2C Canada is committed to transparency and high-quality science in its funding activities and believes that this can be accomplished within the framework of its truly innovative approach to supporting cancer research.

“Cancer is an international problem. Science is an international enterprise. We share information so we can advance treatment of patients. Canada is a leader now and it will be a greater leader in the future because of Stand Up To Cancer in Canada.”

Phillip A. Sharp, Ph.D.
Nobel Laureate and co-chair of SU2C Canada Scientific Advisory Committee

“In my lifetime we are going to have effective treatments against cancer. As a proud Canadian, I think Canadian scientists and clinicians have a lot to offer in making this happen.”

Alan Bernstein, OC, Ph.D., RRSC
co-chair of SU2C Canada Scientific Advisory Committee

SU2C Canada Scientific Advisory Committee (CSAC)

The Stand Up To Cancer Canada Scientific Advisory Committee (CSAC) oversees the SU2C Canada research portfolio. Members of the CSAC along with others, specific to each Dream Team, review proposals to select the Dream Teams that offer the most promising science and will most likely achieve patient benefits in the four-year research funding

period. After the teams are selected, members of the CSAC monitor the research progress, participating in formal Dream Team reviews, including onsite visits that happen twice each year.

SU2C Canada Scientific Advisory Committee:

- Phillip A. Sharp, Ph.D., Co-Chairperson
- Alan Bernstein, O.C., Ph.D., Co-Chairperson
- Carlos Arteaga, M.D.
- Jenny Chang, M.D.
- Carol L. Prives, M.D.
- Patient Advocate (currently vacant – replacement in process)

SU2C Canada SAC Review Team - Breast Cancer Dream Team

- Carlos L. Arteaga, M.D.
- Cecil B. Pickett, Ph.D.
- Carol L. Prives, Ph.D.

SU2C Canada SAC Review Team – Cancer Stem Cell Dream Team

- Jeffrey M. Trent, Ph.D.
- Eric C. Holland, M.D.
- Stacey L. Berg, M.D.

SU2C Canada SAC Review Team – Metastatic Breast Cancer Dream Team (this team will be finalized in November 2018)

- Judy Garber, M.D., MPH.
- Ingrid Mayer, M.D.
- Eric Winer, M.D.
- Suzanne Topalian, M.D.
- Lewis Chodosh, M.D., Ph.D.
- Two additional reviewers pending confirmation

AACR International–Canada serves the Canadian cancer research community, in coordination with the American Association for Cancer Research (AACR). As the Scientific Partner to Stand Up To Cancer Canada, AACR International–Canada provides scientific oversight and conducts expert peer review and research administration. For more information, please visit <http://www.AACRCanada.ca>. AACR International–Canada is a registered charity in Canada.

KEY MILESTONES - STAND UP TO CANCER CANADA

Stand Up To Cancer Canada has moved swiftly from its public launch in July 2014, through the selection and award of the two inaugural SU2C Canada Dream Teams, and the initiation of SU2C Canada research, as detailed below:

- July 9, 2014: launch of SU2C Canada announced at MaRS Centre

- September 5, 2014: First Canada-inclusive SU2C Telecast
- Week of October 6, 2014: Launch of the Call for Ideas
- December 8, 2014: Deadline for idea submission
- February 16, 2015: Finalists invited to submit full proposals
- April 27, 2015: Deadline for submission
- June 29, 2015: In-person selection meeting
- September 30, 2015: SU2C Canada-CBCF Breast Cancer Dream Team announced
- January 26-29, 2016: SU2C Canada Dream Team Leaders/Co-Leaders present and participate at the SU2C Annual Scientific Summit
- February 4, 2016: SU2C Canada Cancer Stem Cell Dream Team announced
- May 2016: SU2C Canada-CBCF Breast Cancer Dream Team initiates clinical trial
- July 2016: first semi-annual Dream Team reviews conducted
- September 9, 2016: Second Canada-inclusive SU2C Telecast
- January 23-25, 2017: SU2C Canada Dream Team Leaders/Co-Leaders present and participate at the SU2C Annual Scientific Summit
- February 1, 2017: Canadian Breast Cancer Foundation merges operations with the Canadian Cancer Society; re-branding Dream Team to SU2C Canada – Canadian Cancer Society Breast Cancer Dream Team
- August 2017: semi-annual Dream Team reviews conducted
- January 27-30, 2018: SU2C Canada Dream Team Leaders/Co-Leaders present and participate at the SU2C Annual Scientific Summit
- February 2018: Canadian Charitable Registration transitions from EIF Canada to Stand Up To Cancer Canada
- June 2018: semi-annual Dream Team reviews conducted

SU2C CANADA DREAM TEAMS

The two inaugural SU2C Canada Dream Teams involve 56 researchers from 16 institutions in 5 provinces across the country. A third Dream Team, focused on metastatic breast cancer, will be selected in November 2018.

