

A full-page background image of astronaut Chris Hadfield in a white space suit, floating in space. The Earth's blue and white horizon is visible in the background. The astronaut's helmet is reflective, showing a distorted view of the surroundings. A Canadian flag patch is visible on the right chest of the suit.

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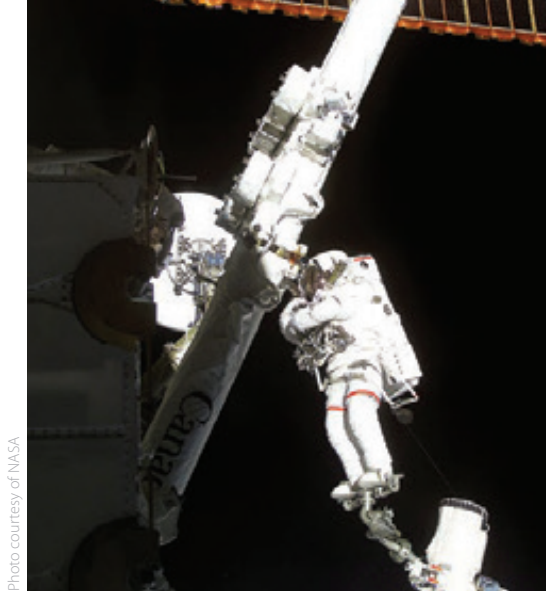


Photo courtesy of NASA

Chris Hadfield Page 16

This Issue

16 Cover Story

Chris Hadfield

Achieving the Impossible

Réaliser l'impossible

13 The Gap Year Advantage

27 Remind Grads to Use Good Judgement

28 Youth and Diabetes

What counsellors need to know

31 Summer Camp

The benefits of a supportive community

Camp d'été

Le bienfait d'une communauté de soutien

Departments

6

On the Bookshelf

7

Across Canada

12

Counsellor's Corner

Keeping up with
High School Choices

39

Great Idea

The Fourth R

37

Career Opportunity

Microbiology

42

Last Period



Photo courtesy of The Fourth R

The Fourth R Page 39

42

Advertiser Index



You can feel the excitement beginning to pulsate throughout the school. Anticipation is mixed with trepidation as the year draws to a close. Whether they will be graduating and leaving high school forever or just looking ahead to a fun filled summer, students can practically taste their freedom. You probably have a little extra spring in your step these days too. The weather is warmer; people are happier.

Before you close shop for the summer, please take some time to enjoy a few of the great articles we have in this issue. Special thanks need to be extended to my son, Taeven, for inspiring me to write about Chris Hadfield and to the Canada Space Agency for their assistance with the article. Commander Hadfield is certainly an inspirational figure in our home, and we look forward to the time we share learning more about space through the videos and photographs posted online. (If you haven't checked out his photos on Twitter, you really should.) He epitomizes for us all what hard work and dedication to our pursuits can achieve.

Recently, on May 13, 2013, CSA Astronaut Chris Hadfield along with two of his crewmates, returned to Earth in the Soyuz TMA-07 capsule. Soon after his landing in Kazakhstan, Hadfield was flown to Houston for rehabilitation and physical tests; after five months of weightlessness his body must learn to adapt to the physical challenges of life with gravity. Congratulations Chris on your successful mission and safe return!

I'd like to thank Dr. Michael Ungar and Shelley Skelton for taking the time to contribute to our editorial this issue. Dr. Ungar discusses the benefits of gap years to facilitate discussions you may have with your students. Ms Skelton, this month's Counsellor's Corner contributor, examines the role of choice in high school programming to meet students needs.

The Canadian Diabetes Association (CDA) and the Canadian Society of Microbiologists (CSM) were both kind enough to share their knowledge with us. Dr. Rafael Garduno provides students with some insight on what a career in microbiology entails and the CDA offers us some helpful information about how diabetes may affect teens.

In our final article discussing learning disabilities, I spoke with representatives from Eureka Camp and Camp Kodiak about the benefits of specialized summer camps. The Fourth R, our Great Idea focus this month, is a prevention program which contends that relationship skills can be taught. They offer a skill-based curriculum that promotes healthy relationships in teens.

This issue, everyone can get a quick refresher on how to use social media responsibly. With the end of high school in sight graduates may be tempted to be less careful online, but the wrong postings can have serious consequences.

Just for fun find out your summer style in Last Period. Me – I am definitely a mix between home body and family chauffeur! I wish you all a great summer and look forward to sharing new stories with you in the fall.

Tania

» On the Bookshelf



THE SECRET LIFE OF TEENAGERS: CONFESSIONS OF A HIGH SCHOOL COUNSELLOR

by Calvin White | Key Publishing House Inc, 2013

A high school counsellor and educator for thirty years, Calvin White shares the inner, hidden lives of teenagers through their stories, writings and artwork. This Canadian author examines the public school system and the unique challenges teens face today. A great summer read!

220 pages | ISBN: 978-1926780429



IN CONTROL: A GUIDE FOR TEENS WITH DIABETES

by Jean Betschart-Roemer | John Wiley & Sons, 1995

A helpful guide for teens on diabetes; it is both straightforward and enjoyable. The book tackles issues and questions teens have about their mood changes, handling their own diabetes care, information on junk food and fast food, telling their girlfriend or boyfriend, how diabetes affects their sexuality, and how to talk to their doctors.

128 pages | ISBN: 978-0471212607

A Salute to Canada... A timely interview during 75 days of bugs, sweat and teens

Derrick Shirley is a Canadian original. While most of us celebrate Canada Day waving flags and watching fireworks, Derrick is taking his patriotism to new heights.

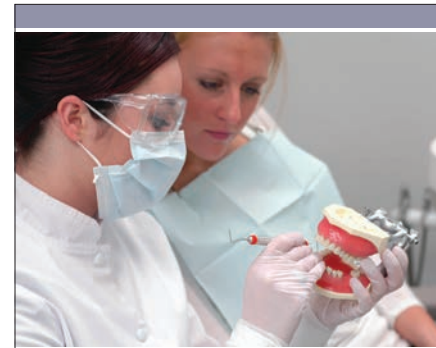
Concerned about the negative influences impacting youth and families, this family counsellor and motivational speaker is embarking on a countrywide journey to personally meet more than 10,000 Canadian teenagers, teachers, parents, and police officers to ask them one simple question, "What has a teen done to WOW you?"

Leaving Vancouver, BC on his 45th birthday, April 16th, Derrick will cycle 8234 km making over 60 stops at high schools and police stations along the route as part of his charity's "Making Wow!" tour. 75 days later, he will ascend to the top of Signal Hill in St. John's NF, on July 1st, Canada Day. By the end of this remarkable and timely tour, Derrick will have talked to thousands of teenagers and adults and collected hundreds of stories of WOW. He will then select the best 50 stories for his next book, "The Big Book of Wow! Discovering Exceptional Teens."

As CEO of the *It Takes 2 (IT2) Youth Leadership Institute*, the Making Wow! Tour is also part of his organization's fundraising efforts to raise money and awareness for their signature program; the IT2 National Tandem Bike Ride for Youth at Risk. This 2014 event – the first of its kind in the world – is a provincial relay across Canada on tandem bicycles with a 15-18 year old youth at risk riding the "captain" (front) position and a police officer riding in the "stoker" (rear) position through the province where they are from. They have received program endorsement from several police departments including Calgary, Lethbridge and Toronto and select OPP and RCMP officers and are now looking for corporate sponsors and public donations.

If you were to ask this 45-year-old parent of two teens, former 400 pound man and author of the bestselling book, "The 400 Pound Male Stripper" why he is doing this, his answer would be simple; because he thinks he can and because it needs to be done.

For more information on the *It Takes 2 Youth Leadership Institute* or the *Making Wow! Tour*, visit www.IT2Institute.com



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Alberta, British Columbia, Quebec, Toronto, Manitoba take top prizes in 20th Sanofi BioGENEius Challenge Canada

Cutting edge research into an experimental therapy that deploys nano-particles of gold to kill cancer cells earned an Alberta high school student, 16, top national honours in the 2013 "Sanofi BioGENEius Challenge Canada" (SBCC).

Arjun Nair, 16, a Grade 11 student at Webber Academy, Calgary, receives the \$5,000 first prize in this year's Sanofi BioGENEius Challenge national competition from Jon Fairest, President and CEO of Sanofi Canada and Dr. Kellie Leitch, Parliamentary Assistant to the Minister of Human Resources and Skills Development Canada.

His research project, mentored at the University of Calgary, advances an experimental cancer "photothermal therapy" which involves injecting a patient with gold nanoparticles. The particles accumulate in tumours, forming so-called "nano-bullets" that can be heated to kill cancer cells.

Arjun showed how an antibiotic may overcome defences cancer deploys against the therapy and make the promising treatment more effective. Arjun's research, which a panel of expert judges led by Dr. Luis Barreto called "world class Masters or PhD-level quality," also won a special \$1,000 prize awarded to the project with the greatest commercial potential.

Eleven brilliant students from nine Canadian regions, all just 16 to 18 years old, took part in the national finals. They had placed 1st at earlier regional SBCC competitions, conducted between March 21 and April 4.

Celebrating 20 years of inspiring young scientists in Canada, this year's SBCC involved a total of 208 high school and CEGEP students collaborating on 123 projects, all mentored in professional labs over several months and submitted via the regional competitions. Since its beginning in Toronto in 1994, some 4,500 young Canadians have competed in the SBCC, an event that has inspired sister BioGENEius competitions in the USA and Australia.

2nd place, \$4,000 – British Columbia: Selin Jessa, 17, Grade 12, Dr. Charles Best Secondary School, Coquitlam, won the \$4,000 2nd place prize with research into how genetic mutations naturally help some HIV patients escape symptoms.

Arjun and Selin will compete for Canada at the International BioGENEius Challenge, conducted at the annual BIO conference, this year in Chicago.

3rd place, \$3,000 – Quebec: Eunice Linh You, 17, Grade 11, Laval Liberty High School, Laval, who investigated how to tailor stem cell treatments for Parkinson's disease.

4th place, \$2,000 – Greater Toronto: Lauren Chan, 17, Grade 12, University of Toronto Schools, who described a potential new therapy to reduce the severity of diabetes.

5th place, \$1,000 – Manitoba: Daniel Huang, 16, Grade 11, St. John's Ravenscourt School, Winnipeg, who discovered a potential new tactic to fight the world's deadliest brain cancer.

Honorable mention, \$500 – Newfoundland, Jared Trask, 18, Kaitlyn Stockley, 17, Grade 12, Holy Spirit High School, Conception Bay West, who, for the second consecutive year, won the Atlantic region competition by proving novel ideas for creating biofuels.

Eastern Ontario, Adamo Young, 16, Grade 11, Lisgar Collegiate Institute, Ottawa, who found that altering its nitrogen supply appears to tame a toxic fungus that ruins billions worth of grain worldwide.

Southwestern Ontario, Melanie Grondin, 17, Shawn Liu, 18, Vincent Massey Secondary School, Windsor, who found a marker in medicine's quest for the holy grail of leukemia treatments: limitless supplies of healthy stem cells.

Saskatchewan, Saruul Uuganbayar, 17, Grade 12, Centennial Collegiate, Saskatoon, who invented a molecular therapy for mutated cells with the dream of curing cancer.

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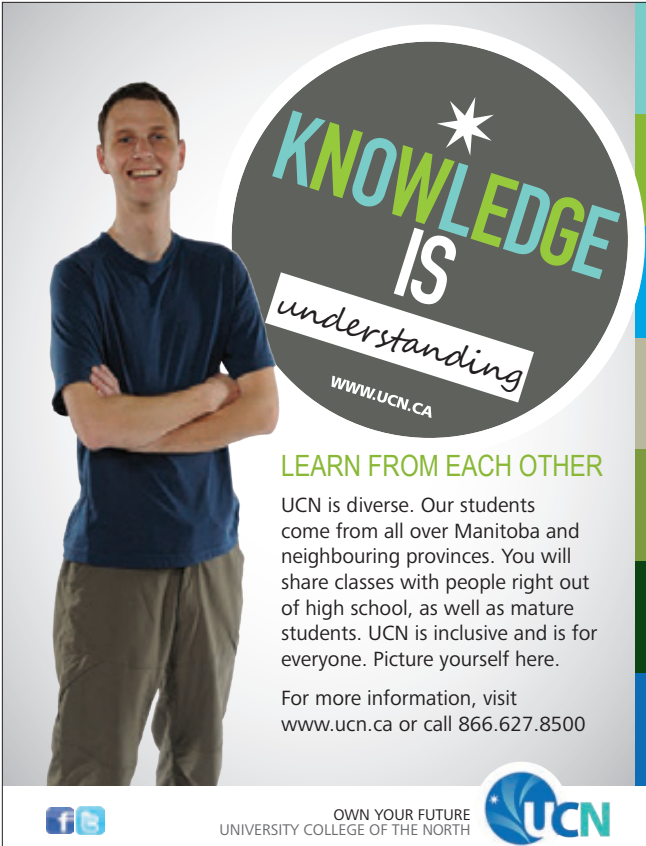
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Following the presentation ceremony at the NRC, the students were received by Governor-General David Johnston at Rideau Hall, a distinguished educator prior to his vice-regal appointment.

Dr. Kellie Leitch, Parliamentary Secretary to the Minister of Human Resources Skills Development, keynote speaker at the awards ceremony, said: "It is so important that we have all of our skills and talent at work in Canada and the SBCC offers students a fantastic opportunity to experience science and technology in new ways, hopefully encouraging them toward exciting careers. I want to congratulate the winners, and all of the participants, of this year's competition and I thank the organizers for all of the work that they have done in supporting young people in science."

Sanofi Canada President and CEO Jon Fairest, who presented the top national prize, said: "The Sanofi Group is very proud to be founding sponsors of the Sanofi BioGENEius Challenge Canada (SBCC) and participate in this milestone competition. With its 20-year heritage, the SBCC shows how critical partnerships are to advance science and talent in Canada. From the mentoring provided by dedicated academics, to the support of government and the private sector, the SBCC truly stands out as a model for collaboration. The SBCC and the incredible students who participate inspire us to all think differently about our future and ensure we have a strong foundation in place to create a sustainable healthcare system in Canada."

The SBCC gives young scientists access to professional labs and academic mentors, encouraging the pursuit of future studies and careers in the country's fast-growing biotechnology sector. Each of the students worked for months conducting research and collaborating with university mentors. Visit sanofibiogeneiuschallenge.ca for more information.



