

Top 20 Under 20, 2010

## Researchers, patent holders and fundraisers... and under 20

Winners of youth award inspire with medical, entrepreneurial and motivational efforts

June 07, 2010 03:40 PM EDT

They come from across Canada and some hold patents, others are doing ground-breaking medical research and still others have raised hundreds of thousands of dollars for causes close to their hearts.



The entrepreneurs who are award recipients: Clockwise from top: Justin Vanderheide, Elyse Simpson, Gary Kurek, Brian Wong, Aly Kassim-Lakha. Photo: J.P. Moczulski/The Globe and Mail

They are this year's recipients of the Top 20 Under 20 awards.

[Serious illness gets serious attention](#)

[Entrepreneurs seize the day](#)

[Youth galvanize others](#)

[Show me the money ... and they did](#)

[Leading the shift to green](#)

[Youth in Motion](#) is the non-profit organization that runs the Top 20 Under 20 awards program. Winners' ages are listed as what they were on Dec. 31, 2009. A national panel selects the winners.

GlobeCampus is The Globe and Mail's site dedicated to undergraduate education in Canada. Through its innovative search, compare and rank tool called campus navigator, Canadian and visiting students can quickly find the school that would fit them best. The Globe and Mail's annual Canadian University Report (formerly University Report Card) collects the opinion of over 40,000 students across the country. This site will guide parents in evaluating universities and colleges and help students make the right pick from the rich array of qualifiers and indicators available from each of the school's profile.

- [Privacy Policy](#)
- [Terms & Conditions](#)
- [Disclaimer](#)

CTVglobemedia

© 2010 CTVglobemedia Publishing Inc. All Rights Reserved.

globeandmail.com and The Globe and Mail are divisions of CTVglobemedia Publishing Inc., 444 Front Street W., Toronto, ON Canada M5V 2S9

Phillip Crawley, Publisher

Top 20 Under 20, 2010

## Serious illness gets serious attention

A passion for tackling serious illnesses &#151; sometimes driven by the experiences of someone close to them &#151; led these recipients to research potential improvements to existing treatments.

Christina Varga

June 07, 2010 03:50 PM EDT

### **Neil Kalra, 19, Saskatoon, Sask.**



Bottom to top: Perri Tutelman, Neil Kalra, Sapna Shah, Sofia Oke and Tony Kwon. Photo: J.P. Moczulski for The Globe and Mail

Neil Kalra's involvement in medical research stems from his desire to "study something so that we can use the knowledge in the real world to help people." His interest in lymphomas and cell death in atherosclerosis led him to find and work with researchers in these fields at the University of Saskatchewan.

Part of the research involves building tissue micro arrays, or combinations of different kinds of tissue that allow for quick analysis of particular proteins involved in the disease. He's hoping the results of the lymphoma research will help at the time of diagnosis to identify which patients have a higher chance of having a more aggressive cancer, allowing them to get the appropriate treatment. As for the atherosclerosis research, he's hoping results could help identify who is more likely to have a stroke or heart attack.

Aside from science fair prizes, his lymphoma research won him second place in the Sanofi-Aventis BioTalent Challenge in the Open category in 2008.

Already enrolled at the University of Saskatchewan, Mr. Kalra, who hopes to be a physician, was accepted to the school's college of medicine.

Mr. Kalra also volunteers with children and youth, among others at the Physical Activity for Active Living Camp for those with disabilities. He is also involved with reading programs and with a Rotary youth leadership program. He is also a soccer referee at the provincial and national levels. His awards include provincial youth awards and a team first-place award in 2007 at the RBC/Shad Entrepreneurship Cup for senior high-school students.

Mr. Kalra, who has co-authored abstracts for the Canadian Association of Pathologists, will continue his research this summer.

### **Tony Kwon, 17, London, Ont.**

As a Grade 9 student, Tony Kwon approached the University of Western Ontario to conduct research in the

microbiology and immunology lab on the effects of garlic on Group A Streptococcus bacteria.

The A.B. Lucas Secondary School student in London, Ont., had become aware of how Group A streptococcal infections affect people in developing countries. It can cause strep throat, among other infections, which in the developed world can be easily treated but in the Third World, treatments are not always available.