SU2C Canada–Canadian Cancer Society (CCS) Breast Cancer Dream Team*: *“Translational Development of Novel Drugs Targeting Tumour Vulnerabilities”*

**initially launched as SU2C Canada – Canadian Breast Cancer Foundation Breast Cancer Dream Team*

Funding Awarded: January 2016

Funding: CAD\$9,000,000

Dream Team Members

Dream Team Leader:

- Tak W. Mak, Ph.D., University Health Network, Toronto, Ontario

Dream Team Co-leader:

- Samuel Aparicio, Ph.D., University of British Columbia, Vancouver, British Columbia

Principals:

- Morag Park, Ph.D., Rosalind and Morris Goodman Cancer Centre, Montreal, Quebec
- Kathleen Pritchard, M.D., Odette Cancer Centre, Toronto, Ontario
- Karen Gelmon, M.D., British Columbia Cancer Agency, Vancouver, British Columbia

Project Manager:

- Thorsten Berger, Ph.D., University Health Network

Advocates:

- Randy Mellon, Toronto, Ontario
- Wendie den Brok, M.D., University of British Columbia, Vancouver, British Columbia

Fast Facts on Breast Cancer

- Breast cancer is the second-most common cancer in the world and by far the most frequent cancer among women.
- Women who have a mother, sister, or daughter with a history of breast cancer are about twice as likely to develop breast cancer as women who do not have this family history.
- Breast cancer death rates have declined in the last 20 years due to improvements in early detection and treatment.

- Triple-negative breast cancer tends to be more aggressive, growing and spreading more quickly than most other types of breast cancer.

About This Team's Research

Breast cancer remains the second-leading cause of cancer death among women in Canada and the United States. For triple-negative breast cancer and other aggressive forms of the disease, treatment options have been limited. The Dream Team seeks to expand the range of options by accelerating the development of three new drugs. The first drug, called CFI-400945, inhibits an enzyme that drives division and proliferation of cancer cells. The second, CFI-402257, inhibits a molecule that also seems to drive the cancer process. The third, CX5461, works by binding to the replicating DNA and stopping the cell's copying machinery in its tracks.

The team is also using state-of-the-art approaches to help determine how the three drugs can be used most effectively against breast cancer. All three are in early-stage clinical trials to pave the way to larger trials. This team was originally launched as the SU2C Canada-Canadian Breast Cancer Foundation Breast Cancer Dream Team, with support from CIBC.

Scientific Abstract

[This abstract was provided by the scientists as part of their application.]

Triple-negative/basal-like breast cancer (TNBC) and other aggressive forms of breast cancer lack targeted therapies. Initial responses to chemotherapy are followed by rapid progression and poor survival. More effective treatments are thus urgently needed. Few druggable mutations exist in TNBC, but these cancers often exhibit genomic instability, aneuploidy and defects in DNA damage repair. These properties may create vulnerabilities that can be therapeutically exploited. Our Dream Team will deliver innovative biomarker-driven therapies for TNBC via an integrated program of translational and clinical development of three novel drugs, which are based on our leaders' scientific discoveries. These are CFI-400945 (PLK4 inhibitor), CX5461 (RNA Pol I inhibitor/GQ binder), and CFI-402257 (TTK inhibitor).

Project 1 of our proposal is comprised of the basic/translational development of each drug, while Project 2 encompasses Phase I/II clinical trials in advanced breast cancer patients.

For Aim 1 of Project 1, each drug will be subjected to in vitro drug screening, and functional genomic approaches will be applied to primary and chemo-resistant TNBC and established cell lines using CRISPR genome-editing technology. Mediators of resistance and synthetic lethality will be identified using computational approaches.