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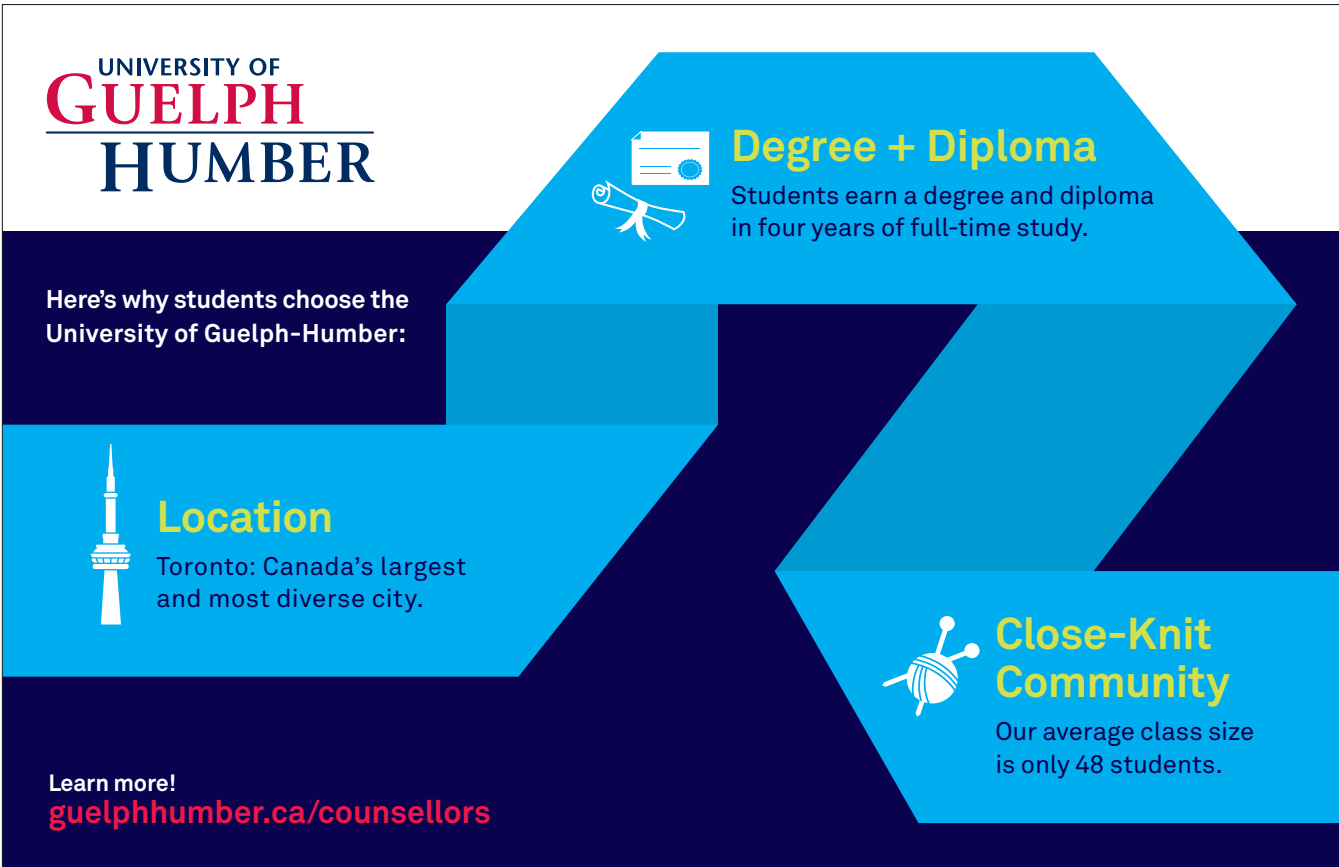
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Team Canada-ISEF 2013 Announced

Eighteen of Canada's top high school scientists have been selected by Youth Science Canada to represent the country at the Intel International Science and Engineering Fair in Phoenix, Arizona. Intel ISEF is the world's largest science fair.


Team Canada-ISEF 2013 was selected by a distinguished panel of 18 university faculty, industry researchers, educators and Team Canada-ISEF alumni through a competitive national selection process that began in October 2012.


Last year, the 18 members of Team Canada-ISEF put on a world-class performance, bringing home a total of 30 awards, including one of two \$50,000 Intel Foundation Young Scientist Awards presented to the best of the best, three of the seventeen \$5,000 Best of Category Awards, and four First Place Grand Awards.

This year's Team Canada-ISEF includes 5 Intel ISEF veterans and 13 newcomers from Alberta, Ontario, and Québec. They are (left to right, top to bottom in photo):

- ▶ **Dan Alferov** - London, ON
Neural Correlates of Conscious Awareness during Perceptual Organization
- ▶ **Sruti Arulmani** - Mississauga, ON
Enhancement of Biofuel Production through Novel Bioelectrosynthesis Characterization of E. coli
- ▶ **Maya Burhanpurkar** - Shanty Bay, ON
The First Validation of the Physical Nature of the Time Integral of Displacement
- ▶ **Minuoja Chandramohan** - Montréal, QC
Cocoa polyphenol extract inhibits interferon-gamma (IFN- γ) production in murine
- ▶ **Adelina Corina Cozma** - Richmond Hill, ON
Neural Plasticity: Novel Language Learning through Digital Technology
- ▶ **Jennifer Csele** - Welland, ON
Creating PEAS: Portable Elemental Analysis System
- ▶ **Sarah Julia Hyslop** - Calgary, AB
The Road to Novel Antibiotics
- ▶ **Zeyu Liu** - Calgary, AB
A Novel Modular Repulsive Type Hybrid Magnetic Bearing for FES Systems
- ▶ **Jessie MacAlpine** - Woodstock, ON
Mustard oil as an apicomplexan-targeting drug therapy for Plasmodium falciparum
- ▶ **Sujay Nagaraj** - Calgary, AB
Understanding the Role of Platelet Derived Growth Factor in the Function of Glioblastoma Brain Tumor
- ▶ **Arjun Nair** - Calgary, AB
A Synergistic Approach in Treating Cancer via Photothermal Therapy and HSP90 Inhibition
- ▶ **Avinash Pandey** - Waterloo, ON
Improving Longterm Compliance to Life Saving Medications
- ▶ **Ankita Saxena** - Calgary, AB
Beta-Amyloid in Neurodegenerative Diseases
- ▶ **Sarthak Sinha** - Calgary, AB
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Future Shop is excited to reveal the 12 schools sharing nearly \$250,000 in Future Generation Tech Lab grants

After reviewing more than 150 applications from schools seeking upgrades to their technology, Future Shop, Canada's largest retailer of consumer electronics, is pleased to announce grant recipients for this year's Future Generation Tech Lab program. The 2013 program is gifting nearly \$250,000 in total grants to the 12 deserving schools across Canada for classes and programs focused on students in Grade 9-12. These schools submitted applications in November and December 2012 and were judged based on the impact of the technology on student learning potential.

The following 12 schools are recipients of a Future Generation Tech Lab grant:

- Britannia Secondary School, Vancouver, BC
- Clearwater Secondary School, Clearwater, BC
- New Westminster Secondary School, New Westminster, BC
- Alternative High School, Calgary, AB
- Parkview Secondary School, Hamilton, ON
- Clarke Road Secondary School, London, ON
- École secondaire de L'île, Gatineau, QC
- École secondaire des Hauts-Sommets, Saint-Jérôme, QC
- Kennebecasis Valley High School, Rothesay, NB
- Blackville School, Blackville, NB
- Lockview High School, Fall River, NS.
- Bluefield High School, Hampshire, PEI.

Winners of Shell Canada and Canadian Geographic's Classroom Energy Diet Challenge announced

Over the past three months 40,000 Canadian students have trimmed their "energy waistlines" as part of the Classroom Energy Diet Challenge, a national energy efficiency program sponsored by Shell Canada and Canadian Geographic. Congratulations to the teachers and students from this year's winning schools:

- Grand Prize Secondary: Lindsay Reynen's grade 12 class at Wallaceburg District Secondary School in Wallaceburg, ON
- Grand Prize Elementary: Cheryl Kopp's grade 4 class at École Riverbend Community School in Winnipeg, MB

- Most Points Prize: Andrew Foxcroft's grade 7/8 class at St. Mary's School in Huntsville, ON
- Top School Prize: Duncan Cran Elementary School in Fort St. John, BC
- Video Prize Elementary: Herman Chang's grade 5/6 class at Hillview School in Edmonton, AB
- Video Prize Secondary: Angela Elliot's grade 11/12 class at John Paul II Catholic School in London, ON

In addition to lessening their environmental impact, the competing classrooms also had the chance to win some incredible prizes, such as one of the two grand prizes of a classroom set of iPads valued at over \$5,000. The winners of an energy conservation video contest were chosen through a combination of public voting and judging by Challenge organizers.

For more information on the Classroom Energy Diet Challenge, please visit energydiet.canadiangeographic.ca.

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Keeping Up with High School

Choices

When I think back to my days as a high school student, my decisions were relatively simple. I went to the school in my part of the city, signed up for my classes, learned from the teacher I was assigned, and I knew that if I failed a class, I would go to summer school. It is unlikely that I appreciated the simplicity of this experience at the time, and as I provide counselling to high school students, I recognize how this dynamic learning environment can impact students and school professionals.

It is easy to identify the many advantages that students (at least in Calgary) have at their disposal. In addition to a large number of traditional high schools, students can pursue courses or entire programs on-line within or outside of the school board. For those who require an alternative setting, there are outreach schools throughout the city as well as a building for career and technology options that is open six days a week year-round. In terms of upgrading, students have the choice of summer

school, on-line, or in a college environment. Moreover, students in particular circumstances have the option of extending their high school experience to four years in their designated school. Unquestionably, choice promotes diverse learning needs and ideally higher academic success.

What I encounter daily with students and parents are the negotiations involved in constructing a high school program from more than one source. Most common are the requests for part-time student status at their designated school with concurrent on-line courses. Also are the students who want to accelerate their programs by taking more than the recommended course load, or inversely, slow it down in order to maintain employment. The choices available offer great flexibility; what needs to follow is similar flexibility with school policy and decision-makers.

Education in general is in the middle of a paradigm shift in terms of how to best serve

this young generation. Perhaps the biggest challenge for school personnel is learning how to relinquish control and revisit school policy in order for students to fully benefit from these options. In my experience, the obstacles that students face include fulfilling school policy of minimum course enrollment and meeting departmental policy concerning when a course can be taken. I do not doubt that these policies served a valuable purpose at one time, however, times are changing, and as school professionals, it is our responsibility to stay up-to-date with the current needs of students.

So what is the impact of choice in today's high school programming? Students have the opportunity to create a program that fits them, as opposed to trying to fit into the program. School professionals are challenged to remain current with meeting the needs of diverse learners in an ever-changing educational system. By focussing on what is in the best interests of the student, we can look beyond how things 'have always been done' and move towards differentiation of programming to meet individual student needs. 🍁 CSC

Shelley Skelton is a high school counsellor in Calgary. She has a B.A. from Dalhousie, did her teacher training at McGill and has a Masters in Counselling from Athabasca.



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jimlamarche.wordpress.com

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The Gap Year Advantage

When Jeanine was half way through her final year of high school she did what all her classmates in the advanced program were doing: she applied to several universities for admission. She was a very good student and the expectation was that she would make the transition smoothly into a BSc or BA. The only problem was that Jeanine had no idea what she wanted to study. University was becoming a very complicated, and expensive, opportunity to grow up and find herself rather than an educational path to a future career. Fortunately, by graduation, Jeanine's parents put the brakes on their daughter's university plans. They decided it was better she delay post-secondary education until she was more sure of what she wanted to study.

It was a smart move on their part and a gift to their daughter. Results from a study I led of 100 young people in their late 20s, in five different regions of Canada with very different economic opportunities, showed that racing into university or college after high school can have some very real and harmful consequences. For young adults like Jeanine, a gap year can prevent perilous problems that accompany an aimless wander through the corridors of higher education.

The research included young people in their later 20s, reasoning that by that point most had been out of high school for at least a decade, enough time to figure out their career paths. Participants for the study came from economic zones like the economically depressed and de-industrializing cities of southern Ontario, the economic boom towns of the prairies (we interviewed recent newcomers who'd come looking for work and young people who had grown up in the boom economy), east coast cities that produce the migrant workers for western Canada, and Atlantic Canada's rural regions with their small socially cohesive communities.

Three Career Search Strategies

When my research team interviewed those 100 twenty-somethings we found three different patterns to how young people transition from high school into a stable career path: navigators, explorers, and drifters. The advantages and disadvantages of each career search strategy tell us a lot about why gap years are a good thing for young people to consider.

Navigators:

- ▶ The good news for anxious parents is that many young people still leave high school with clear learning objectives. They think to themselves, "I want to be an engineer," "nurse" or "animator." They base their decision on their experience and often select a career path from a reasonably narrow pool of choices. Usually they knew someone doing the kind of job they want to do and there is a well-defined program at a post-secondary institution.
- ▶ The bad news is that navigators often make bad choices and suffer the consequences. Navigators frequently discovered by the second year of their post-secondary program that they'd made the wrong decision. What they thought they would be doing wasn't really what people did when employed full time in their chosen profession, or the topic they enjoyed studying for one period a day in high school is actually boring or much more difficult than they expected when studied at university. Committed and already in debt, most navigators persisted with their programs and got their degree. Some failed and had to contend with poor marks that pulled down their GPA's when they went looking for a graduate program to enrol in. Still others became severely depressed, or finished university or college just to please their parents and then failed to pursue the career they were trained to do. A couple of years post-degree with no job experience or motivation to get started on a career that they'd foreclosed on early tumbled navigators into patterns of permanent under-employment.

Explorers:

- ▶ The good news is that explorers use their time after high school to sample numerous career paths. They actively seek new opportunities for training and put themselves into places where they can grow and meet new people. They show a great deal of personal agency, travelling, or working summer jobs, doing volunteer work, and taking courses at university and college that allow them to experiment with new skills and broaden their interests. Explorers enjoy the advantage of encountering new career paths that they likely didn't know existed when they were

in high school. They also are responsive to a globalized labour market where shifting job opportunities are requiring young people to adapt to the hundreds of new job titles emerging every year. For example, among the study's participants were artists who design false teeth, golf pros in small towns capitalizing on an aging population, green builders, and stay-at-home dads, all career paths none of the participants had anticipated when they were 18.

- ▶ The bad news is that explorers can become overwhelmed with the choices they generate, rack up huge debt while looking for new options, and appear to both their parents and future employers to lack commitment and focus. Their resumes read like a game of hopscotch, and though they have a myriad of different skills, if their exploring goes on too long, they lose their competitive advantage to the navigators who come along after them who appear to have a deeper sense of purpose.

