brains at their best

check out what you helped us achieve in 2014
CRYSTAL PHILLIPS
EXECUTIVE DIRECTOR, CO-FOUNDER

In 2005, 19-year-old Phillips was bursting with potential as one of the top young speed skaters in Canada. Her rise to Canada’s world junior team had been as smooth as her skating until one day that spring, tragedy struck. It started with tingling in her foot one morning, then quickly progressed up her leg and through her body. By nightfall, she could hardly walk. After a trip to the hospital and numerous tests, Phillips was diagnosed with multiple sclerosis. The doctors told her multiple sclerosis is a degenerative neurological disease with no cure. They also said she may never speed skate again. But hanging up her skates was out of the question and despite doctors’ admonitions, she vowed to return to the ice.

Determined to recover, she started taking a daily drug injection and experimenting with alternative healing, including good nutrition. Four months later, she relearned how to walk, bike and eventually skate again. Four years later, Crystal skated her first personal best time since her diagnosis and qualified to race at the 2010 Canadian Olympic trials. Six months before trials, she woke up with no vision in her left eye. Tests showed that her disease was progressing. The neurologists told her at this pace, she’d be in a wheelchair in two years.

They also told her to stop skating and to start a more aggressive drug therapy. As they listed the side effects, Crystal decided this wasn’t the right decision for her. She decided to go off all of her drugs and treat her disease 100% naturally through diet, lifestyle and exercise regimes. Six months later, she skated at the 2010 Olympic Trials, missing the Canadian Olympic team by just six spots.

Today, you might find Crystal on stage talking about her experience, attacking a hill on her road bike, or sprinting the paths by the Bow River. Her fast-paced lifestyle makes it hard to believe she has debilitating degenerative neurological disease. Her own personal success in living with a neurological disease highlighted the need for more research so that everyone, including doctors, can use natural therapies to either prevent, treat or even cure the 600+ neurological disorders that exist.

THIS is why Branch Out Foundation exists, to “Branch Out” for brains at their best and fund research in neuroCAM (neuroscience and complementary and alternative modalities).
2014 CONTRIBUTING EVENTS RAISED OVER $20,000!

- 4th Annual Stampede Turbo Party
- 2nd Annual Bocce Tournament
- Peak to Valley Ski Challenge
- 2nd Annual Branching Into Fashion Show
- Calgary Corporate Challenge Poker Tournament
- Yoga Karma Class at Moksha Yoga North
- WSP Stampede Party
- Pumphouse Cycle Cross Race

FUN FACT: OVER 25 OLYMPIC ATHLETES HAVE PARTICIPATED IN BRANCH OUT EVENTS TO SUPPORT NEUROCAM RESEARCH.

Can you find the three Olympians? Hint: 1 luger, 1 speed skater, 1 skier

BRANCH OUT BIKE TOUR OVER THE YEARS

<table>
<thead>
<tr>
<th>YEAR</th>
<th># PARTICIPANTS</th>
<th>RAISED</th>
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<tbody>
<tr>
<td>2011</td>
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<td>$50,000</td>
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<td>2014</td>
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<td>2015</td>
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BTV CALGARY MEDIA APPEARANCE

Olympic bobsledder Justin Kripps, twin brothers John and Dan Reid with Bike Tour Chair Graham Daw. Practicing the “Mandem Push” leading up to the 2014 Branch Out Bike Tour.
RESEARCH FUNDED

- PhD Grant
- Master's Grant
- Undergrad Grant

$22,550 in 2012
$52,000 in 2013
$102,000 in 2014
$162,500 in 2015

MY, HOW WE’VE GROWN

$240,000 Raised in 2014.
Over 300% growth since our founding year in 2010.

WE ARE WORKING TOWARDS CREATING A NEUROCAM COMMUNITY IN ALBERTA. WE ENVISION CALGARY TO BE RECOGNIZED AS A TOP DESTINATION FOR NEUROSCIENTISTS FROM AROUND THE WORLD.
SUMMER STUDENTSHIP GRANT PROGRAM

UNIVERSITY OF CALGARY

PREDICTING TRANSCRANIAL MAGNETIC STIMULATION RESPONSE IN DEPRESSION
Student: Yamile Jasaui Carranza (Masters), Keon Ma

"Mental health is an increasingly relevant issue in today's society, but current treatment protocols lack a streamlined and efficient approach. Thus, this summer's research has inspired me to continue research in this field, so that my research may benefit those who are affected by mental health in the future."

Implication: This project explores the possibility for biomarkers that would indicate responsiveness to rTMS as a form of personalized medicine. Additionally, rTMS is a non-invasive intervention that could operate through natural neural mechanisms to change the disease progression of depression.

ENDOCANNABINOID SIGNALLING IN ANXIETY
Student: Kowther Hassan

Implication: Cannabis has been reported to have anti-anxiety properties by acting on the endocannabinoid system and this project explores the process by which this might occur. While cannabis could be used to achieve these effects, other studies have indicated that exercise would result in similar increases in endocannabinoids, offering a naturopathic option to manage anxiety.

EFFECT OF A MUSIC TRAINING BIOFEEDBACK PROGRAM IN MOVEMENT DISORDERS
Students: Kailie Luan, Michelle Au

"Branch Out has allowed me to become exposed to a new realm of research and medicine, one that is more creative, yet still effective. Branch Out has enabled me to pursue the integration of my music minor with my biomedical degree, something that is hard to accomplish."