In Aim 2, a large, shared collection of molecularly characterized PDX representing the spectrum of treatment-naïve, chemotherapy-resistant, and metastatic disease will be employed. Anti-tumour activity and biomarker / response relationships will be characterized by evaluation of clonal dynamics at the single-cell level and in models of acquired drug resistance. Aim 3 will examine the impact of the tumour microenvironment on drug response variability. Single-cell profiling will be used to evaluate tumour/stroma crosstalk in 3D organotypic cultures with matched cancer-associated fibroblasts.

For Project 2, each drug will enter biomarker-driven clinical trials carried out in collaboration with the NCIC Clinical Trials Group and a pan-Canadian network of sites. These trials will incorporate correlative programs and will be refined according to data emerging from our preclinical/translational program. The Dream Team Patient Advocates will advise on trial-related design and consent issues, as well as support patient recruitment and knowledge translation.

This Dream Team proposal has the potential for major near-term impact on breast cancer treatment.

Clinical biomarker implementation and correlative studies will provide the proof-of-concepts necessary to support the efficacy trials that follow. Furthermore, state-of-the-art preclinical systems will identify and validate a pipeline of new targets for this devastating disease.

The SU2C Canada-CCS Breast Cancer Dream Team is developing new treatments for triple-negative breast cancer (TNBC) and other aggressive breast cancers, which now lack targeted therapies. The team is focusing on three drugs that exploit genomic weaknesses in the makeup of these cancers.

All three drugs have been tested in Phase I clinical trials, with Phase II trials set to begin. The team has also conducted non-clinical research to sharpen its understanding of biomarkers that can help guide usage of the drugs.

If successful in the larger trials, these drugs could potentially have significant impact on a patient population that currently has a limited range of treatment options.

The SU2C Canada-CCS Breast Cancer Dream Team has engaged in Phase I clinical trials of three new drugs: CFI-400945, CFI-402257, and CX5461.

Progress to date has positioned the team to enter Phase II trials with the same drugs, which have the potential for significant impact in a patient population with high unmet clinical need. The data emerging from non-clinical work will inform the team's clinical path and correlative

biomarker implementation, in order to best leverage the novel agents to impact the treatment of patients with aggressive breast cancers.

Progress Updates

December 2017

- Continued clinical trial of drug CX5461.
- Launched clinical trials of drugs CFI-402257 and CFI-400945.
- Completed genomic characterization of patient-donated tumour models, permitting the team to test its predictions of drug response.

June 2017

- Obtained preliminary results of clinical trials, allowing the usage of higher doses of the drug than initially anticipated without unexpected toxicity ("side effects").

December 2016

- Launched clinical trial of drug CX5461 – developed by team leaders and the first agent of its kind to be tested as a treatment for breast cancer.
- Obtained encouraging observations on the use of new drugs on patient-derived tumours being grown in animal models.
- Applied new technologies to predict which changes in a tumour cell will kill the cell or render it more or less likely to be killed by drugs being investigated.

June 2016

- Three agents were tested using a panel of more than 50 breast cancer cell lines, helping the team determine which tumour cell features ("biomarkers") can predict a response to a given drug.
- Prepared clinical trials of new drug agents.

Publications

"A targetable EGFR dependent tumour-initiating program in breast cancer"

Savage P, Park M, et al. (2017)

Cell Reports 21, 1140–1149, October 31, 2017.

<https://doi.org/10.1016/j.celrep.2017.10.015>

"CX-5461 is a DNA G-quadruplex stabilizer with selective lethality in BRCA1/2 deficient tumours"

Xu H, Mak TW, Aparicio S, et al. (2017)

Nature Communications 8:1432, February 17, 2017. doi:

10.1038/ncomms14432

SU2C Canada Cancer Stem Cell Dream Team: “Targeting Brain Tumour Stem Cell Epigenetic and Molecular Networks”

Funding Awarded: October 2015

Funding: CAD\$11,790,000

Dream Team Members

Dream Team Leader:

- Peter B. Dirks, M.D., Ph.D., The Hospital for Sick Children, Toronto, Ontario

Dream Team Co-leader:

- Samuel Weiss, Ph.D., Hotchkiss Brain Institute, Calgary, Alberta

Principals:

- Michael D. Taylor, M.D, Ph.D., The Hospital for Sick Children, Toronto, Ontario
- Nada Jabado, Ph.D., Research Institute of the McGill University Health Centre, Montreal, Quebec
- Cheryl H. Arrowsmith, Ph.D., University of Toronto, Toronto, Ontario
- Michael Salter, M.D., Ph.D., The Hospital for Sick Children, Toronto, Ontario
- Marco A. Marra, Ph.D., BC Cancer Agency, Vancouver, British Columbia
- Mathieu Lupien, Ph.D., Princess Margaret Cancer Centre, Toronto, Ontario
- Amy A. Caudy, Ph.D., University of Toronto, Toronto, Ontario
- Trevor J. Pugh, Ph.D., Princess Margaret Cancer Centre, Toronto, Ontario
- Gary D. Bader, Ph.D., University of Toronto, Toronto, Ontario
- Michael D. Tyers, Ph.D., University of Montreal, Montreal, Quebec

Advocate:

- Wendy Marie Durigon, Guelph, Ontario

Project Managers:

- Fiona Coutinho, Hospital for Sick Children
- Tracey Richards, Hospital for Sick Children

Fast Facts on Brain and Central Nervous System Tumours

- There are nearly 100 different types of brain tumours and most are not linked with any known risk factor and have no obvious cause.
- Brain and central nervous system tumours are the most common cancer-related cause of death in children.
- Approximately three of four children with brain tumours survive at least five years after being diagnosed.
- In adults, the five-year survival rate varies depending on the type of brain tumour and the age of the patient.

About This Team’s Research

Malignant brain tumours remain deadly and incurable. This Dream Team is focusing on glioblastomas in adults and children and on posterior fossa ependymomas in

infants. Treatment options for both of these tumour types are limited, leaving a dismal outlook for these patients.

Researchers previously discovered that at the root of these tumours lies a relatively small population of cells known as brain tumour cancer stem cells (BTSCs). These cells are resistant to known forms of therapy. When patients undergo treatment, these cells survive and regrow the whole tumour, causing a relapse.

To better understand these cells, the team is taking a three-tiered approach: 1) analyzing BTSCs from 70 patients using cutting-edge technology to reveal their full biological profile; 2) testing a panel of drugs on these tumours to find promising candidates; and 3) performing tests on these promising drugs in preclinical mouse models to predict efficacy in human patients.

Taking a multidisciplinary approach, the team is providing new insights into BTSC biology, offering a promising avenue by which to solve a long-standing problem.

Scientific Abstract

[This abstract was provided by the scientists as part of their application.]

Brain tumours remain largely incurable diseases. To address the poor outcome of these tumours, we have formed a Pan-Canadian Dream Team. Our goal is to focus our attention on the worst prognosis brain tumours, glioblastoma (GBM) of adults and children, and posterior fossa subtype A (PFA) ependymomas of infants, with a goal of finding new treatments. We, and others, have shown that these tumours contain subpopulations of cells, brain tumour stem cells (BTSCs), that drive disease relapse and resistance to therapy.

The central hypothesis is that: Human glial tumours are driven by disturbances in epigenetic and related metabolic/neural signaling processes that are common across heterogeneous genetic subtypes. In order to gain clinically relevant insights into the complementary and compensatory networks that drive brain tumour growth, these processes cannot be studied in isolation but need an integrated approach.

We propose three integrated specific aims:

1. Conduct a comprehensive investigation of genomic, epigenomic and metabolomic profiles of BTSCs to define networks of self-renewal, therapeutic resistance and targetable vulnerabilities.

We propose to define and target the aberrant epigenetic and related metabolic/neurochemical processes which fuel the maintenance of the BTSC reservoir. We will perform detailed experimental characterization of the genomic, epigenomic, metabolomic, proteomic, and neurobiologic profiles of BTSCs.

2. Identify targets whose pharmacological inhibition is efficacious on BTSCs from GBM and PFA ependymoma. We propose to integrate testing of chemical probes and promising drugs, with the BTSC biological readouts and phenotypes, towards developing the necessary understanding of clinical successes and setbacks. We will pay particular attention to the (epi)genomic mechanisms that are vulnerable, and

under which circumstances combination therapies might be utilized. The best targets (as defined by experienced pharma advisors) will be tested in pre-clinical models of BTSC function in vivo.