Drifters:

- ▶ The good news is that most drifters eventually do just fine even if they drive their parents crazy. Drifters do, however, tend to languish a bit too long on their parents' couches but they are easy going about their futures and tend to enjoy their period of prolonged adolescence. The interesting thing about drifters, however, is that they are the most open to serendipity. When they travel aimlessly through South-East Asia on money they earned working at Tim Hortons for a few months, they are the ones who get interested in diving and eventually certify for a career as an underwater welder that few would ever have chosen fresh out of a high school chemistry class. Drifters can, if encouraged to get off their parents' couches a little sooner, become the people in our communities that make them interesting places to live. They eventually open small businesses to follow a passion, build their own homes, work in retail where training is not required, and become parents. They also go back to school when they're ready and often do quite well as mature students.
- ▶ The bad news is that drifters are also at risk of being left too long to do nothing. They are more likely to become depressed, develop an addiction, or lose their confidence and avoid post-secondary education altogether. When they are encouraged to fend for themselves, however, the results are usually quite inspiring.

A Gap Year Benefits Career Decision-making

Navigators, explorers and drifters all benefit from a gap year. This comes as a surprise to many parents who worry that their children will not go on to post-secondary education if given a year to consider their choices. Based on my research, nothing could be further from the truth. Few young people choose to stop training if they have the ability to pursue a degree. For navigators, the gap year gives them the opportunity to discover new career choices or get an insider's look at their chosen career before investing too heavily. For explorers, the gap year is the ideal way to experience new people and places without making their resume look awful. And for drifters, a structured gap year can help them develop the intrinsic motivation to learn rather than letting themselves being pushed clumsily into post-secondary education to please others.

It's still uncommon, however, for young people in Canada and the United States to take a year to consider new career paths. In one study, less than 3% of young people reported taking a gap year.¹ While parents worry that their child will not return to school or become disadvantaged when looking for

¹Hango, D. & de Broucker, P. (2007). Education-to-labour market pathways of Canadian youth: Findings from the Youth in Transition Study. Ottawa, ON: Statistics Canada. [Catalogue no. 81-595-MIE2007054]

work later, that same study found that 80% of young people had found employment in their mid-twenties and that there was no difference in the rate of engagement in the workforce between youth who had taken a gap year and those who had gone straight to post-secondary education.

The Best Advice: Help Young People Take the First Step

A gap year, like any uncertain path to an uncertain end, should begin with a first step. If an entire year is too much to plan, encourage a high school graduate to at least consider his or her options. The best advice I heard from research participants was to make a decision, any decision. One's first step towards a career is very seldom one's last. Career paths change. A well-planned first month or two can make a gap year count.

Formal gap year programs can also be useful, especially if they reassure the hesitant adolescent (and his or her parents) that a year beyond the classroom can still be productive. But there are other ways a gap year can be structured, too, which also help a young person gain career related knowledge and experience. Volunteering? Travel? Paid employment? Even something as simple as working as a secretary in the offices where the youth hopes one day to work as a professional is going to provide a great deal of information on what different professionals do day-to-day. Likewise, a travel opportunity to stay with a distant relative somewhere else in the country (or even better, overseas) is going to open up a period for self-reflection and hopefully expose an adolescent to new career opportunities.

The advantages of the gap year are numerous. With a little help financially from her parents, and income from a summer job, Jeanine travelled and worked in western Canada for a year, then came back east and decided she'd attend university in a new program on sustainability at a local university. She's not sure if that choice will be her final one, but for now she gets to pursue some interesting courses and she's happy with her decision. Her parents are happy too, convinced that their daughter will finish her degree in a field of study that is close to what she wants to do long term. To my mind, that's not a bad return on investment for a child's future.

Tips for School Counselors

If you are a school counselor, you may want to offer young people the option of a gap year even as they consider post-secondary programs to apply for.

- ▶ Encourage young people who are about to graduate to be open to changing their minds about their career paths. Remind them that the program they start may not be the program they complete.
- ▶ Help parents see the benefits of a gap year and other less conventional career search strategies. The more they understand the perils of foreclosing on a career early, and the potential benefits of a gap year, the more likely they are to influence a young person's choices.
- ▶ Help navigators consider more career paths.
- ▶ Help explorers find meaningful activities that will give them opportunities to experience new career choices.
- ▶ Support drifters in any way possible to take initiative and put themselves in places where they are most likely to have the chance encounters that will help them discover a career path.
- ▶ Most important of all, encourage young people to take the time they need before committing to a post-secondary education. 🍀 CSC

Michael Ungar, Ph.D. is a Professor of Social Work at Dalhousie University and Scientific Director of the Resilience Research Centre. He has published over 100 peer-reviewed articles and chapters and 11 books on the topic of resilience, including *We Generation: Raising Socially Responsible Kids and Too Safe For Their Own Good: How Risk and Responsibility Help Teens Thrive*. In 2012, he was awarded the Canadian Association of Social Workers National Award for Distinguished Service.

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May 23, 2011 – This photo of Space Shuttle Endeavour docked to the International Space Station is one of several taken by European Space Agency astronaut Paolo Nespoli who was in the Soyuz TMA-20 as it began its return trip home. This is the first time that images of a Shuttle docked to the Station have been captured from the unique vantage point of an undocked Soyuz. Photo courtesy of NASA.

23 mai 2011 – Cette photo de la navette spatiale Endeavour arrimée à la Station spatiale internationale est une des nombreuses prises par Paolo Nespoli, astronaute de l'Agence spatiale européenne, alors qu'il était dans le vaisseau Soyuz TMA-20 pour son retour sur terre. C'est la première fois que des images d'une navette arrimée à la Station ont été capturées à partir du point d'observation unique d'un Soyuz désarrimé. Courtoisie : NASA

Chris Hadfield

Achieving the Impossible / Réaliser l'impossible

by/par **Tania Moffat**

"It's Chris Hadfield's impeccable technical credentials and hard work that got him the privilege of being named Commander of an International Space Station expedition. But beyond that, his talent as a communicator has allowed him to share his exceptional experience with a vast and varied audience with unprecedented success. His approachable personality and genuine love of his work make it both interesting and fun to follow his adventures on orbit. I'm certainly a fan!"

« Ce sont les qualifications techniques impeccables et le dur labeur de Chris Hadfield qui lui ont valu le privilège d'être nommé commandant d'une expédition de la station spatiale internationale. Mais plus que cela, son talent de communicateur lui a permis de partager son expérience exceptionnelle avec une audience vaste et variée avec un succès sans précédent. Sa personnalité chaleureuse et son amour véritable de son travail rendent intéressant et divertissant le fait de suivre ses aventures en orbite. Je suis certainement un fan! »

~ Canadian Space Agency Astronaut / Astronaute de l'Agence spatiale canadienne,
David Saint-Jacques

“I have been one of the luckiest guys on earth.” ~ Chris Hadfield

Canada’s most accomplished astronaut, Chris Hadfield, has been the voice of NASA’S mission control, flown into space on three separate missions, and spent two weeks living at the bottom of the ocean. He was the first and only Canadian to board the Russian space station, Mir, the first Canadian to walk in space and now he has achieved yet another huge first for Canada’s space program. As the commander of the International Space Station (ISS), he is the first Canadian to command this spaceship, an incredible honour for him personally and for us as Canadians. What may seem like luck is actually the result of his hard work, determination, and the tenacious pursuit of his childhood dream.

Raised on a corn farm in southern Ontario, Chris, born on August 29th, 1959, decided his fate a long time ago. He was nine when he watched Neil Armstrong and Buzz Aldrin walk on the moon in July of 1969. When people ask what inspired him to become an astronaut, he recounts his experience that day - “I thought that looks interesting, so why not do that. I knew it was probably impossible, but if I didn’t try, it was definitely impossible.” At the time it really was an impossible dream. There were no Canadian space programs and the Canadian Space Agency did not yet exist. With his childhood dream as a guiding beacon, he began to steer his life in the direction he wanted to go.

The journey began ordinarily enough. As a teenager Chris joined the Royal Canadian Air Cadets and shortly after his high school graduation he became a member of the Canadian Forces. In the Forces he undertook flight training and received his bachelor’s degree in Mechanical Engineering. Chris married his high school sweetheart, Helene, and they had three children. Trained as a tactical fighter pilot, he flew CF-116’s and

« J’ai été une des personnes les plus chanceuses sur terre. » - Chris Hadfield

Astronaute d’élite du Canada, Chris Hadfield a été la voix du Centre de contrôle de mission de la NASA, il a voyagé dans l’espace lors de trois missions séparées et il a passé deux semaines à vivre au fond de l’océan. Il fut le premier et le seul Canadien à monter à bord de la station spatiale russe, Mir, le premier Canadien à sortir dans l’espace et maintenant il vient de réussir une autre première pour le programme spatial canadien. Comme commandant de la Station spatiale internationale (ISS), il est le premier Canadien à commander ce vaisseau, un incroyable honneur pour lui personnellement et pour nous, les Canadiens. Ce qui peut sembler être de la chance est en fait le résultat de son travail acharné, sa détermination et la poursuite tenace de son rêve d’enfant.

Élevé sur une ferme productrice de maïs dans le sud de l’Ontario, Chris, qui est né le 29 août 1959, a décidé de son avenir il y a longtemps. Il avait neuf ans quand il a vu Neil Armstrong et Buzz Aldrin marcher sur la lune en juillet 1969. Quand les gens lui demandent ce qui l’a inspiré à devenir astronaute, il raconte l’expérience qu’il a vécu ce jour – « j’ai pensé que ça semblait intéressant, donc pourquoi ne pas faire ça. Je savais que c’était probablement impossible, mais si je n’essayais pas, c’était définitivement impossible. » À l’époque, c’était réellement un rêve impossible. Il n’y avait pas de programme canadien de l’espace et l’Agence spatiale canadienne n’existait pas encore. Avec son rêve d’enfant comme balise de guidage, il a commencé à diriger sa vie dans la direction où il voulait aller.

Le voyage commença de façon bien ordinaire. À l’adolescence, Chris s’est joint aux Cadets de l’Aviation royale du Canada et dès la fin de son secondaire il devint membre des Forces canadiennes. Dans les Forces, il entreprit sa formation d’aviateur et compléta un baccalauréat en



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Official photo of Canadian Space Agency Astronaut Chris Hadfield prior to the launch of mission Expedition 34/35. Photo courtesy of Canadian Space Agency

Photo officielle de l'astronaute Chris Hadfield de l'Agence spatiale canadienne avant le lancement de la mission Expédition 34/35.
Courtoisie : Agence spatiale canadienne

CFR-18's; to date, he has flown over 70 different aircrafts. Breaking records even then, he was the first CF-18 fighter pilot to intercept a Soviet long range bomber in the Canadian Arctic while flying intercept missions for NORAD (North American Aerospace Defense Command).

In the late 1980's he trained at the US Air Force Test Pilot School which was followed by a stint at the University of Tennessee Space Institute to complete his post graduate research and obtain his masters degree in aviation systems in 1999. During his studies, Chris was selected from 5330 applicants as one of four new Canadian astronauts for the Canadian Space Agency (CSA), in June 1992. Assigned to the NASA Johnson Space Centre in Houston, he worked in various roles including NASA's CAPCOM position as the voice of mission control for 25 space shuttle missions.

His childhood dream was finally realized in November 1995. His first flight into space, was aboard the Space Shuttle Atlantis as Mission Specialist 1 on STS-74. The crew's mission was to attach a 5 tonne docking module to the Russian Space Station, Mir, and transfer over 1,000 kg of food, water and scientific supplies to the cosmonauts. On this, NASA's second rendezvous with the Space Station, Mir, Chris would become the first Canadian to operate the Canadarm in orbit and the only Canadian ever to board Mir.

In the years following his first space flight, he became the Chief Astronaut for the CSA representing CSA astronauts and co-ordinating their activities.

“To accomplish anything in life requires risks, risks are infinitely worthwhile”

« Pour accomplir n'importe quoi dans la vie requiert prendre des risques, les risques en valent infiniment la peine. »

~ Chris Hadfield

ingénierie mécanique. Chris épousa Helene, sa petite amie depuis ses études au secondaire, et ils eurent trois enfants. Formé comme pilote de chasse d'appui tactique, il a piloté des CF-116 et CFR-18, et à ce jour, il a piloté plus de 70 appareils différents. Pulvérisant des records même à cette époque, il fut le premier pilote de chasseur CF-18 à intercepter un bombardier soviétique à long rayon d'action dans l'arctique canadien lors de missions d'interception pour NORAD (Commandement de la défense aérospatiale de l'Amérique du Nord).

À la fin des années 1980, il s'est entraîné à la US Air Force Test Pilot School ce qui fut suivi d'un passage à l'université du Tennessee Space Institute pour compléter ses recherches de troisième cycle et obtenir sa maîtrise en systèmes aéronautiques en 1999. Pendant ses études, en juin 1992, Chris fut choisi parmi 5,330 candidats pour devenir un des quatre nouveaux astronautes canadiens de l'Agence spatiale canadienne (ASC). Affecté au Centre spatial Johnson de la NASA à Houston, il a cumulé diverses fonctions incluant le poste de CAPCOM de la NASA comme la voix du contrôle de mission pour 25 missions de la navette spatiale.

Son rêve d'enfant s'est finalement réalisé en novembre 1995. Son premier vol dans l'espace fut réalisé à bord de la navette spatiale Atlantis comme premier spécialiste de mission sur STS-74. La mission de l'équipage était de fixer un module d'arrimage de 5 tonnes à la station spatiale russe, Mir, et de transférer plus de 1,000 kg de nourriture, d'eau et de fournitures scientifiques aux cosmonautes. Lors de cette mission, le second rendez-vous de la NASA avec la station spatiale Mir, Chris est devenu le premier Canadien à opérer le Canadarm en orbite et le seul Canadien qui ait jamais monté à bord de Mir.

Dans les années suivant son premier vol dans l'espace, il est devenu astronaute en chef de l'ASC pour représenter les astronautes de l'ASC et coordonner leurs activités.

La chance lui a souri une deuxième fois quand il a été désigné premier spécialiste de mission sur STS-100 – le vol 6A pour l'assemblage de la Station spatiale internationale en 2001. L'équipage de la navette spatiale Endeavor était chargé de livrer et d'installer le nouveau bras robotique de fabrication canadienne, Canadarm2, ainsi que le module logistique polyvalent Raffaello de conception italienne. Durant cette mission, Chris effectue deux sorties extravéhiculaires passant un total de 14 heures et 50 minutes dans le vide spatial pour devenir le premier Canadien à quitter un engin spatial et à évoluer librement dans l'espace.