One serious consequence of strep throat, if left untreated, is that it can cause rheumatic heart disease, which conservative estimates suggest causes 233,000 deaths worldwide, says Mr. Kwon. Estimated deaths from overall streptococcal infections are 500,000 worldwide, he adds.

He chose to research garlic because it is already often used for medicinal purposes and is part of many cultures' cuisine.

Mr. Kwon's research indicates that fresh garlic inhibits streptococcal bacterial growth and can decrease virulence. He placed first in the senior medical sciences category in the 2009 national science fair and was a member of the 2009 Team Canada at the international science fair in Tunisia.

He intends to continue his research, hoping to find whether garlic induced changes can make the bacteria less severely invasive.

Next year, Mr. Kwon will be studying life sciences at the University of Toronto, and hopes to become a researcher in the field of microbiology and immunology.

### **Sofia Oke, 17, Guelph, Ont.**

A close family friend's chemotherapy treatments after a cancer diagnosis gave Sofia Oke a close look at how harmful the side effects, such as hair loss and vomiting bleeding, can be. This inspired her to begin researching how to reduce them.

The Centennial Collegiate and Vocational Institute student in Guelph, Ont., became interested in chemosensitizers, which can make cancerous cells more sensitive to the effects of chemotherapy drugs. She and a partner they approached a mentor from the University of Guelph. Two years of research using chemosensitizers indicated the ability to lower the side effects of chemotherapy drugs, in particular indomethacin, a commonly used drug for breast and colon cancer.

Their work earned a gold medal at the Waterloo-Wellington Science Fair in 2009 and 2010 and a Petro Canada Innovation Award at the Canada-wide science Fair in 2009, as well as a bronze medal in senior health sciences at the 2010 Canada-wide Science Fair.

Ms. Oke also volunteers with Habitat for Humanity, St. Joseph's Health Care Centre, the Canadian Red Cross, Canadian Blood Services and the Bracelet of Hope Campaign.

She is also a member of the Guelph Youth Council, was named most valuable player of her competitive soccer team, and placed 10th out of 1,000 at the DECA international business competition in California.

Ms. Oke received a University of Guelph Chancellor's Scholarship for next year, and will be studying toxicology. She loves travel and science, and hopes to combine both by eventually becoming a physician, opening a clinic and travelling the world as a medical correspondent.

### **Sapna Shah, 17, Markham, Ont.**

Inspired by a friend's father, who was dealing with kidney failure, Sapna Shah began researching the disease. She e-mailed professors doing research in the field, and found someone at McGill University who had hosted high school students in the past.

At 16, Ms. Shah began working as a summer research student at McGill, designing an experiment to see if coated live yeast cells would decrease the toxins associated with kidney failure in rats.

This shows potential for helping even patients with kidney failure, who might be able to decrease the number of times they need to undergo dialysis by taking the yeast cell capsules, she says.

Her co-authored review of the research was published in the Journal of Biologics last year.

This fall, the Markham District High School student has been accepted to Queen's University as a chancellor's scholarship recipient, where she will study science in hopes of becoming a physician or medical researcher .

Next summer, she will continue her research at McGill. She found that, while the live yeast cells were successful in breaking down urea, one of toxins created by kidney failure, one result was an accumulation of ammonia, another toxin. She is looking at a species of E. coli bacteria to counteract the ammonia.

Ms. Shah also volunteers at the Markham Stouffville Hospital , helping orient children before their surgeries.

She is also on the Mayor's Youth Task Force, helping advise on youth programs.

### **Perri Tutelman, 16, Richmond, B.C.**

Concerned about breast cancer, Perri Tutelman began to research the potential of an herb in decreasing the effects of chemotherapy. At the same time, the Grade 11 student at SIDES school is dedicated to helping children with life threatening illnesses and established the Cures for Kids Foundation.

