

# ANNUAL REPORT

2016/17



**THE TERRY FOX**  
FOUNDATION



The Terry Fox Research Institute  
L'Institut de recherche Terry Fox

# MAKING A DIFFERENCE TOGETHER

“Even if I don’t  
finish, we need  
others to continue.  
It’s got to keep  
going without me.”

– Terry Fox

Terry’s final call to action to all Canadians was to keep alive his dream of a world without cancer. We are honoured to join the thousands of volunteers, participants and donors that we so affectionately call “Terry Foxers” in responding to his call.

In 1980, Terry’s Marathon of Hope touched millions of Canadians. Thanks to the dedicated educators who include Terry in their lesson plans and almost 10,000 annual events that bear his name, Canadians are still just as inspired and engaged in finding a cure today. It continues through people like you, part of our extended family, who share a passion and commitment to Terry and the remarkable marathon that he started 37 years ago.

As a contributor to our vitally important cause, you have helped us raise significant funds for the best and most impactful cancer research in the country and to do so in such a cost efficient way that we set the standard in the non-profit landscape – Thank You.

Our researchers are world-class in innovative, cure-oriented cancer research and we take the investment of your dollars through our sister organization, The Terry Fox Research Institute, seriously. The criteria for our research investment is based on scientific excellence, potential impact and the ability to most rapidly translate innovation to application for all cancer patients. All are giant steps to making Terry’s dream a reality.

We are excited to share with you a bold new vision for The Terry Fox Research Institute and the research landscape. This new plan of attack is called The Marathon of Hope Cancer Centre Network. A pan-Canadian collaboration using the principles of precision medicine and big data to unite the amazing research done across the entire country. This game-changer will revolutionize cancer treatment and research in Canada and solidify our country as a leader on the world stage.

All of this points to the need to increase investment, to raise more money and that now more than ever we need to double-down in finding a cure for cancer through cancer research. We know that this is what Terry would have wanted.

It is all thanks to our talented team, our passionate volunteers and our visionary donors that we look ahead with excitement. We ask that you join us in this journey and promise that we will continue to hold ourselves to the highest possible standards – those of Terry Fox.

Yours Sincerely,



**Bill Pristanski**  
Board Chair  
*The Terry Fox Foundation*



**Britt Andersen**  
Executive Director  
*The Terry Fox Foundation*

# OUR ROAD MAP

This is a banner year for The Terry Fox Research Institute (TFRI). We marked our 10th anniversary on October 29, 2017 and celebrated this significant milestone at our 8th Annual Scientific Meeting in Vancouver on Nov. 4, 2017.

Without the leadership and imagination of The Terry Fox Foundation in creating the Institute, as well as the funds raised by Run organizers, school children and their families, and participants and supporters of the community and school runs across the country, we would be unable to fund the best cancer research in Canada. Moreover, we would not have established this truly unique cancer research institute. Thank you for your generosity.

When TFRI was created with a focus on translation (put simply moving discoveries from the bench to the clinic), it was also recommended the Institute be nimble, networked and nationwide. Currently, we have linkages with over 80 funding and research partners, we have invested close to half a billion dollars since 2007, and we have awarded 124 team-science research grants that have supported over 400 investigators. Our teams are making progress, but there is still much to do!

Notably, this year we launched a pilot project to accelerate precision medicine for cancer patients with the Princess Margaret Cancer Centre and the BC Cancer Agency, for a total of \$12-million. Precision medicine requires big data – the genetic information of thousands of people – to provide clinicians with the knowledge and tools they need to deliver and apply innovative treatments effectively and efficiently. We believe that precision medicine will enable us to customize care for individuals to ensure that they receive the right treatment at the right time, and based on the molecular makeup of their individual cancer.

Our bold vision is to unite cancer centres across the country to create a powerful interactive, constantly learning and growing network – The Marathon of Hope Cancer Centre Network. This network will enable researchers and clinicians coast to coast to share their data – treatments and outcomes – all in the collective pursuit of cures for cancer.

We believe this initiative will accelerate precision medicine at a rate unimaginable a few years ago and enable doctors to create “personalized” treatments designed specifically for each patient. This is our road map to cure cancer. With your continued support, we will achieve Terry’s dream.