Implication: This project demonstrates not only the feasibility, but success of a music based biofeedback system for motor deficit treatment. The Ambulosono is easy to install on an I-Pod for widespread distribution and data collection. It also received the attention of MacLean's Magazine as well as the Michael J. Fox Foundation based on its success and ingenuity.

UNIVERSITY OF ALBERTA

BRAINSTEM NEUROMODULATION IN SLEEP APNEA
Student: Sudi Duan

Implication: Sleep apnea is currently treated with a bulky mechanical respirator that has limited success. The findings from this project could identify targets that would allow for the development of less-invasive treatments.

HIPPOCAMPAL ACTIVITY IN MEMORY PROCESSING
Student: Jonathan Dubue

"Branch Out has been a phenomenal support of my research aspirations and goals. In particular, I hope to uncover the neuroscientific validity behind various counselling therapies and argue their validity using electroencephalography or other human electrophysiological approaches. I hope to find BONF in my future research aspirations as I help make sense of neurological nonsense. Without them I would be hard-pressed to fund the financial support to dedicate my summer to my research project, additional to funding my travels towards various conferences."

Implication: The implications of this project are two fold. First it shows that pharmacological methods to change behaviour have side effects that can compromise their efficacy, suggesting that alternative methods of influencing behaviour be explored. Second, these results give insight into the nature of neuroplasticity (the ability of the brain to change itself), which could be a very useful tool in helping change maladaptive behaviours and thought processes.

EXPLORING THE GENETICS OF CONGENITAL MYASTHENIC SYNDROMES
Student: Cassandra Janetzki-Flatt

Implication: Personalized medicine is the future of medical practice and will require all types of information to plan and execute effective therapies based on the individualized diagnosis. This project is a pioneer in exploring the genetic component to personalized medicine.

GRANT MACEWAN UNIVERSITY

SENSORY DYSFUNCTION ASSESSMENT IN CARPAL TUNNEL SYNDROME
Student: Christopher Clarke

Implication: With an adequate assessment tool, Acetyl-L-Carnitine can be properly evaluated as a possible treatment for neuropathic pain, such as those found in Carpal Tunnel Syndrome.

Awarded to the top undergraduate students studying high quality neuroCAM research for 4 months over the summer.
OUR FIRST PHD GRANT PROGRAM
• Up to 4 years of funding for a PhD student studying high quality neuroCAM research
• On track to increasing our goal of funding at all academic levels at accredited universities across the country.

BRANCHING OUT TO SASKATCHEWAN
• Undergrad, masters and PhD grants are now available to accredited universities in Saskatchewan.

NEW WEBSITE COMING!
• Creative Director, Sutik Sharma, led the way to rebranding the Branch Out Foundation with a new look and feel that will be integrated through the new year, including a new website.

INAUGRAL BRANCH OUT SNOWSHOE TOUR
Marcus Henry and a committee of 9 volunteers have been working, planning and brainstorming since February 2014 in preparation for the inaugural Branch Out Snowshoe Tour happening on February 28th, 2015 in Bragg Creek.

http://branchoutfoundation.com/snowshoe-tour/

SOCIAL ENTERPRISES
• Neuro Art – Anastasia Greenberg is a neuroscientist/artist who will be painting neuro themed paintings to sell at Branch Out events. 50% of the proceeds will be donated to the Branch Out Foundation.
• Neurons Are Neat Cards – Crystal Phillips and Laura Sand have developed a card company with quirky neuroscience quotes for all occasions. $1 from every card sold is donated to the Branch Out Foundation.

PHILANTHLETE PROGRAM
where brawn meets brain
• A new athlete ambassador program.

MEMBERSHIP PROGRAM
For Branch Out supporters to receive discounts, first dibs on registering for events, bragging rights, surprise gifts, draw prizes and more.

UP TO 4 YEARS OF FUNDING FOR A PHD STUDENT STUDYING HIGH QUALITY NEUROCAM RESEARCH
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UNIVERSITY OF ALBERTA
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IMPLICATION: This project explores the possibility for biomarkers that would indicate responsiveness to rTMS as a form of personalized medicine. Additionally, rTMS is an non-invasive intervention that could operate through natural neural mechanisms to change the disease progression of depression.

EFFECT OF BROCCOLI EXTRACT AS AN INFANTILE NEUROPROTENTION AGENT
Student: Ann-Marie Przyslupski

IMPLICATION: This project demonstrates the possibility that naturally occurring substances can have therapeutic effects. It also highlights how repeatedly funded studies can produce greater results despite setbacks in early stages of the project.

“Could eating broccoli sprouts help a pregnant woman protect the brain of her developing fetus? That’s a question the University of Alberta’s Jerome Yager wants to answer. He is investigating whether the diet of expectant mothers - in particular the consumption of foods like broccoli sprouts that are rich in potent antioxidants - can reduce brain injuries that occur in the womb.”

Read full article here: http://www.theglobeandmail.com/technology/science/the-magic-of-broccoli-sprouts/article1368781/

MASTER’S RESEARCH
Up to 2 years of funding for a master’s student studying high quality neuroCAM research.

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2014 Branch Out Bike Tour Top Volunteer Winners
Aryn Flette and Mandy Ediger (middle)
DONATE HERE:

www.branchoutfoundation.com/donate/

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BranchOutNF

YouTube
youtube.com/branchoutnf

GET IN TOUCH

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