Canadian Space Agency Astronaut Chris Hadfield's feet are attached to Canadarm while he works to install Canadarm2 on the International Space Station (ISS) during mission STS-100. Photo courtesy of NASA.

Les pieds de Chris Hadfield, astronaute de l'Agence spatiale canadienne, sont attachés au Canadarm pendant qu'il travaille à l'installation du Canadarm2 sur la Station spatiale internationale (ISS) lors de la mission STS-100. Courtoisie : NASA

Fortune would bless him for a second time when he was appointed Mission Specialist 1 on STS-100 - the International Space Station assembly Flight 6A in 2001. The Space Shuttle Endeavor's crew was charged with delivering and installing the new Canadian-built robotic arm, Canadarm2, and the Italian-made re-supply module, Raffaello. Chris performed two spacewalks on this mission, spending a total of 14 hours and 50 minutes in space, and became the first Canadian to ever leave a spacecraft and float freely in space.

« Vous vous accrochez à une création humaine d'une main, le vaisseau spatial, et quand vous regardez à votre droite, il y a tout l'univers, juste là, jusqu'à l'infini, et quand vous regardez à votre gauche, le monde entier se déroule tout près de vous. J'ai trouvé ça stupéfiant. J'ai trouvé ça ahurissant, juste la beauté inhérente... et vous êtes seuls au milieu de tout ça, en tenant le seul lien aux autres 6 milliards d'individus, et toute l'histoire, toute la beauté, toute la poésie et tout ce qui est humain est relié dans une main »

De 2001 à 2003, il oeuvre comme directeur des opérations pour le compte de la NASA au Centre Youri Gagarine pour la formation des cosmonautes en Russie. Ici, Chris s'entraîne pour devenir cosmonaute ingénieur de bord pour le vaisseau spatial Soyouz TMA et pour réaliser des activités extravéhiculaires. Après 25 années de service militaire, il a pris sa retraite des Forces armées canadiennes avec le grade de colonel et il est devenu astronaute civil de l'ASC. Pendant trois ans, Hadfield fut chef du Département de robotique de la NASA à Houston et il a occupé le poste de chef de l'exploitation de la Station spatiale internationale entre 2006 et 2008. L'année suivante, comme relève de Bob Thirsk pour l'expédition 21, il s'entraîne à vivre et travailler à bord de l'ISS pour une période allant jusqu'à 6 mois.

La prochaine aventure de Chris l'entraîne dans les profondeurs de la terre où il sert comme commandant de la mission NEEMO-14. Pendant 14 jours en mai 2010, il vit et travaille à bord de l'Aquarius Underwater Laboratory au large des côtes de la Floride. Aquarius, situé 19 mètres sous l'eau, est un environnement hostile similaire à celui de l'espace qui fournit à la NASA un endroit idéal pour simuler des missions et tester des concepts d'exploration.

Le meilleur était toujours à venir! La NASA a annoncé que Chris Hadfield serait affecté à l'Expédition 34/35 et deviendrait le premier commandant canadien de l'ISS. L'opportunité de commander un vaisseau spatial et vivre dans l'espace pendant 5 mois est bien plus que son rêve d'enfance originel. Sa troisième et plus longue mission dans l'espace fournit à Chris plus que simplement l'honneur et le prestige, elle lui donne de nouvelles possibilités pour atteindre le monde et partager cette expérience avec les autres.

"Canadians are tremendously proud of Chris Hadfield and all of his impressive achievements. He epitomizes how the children of our great country continue to push the frontiers of exploration and knowledge. His teaching and sharing via social media are inspiring young people, like those joining me today, to dream big and achieve those dreams."

« Les Canadiens sont excessivement fiers de Chris Hadfield et de toutes ses impressionnantes réalisations. Il personnifie comment les enfants de notre grand pays continuent à faire reculer les frontières de l'exploration et de la connaissance. Son enseignement et son partage par les médias sociaux inspirent les jeunes gens, comme ceux qui se joignent à moi aujourd'hui, à avoir de grands rêves et à les réaliser. »

~ Stephen Harper, Prime Minister / premier ministre

“You are holding onto a human creation - the spaceship, with one hand, and when you look to your right - there’s the whole universe, just right there, going on forever; and when you look to your left the whole world is just pouring by next to you. I found it stupefying. I found it dumbfounding; just the inherent beauty of it... and you are alone in the middle of that and you’re holding the only link to the other 6 billion people, and all history and all of beauty and poetry and everything that is human is linked in one hand”

From 2001 until 2003, he was the Director of Operations for NASA at the Yuri Gagarin Cosmonauts Training Centre in Russia. Here, Chris trained to be a flight engineer cosmonaut in the Soyuz TMA spacecraft and to perform spacewalks. After 25 years of military service, he retired as Colonel from the Canadian Armed forces and became a civilian CSA astronaut. Hadfield was Chief of Robotics for NASA in Houston for three years, and Chief of International Space Station Operation between 2006 and 2008. The following year, as Robert Thirsk’s backup for Expedition 21, he trained to live and work on board the ISS for a period of up to 6 months.

Chris’s next adventure took him to the depths of the earth, where he served as the commander of the NEEMO 14 mission. For 14 days, in May of 2010 he lived and worked on board the Aquarius Underwater Laboratory off the coast of Florida. Aquarius, located 19 meters underwater, is a hostile environment similar to that of space; it provides NASA with an ideal location to simulate missions and test exploration concepts.

La Station spatiale internationale

En orbite autour de la terre depuis 1998, l’ISS est le plus grand laboratoire scientifique en microgravité du monde. Elle a été occupée par des cosmonautes de façon continue pendant plus de 12 années. Le programme de la station spatiale comprend cinq partenaires – l’Agence spatiale canadienne (ASC), l’Agence spatiale européenne (ASE), l’Agence d’exploration aérospatiale japonaise (JAXA), la National Aeronautics and Space Administration (NASA) et l’Agence spatiale russe (Roscosmos).

Le 19 décembre 2012, le vaisseau Soyuz TMA-07M fut lancé du Kazakhstan et Chris Hadfield est arrivé à l’ISS deux jours plus tard comme prévu. Il est entré dans l’histoire comme premier commandant canadien de la Station spatiale internationale le 13 mars 2013. Comme le Canada est un des plus petits partenaires du programme spatial, la nomination de Chris comme commandant de l’ISS est d’autant plus incroyable. Il est le second des 35 derniers commandants de l’ISS à ne pas être Américain ou Russe.

En comparant sa nomination au fait de gagner une médaille d’or aux Olympiques, il reconnaît que ce moment historique est un honneur et un privilège pour lui, l’ASC et tout le Canada.

Comme commandant de l’ISS, il est responsable de la santé et la sécurité des 5 cosmonautes américains et russes qui l’accompagnent et du fonctionnement du vaisseau spatial. Avec son équipage, ils sont responsables de plus de 130 expériences exécutées au nom de divers

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Canadian Space Agency Astronaut Chris Hadfield arriving with Cosmonaut Yuri Lonchakov at the Kennedy Space Center on April 16, 2001. They will both be mission specialists on STS-100. Photo courtesy of NASA.

Chris Hadfield, astronaute de l'Agence spatiale canadienne, et le cosmonaute Yuri Lonchakov arrivant au Centre spatial Kennedy le 16 avril 2001. Ils seront tous les deux des spécialistes de mission sur STS-100. Courtoisie : NASA

The best was still to come! NASA announced that Chris Hadfield would be assigned to Expedition 34/35 and would become the first Canadian commander of the ISS. The opportunity to command a spaceship and live in space for 5 months was well beyond his original childhood dream. His third and longest mission in space is providing Chris with more than just honour and prestige, it is providing him with new abilities to reach out to the world and share this experience with others.

pays. Ces expériences ont le potentiel d'accroître notre connaissance de l'espace et d'améliorer notre qualité de vie sur la terre. Son retour sur terre à bord d'une capsule Soyuz russe est prévu le 13 mai 2013. Jusqu'à ce moment, il utilisera Tweeter et partagera ses expériences à bord de l'ISS.

The International Space Station

Tendre la main

Orbiting the earth since 1998, the ISS is the world's largest microgravity scientific laboratory. It has been continuously occupied by cosmonauts for more than 12 years. The space station program is comprised of five international partners - the Canadian Space Agency (CSA), the European Space Agency (ESA), the Japan Aerospace Exploration Agency (JAXA), the National Aeronautics and Space Administration (NASA) and the Russian Space Agency (Roscosmos).

Pendant les 20 dernières années, le commandant Hadfield a fait des conférences dans des écoles, il a parlé aux médias et a informé les gens à propos de l'Agence spatiale canadienne. Depuis son arrivée dans l'espace, Chris a fourni des tweets quotidiens à propos de la vie à bord de la station spatiale et il a partagé, par Twitter, de superbes photos de la terre. Décrit par Forbes comme « l'astronaute probablement le plus à l'aise avec les médias sociaux à ne jamais quitter la terre », il a atteint 1,000,000 abonnements sur Twitter et ses photos ont été visionnées par des millions autour de la terre. Quand ont lui a demandé comment il souhaitait utiliser cette opportunité (Twitter), il a répondu :

On December 19th, 2012 the Soyuz TMA-07M vessel launched from Kazakhstan and Chris Hadfield arrived at the ISS two days later as scheduled. He made history as the first Canadian commander of the International Space Station on Mar 13, 2013. As one of the smallest partners in the space program, Chris's appointment as Commander of the ISS is even more incredible. He is only the second of the past 35 ISS commanders who were not an American or Russian.

« Où nous en sommes avec l'exploration humaine est important, d'essayer de mieux comprendre le monde, l'espace autour du monde et le reste de l'univers. Je pense que c'est important. Je crois que c'est critique pour la santé de la planète, la santé de l'économie canadienne et des gens en général... Et maintenant, en vivant dans la station spatiale avec l'incroyable privilège de commander ce vaisseau spatial, avec toute la nouvelle technologie par les médias sociaux et les liens directs que la

Comparing the appointment to winning a gold medal at the Olympics, he acknowledged that the historic moment was an honour and a privilege for him, the CSA, and all of Canada.

As commander of the ISS, he is responsible for the health and safety of his 5 fellow American and Russian cosmonauts, and for the functioning of the space ship. He and the crew are responsible for over 130 science experiments conducted on behalf of various countries. These experiments have the potential to increase our knowledge of space and enhance our quality of life here on earth. His return to earth aboard a Russian Soyuz capsule is scheduled for May 13, 2013. Until then he will be tweeting and sharing his experiences aboard the ISS.

Reaching Out

Over the last 20 years, Commander Hadfield has been speaking at schools, talking with media and informing people about the Canadian Space Agency. Since his arrival in space Chris has provided daily tweets about life on board the space station, and shared amazing photographs of the earth via Twitter. Described by Forbes as “perhaps the most social media savvy astronaut to ever leave the earth”, he has amassed a following of almost one million on Twitter and his photos have been viewed by millions around the world. When asked how he wanted to use this opportunity (Twitter) he replied:

“Where we are in human exploration is important, for us to try to understand the world better, the area around the world and the rest of the universe. I think that is important. I think it is a critical thing for the health of the planet, the health of the Canadian economy, and generically for people... And now, living on the space station with the incredible

NASA a construits entre le vaisseau spatial et la terre, cela nous donne l’occasion de réellement et clairement transmettre ce que nous faisons ici. Permettre aux Canadiens et en fait à toute la terre de voir, et ça c’est l’objectif, et je suis réellement heureux du niveau de réponse quand vous donnez aux gens une chance de voir ce qui se passe dans l’univers autour d’eux.. Je crois que la science est importante, mais je pense que la conscience des gens de la science que nous pratiquons est réellement aussi importante et je suis heureux d’être le messager entre les deux. » Dans un effort continu de générer un intérêt chez le public, il a tenu des communications radio et des conférences vidéo avec le premier ministre, le Gouverneur général, William Shatner, les médias et plusieurs écoles à travers le pays. Son caractère accessible, son magnétisme personnel et sa forte aptitude à s’exprimer lui permettent d’établir une réelle connexion avec ses audiences. Les vidéos qui peuvent être visionnées par les liens du site web de l’ASC et le canal YouTube de l’ASC sont inspirantes et honnêtes. Vous ne pouvez pas vous empêcher d’être divertis quand il répond à des questions d’étudiants. Mais Chris ne fait pas que divertir les étudiants, il émousse leurs intérêts pour la science en leur fournissant de l’information éducative de façon novatrice et divertissante – depuis l’espace. Alimenter cet intérêt est ce qui le pousse à parler avec tant d’étudiants et à créer les nombreuses vidéos qu’il fait.

Tout en poussant de l’avant l’intérêt pour l’espace des étudiants et du public, il partage également de sages conseils. Il partage, avec les étudiants, les leçons de vie qu’il a apprises en répondant à la multitude de questions qu’ils lui adressent. Un des messages qu’il a partagé s’énonce comme suit : « Chaque jour vous êtes le résultat de ce que vous avez fait les jours précédents, donc, si vous inversez, vous vous transformez

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» Outreach – Chris Hadfield

privilege of commanding this space ship, and with all new technology through social media and direct links that NASA has built between the spaceship and earth, it has given us the opportunity now to really, clearly transmit what it is we are doing here. And to let Canadians, and really the whole world see, and that is the goal, and I am really delighted at the level of response when you give people a chance to see what is happening in the universe around them... I think the science is important, but I think the people's awareness of the science we are doing is really important as well and I am pleased to be the messenger in the middle."

In a continued effort to generate interest with the public, he has had radio communications and video conferences with the Prime Minister, the Governor General, William Shatner, the media, and numerous schools across the country. His approachable nature, magnetic personality, and powerful speaking abilities enable him to make a real connection with his audiences. The videos which can be watched through links on the



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Attired in a training version of his Extravehicular Mobility Unit (EMU) spacesuit, CSA astronaut Chris Hadfield is moved by a crane to be submerged in the waters of the Neutral Buoyancy Laboratory (NBL) at NASA's Johnson Space Center for spacewalk training. Photo courtesy of Jiri Silha, NASA

Équipée d'une version pour l'entraînement de sa combinaison de sortie extravéhiculaire (EMU), l'astronaute Chris Hadfield de l'ASC est déplacé par une grue pour être submergé dans les eaux du Neutral Buoyancy Laboratory (NBL) au Centre spatial Johnson de la NASA pour s'entraîner à sortir dans l'espace. Courtoisie : Jiri Silha, NASA

CSA's website and CSA's YouTube channel, are engaging and honest. You cannot help but be entertained as he answers students' questions. But Chris is not just entertaining students, he is arousing their interests in science by providing them with educational information in an innovative and fun way - from space. Fueling this interest is what impels him to speak with so many students and to create the numerous videos that he does.