Yours Sincerely,



**Dr. Victor Ling**, O.C., O.B.C., PhD  
President and Scientific Director  
*The Terry Fox Research Institute*

“I want to try the impossible to show it can be done”

– Terry Fox

# MEET DAVID

## STAR WARS FAN, CANCER SURVIVOR

When I was three, the doctor told my mom I had cancer. It was in my kidney and super duper big. It was scary and we had to go to the hospital all the time. My favourite nurses were Pam and Jean. They were always really nice and played games with me. There was a clown named Molly too. She played jokes and let me use her noise maker!

I had to do a lot of chemo and then I had a big surgery. On my last day of chemo I got to ring the bell and have a chocolate cake! The bell tells everyone you're all done. That made everyone really happy – especially my mom.

Today I am 7 years old and in Grade 2. My favourite part about school is math and speaking French. While I can't play some sports like hockey, that's okay because I like running and horseback riding better anyway. I'm the only kid in my class to have had cancer. I love animals and share my home with two cats named Cypress and Seymour, one fish, one dog and a horse named Jake!

My mom says thanks to all the money raised for cancer research I'm doing great. I told her that if I had a genie with one wish, I would wish for all cancer to be gone.

“Thank you so much for fundraising for cancer research and helping kids like me. I think Terry Fox would be very proud of everything you do to make the world a better place.”

- David



# TERRY FOX PROFYLE BRINGS HOPE FOR YOUNG CANADIANS

“It’s been such a long journey, but we’re just so grateful we have some more options. Hope’s pretty much all we have at this point.” – Tanya

When eight-year-old Marlow Ploughman’s late-stage rhabdomyosarcoma (muscle cancer) relapsed for the fourth time, doctors told her parents there were no more conventional treatments left to try. The news was devastating – but then the Kingston, Ont. family learned about Terry Fox PROFYLE.

Short for PRrecision Oncology For Young peopLE, a \$5-million investment by the Terry Fox Research Institute is the catalyst bringing pan-Canadian top scientists and clinicians, research centres and foundations at children’s hospitals across Canada together to create new hope for kids like Marlow.

For the first time, these groups are working together to molecularly profile the tumours of young cancer patients living anywhere in the country. The premise is simple: children, adolescents and young adults who have been told they are out of treatment options, are being given another chance to beat their cancer.

There has been dramatic improvement in treatments and outcomes for many pediatric cancers over the last three decades. However, for the 20 per cent of young people whose cancers have spread, returned, or are resistant to treatment, outcomes remain grim.

“[Terry Fox PROFYLE] is extremely important, because with children like Marlow we have very few options except the one conventional protocol that we’re given,” said Marlow’s mom, Tanya Boehm. “PROFYLE provides a key to unlock the door to perhaps more options – or at least provides us more time to wait for some more options to come.”

The project has led to investments from many pediatric foundations and funding partners, resulting in a total national investment of \$16.4-million for the initiative. This amount is expected to grow over the life of the five-year project as new funders join the partnership.

Project lead Dr. David Malkin, based at The Hospital for Sick Children (SickKids) in Toronto, says PROFYLE is bringing together the entire pediatric and young adult national clinical and research expertise in precision medicine in a way that has never before been done in Canada.

“One of the big wins for Canada is that instead of working in somewhat independent silos, we have created a massive formalized collaborative and co-operative program to achieve this goal,” said Dr. Malkin.

PROFYLE is breaking down barriers, giving young people who need it access to the best cancer care in Canada, no matter where they live. For example, a child enrolled in the study will have his or her tumour sample sent to one of three profiling sites in Canada. The results are then discussed at a national tumour board – and, if the patient meets criteria for a clinical trial suitable for their cancer, they will be enrolled.

There are currently more than 40 patients from across Canada enrolled in PROFYLE, and the project eventually plans to enroll over 450 patients in the next four years. Marlow met the project criteria and was also enrolled, something her mother says has given their family hope.