3. Pre-clinically test five targets to accelerate translation to the clinic. We have data that points to blocking epigenetic or abnormal metabolism in BTSCs as potential therapeutic strategies. In parallel to our BTSC 'omics', we will accelerate pre-clinical testing of several strong target hypotheses at the outset of funding. We will use best-in-practice in vivo assays of tumourigenicity using orthotopic transplantation, with emphasis on assays that test whether target inhibition reduces or eliminates self-renewal properties.

We believe that integrating the testing of chemical probes and preclinical/approved drugs whose target inhibition and selectivity are well documented, with the critical BTSC biologic readouts, is necessary for understanding the reasons for both success and failure. Our ultimate goal is to demonstrate proof of concept for new BTSC targets in human clinical trials for adult and childhood GBM and PFA ependymoma.

Progress Updates

Using the new gene editing tool called CRISPR/Cas9, the Dream Team has identified genes that are critical to the persistence of glioblastomas. The team has also shown that already available inhibitory drugs for some of these genes can also be used against brain tumour stem cells, thus fast-tracking the process of identifying potential treatments that can be tested in the clinic.

The overall goal of the SU2C Canada Cancer Stem Cell Dream Team is to understand the special characteristics of the stem cells that lie at the root of certain brain tumours, in terms of identity and behavior. To accomplish this, the Team is taking a three-tiered approach:

- 1) cancer stem cells from the tumours of 70 patients will be studied to dissect the properties of the cancer stem cells that are shared and those that are unique to the individual patient tumours;
- 2) a panel of drugs will be tested on these tumours to find promising candidates and understand the mechanisms by which they effectively target these cells and their molecular programs; and
- 3) drug testing will also be performed in pre-clinical mouse models to predict efficacy in human patients.

In progress to date, the team has:

December 2017

- Identified two new drugs that can target brain tumour stem cells. One blocks a protein called glutaminase. Another is an inhibitor for a protein called glucose transporter.

- Shown that blocking a protein called PRMT5 keeps brain tumour stem cells from multiplying and, therefore, can keep cancer from growing. They are now testing a drug that can block PRMT5 in mice.

June 2017

- Found a common characteristic in the way the DNA of brain tumour stem cells are organized. This commonality can be used to kill these cells even if the cells have different mutations.
- Developed software that can combine all the data from the DNA sequencing and drug testing. This software, called netDx, can be used to identify ways to predict favorable drug response from a patient's DNA characteristics.
- Identified numerous drug candidates and shown that the clinical drug EPZ5676 was effective against glioblastoma brain tumour stem cells.

December 2016:

- Begun rigorous analysis of the first cohort of 20 patient samples. The genomic analysis thus far confirms that the majority of the tumour tissue and the stem cell compartments do not have the same genetic profile.
- Identified a unique metabolite from the first few samples of their project, which may serve as a biomarker for a subset of tumours.
- Tested the two leading targets in several cell culture systems and moved them into preclinical studies.

June 2016:

- Nominated the first 20 of 70 patient tumours to undergo all brain tumour stem cell characterization to investigate the genetic and functional characteristics of these cells across tumours.
- Identified two promising drugs and begun studies by team members in unique experimental models.

SU2C Canada Metastatic Breast Cancer Dream Team

Funding to be Awarded: November 2018

Funding: CAD\$6,000,000, over a four-year grant term

Stand Up To Cancer Canada, the Canadian Cancer Society (CCS) and Canadian Institutes of Health Research (CIHR) are collaborating on a new Stand Up To Cancer Canada Metastatic Breast Cancer Dream Team to be selected in November 2018. The Stand Up To Cancer Canada Metastatic Breast Cancer Dream Team, supported by CCS and CIHR, represents a new, focused effort to implement advances in metastatic breast cancer research as rapidly as possible through the creation of a collaborative, translational, cancer research "Metastatic Breast Cancer Dream Team." The most talented and promising researchers across Canadian institutions will be assembled into a pan-Canadian Dream Team, forming an optimal configuration of expertise needed to solve key problems in metastatic breast cancer and positively impact patients in the near future. This Metastatic Breast Cancer Dream Team will span multiple disciplines and utilize the new tools of modern biology to attack research questions in a coordinated way. Mechanisms to foster collaborations within the Dream Team will be employed—an approach that promotes the sharing of information and a goal-oriented focus on measurable milestones of progress. SU2C Canada, CCS and CIHR believe that this unique Metastatic Breast Cancer Dream Team model will advance scientific research in the interests of both today's cancer patients and those who may develop cancer in the future.