As he drives student and public interest in space forward, he is also sharing some sage advice. Life lessons that he has learned are shared with students as he answers the multitude of questions they have for him. One such message he has shared is this – "Every single day you are the result of what you did on the days prior, so if you turn that around, you are turning yourself into who you want to be based on what you decide to do today. What food do you put in your mouth? What book do you read? What movie do you watch? What do you do with your spare time? Do you study? Do you learn something? If you sort of make deliberate choices with your life it's amazing after a week, or a month, or a year, the changes that you can affect; and literally turn yourself into the person that you're going to become. Life very seldom goes as planned, mine sure didn't. I couldn't count the number of dead ends I ran into, setbacks, serious problems, minor problems, opportunities that looked like a sure thing that didn't pan out. The key is to accept them...Don't measure the success of your life by the one thing at the end, measure your life by each of the small victories along the way."

With all he has accomplished at the age of 53, Chris Hadfield could retire happily with a distinguished career. However, it would seem that retirement may not occur so soon. He is already talking about Mars, and there is no doubt in my mind, that there will be more to come from Canada's Rocket Man. [✦ CSC](#)

en ce que vous voulez être sur la base de ce que vous décidez de faire aujourd'hui. Quelle nourriture mettez-vous dans votre bouche? Quel livre lisez-vous? Quel film regardez-vous? Que faites-vous de vos moments libres? Étudiez-vous? Apprenez-vous quelque chose? Si vous faites des choix délibérés avec votre vie, les changements que vous pouvez affecter sont étonnants après une semaine ou un mois ou une année et vous vous transformez littéralement en la personne que vous serez. La vie se déroule rarement comme prévu, la mienne ne l'a sûrement pas fait. Je ne peux compter le nombre de culs-de-sac où je me suis engagé, les revers, les problèmes sérieux, les problèmes mineurs, les opportunités qui semblaient de bonnes affaires, mais qui n'en étaient pas. La clé, c'est de les accepter... Ne mesurez pas le succès de votre vie par une chose à la fin, mesurez votre vie par chacune des petites victoires en cours de route. »

Avec tout ce qu'il a accompli, à l'âge de 53 ans, Chris Hadfield pourrait se retirer l'âme en paix après une brillante carrière. Il semble cependant que la retraite n'est pas pour si tôt. Il parle déjà de Mars, et il ne fait aucun doute dans mon esprit que nous en verrons d'autres de la part du Rocket Man canadien. [✦ CSC](#)

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Fun Space Facts / Faits intéressants à propos de l'espace

- * The ISS travels at 8 km a second (28,000 km/hour or about Mach 25), 400 kilometers above earth. At this speed it takes the ISS 10 minutes to glide from Vancouver Island to the Maritimes and 92 minutes to complete one orbit around the earth.
- * The ISS weighs almost one million pounds (approximately 925,000 pounds); the equivalent of more than 320 automobiles and is bigger than 5 hockey rinks.
- * Since the CSA was established in 1989 there have been 12 Canadians selected to become astronauts. Currently there are four active Canadian astronauts, Ms. Julie Payette, Col. Chris Hadfield, Major Jeremy Hansen, and Dr. David Saint-Jacques.
- * In his spare time, Chris, an accomplished rhythm guitarist and vocalist, is also working on the first original music album to be recorded in space. He released the first original song recorded in space, Jewel in the Night, on Christmas Eve and has since recorded a collaboration with Ed Robertson of the Barenaked Ladies and the Wexford Gleeks (glee club in Toronto arts college), I.S.S. Is Somebody Singing, this past February.
- * The recipient of many awards and special honours, Chris Hadfield has been awarded the NASA Exceptional Service Medal, inducted into Canada's Aviation Hall of Fame, and commemorated on Royal Canadian Mint silver and gold coins for his spacewalk to install Canadarm2 on the ISS.
- * Spot the Station, a free service offered by NASA, sends you an email or text message a few hours before the space station passes over your city. They monitor 4,600 locations worldwide! You can sign up with an email or mobile phone number on NASA's website.
- * The National Film Board of Canada and the Canadian Space Agency have teamed up to launch the NFB Space School - an interactive learning tool with exclusive footage of Hadfield, interactive videos and quizzes about space, science and leadership. NFB Space School, available in English and French, is also ideal for classroom use, with additional educational resources available through the NFB's subscription-based educational portal available in September 2013. To learn more visit the NFB Space School at <http://spaceschool.nfb.ca/#module/all/>
- * L'ISS voyage à 8 km à la seconde (28,000 km/h ou environ Mach 25), à 400 km au-dessus de la terre. À cette vitesse, l'ISS voyage de l'île de Vancouver aux Maritimes en 10 minutes et elle fait un tour de la terre en 92 minutes.
- * L'ISS pèse environ un million de livres (environ 925,000 lb), soit l'équivalent de plus de 320 automobiles et elle est plus grande que 5 patinoires de hockey.
- * Depuis la naissance de l'ACS en 1989, il y a eu 12 Canadiens qui ont été choisis pour devenir des astronautes. Aujourd'hui, il y a cinq astronautes canadiens actifs, Mme Julie Payette, Col. Chris Hadfield, Major Jeremy Hansen, et Dr David Saint-Jacques.
- * Pendant ses moments libres, Chris, un guitariste rythmique et chanteur accompli, travaille sur le premier album musical original à être enregistré dans l'espace. Il a lancé la première chanson originale enregistrée dans l'espace, « Jewel in the Night », la veille de Noël et depuis il a enregistré une collaboration avec Ed Robertson de Barenaked Ladies et Wexford Gleeks (glee club du collège des arts de Toronto), « I.S.S. Is Somebody Singing » en février dernier.
- * Récipiendaire de plusieurs prix et honneurs spéciaux, Chris Hadfield a reçu la médaille du service exceptionnel de la NASA, il a été intronisé au Panthéon de l'aviation du Canada et on a commémoré sa sortie dans l'espace pour installer le Canadarm2 sur l'ISS par des pièces d'argent et d'or de la Monnaie royale du Canada.
- * « Spot the Station », un service gratuit offert par la NASA, vous transmet un courriel ou un message texte quelques heures avant que la station spatiale passe au-dessus de votre ville. Elle surveille 4,600 sites sur la terre! Vous pouvez vous inscrire avec une adresse de courriel ou un numéro de téléphone mobile sur le site web de la NASA.
- * L'Office national du film du Canada et l'Agence spatiale canadienne se sont associés pour lancer l'école spatiale ONF un outil interactif d'apprentissage avec des images exclusives de Hadfield, des vidéos interactives et des questionnaires à propos de l'espace, la science et le leadership. L'école spatiale ONF, accessible en français et en anglais, est également idéale pour un usage en classe avec des ressources supplémentaires disponibles sur abonnement au portail éducatif de l'ONF qui sera disponible en septembre 2013. Pour en savoir davantage, visitez l'école spatiale ONF à <http://spaceschool.nfb.ca/#module/all/>



Remind Grads to Use Good Judgement

Students all over the country are preparing for their graduation and looking forward to bidding a fond adieu to their high school. A gentle reminder about specific school policies, guidelines, and the conscientious use of social media may be germane. Unfortunately, many will not heed this advice and may end up paying the price by hurting others, ruining their education, negatively impacting their job opportunities, or facing criminal charges. While graduates may feel they no longer face academic punishment from their schools, they are not immune to the law or to what others, including potential employers and admissions offices, find online.

- ▶ Cyber-bullying continues every day even though most students are aware of its harmful effects. Remind them that by utilizing social media sites, blogs, or other online sites to threaten or hurt other students they can incur the risk of expulsion, exclusion from graduation activities, and even criminal prosecution.
- ▶ Students should also use caution before lying to teachers and posting contrary evidence online. Conquests such as bragging about skipping classes, lying to teachers, or cheating are better kept to oneself.
- ▶ The threat of online predators is real and students should beware. Information such as addresses, birthdates, student id numbers, specifics of meeting places, etc. casually mentioned online can lead to identity theft or something more sinister.
- ▶ How many times have we said or done something in the heat of the moment only to regret it later? We all are guilty of reacting without thought. Remind students to take a moment and really think about what they are about to put online.

- ▶ Whether it is an impromptu photograph of a teacher or parent chaperone supervising grad celebrations or a final comment about a much despised class, coach, or about the school in general, it is best if students keep posts about the school and faculty to themselves.
- ▶ Grad celebrations are underway, but posting photos of underage drinking or drug use can open a floodgate of problems for students. The same is true of posting *any* illegal activity such as egging a house or stealing from a store; posting these photos or videos can lead to criminal prosecution.
- ▶ Students may think they are safe if their profile is “private”; however, it just takes one friend to download and save or share

a comment, photo, or video file. Once anything is posted online, it is out there forever.

Whether students want to believe it or not, employers and colleges may search their history online. So, remind them to use good judgement when making posts during their year-end celebrations. Their social media sites should both reflect responsibility and be something they are not ashamed to show a potential employer. It is a good idea for everyone to review the content accessible on their online profiles periodically and remove photos or inappropriate content. [csc](#)

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Youth and diabetes: What counsellors need to know

by the Canadian Diabetes Association



Photo courtesy of Canadian Diabetes Association

Diabetes Globally

Recent figures from the International Diabetes Federation estimate that today there are more than 371 million people living with diabetes worldwide. Even more troubling—4.8 million people died in 2012 alone due to complications arising specifically from their diabetes, and this number will continue to grow each year.

Diabetes in Canada

Today, more than nine million Canadians live with diabetes or prediabetes – a condition that, if left unchecked, puts you at risk of developing type 2 diabetes. Approximately 50 per cent of those with prediabetes will go on to develop type 2 diabetes.

“Canada has very high rates of diabetes prevalence in comparison to its peer countries. Even more concerning is that Canada’s rate of diabetes-related mortality is the third-highest among its peer countries,” says Dr. Janet Hux, Chief Scientific Advisor for the Canadian Diabetes Association. “Rates of diabetes have doubled over the past decade and its projected one in three Canadians will be living with diabetes or prediabetes by 2020, if trends continue.”

Types of diabetes

There are three main types of diabetes and there is no cure for the disease.

The first is type 1 diabetes. Type 1 diabetes is an autoimmune disease that occurs when the pancreas is unable to produce insulin or produces very little insulin. Insulin is a hormone produced by the pancreas to control the amount of glucose (sugar) in the blood and ensures body energy needs are met. Ongoing high levels of glucose in the blood can result in serious complications including kidney failure, blindness, heart attack, stroke and limb amputation. Type 1 diabetes usually develops in childhood or adolescence and affects approximately 10 per cent of Canadians with diabetes. Type 1 diabetes requires close self-monitoring of blood glucose and insulin administration by pen, syringe or insulin pump.

The second is type 2 diabetes. Type 2 diabetes, which affects approximately 90 per cent of Canadians with diabetes, is a disease that occurs when the pancreas does not produce enough insulin to meet the body’s needs and/or the body is unable to use the insulin it produces (insulin resistance). Although type 2 diabetes usually develops in adulthood, increasing numbers of children, adolescents and teenagers

in high-risk populations are being diagnosed. People with type 2 diabetes more commonly use oral medications to manage their disease, although some will require insulin.

The development of type 2 diabetes is closely related to unhealthy weights; about 95 per cent of children with type 2 diabetes are overweight at diagnosis. Given that the proportion of Canadian children who are overweight has tripled in the last 30 years, it is not surprising that the incidence of type 2 diabetes among youth is rising.

In addition to unhealthy weights, factors that increase a youth's risk for developing type 2 diabetes include:

- Being a member of a high-risk ethnic group (i.e. Aboriginal, African, Asian, Hispanic or South Asian);
- Having a family history of the disease (particularly when the mother's pregnancy was complicated by diabetes);
- Having dark, velvety patches in skin folds (a skin condition known as acanthosis nigricans);
- Having high levels of fat in the blood (dyslipidemia);
- Having high blood pressure (hypertension); and
- Having polycystic ovarian syndrome (a disorder in females that is marked by lack of menstrual periods, unusual hair growth and excess weight).

The third type is gestational diabetes. Gestational diabetes develops during pregnancy. Blood glucose levels usually return to normal following delivery, however both mother and child are at higher risk of developing type 2 diabetes later in life. Every year, between three to 20 per cent (depending on risk factors) of pregnant women in Canada develop gestational diabetes.

"While diabetes can lead to serious complications, people can do many things to stay well. Management strategies include working with your healthcare team, eating healthy, getting active and learning as much as possible about diabetes," says Dr. Hux.

Teens with diabetes

When children are first diagnosed with diabetes, parents play a large role; learning about the disease; participating in daily routines; and sharing management decisions. However, older school-aged children and teenagers typically are in the process of taking full responsibility for their own health. As adults, they will have to engage in diabetes self-management and make more decisions about their own healthcare needs with the support of their healthcare team.

"Managing diabetes at any age requires a careful balancing act of food intake, activity level and, when needed, medication," says Dr. Hux. "Within the teenage years, this can be stressful with puberty, the desire to be more independent from parents and pressure from peers and school."

It is normal for some teens to try risky behaviours, such as smoking, drugs, alcohol or unprotected sex. For teens with diabetes, these behaviours can be particularly hazardous to their health. Smoking greatly increases the chance of early stroke, heart attack, and other diabetes-related complications. Drinking alcohol increases the risk of low blood glucose levels.

Generally, teenage pregnancies are considered high risk as there is a greater chance of complications for both the mother and baby, but pregnant teens with diabetes face even greater risk. Babies who are exposed to high blood glucose levels when they are in their mother's womb have a greater risk of birth defects, difficult deliveries and a greater chance of developing diabetes when they grow up. Women with diabetes often prepare well in advance for pregnancy with the help of their healthcare team.

Diabetes may also become a target for risk-taking behaviours for teens. Students may rebel by discontinuing all or part of their medical regimen. Teens may skip blood glucose checks and meals. Teenagers are also more exposed to high fat, high sugar and high calorie food choices, which can negatively affect eating habits—unhealthy eating can ultimately affect blood glucose levels.