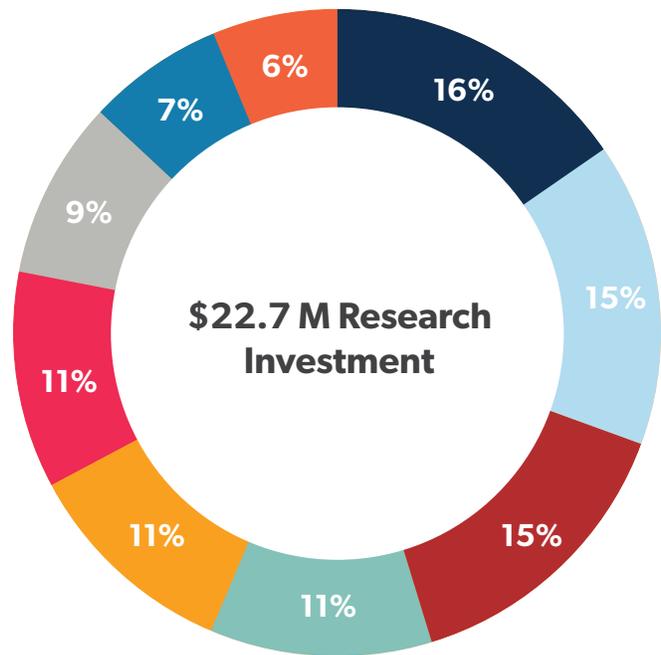
“Hope means to me the belief that researchers can provide kids with hard-to-treat cancers some more options and some more time to allow science to catch up,” said Boehm.



# OUR RESEARCH

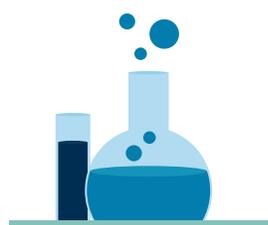
## 2016-17 Funding by Cancer Site

- Blood
- Brain
- Colorectal
- Pediatric
- Breast
- Prostate
- Ovarian
- Other\*
- Novel Therapeutics



\*Investment in each of these cancer sites is under 5%. The percentage shown is a cumulative total and includes bone, cervix, head & neck, lung, pancreatic, and sarcoma.

## By The Numbers



405

Funded  
Researchers



80

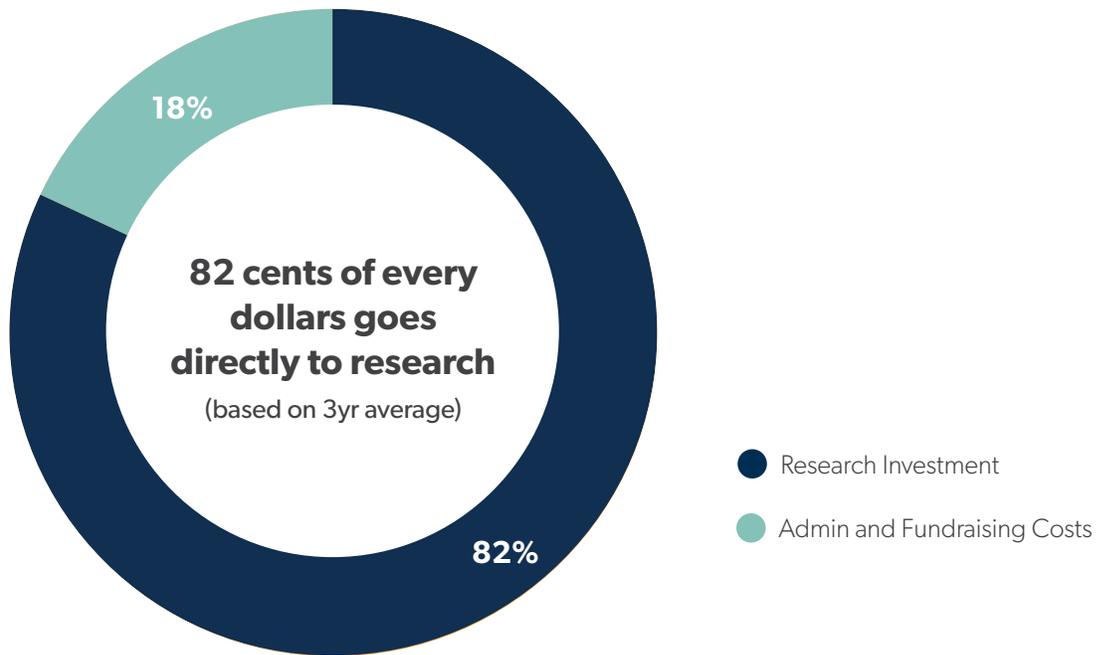
Collaborative Institutions  
Across Canada