Ms. Tutelman has been a contributing researcher at the B.C. Cancer research Centre. Her research into the herb artemisinin suggests that its ability to inhibit cell growth may allow patients with breast cancer to undergo less chemotherapy. Her work was recognized with a gold medal at the Canada-wide science fair in 2009, a Canadian Medical Laboratory Association award and second place at the Sanofi Aventis Biotalent competition.

Ms. Tutelman has also worked as a pediatric support worker, and witnessing the devastation of serious illness in children inspired her to found Cures for Kids, a non-profit organization that raises funds and awareness for pediatric life-threatening illnesses.

She leads a team of student volunteers and a board of directors. The organization recently secured long-term corporate support through a partnership with Boston Pizza and raised \$15,000 for a project for childhood cancers.

Cures for Kids received a national award of innovation from the Art of Living Foundation.

She has also volunteered at Canuck Place Children's Hospice and other recreational programs, working with children who have special needs.

Ms. Tutelman continues to do research at the University of British Columbia as a volunteer research assistant, looking into the role of hormones in auto-immune disorders through the use of transgenic, or genetically modified, models.

She plans to go to the University of British Columbia and hopes to get MD and PhD degrees, allowing her to pursue both research and clinical work, specializing in pediatric medicine.

GlobeCampus is The Globe and Mail's site dedicated to undergraduate education in Canada. Through its innovative search, compare and rank tool called campus navigator, Canadian and visiting students can quickly find the school that would fit them best. The Globe and Mail's annual Canadian University Report (formerly University Report Card) collects the opinion of over 40,000 students across the country. This site will guide parents in evaluating universities and colleges and help students make the right pick from the rich array of qualifiers and indicators available from each of the school's profile.

- [Privacy Policy](#)
- [Terms & Conditions](#)
- [Disclaimer](#)

**CTVglobemedia**

© 2010 CTVglobemedia Publishing Inc. All Rights Reserved.

globeandmail.com and The Globe and Mail are divisions of CTVglobemedia Publishing Inc., 444 Front Street W., Toronto, ON Canada M5V 2S9

Phillip Crawley, Publisher

Top 20 Under 20, 2010

## From mobility aids to music management, entrepreneurs seize the day

Young business people's creations range from an anti-malaria net to a patented mobility device, to an independent music label, to innovative software.

Becky Rynor

June 07, 2010 03:52 PM EDT

### **Aly Kassim-Lakha, 17, Toronto**



Clockwise from top: Justin Vanderheide, Elyse Simpson, Gary Kurek, Brian Wong, Aly Kassim-Lakha. Photo: J.P. Moczulski for The Globe and Mail

Aly Kassim-Lakha says he is determined to explode the stereotype of the cutthroat business entrepreneur.

"I've coined a term for myself: ethical entrepreneurship," he says. "My goal is to be an entrepreneur, interwoven with my commitment to ethics. I see no reason why my future success can't be achieved without having ethics at the forefront. I think there's huge potential in the biotechnology field, for example, for ethical entrepreneurship to better the human condition."

Mr. Kassim-Lakha has already earned numerous accolades for combining entrepreneurial endeavours with community service.

As Junior Achievement's Top Salesperson and Outstanding Leader and Entrepreneur in Ontario, he represented Canada at the organization's International Conference for Young Leaders.

An International Baccalaureate honours student at Upper Canada College in Toronto, he is president of the school's model UN and debating club, and a Head of House there. Mr. Kassim-Lakha is also a tutor leader in "Horizons Tutoring," a community outreach program aimed at encouraging inner city youths to stay in high school. He is also a Big Brother.

As a project leader in the Shad Valley summer enrichment program for high-school students, his team's company — "CocoNet" — researched the development of an anti-malaria net made of 100-per-cent biodegradable coconut fibre. The net is cheaper to produce than the ones currently available and garnered the program's prestigious national RBC Entrepreneurship Cup, along with a proposal from an international company interested in marketing the nets.

"I believe it's the fundamental responsibility of the individual to give back to society, to help, when you have the capacity to do so, but in such a way that you can pursue your own goals at the same time. I think those can definitely work in combination with one another," he says.

### **Gary Kurek, 18, Fort Kent, Alta.**

When Gary Kurek was 14, he watched the frustration of three close family members struggle with the mobility restrictions caused by debilitating illnesses.