During adolescence, young people begin to develop a sense of their own body image and compare themselves to others including their peers. In an effort to achieve what they believe is a desired look, teenagers may begin to skip or reduce insulin to lose weight. This is a dangerous disorder called "diabulimia" and affects many people with type 1 diabetes. If insulin is used appropriately, the glucose is absorbed from the blood into the body's tissues and is used (or stored). Without insulin, the glucose builds up in the blood and is excreted in the urine and can cause dramatic weight loss. Adolescents with diabetes require more insulin as they grow and develop, so skipping insulin is a serious concern.

Teens with diabetes may feel alone and alienated. Teens may be teased at school for being overweight, for having to use insulin and check their glucose levels and for their inability to be spontaneous in activities and food intake. It is common for teens with diabetes to experience a wide range of emotions such as anger, depression or fear. During the teenage years, friends and relationships also begin to take on a more important role. Emotional situations can impact blood glucose levels and vice versa. In addition to dealing with normal teenage emotions, teens with diabetes are also learning to deal with the highs and lows associated with disease.

"Blood glucose levels can change with diet, physical activity, stress or illness. In some cases however, blood glucose levels fluctuate for no apparent reason," explains Dr. Hux.

Well-managed diabetes will likely have minimal impact on a student's education and academic performance. However, all people with diabetes will have occasional high or low blood glucose levels. Students whose diabetes is more challenging to manage may experience some disruption of their education. Hypoglycemia (low blood glucose) occurs when too little food has been eaten in relation to the amount of insulin taken or energy expended in exercise. It can affect concentration and the ability to think clearly and in extreme cases lead to loss of consciousness. Sustained hyperglycemia (high blood glucose) can result in tiredness and lack of concentration and, as a result, may affect a student's ability to learn and to participate in school activities.

Some common impacts of hyperglycemia and hypoglycemia may include:

- inability to concentrate or manage behavior during incidents of high or low blood glucose;
- missed class time related to the need to test for and treat high or low blood glucose;
- frequent trips to the washroom and water fountain related to high blood glucose; and
- absence from school because of medical appointments.

"Youth with diabetes may experience blood glucose 'highs' or 'lows' that can seriously impair their academic performance," explains Dr. Hux. "It's important that teachers and school staff discuss concerns regarding diabetes and its impact on a student's education with parents/guardians. If school personnel lack accurate information about diabetes and how it is managed, problems could result, ultimately placing the student's health and safety at risk."

How school personnel can support teens with diabetes

Students spend most of their day in school and must be able to achieve the same level of diabetes management at school that they do at home.

To do this they need access to the tools for diabetes management:

- blood glucose testing equipment;
- insulin delivery systems (pen, needle or insulin pump);
- oral, fast-acting carbohydrate, including snacks and drinks, to treat hypoglycemia;
- sufficient time to eat their snacks and meals;
- school personnel who are knowledgeable about diabetes and able to assist when needed; and
- a private location to test their blood glucose and administer insulin.

People could easily misinterpret symptoms of hypoglycemia or hyperglycemia as fatigue or being under the influence of drugs or alcohol. School personnel should recognize the signs of hyperglycemia and hypoglycemia and encourage the student to take steps to treat. It is important that school staff participate in a diabetes educational training session to understand the signs of hypoglycemia and hyperglycemia, and identify emergency procedures for treating moderate to severe hypoglycemia and hyperglycemia.

Additionally, having diabetes educational literature or fact sheets (i.e. facts about diabetes, recognizing symptoms of hyperglycemia and hypoglycemia, what to do if newly diagnosed, etc.) and contact information for diabetes education centres on hand at schools can be helpful resources for both school personnel and teens.

Presentations about living with diabetes can also be organized at schools. Counsellors can encourage students with diabetes to explain their disease

to other students and teachers. Some students with diabetes will embrace the opportunity to share their knowledge of diabetes, while others might not be interested. Diabetes educators should also be invited to participate.

Some students may not be comfortable speaking about their diabetes with friends and may require a private place to ensure they are checking their blood glucose levels. Schools need to permit flexibility, so that a student with diabetes is able to check blood glucose conveniently and safely throughout the school. Students with diabetes should also be permitted to carry a snack with them at all times to treat low blood glucose. Guidance counsellor offices can be one of the private places where students can test their blood glucose and inject their insulin. The school should also provide appropriate facilities for the safe disposal of sharps (needles and the lancets used for blood glucose testing).

Should students with diabetes have difficulties in school because of their fluctuating blood glucose levels, guidance counsellors can support them by responding to their individual needs and work with them to determine a solution to any issues they may be experiencing.

"Partnerships must exist among the student, parents or caregivers, teachers and school administration to provide a positive educational environment for teens with diabetes," adds Dr. Hux. "Establishing a communication system for teens with diabetes will help with their academic performance, their psychosocial maturity and independence and ultimately their health."

For further information on diabetes or to find local diabetes education centres, please visit diabetes.ca, join [facebook.com/CanadianDiabetesAssociation](https://www.facebook.com/CanadianDiabetesAssociation), follow @DiabetesAssoc on Twitter, or call 1-800-BANTING (226-8464). 



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Troisième partie d'une série en trois parties à propos des troubles d'apprentissage

by/par **Tania Moffat**

The right summer camp can provide students with enriching experiences and opportunities for development that will help shape them as adults. They allow students to grow socially and emotionally, push them to try new things, strengthen their independence, and most importantly have fun. The right camp can be immensely rewarding - the wrong one, devastating.

Teens with learning disabilities, like their peers, benefit from camps, academic courses, and recreational programs offered throughout the summer months. Camps offer them learning opportunities they won't find in a classroom. Specialized programs for teens with learning disabilities often provide the same recreational activities as their mainstream counterparts. The benefits of these camps include staff trained in special education and a higher staff to camper ratio. Some offer the additional benefit of offering academic programs during their sessions. Most importantly they offer children and teens a safe environment to learn from others like themselves, and to practice and develop their social skills.

Le bon camp d'été peut fournir aux étudiants des expériences enrichissantes et des opportunités de développement qui aideront à les façonner en tant qu'adultes. Ils permettent aux étudiants de grandir socialement et émotionnellement, ils les poussent à essayer de nouvelles choses, ils renforcent leur indépendance et, de façon plus importante, ils leur permettent d'avoir du plaisir. Le bon camp peut être extrêmement gratifiant, le mauvais sera dévastateur.

Les adolescents avec des troubles d'apprentissage, comme leurs pairs, bénéficient des camps, des cours académiques et des programmes récréatifs qui sont offerts pendant les mois d'été. Les camps leur offrent des opportunités d'apprentissage qu'ils ne retrouveront pas dans une classe. Les programmes spécialisés pour adolescents avec des troubles d'apprentissage fournissent souvent les mêmes activités récréatives que celles des programmes pour le grand public. Les avantages de ces camps incluent un personnel formé à l'éducation spécialisée et un ratio entre personnel et campeur plus élevé. Certains ont l'avantage d'offrir des programmes d'études pendant la durée du camp. De façon plus importante, ils offrent aux enfants et aux adolescents un environnement sécuritaire pour apprendre de leurs pairs et pour pratiquer et développer leurs compétences sociales.



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“Most professionals have no concept of the therapeutic value of a positive summer camp experience. The right camp can be a very positive life-altering experience, particularly for kids with special needs. The wrong camp can be a disaster where kids are teased, bullied, isolated and shunned.” shares Dave, Director of Camp Kodiak.

“Students with learning disabilities don’t fit the mold; their disabilities are invisible, they appear mainstream. People expect they should manage because that is their first impression; it sets the child up for failure. They have average or above average intelligence and are extremely aware of their shortcomings; therefore, they deal with not only their disappointment but that of others as well.” says Liz Keres, Executive Director of Eureka Outdoor Camp.

“Teens struggling with their learning disabilities can often feel like they are on the outside looking in. They may not have any social outlets. They may not be part of a team or part of the ‘in crowd’. They may be bullied or bullies themselves, but,” says Ms. Keres, “at camp there is no preconceived notion of who you are, you can be who you want to be, and usually, that is more than you think you are capable of.”

Eureka Outdoor Camp offers camp programs for children and adolescents with invisible disabilities in British Columbia. The programs were originally developed by parents in response to a recognized need in the community. Children with these disabilities lacked a social environment to build friendships and interact with peers. At camp they learn skills, build self esteem, and self worth, and become part of their community – their way. Eureka now partners with the Learning Disabilities Association of Metro Vancouver to provide the Edge Leadership program and some of the day camps for 8-12 year olds.

A supportive community

Communal living arrangements at camp provide a much more effective environment for social and emotional skills development. Ms. Keres explains, “At camp the main focus is on relationships with peers. Camp is 24 hours a day, and it is more effective (at providing social and emotional growth) because there is nowhere to run. If they have a problem with a peer they have to find a way to work through it. It is intense, but it teaches them about cause and effect because they have to see it through. There is no bell to save them, no parent to defend them, no room to escape to.” Learning from their peers, discovering how they deal with their disabilities, and seeing how they interact with others is powerful.

New surroundings combined with freedom from the established social constraints they experience in their schools or home provide adolescents with the ability to try new things - activities they may not try at home or school. A teen who sits on the sidelines as an observer at school, may step up and become a leader at camp. Or the opposite may occur; camp provides them with a new dynamic for interaction. Being away from home, and parental influence, also encourages teens to rely on their own ideas and strengths encouraging self discovery.

Older teens can further benefit from Leadership camps and training which give them the opportunity to lead younger campers and assist in daily camp operations. They learn how to take on responsibility and come away from the experience knowing they can make a valuable contribution to their community.

« Les étudiants avec des troubles d'apprentissage échappent à la norme, leur handicap est invisible et ils semblent faire partie de la foule. Les gens s'attendent à ce qu'ils se débrouillent, car c'est leur première impression, ce qui les voue à l'échec. Ils possèdent une intelligence moyenne ou supérieure et sont extrêmement conscients de leurs défauts, par conséquent ils vivent non seulement leur propre déception, mais celle des autres aussi. » selon ce que mentionne Liz Keres, directrice générale du camp d'extérieur Eureka

« Les adolescents qui se débattent avec leurs troubles d'apprentissage peuvent souvent se sentir marginalisés. Ils peuvent ne pas avoir de débouchés sociaux. Ils peuvent ne pas faire partie d'une équipe ou des « gens branchés ». Ils peuvent être victime d'intimidation ou être eux-mêmes intimidateurs, mais, » selon ce que nous dit Mme Keres, « au camp, il n'y a pas d'idée préconçue de qui vous êtes, vous pouvez être celui que vous souhaitez être et habituellement c'est plus que ce que vous pensez être capable de faire. »

Le camp d'extérieur Eureka offre des programmes pour les enfants et les adolescents de la Colombie-Britannique qui souffrent de handicaps invisibles. Les programmes ont initialement été développés par des parents pour répondre à un besoin reconnu de la communauté. Les enfants affligés de ces handicaps n'avaient pas d'environnement social pour développer des amitiés et interagir avec leurs pairs. Au camp, à leur façon, ils développent des habiletés, l'estime de soi et le sentiment de valeur propre en plus de faire partie de leur communauté. Eureka s'est maintenant associé à la « Learning Disabilities Association » de la région métropolitaine de Vancouver pour fournir le programme « Edge Leadership » et certains camps de jour pour les 8 - 12 ans.

Une communauté de soutien

L'organisation de la vie communautaire au camp fournit un environnement bien plus efficace pour le développement d'habiletés sociales et émotionnelles. Mme Keres explique, « Au camp, le centre d'intérêt principal est les relations entre les pairs. Le camp c'est 24 heures par jour et c'est plus efficace (pour aider à la croissance sociale et émotionnelle), car il n'y a nulle part où s'enfuir. S'ils ont un problème avec un de leurs pairs, ils doivent trouver un moyen de le résoudre. C'est intense, mais cela leur enseigne les causes et effets, car ils doivent aller jusqu'au bout. Il n'y a pas de cloche pour les sauver, pas de parent pour les défendre ni de chambre où se réfugier. » Apprendre de leurs pairs, découvrir comment gérer leurs handicaps et voir comment ils interagissent avec les autres sont de puissants outils.

Un nouvel entourage associé à la liberté face aux contraintes sociales établies qui leur sont imposées à l'école ou à la maison fournit aux adolescents l'occasion d'essayer de nouvelles choses, des activités qu'ils n'essayeraient pas à la maison ou à l'école. Un adolescent qui reste à l'écart comme observateur à l'école peut s'impliquer et devenir un leader

« Au camp, il n'y a pas d'idée préconçue de qui vous êtes, vous pouvez être celui que vous souhaitez être et habituellement c'est plus que ce que vous pensez être capable de faire. »

~ Liz Keres, directrice générale du camp d'extérieur Eureka.



« La plupart des professionnels n'ont aucun concept de la valeur thérapeutique d'une expérience positive d'un camp d'été. Le bon camp peut être une expérience très positive de changement de vie, particulièrement pour les enfants avec des besoins particuliers. Le mauvais camp peut être un désastre si les enfants sont tourmentés, intimidés, isolés et fuis. » selon ce que nous dit Dave, le directeur du camp Kodiak.

“At camp there is no preconceived notion of who you are, you can be who you want to be, and usually, that is more than you think you are capable of.”

~ Liz Keres, Executive Director of Eureka Outdoor Camp

Summer learning loss

Over the course of the summer, students experience a decline in their learning. The break in instruction leads to forgetting, and these effects can be more pronounced in students with learning disabilities. A research synthesis examining the effects of summer vacation on standardized achievement test scores was conducted in 1996 by Cooper, Nye, Charlton, Lindsay and Greathouse. The results of their statistical integration showed that children's test scores were at least one month lower when they returned to school in the fall than when they left the prior spring.

Camp Kodiak's Director, Dave, has seen the effects of summer learning loss first hand. “I was a teacher for 27 years. Twenty-one of those years were spent as a special education teacher. I have absolutely no doubt that kids with learning disabilities slip backwards over the summer. Many neuro-typical kids slip backwards over the summer as well, but not to the same degree as kids with learning disabilities. I know that our kids are in much better shape in September because of our academic program and because of their improved confidence. We have heard this from parents, kids, teachers, guidance counsellors and administrators.” Camp Kodiak is an integrated, non-competitive program for children and teens with and without attention deficit hyperactivity disorder, learning disabilities, non-verbal learning disabilities, and high functioning Asperger Syndrome located in Ontario. They offer an hour of academics per day, individualized to meet the needs of every camper. By keeping children's brains actively learning over the summer, through experiential learning or academic courses, lessons from the previous year can be reinforced; thus helping to ease the return to classes in the fall.