57

Funded  
Programs

# YOUR DONATION



## By The Numbers



**18 %**

Cost To Raise  
A Dollar



**9000+**

Volunteer-Led  
Runs

**3.5M+**

Annual  
Participants

# INTERNATIONAL



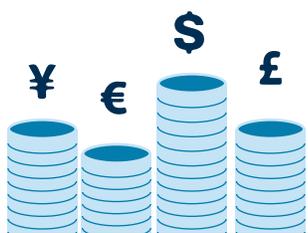
30

Countries world-wide



38

Funded international Programs



\$1.2 M

International Cancer Research Investment



52

International Runs

# TERRY FOX AROUND THE WORLD



Hanyin Bilingual School – Taoyuan City, Taiwan



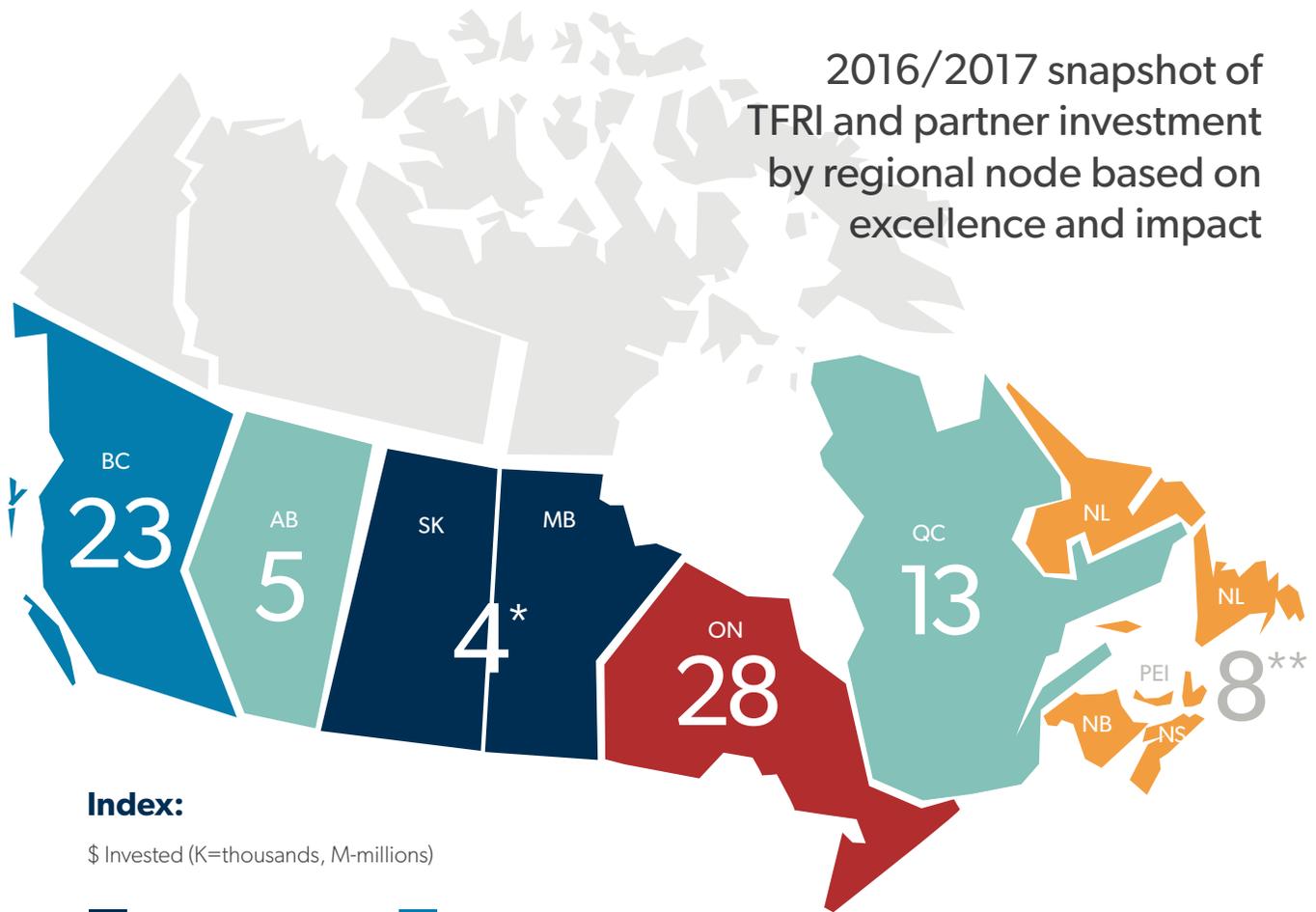
New York, New York



Sao-Paulo, Brazil

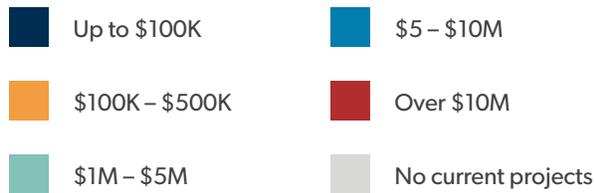
# SNAPSHOT OF TFRI INVESTMENT BY REGIONAL NODE

2016/2017 snapshot of TFRI and partner investment by regional node based on excellence and impact



## Index:

\$ Invested (K=thousands, M-millions)



- Large number indicates total projects funded (includes discovery, translational, new investigators and training)
- Many of the funded projects are multiple year (e.g. 3 and 5 year)
- Many projects have multiple sites participating; each site is included within its provincial project investment total (\$)

\*Prairie Node

\*\*Atlantic Node

# BERGER FAMILY LEGACY LIVES ON

Michael Berger is someone we believe to be a true Terry Foxer. After 20 years he and his family have yet to miss a run!

Participating in his 20th Terry Fox Run this past September, Michael has fundraised a total of over \$250,000 in support of Terry's legacy and cancer research. Crossing the finish line this year with his son Ryan, riding right beside him on his scooter, marked another run completed by their family, and another since Berger lost his parents to cancer.

This annual tradition that the Berger family takes part in was inspired by the death of his father Gerald in 1998. "Right after my father was diagnosed, he became very involved with (Terry Fox) Runs," Berger said. His Dad was still in treatment while he did his first run and since then, the family has continued this legacy.

Participating in a Terry Fox Run is also a way for the family to remember Berger's mother Ruth, who died of cancer shortly after his father passed away.