"Both my grandparents had cancer, and my aunt had Lou Gehrig's disease," he says. "For a period of about two years they were using the available mobility aids and I was really disappointed with what the 21st century has to offer. Mobility aids really haven't changed that much from the 1970s. I thought it was an area that really needed some innovation."

He observed and queried his family members, "did a lot of homework and a lot of research," and came up with the Rollator Wheelchair Hybrid (RWH), a universal kit that can be retrofitted to any four-wheeled rolling walker. Mr. Kurek says it allows users to change their manual walker into a power-assisted walker or a fully powered wheelchair, "simply by pushing a button." He says it costs and weighs a fraction of an electric wheelchair and "it turns on a dime."

"When you have people who are in a rehabilitating or debilitating state, sometimes their needs throughout a very short period of time can change," he says. "For someone with cancer, for instance, they can wake up in the morning feeling great and they can do a lot of things independently. Then instantly they can hit the wall and need a lot more assistance to carry on with their day."

His invention has garnered 17 Canada-wide science fair awards, including the Best in Fair National Champion in 2009. He recently received both gold and bronze medals at the International Science Fair in San Jose, Calif., which will allow him to present the Rollator at an international engineering symposium in Chicago this summer.

Mr. Kurek's company, GET Mobility Solutions Inc., holds the patent on the device, which he hopes to launch later this year.

### **Elyse Simpson, 17, Oakville, Ont.**

Elyse Simpson is all about seizing opportunities.

Her long-term goal has always been to launch her own record label, but she figured it would have to wait a few years until she established a career as a solo musician.

But last year she heard about a summer grant opportunity through Ontario's Halton Region providing \$3,000 to set up and run a company complete with career counseling and mentoring. She got the grant, then entered the same business plan in another regional competition to net an additional \$2,000. By October 24, 2009 — a month after her 17th birthday — Ms. Simpson launched Jangle Records, an independent label featuring folk, rock and alternative artists.

"I thought, 'If the opportunity is there, why not try it now,' " she says. "There are a lot of great artists, who have great potential and great music . . . but there's so much out there that I think sometimes these independent musicians get lost along the way. There are a lot of artists I know — I really love their material and I thought they need a chance to get their music out there."

Within two months, Ms. Simpson had signed two musicians to her label and is now branching off into marketing and merchandise.

She is also focusing on her own upcoming tour, with performances booked in Ottawa, Montreal and New York.

"I'm lucky to have a lot of great people supporting me and I've had great opportunities and met great people in the music industry," she says. "I've always known I wanted to do this and I love travelling. So it combines the best of both worlds."

Come January, Ms. Simpson will be heading back to school to do a dual major in vocal performance and music business at the Berklee College of Music in Boston, where she has already completed a course to be a certified Music Specialist.

"It's my dream school," she says. "I'm really lucky to be going there."

### **Justin Vanderheide, 18, Oakville, Ont.**

As a swim instructor, it was while labouring over dozens — sometimes hundreds — of hand-written report cards for his swimming students that Justin Vanderheide figured there had to be a more efficient way to provide consistent feedback for kids and their parents.

"Some instructors would say, 'Great job swimming. Happy holidays.' We want to provide good, solid comments," he says.

Mr. Vanderheide developed "Swimgen," an online program that helps swim instructors write the comments that go on the report cards.

"You type in the swimmer's name and pick what level they're in and it gives them all the options of the skills we teach at that level," he says. "Then they can pick a strength and two weaknesses that they have and it creates meaningful feedback and how they can improve. The idea is that it consistently produces well-written comments."

After two months in development and a successful test run with the town of Oakville, Ont., Vanderheide launched Swimgen in early 2010. It is now online at [swimgen.net](http://swimgen.net). Oakville uses the program for creating reports in all of its swimming courses and Mr. Vanderheide is pushing to have Swimgen adopted by communities across the country in two years.

He has also developed another Web-based application that similarly streamlines sports league registrations and administration.

This fall, Mr. Vanderheide will be attending Waterloo University's computer science co-op program with a business option.