The successful team will:

- develop a translational cancer research project that addresses critical problems in metastatic breast cancer patient care including prevention strategies for those at risk and increasing understanding of the biological mechanisms of metastatic progression.
- design and carry out projects that accelerate the application of preventative, diagnostic or therapeutic approaches to the clinic.
- have leadership (Leaders and Principals) that involves a minimum of three institutions from three different regions in Canada.
- include at least two promising early-career investigators whose development will be integral to the success of the team.
- include two patient advocates.
- include plans describing how the work will be translated into the clinic. The ideas should be based on perceived opportunities for success as well as high-priority areas with a critical need for rapid progress beyond current medical care.

SU2C CANADA EDUCATION AND PUBLIC AWARENESS CAMPAIGNS

Increasing public awareness and education is one of the goals of SU2C Canada. Since inception, SU2C Canada has engaged in several public awareness campaigns in donated media across the country.

SU2C Canada “Act Now” PSA Campaign

“Act Now” was a general awareness campaign, which concluded in 2017, to inform the Canadian public on the scope of cancer across the country—that two in five* Canadians will receive a cancer diagnosis in their lifetimes. The campaign was shot by renowned photographer and film director Greg Williams, and featured several celebrities, including Eva Mendes, Idris Elba and Eddie Redmayne.

From January 2015 through December 2017, SU2C Canada aired the ACT NOW TV Public Service Announcement (PSA) nationally in top markets throughout Canada, including Toronto, Vancouver, Calgary, and Montreal. The Act Now PSA reached an audience of nearly 497MM in donated media totaling more than USD \$4.5 million in value.

* NOTE: the current statistic is one in two Canadians will receive a cancer diagnosis in their lifetimes, but at the time of the Act Now campaign the statistic was two in five.

PSA Campaign With CBCF

Stand Up To Cancer Canada (SU2C Canada) and the Canadian Breast Cancer Foundation (CBCF) teamed up on a public service announcement (PSA) campaign featuring actress Kim Cattrall. The PSA, entitled “Surviving Looks A Lot Like Thriving,” was designed to raise awareness about progress that is being made through research and the ongoing need for innovative breast cancer research. While highlighting opportunities to get involved in creating a future without breast cancer, the PSA also emphasised how, thanks to research advances, Canadian breast cancer mortality rates have fallen, and survivors are leading longer, more active and fulfilling lives.



Providing information about research and clinical trials for breast cancer patients and the community, the campaign was linked to the website standup2cancer.ca/breastcancer.

The PSA Campaign, which ran from October 20, 2015 through December 2016, garnered over 1 BILLION impressions, running in donated media with a value of more than USD \$6.6MM including placements on TV, print, radio, out-of-home, and digital outlets.

SU2C CANADA TO PRESENT CANADA-INCLUSIVE 2018 SU2C TELECAST

Stand Up To Cancer Canada will again provide Canada-inclusive content on the upcoming Stand Up To Cancer biennial telecast. This sixth televised fundraising special from SU2C will air on Friday, Sept. 7 (8:00 – 9:00 PM ET/PT / 7:00 PM CT). Bradley Cooper, Academy Award-nominated actor and founder of the Charles J. Cooper Patient Support Fund, will again serve as executive producer along with renowned live, large-scale event producers Done + Dusted, working with Stand Up To Cancer’s production team. Stand Up To Cancer Canada will simultaneously broadcast the Canadian-inclusive telecast, featuring a Canadian patient supported by SU2C research, SU2C Canada collaborators and Dream Teams, as well as Canadian talent across all four major English-language broadcasters: **CBC, City, CTV, and Global**, as well as Canadian services **AMI, A.Side, BBC Earth, CHCH, CHEK, Cottage Life, Fight Network, Game TV, HIFI, Hollywood Suite, Love Nature, Makeful, NTV, OUTtv, Smithsonian Channel Canada, T+E, YES TV**, in addition to streaming live on the CBC TV App, cbc.ca/watch, **CBS All Access**, the CTV App and CTV’s website, and available on-demand on **TELUS Optik TV** in Canada. The telecast will also stream live in Yonge-Dundas Square from the City TV and CTV digital boards.