The Berger family has raised over \$250,000 since 1998, and they reached their highest yearly amount at \$22,000 this year. They have participated in Runs all around Canada, making sure that even with their various moves across the country, that they wouldn't miss a Run. They have attended Runs in Richmond Hill, Vancouver & Toronto.

We are truly honoured to be a part of this family's legacy.



# IN FOCUS: PRECISION MEDICINE

Precision medicine projects are using novel technologies, therapeutics, knowledge of cancer biology and new ways to monitor treatment effectiveness to improve outcomes for individual patients.



## Novel technology for lung cancer

A highly successful TFRI project has become the first in Canada to explore the role of pollution and genetic susceptibility on the risk of developing lung cancer.

“In the original project, we looked at the use of a risk prediction algorithm to identify people that would benefit from screening, but the best available model still only catches about 50 per cent of people that may develop lung cancer,” said principal investigator Dr. Stephen Lam, chair of B.C.’s Provincial Lung Tumour Group at BC Cancer. **Their work has been successful in identifying individuals at high-risk for the disease through early detection.**

The current project is expanding to investigate air pollution and genetic measures to the risk prediction algorithm for early lung-cancer screening detection. The team is also developing advanced computer analytic imaging tools to determine the likelihood of small lung nodules found on screening CT being cancerous to improve the efficiency, accuracy, and cost-effectiveness of reading the large number of scans generated in a screening program.

The new project is also working with international partners, recruiting patients from British Columbia and comparing data with similar research across Canada, as well as separately funded research in the U.S., Australia, the UK and Hong Kong.

Lung cancer is the most common cause of cancer death around the world. The five-year survival rate for patients is currently less than 18 per cent, but if caught early enough the disease can be cured in 70 per cent of cases.