"With the co-op program, in the summers I'll be working with different computer science companies. So I want to try all the different fields — Web development, servers and networking — to see what I like."

He will also be studying Korean in the hopes of opening some international doors.

"There's a lot of computer science in South Korea, so if I learn enough maybe I could have a co-op term in South Korea. That would be really neat. There is really amazing stuff they do in South Korea that we don't even have here."

### **Brian Wong, 18, Vancouver**

Brian Wong was 11 years old when he started high school, 16 when he and three pals started up a successful Web-design company and 18 when he graduated last year from the University of British Columbia with a Bachelor of Commerce degree in marketing.

The Vancouver-born entrepreneur now lives and works in San Francisco, where he was scooped up to do business development for the social news website, Digg.com.

Mr. Wong says that first company, Aer Marketing, was initially created to cover the cost of tuition while attending UBC. After just four weeks of development, the team launched FollowFormation, an online user tool for Twitter novices.

"This was a tool that allowed people to quickly discover top Twitter users online based on what they're interested in, in just a few clicks," Mr. Wong says in a phone call from Medellin, Columbia, where he is an inspirational speaker at a high-tech conference with a strong youth presence. FollowFormation recorded more than 30,000 follows the first month, and earned the attention and praise of social media heavyweights like Mashable, one of the largest news blogs on the internet.

That success took Mr. Wong to conferences around the world as an inspirational speaker. He was attending one in Los Angeles when he decided to take a side trip to San Francisco, where he connected with Digg.com. They convinced him to stay.

"As an entrepreneur, my thinking needed to be expanded," he says. "Vancouver has a great, but very tight-knit and small-tech scene. You can literally count on your fingers the number of people who can invest in tech ventures. That's simply not the type of environment for rapid, high-volatile growth, which is what I want to be able to do. So if I can do that in San Francisco, then return and bring some of the knowledge and the networks that I've developed down there back, then I will be happy to do so. But right now, I've just begun my journey. I'm not there yet at all."

GlobeCampus is The Globe and Mail's site dedicated to undergraduate education in Canada. Through its innovative search, compare and rank tool called campus navigator, Canadian and visiting students can quickly find the school that would fit them best. The Globe and Mail's annual Canadian University Report (formerly University Report Card) collects the opinion of over 40,000 students across the country. This site will guide parents in evaluating universities and colleges and help students make the right pick from the rich array of qualifiers and indicators available from each of the school's profile.

- [Privacy Policy](#)

- [Terms & Conditions](#)
- [Disclaimer](#)



© 2010 CTVglobemedia Publishing Inc. All Rights Reserved.

globeandmail.com and The Globe and Mail are divisions of CTVglobemedia Publishing Inc., 444 Front Street W., Toronto, ON Canada M5V 2S9

Phillip Crawley, Publisher

Top 20 Under 20, 2010

## Beating the odds and working to galvanize others

These motivational young people have become involved with their communities, from encouraging science participation to mentoring troubled youth to creating a campus green team.

Marlene Habib

June 07, 2010 04:02 PM EDT

### **Stéphanie Brisson, 19, Quebec City**



Stéphanie Brisson will enter her first year at McGill University in Montreal this fall with stars in her eyes — a love of science that she says began with her high school physics teacher.

"He knew how to talk about science with his students, and physics in particular," Ms. Brisson, a 19-year-old CEGEP graduate from Collège François-Xavier-Garneau in Quebec City, says about teacher René Breton. "He talked about the fact man comes from the stars — all the elements and atoms come from the stars, so with time, the atoms became a little dust, dust became rock, and rock

became the planets."

Intrigued by the origin of the universe, Ms. Brisson started entering science fairs and soon became determined to encourage other young Quebecers to also take part. "I thought this experience of science fairs shouldn't just be for me."

At 16, she won awards at the Canada Wide Science Fair. At Shad Valley International, a summer enrichment program with a focus on the sciences, technology and entrepreneurship, she was the leader of a team of 25. Her efforts led to the inclusion of science event information in packages handed out at Collège François-Xavier-Garneau. She has been especially vocal about encouraging girls to embrace science, becoming a committee member of Les filles et les sciences Québec.