Camps teach valuable life lessons in unique learning environments providing teens with enriching experiences that cannot be found in any classroom. The benefits are the same for all – independence, self expression, personal growth. Specialized camps allow those with learning disabilities to experience the same benefits in a safe environment where they are accepted for who they are, and fit in. ♣ CSC

au camp. Le contraire peut également se produire, le camp leur fournit une nouvelle dynamique pour l'interaction. Être loin de la maison et de l'influence des parents encourage également les adolescents à se fier à leurs propres idées et leurs forces ce qui favorise la découverte de soi.

Les adolescents plus âgés profitent davantage des camps de leadership et de formation qui leur donnent l'opportunité de diriger de jeunes campeurs et d'aider aux opérations quotidiennes du camp. Ils apprennent comment prendre des responsabilités et sortent de l'expérience en sachant qu'ils peuvent apporter une contribution de valeur à leur communauté.

Perte d'apprentissage estivale

Pendant l'été, les étudiants subissent un déclin de leur apprentissage. La pause de l'enseignement amène l'oubli et cet effet peut être plus prononcé chez les étudiants avec des troubles d'apprentissage. Une synthèse de recherche sur les effets des vacances d'été sur les résultats scolaires a été effectuée en 1996 par Cooper, Nye, Charlton, Lindsay et Greathouse. Les résultats de leur interrogation des statistiques ont démontré que la performance des enfants recule d'au moins un mois lors de leur retour à l'école à l'automne par rapport à celle réalisée au printemps.

Dave, le directeur du camp Kodiak, a pu constater directement les effets de la perte d'apprentissage estivale. « J'ai enseigné pendant 27 ans. Pendant vingt et une de ces années, j'étais professeur d'enseignement spécialisé. Je n'ai absolument aucun doute que les enfants avec troubles d'apprentissage reculent pendant l'été. Plusieurs enfants neurotypiques reculent également pendant l'été, mais pas autant que ceux qui ont des difficultés d'apprentissage. Je sais que nos enfants sont en bien meilleure forme en septembre à cause de notre programme d'étude et à cause de leur confiance améliorée. Des parents, des enfants, des enseignants, des conseillers et des administrateurs nous l'ont dit. » Le camp Kodiak situé en Ontario est un programme intégré, non compétitif, pour les enfants et les adolescents avec et sans troubles d'hyperactivité avec déficit de l'attention, troubles d'apprentissage, troubles d'apprentissage non verbaux et syndrome d'Asperger de haut niveau. Il offre une heure d'études individualisées par jour, pour répondre aux besoins de chaque campeur. En maintenant le cerveau des enfants en apprentissage actif pendant l'été, par l'apprentissage par expérimentation ou par des cours académiques, les leçons des années précédentes peuvent être renforcées et donc faciliter le retour en classe à l'automne.

Les camps enseignent des leçons de valeur dans des environnements d'apprentissage uniques fournissant aux adolescents des expériences enrichissantes qui ne peuvent être vécues dans aucune classe. Les bénéfiques sont les mêmes pour tous : indépendance, expression de soi et croissance personnelle. Les camps spécialisés permettent à ceux affligés de troubles d'apprentissage de récolter les mêmes bénéfices dans un environnement sécuritaire où ils sont acceptés pour qui ils sont et où ils ont leur place. ♣ CSC

Some of the Specialized Camps available across Canada / Quelques-uns des camps spécialisés disponibles au Canada

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For Teens 15-18 years
12 day residential camp
Camp Deka, 100 Mile House, BC (transport provided from Vancouver)

Our program promotes positive interaction to encourage self respect, self esteem and self confidence. Because many invisible disabilities interfere with the abilities of campers to practice appropriate social interaction without support, we offer opportunities to practice self organization, group membership, self responsibility, peer friendship and relationship building. We have a good understanding of invisible disabilities and the challenges they create and create many opportunities to work closely with each camper to support, encourage and celebrate every success.
www.eurekacamp.ca
604-520-1155

Camp d'extérieur Eureka

Pour adolescents de 15 - 18 ans
Camp avec hébergement de 12 jours
Camp Deka, 100 Mile House, BC (transport fourni à partir de Vancouver)

Notre programme promeut l'interaction positive pour encourager le respect de soi, l'estime de soi et la confiance en soi. Parce que plusieurs handicaps invisibles interfèrent avec les habiletés des campeurs à pratiquer une interaction sociale appropriée sans support, nous offrons des opportunités pour la pratique de l'auto-organisation, de l'appartenance à un groupe, de l'autoresponsabilisation, de l'amitié entre pairs et de l'établissement de relations. Nous comprenons bien les handicaps invisibles et les défis qu'ils créent et nous créons plusieurs occasions pour travailler étroitement avec chaque campeur pour les soutenir, les encourager et célébrer chaque succès.
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604-520-1155

EDGE Leadership Program – (in partnership with the Learning Disabilities Association of Metro Vancouver)

July 2-4, 2013
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Vancouver, BC
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**Programme de Leadership EDGE—
(en association avec la Learning
Disabilities Association de la région
métropolitaine de Vancouver)**

2-4 juillet 2013

Pour adolescents de 14 - 17 ans
Vancouver, BC

Modules sur l'estime de soi, la gestion du temps,
l'empathie et les responsabilités. C'est une fantastique
occasion pour tout jeune qui souhaite accroître sa
confiance et pratiquer de nouvelles habiletés dans un
environnement où il est guidé et supporté.

Nous offrirons également six places pour leaders
de jeunes qui suivent la formation pour participer
au programme de Leadership EDGE lors de notre
programme de jour pour les 8-12 ans qui dure 2
semaines à l'été.

www.eurekacamp.ca ou www.ldav.ca
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ALBERTA

Camp Amicus - Teen Buddies

For Teens 14 – 17 years

6 day residential camp

Camp Goldeye in Nordegg, Alberta

We offer a structured, supportive program for youth
to learn, grow and have fun while developing social
skills and making friends. Camp Amicus offers a 3:1
camper to staff ratio and a number of exciting activities
including horseback riding, wall climbing, ropes
courses, swimming, canoeing and more.

www.ldaa.net/amicus.php
403-283-6606

Camp Amicus - Copains d'Adolescence

Pour adolescents de 14 - 17 ans

Camp avec hébergement de 6 jours

Camp Goldeye à Nordegg, Alberta

Nous offrons un programme structuré de support où
les jeunes peuvent apprendre, croître et avoir du plaisir
en développant des compétences sociales et se faire
des amis. Le camp Amicus offre un ratio campeur à
personnel de 3:1 et un nombre d'activités excitantes
incluant l'équitation, escalade, hébertisme, natation,
canoé et plus.

www.ldaa.net/amicus.php
403-283-6606

Camp Amicus - Leadership Camp

For Teens 16 – 18 years

4 day residential camp

Camp Goldeye in Nordegg, Alberta

Same as Teen Buddies above but this camp also has a
little more emphasis on developing self-awareness,
teamwork and gives campers an opportunity to lead
games and activities with younger campers

www.ldaa.net/amicus.php
403-283-6606

Camp Amicus - Camp de Leadership

Pour adolescents de 16 - 18 ans

Camp avec hébergement de 4 jours

Camp Goldeye à Nordegg, Alberta

Même que le camp Copains d'Adolescence plus haut,
mais avec un peu plus d'emphasis sur le développement
de la conscience de soi, le travail en équipe et il donne
aux campeurs une occasion de mener des jeux et des
activités avec des campeurs plus jeunes.

www.ldaa.net/amicus.php
403-283-6606

Camp Amicus - Next Steps Day Camp

For Pre-Teens and Teens 11 – 15 years

2 week day camp

Calgary, Alberta

Next Steps Day Camp is designed to offer youth with
LD/ADHD a place to work on their social skills as well as
build and expand on their understanding of the social
expectations that are placed on them as they move into
junior high and high school. The camp aims to provide
guidance to campers as they participate in activities
that will support the development of self-esteem,
confidence, leadership skills and teamwork.

www.ldaa.net/campamicusdaycamp.php
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Camp Amicus - Camp de jour, Prochaines Étapes

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Camp de jour, d'une durée de 2 semaines
Calgary, Alberta

Le camp de jour Prochaines Étapes est conçu pour offrir aux jeunes avec TA/THDA un endroit où travailler sur leurs compétences sociales ainsi que bâtir et accroître leur compréhension des attentes sociales qui leurs sont imposées quand ils passent au premier et deuxième cycle secondaire. Le camp vise à guider les campeurs alors qu'ils participent à des activités qui les aideront à développer leur estime de soi, leur confiance, leurs habiletés de leadership et le travail en équipe.

www.ldaa.net/campamicusdaycamp.php
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ONTARIO

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Arden, Ontario

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Camp Kennebec

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Camp avec hébergement et des programmes de 1-6 semaines

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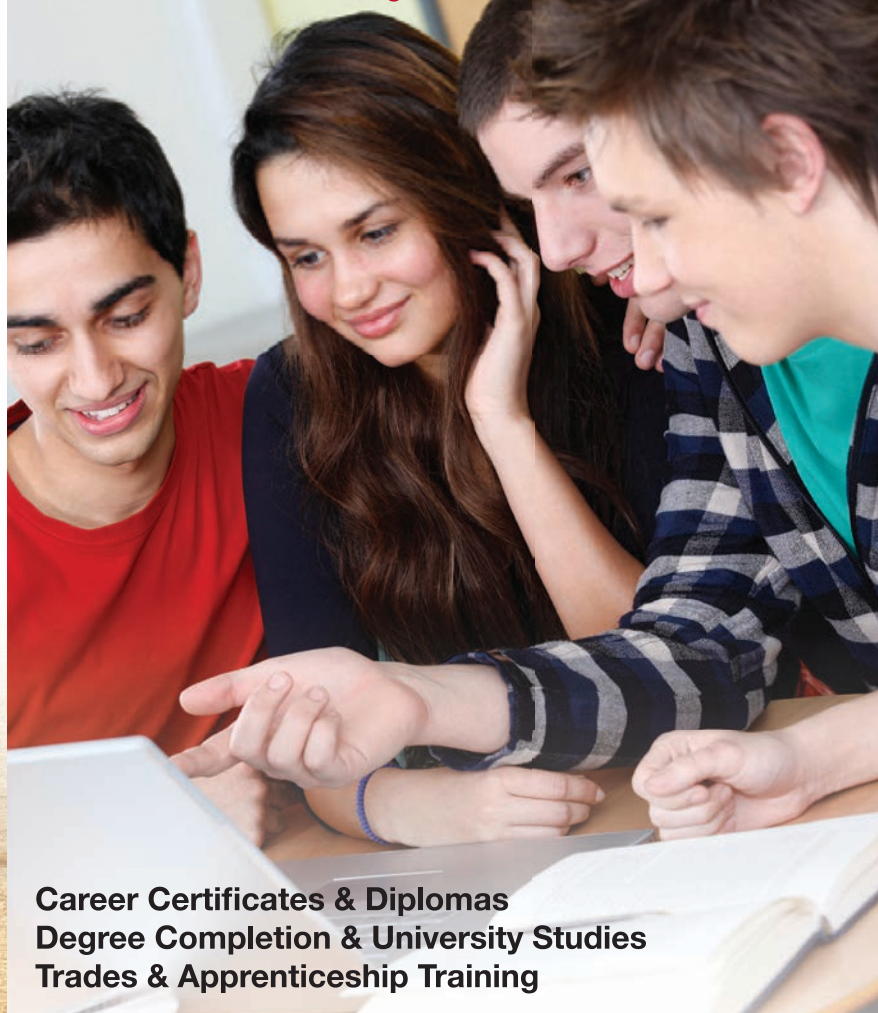
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www.campkodiak.com
(905) 569-7595 or 877-569-7595

Camp Kodiak

Pour les 6-18 ans

Camp avec hébergement - session de 4 semaines en juillet et 3 semaines en août

McKellar, Ontario

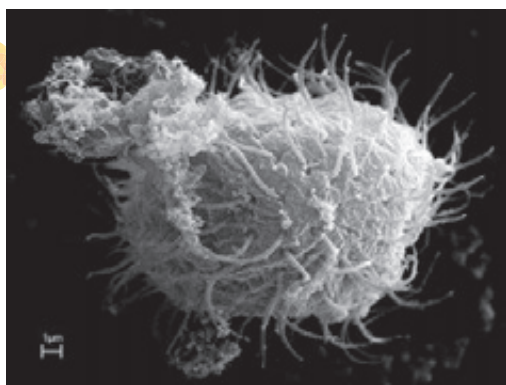
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MICROBIOLOGY

Microbiology is the scientific discipline that focuses on the study of all those living organisms that, due to their small size, cannot be seen by the naked eye. These micro-organisms include bacteria, protozoa, fungi, algae and viruses. Microbiology and Microscopy, the science of microscopes and their applications, are closely linked as all microbiologists, at one point or another in their careers, will need to use microscopes to see the microorganisms they are studying.

Microorganisms are fascinating creatures. They are famous of course by the diseases they cause not only in humans but also in animals and plants. Some of these diseases have affected humanity since ancient times and in some cases have even shaped history. The bacterium named *Yersinia pestis*, which caused the Plague of the 1300's, played a major role in shaping Europe's history. In America, the introduction of small pox virus by the Spanish conquistadors devastated native populations favouring the European colonization of the New World. Not all microorganisms are humanity's enemies. Beneficial microorganisms include those that we use



Photograph of a ciliated protozoan cell commonly found in fresh water. Notice that the surface of the cell is covered by “thick hairs” – these are the cilia, which the protozoon uses to swim. The scale is indicated by the size bar on the bottom left.

One micrometer (1 μm) is a one-thousandth of a millimeter. Photo provided by Dr. Rafael Garduno, Dalhousie University.

in the production of some food products (yogurt, soy sauce, chocolate, wine and beer to mention a few), as well as those that make the soil fertile and suitable for growing plants. Microorganisms are also major sources of therapeutics used in modern medicine, including antibiotics. On a global scale, they are responsible for producing most of the oxygen in the earth's atmosphere and for removing significant amounts of carbon dioxide and other toxic gases from it.