## Better therapeutics for myeloma

When Dr. Tony Reiman is looking for inspiration for his TFRI-funded project on multiple myeloma, he thinks of patients he’s lost to the incurable bone marrow cancer.

“I’ve always found it’s the patients who are destined not to survive their disease that provide me with the strongest motivation to find ways to help them do better,” says the medical oncologist and professor at the University of New Brunswick.

Dr. Reiman is leading the pan-Canadian project Multiple Myeloma Molecular Monitoring (M4 study), which is comprised of researchers and clinicians at multiple sites including Vancouver, Calgary, Toronto and Montreal. Between 2,000 and 3,000 Canadians are diagnosed with multiple myeloma each year – and only 40 per cent of patients survive after five years, with many living just months after diagnosis.

Despite being a heterogeneous disease, multiple myeloma is currently treated and monitored the same way for each patient. Dr. Reiman’s M4 team is working with more than 250 patients across Canada to advance the ability to characterize and monitor multiple myeloma in the blood and the bone marrow to better understand how current treatments work and develop new, more effective ones to improve patient outcome.

# THE MEDICINE OF TOMORROW

Many notable research projects funded by the Terry Fox Research Institute are focused on precision medicine.



## National colon cancer project

Colorectal cancer is the second leading cause of cancer death in Canada, with about one in every 14 people likely to develop the disease. TFRI's Pan-Canadian Colorectal Cancer Consortium (C4) is uniting researchers across the country to detect the disease earlier and to identify novel treatment options.

Montreal's Dr. Gerald Batist (Segal Cancer Centre Jewish General Hospital) and Toronto's Dr. Steve Gallinger (Mount Sinai Hospital/UHN) are co-leading the project. Around 20 per cent of people diagnosed with colon cancer have a family history of the disease, and around five per cent of all cases have an identifiable genetic cause that may be unknown to the patient. One of the main challenges is identifying people who are at the highest risk through genetic testing, then ensuring these individuals are screened appropriately.

The project aims to solve these problems: Dr. Gallinger's team has created a method of screening to identify high-risk colon cancer families and have them tested appropriately; while Dr. Batist's group operates the therapeutic axis, creating a registry of patient biopsies to better understand what makes a tumour resistant to treatment. His team has collected more than 500 samples of metastatic tissue both prior to treatment and at the time of drug resistance to identify potential biomarkers that could have implications in current therapeutic decision-making, and to create more personalized treatments for colorectal cancer patients.



## Imaging tools for breast cancer

What if an ultrasound could detect if a patient's cancer treatment was working after just one week of therapy – or better yet, before treatment even begins? Using quantitative ultrasound and magnetic resonance imaging (MRI), Dr. Gregory Czarnota and his team at Toronto's Sunnybrook Health Sciences Centre are working to make "personalized chemotherapy" a reality for patients with advanced breast cancer.

Around one in nine women will be diagnosed with breast cancer at some point in their lives, and patients typically receive "one-size-fits-all" chemotherapy treatments that are only effective for a certain percentage of the population. Dr. Czarnota's team uses a specialized form of ultrasound, extracting image biomarkers that observe cell death. These changes can be detected just hours after a patient begins chemotherapy or radiation, and can predict if treatment is working much sooner than standard practice.

Further, in April 2017 the team published a groundbreaking paper in *The British Journal of Cancer*, suggesting that a new form of imaging (diffuse optical spectroscopic (DOS) texture features) may be able to predict breast cancer response to chemotherapy – before treatment even begins.

"We're at the stage now where we've put in 20 years of work," said Dr. Czarnota. "I really think this technology stands to change the way that things are done in the medical field in short order."



# THANK YOU

to all of our generous & amazing  
Terry Fox supporters. Including  
those who contributed by:

- o Giving a monthly gift
- o Participating in or donating to a Run
- o Volunteering your time
- o Making a donation
- o Leaving a Legacy gift in your will
- o Donating stocks or investments

Anyone who has donated continues to be a  
part of helping to keep Terry's dream alive.  
Without you this would not be possible.

“I’ve said to people before that I’m going to do my very best to make it, I’m not going to give up. But I might not make it... if I don’t, the Marathon of Hope better continue.”

– Terry Fox



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**The Terry Fox Foundation**

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