Microbiologists are the people who study microorganisms, the diseases they cause, or their beneficial applications. They can be found in many different places performing exciting jobs either as professionals in industry and government agencies, or as investigators in research institutions and universities. In order to become a microbiologist, students will be required to complete a 4-year university degree after completing their high school education. Several Canadian universities offer degrees with a major or minor in microbiology. Courses and their content change from university to university, but all microbiology programs start with an introductory course at the second year level. After the four years of study, a Bachelor in Sciences (BSc) with a major or minor in Microbiology, can be obtained. Students looking for alternatives to the 4-year university program can look into diplomas for lab technologists offered at their local colleges. These diplomas include a practicum, which would allow them to work in diagnostic or analytical labs as a technician. Although a lab technologist's position is not equivalent to that of a microbiologist a major component of their job does involve microbiology, particularly for Medical Lab Technologists. In most cases, lab technologist programs require a 3-year commitment, assuming students obtain certification. Completion of the diploma itself could take as little as two years after high school. Students enrolling in either a BSc program or college diploma will need to meet various entrance requirements including passing grades in at least one science course (usually chemistry), mathematics, and language arts.

Many microbiology BSc graduates choose to continue their studies and complete a Masters in Science (MSc) and/or a Doctor in Philosophy (PhD) postgraduate


degree. An MSc or a PhD degree enhances professional opportunities for microbiologists. MSc degrees can normally be completed within 2-3 years, and PhD degrees within 4-5 years. Both of these degrees require a thesis which in most cases is experimental and involves

research in a microbiology lab. However, some microbiology thesis projects can be heavily computational, especially in the field of metagenomics, where investigators look for the presence of microorganisms by obtaining and analyzing DNA sequences. In these

instances, specialization in computer sciences would be advisable. If students have a vocation for research, a PhD might not be sufficient to get you a coveted research position. Additional training as a postdoctoral fellow might be required before they can become a researcher in an institute or a professor in a university. If this is the case, they are looking at a program with a total time commitment of up to 13 years after finishing high school.

Either as a BSc, MSc, or a PhD microbiologist there are choices for specialization. In fact, the choices are numerous and can include specializations in medical microbiology (infectious diseases of humans), veterinary microbiology (infectious diseases of animals), phytopathology (infectious diseases of plants), sanitary microbiology (related to public health issues and infection control), industrial microbiology and biotechnology, agricultural microbiology, microbial ecology, food microbiology, analytical microbiology and quality control, among others. Some microbiology-related jobs can lead to areas of specialization that might not be obvious for a microbiologist. Petroleum microbiology and geomicrobiology, (where microorganisms can be used to facilitate the extraction of petroleum, or to look for valuable minerals), and specializations related to the search for extra-terrestrial life are some examples of these.

As a professional microbiologist or an investigator it is desirable to associate with other microbiologists, particularly in your area of specialization. It is therefore advisable to become a member of a society. In Canada, professional microbiologists can become members of the Canadian College of Microbiologists (CCM) which offers professional certification in various areas of specialization. Academic microbiologists, and all other microbiologists that do not necessarily require professional certification, can become members of the Canadian Society of Microbiologists (CSM). The CSM holds an annual meeting where microbiologists can keep current by exchanging ideas and discussing advances in the field.

Microbiology is a scientific discipline that can present students with exciting career possibilities in industry, government agencies, and academia, where they can become a professional or an investigator. 

Dr. Rafael Garduno is an associate professor in Microbiology and Infectious Diseases at Dalhousie University and member of the Education Committee of the Canadian Society of Microbiologists.



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The Fourth R

Healthy Relationships Plus Program

The Fourth R is an evidence-based comprehensive prevention program currently implemented in over 2000 schools across Canada. It applies best-practice approaches to building skills and reducing harm among adolescents. The foundation is a skill-based curriculum that promotes healthy relationships and targets violence (bullying, peer and dating violence), high-risk sexual behaviour and substance use among adolescents. The contention of the Fourth R is that relationship skills can be taught in the same way as reading, writing, and arithmetic. Furthermore, given the plethora of negative relationship models

available to teens, it is crucial that adolescents be exposed to healthy alternatives and equipped with the skills to engage in healthy relationships themselves.

The Healthy Relationships Plus Program (HRPP) is an innovation to healthy relationship programming and is intended for youth 12-18 years old. The lessons, which focus on a strengthened mental health awareness, suicide prevention, and substance abuse prevention, were designed to be taught in small group settings outside of class time. During the course of the lessons, youth engage in extensive skill development and role-play activities

to help develop effective and healthy responses to everyday situations that will enable them to identify stressors and pressures in their lives and the lives of others. Skills learned in the HRPP help youth communicate more effectively and to manage situations where they or their friends are confronted with conflict, abuse, or violence. Beyond skills, the HRPP develops critical thinking, self-awareness and problem-solving, and promotes healthy attitudes. This program is a proactive, competency-enhancement approach rather than a treatment. It was designed to build strengths, resilience, and coping skills among youth as a way of enhancing

The manual is easy to follow and I find the sessions easy to prepare. When I facilitate the sessions, the youth enjoy the activities, and it's easy to keep the rhythm going in the group!

– Jayne, YWCA, North West Territories

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interpersonal functioning. Every aspect of the program, from the material presented to the relationships among facilitators and participants, is designed to model appropriate use of power and respectful relationships, and support youth empowerment.

“The topics are very relevant to these high-risk teens. The information is delivered in an effective way, and the students enjoy practicing the new skills that they have learned. It has really helped develop a strong feeling of community in this program,” says Fiona, a facilitator in Ontario.

Students participate in a number of activities to identify influences that affect how they think about people, relationships and friendships. Relationship imbalances including bullying, sexual harassment, sexual assault, physical violence, dating violence, racism, and homophobia are all topics for discussion during HRPP sessions.

Mike, shares the following about the group he facilitates in Ontario; “The activities gave the students the opportunity to talk about things that they deal with on a daily basis which doesn’t necessarily get talked about. The role plays, topics, and real life scenarios most certainly related to the students and gave them the opportunity to practice different methods of having and maintaining healthy relationships. Where else would students get the chance to practice apologizing? Or learn the importance of an apology and the emotional weight and responsibility that goes along with it?”

When asked what they gained from their participation in the HRPP program, students responded that they learned: how to talk to someone without being aggressive; how to manage their stress and cope with their anger, how to help themselves if they were put in a bad position, and how to apologize and know why they were saying sorry.



“This should be a course everyone takes”
– student response to the HRPP session.

The mental health component of the HRPP helps youth to know what mental health is, to see the signs of stress, practice behavior modification to manage stress, and identify coping mechanisms they can use. In addition, youth are able to talk about their responsibilities to themselves, their friends, and their partners if they are experiencing a mental health issue. “I learned that some people have mental health issues and you may not know they have it and that is why they may act different” shared one student.

Each session in the HRPP lasts one hour and there are 16 lessons. Ideally, the lessons would

take place each week for 16 weeks. Schools and community organizations have condensed the timeline, by offering two sessions per week for 8 weeks. In each session, there is an attempt to provide opportunities to explore the positive definition of healthy relationships, including assertive communication, empathy, providing positive feedback and active listening, for example. The message that behavior is a choice and, therefore, we are all responsible for our own behavior is one that is critically examined by the youth throughout the program.

The HRPP facilitator is critical when establishing a “youth-centered” environment. If requested, additional facilitator training can be provided by CAMH Centre for Prevention Science HRPP master trainers and the manual contains numerous examples for modeling non-controlling communication. Program facilitators are guided through planning

a group agreement around what the youth want, creating a safe environment to discuss sensitive and sometimes personal information, and guiding discussions in a positive and respectful way. Each session follows the pattern of starting with a warmup, a game and finally a cool down activity which keeps the youth actively participating and engaged.


For more information or a copy of the Healthy Relationship Plus facilitator manuals, visit the Fourth R website at youthrelationships.org. 🍀 CSC

Claire Crooks is the Associate Director at the CAMH Centre for Prevention Science and one of the authors of the Healthy Relationship Plus Program.

Ray Hughes is the National Education Coordinator at the CAMH Centre for Prevention Science and one of the authors of the Healthy Relationship Plus Program.

Suzanne Zwarych is a Project Scientist with the CAMH Centre for Prevention Science and one of the Master Trainers for the Fourth R Healthy Relationship Plus Program.

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What is your Summer Style?

A much deserved break is just around the corner. What will you do with your time off? Will you be obsessed with getting organized for the next year or revelling in your freedom? Whether you are all keener or part partier/part traveller find out your summer style and enjoy this time that you have for yourself and your family.

The Keener: Life revolves around your job. You spend your summer teaching summer school, coaching a team, taking self improvement classes, or brushing up on various counselling techniques. Missing the routine and stability of the school year, you find yourself counselling the family dog about his obsession with rabbits.

The Camper: You have already registered for your summer campsites. You are scouring the spring flyers deciding which gps system would be better for this year's geocaching competition, and whether or not you should get a new sleeping bag. Your bug spray, sun tan lotion, and fishing pole are ready to go the second the last bell rings.

The Traveller: While students are writing their final exams, you are finalizing your flight plans. Rome, Sydney, Phoenix, it doesn't matter; you always find somewhere to go. Travelling rejuvenates your soul, and there is no better time to do it.

The Worrier: School is not even out yet and you are consumed by thoughts of returning to class. Wanting summer to last forever, you cheat yourself by worrying about how much time you have left. You know exactly how many weeks, days, and hours there are until school starts again in the fall.

The Partier: Summer is all about fun! Your calendar is booked; if you're not having a party, you are attending one. Your students have nothing on you; you will definitely have more fun than them over the next couple of months. Thoughts of school? Not until September baby!

The Zen Master: You are looking forward to the lazy days and long evenings of summer. This is your time; you savour and make the most of every moment. Thoughts of school won't faze you as long as summer is here.

The Home Body: Seedlings are growing in your front window; you've polished up the tiller and are following the farmer's almanac to see when you can plant. Paint cans are lined up waiting to redo the trim on your house and you already have decided how you are going to remodel the kitchen.

The Family Chaffeur: Change those tires because you never stop. Whether it is trips to the zoo, family bbq's, baseball practices, camping trips, or visits to the splash park on hot afternoons with the kids, you are constantly on the move.



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Advertiser Index

Acadia University	24
Air Georgian / Air Canada	2
Apply Alberta	21
Association of BC Forest Professionals	34
Bow Valley College.....	7
Canadian Geoscience Education Network	38
Canadian Institute of Actuaries	25
Centre for Distance Education	3
Collège Boréal	34
Columbia College.....	10
eCampusAlberta.....	40
Encounters With Canada	8
Forest Products Association of Canada	30
The Fourth R.....	41
Grande Prairie Regional College	36
Harris Institute	12
Horizon College & Seminary.....	18
Humber Business School	44
Mactech Distance Education	4
Mount Allison University.....	15
Ontario Dental Education Institute	7
Opticians Association of Canada.....	38
Ryerson University	23
Scholarships Canada	30
Selkirk College.....	27
Sheridan College Institute.....	35
St. Jerome's University	23
Trebas Institute.....	21
UA Canadian Piping Trades.....	43
University College of the North	9
University Guelph Humber.....	9
University of Ottawa	11
University of Sudbury	18
Windsong School of Healing	41



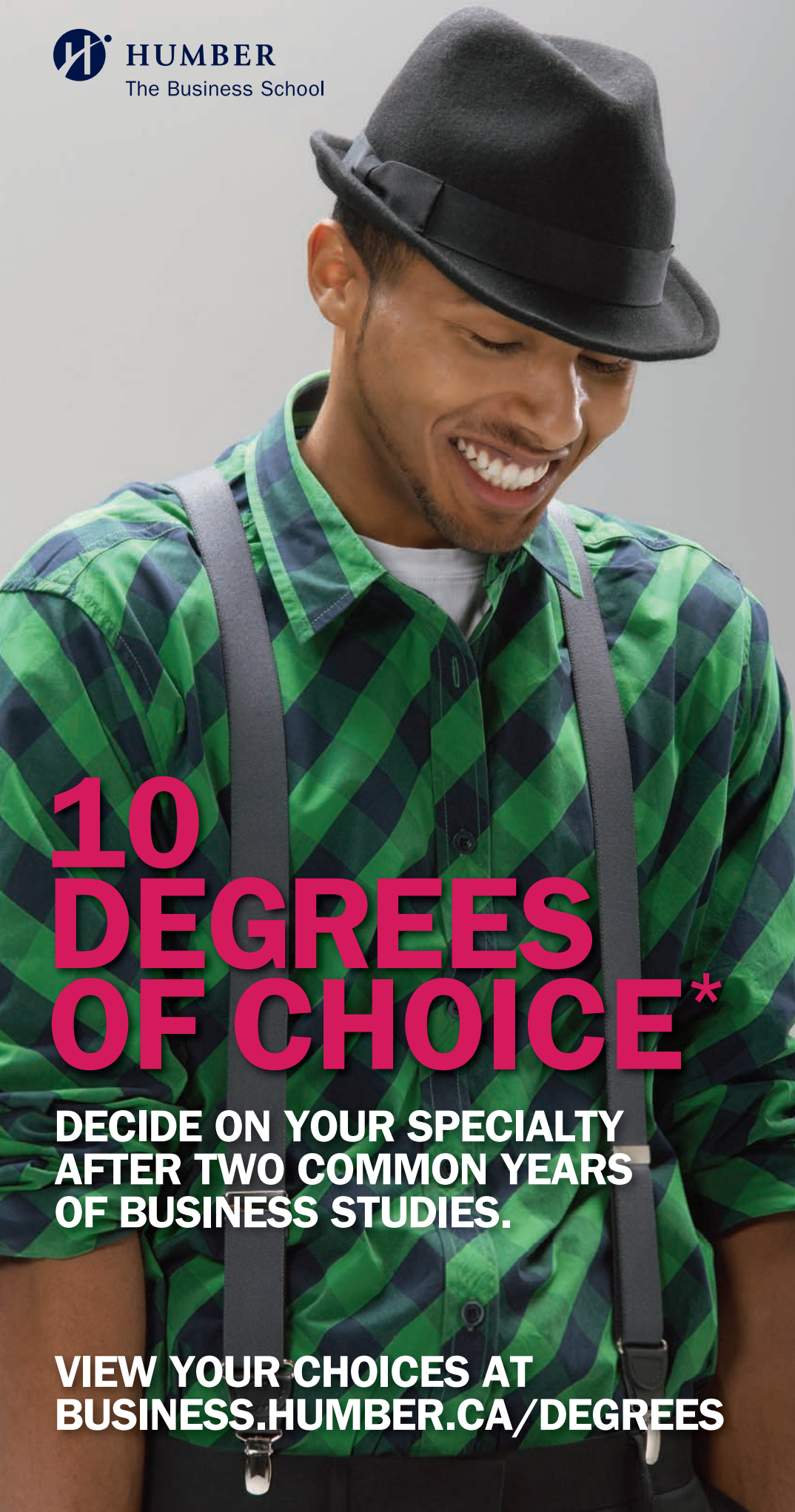
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