"If a girl doesn't like biology, chemistry, physics and math, they may think science is not for me," says Ms. Brisson, who is attending McGill with a private-sector scholarship in community leadership, and hopes to become a teacher. "They can also go into computing, medicine, engineering ... and be recognized as helping their community."

### **Claudia Covalciuc, 19, Membertou, N.S.**



Claudia Covalciuc has endured a lifetime of hardships, and she's only 19.

But even being born in an Austrian refugee camp, living in poverty in London, Ont., for several years with her mother, missing school for five years until age 16 after they moved to Romania, and working long hours to put herself through high school in Nova Scotia haven't given the determined university student excuses for feeling sorry for herself.

In fact, Ms. Covalciuc has spent immeasurable time giving motivational talks to Cape Breton youth, especially those at risk.

"I feel like the person I am is the person I was meant to be," says Ms. Covalciuc, who lives on a native reserve in Membertou, N.S., when she's not attending Saint Mary's University in Halifax.

Driven to make something of herself while also supporting her mother, Claudia saved for three years while working at a flea market in Romania to get the \$1,100 she needed for a flight back to Canada four years ago.

She landed at the Halifax airport with nowhere to live. A woman who saw Ms. Covalciuc crying took her to a family on a native reserve, where the determined teen earned her keep for two months before moving to Membertou. For

two years, Ms. Covalciuc made the 45-minute commute to Riverview Rural High School near Sydney while also pulling long hours working.

In her final year of high school in 2009, when she graduated with honours, she was recognized by teachers from various Cape Breton schools for her ability to connect with other students.

"I had kids coming to me crying; I had so many kids telling me their stories," says Ms. Covalciuc.

Through her motivational talks, special hikes and expeditions that reinforce healthy lifestyles, she has become a role model for young people, especially those facing school, family and abuse issues.

This summer, she is helping develop a program in Sydney for teen girls with the goal of building self-esteem and relationships with other young people.

Always thinking of her mother, whom she continues to send money to in Romania while keeping in contact with her by e-mail, Ms. Covalciuc will return this fall to Saint Mary's to study criminology and sociology. Whether she becomes a lawyer or works for the RCMP, one of her goals is to help improve the legal system, with an eye on helping young people.

### **Yan Yu, 19, Calgary**



Yan Yu's trip to China three years ago during his winter break from Queen's University in Kingston, Ont., left him feeling "half-thankful and half-guilty" — and opened his eyes to the evils of waste.

"My great-uncle's house in rural China is a wooden shack with dirt floors, a simple fire stove, and they get water from a well," said 19-year-old Mr. Yu, who immigrated to Calgary with his parents 10 years ago.

"It really was the first time I saw those kinds of living conditions. When I got back to Queen's, the first thing I noticed when I stepped into the cafeteria was all the food waste — it made me sick."

It turned Mr. Yu, who just completed his third year as a biology major, into "the face of environmental activism" at Queen's. After interning with the Main Campus Resident's Council (MCRC) Sustainability Office, run by the student government, he helped lobby to establish the position of sustainability co-ordinator. During his year in that role, he created the MCRC Green Team — dozens of students tasked with reducing food waste, running a campus cleanup crew and overseeing a worm-composting system in residence. In the team's first four months, collection of recyclable materials increased by 57 per cent over the previous year.

"My biggest accomplishment has been providing an opportunity and helping empower students to do stuff that makes an impact on the world," says Mr. Yu, who will either complete his fourth year at Queen's starting this fall, or enter medical school at the University of Calgary to prepare for a career in public health.

GlobeCampus is The Globe and Mail's site dedicated to undergraduate education in Canada. Through its innovative search, compare and rank tool called campus navigator, Canadian and visiting students can quickly find the school that would fit them best. The Globe and Mail's annual Canadian University Report (formerly University Report Card) collects the opinion of over 40,000 students across the country. This site will guide parents in evaluating universities and colleges and help students make the right pick from the rich array of qualifiers and indicators available from each of the school's profile.

- [Privacy Policy](#)
- [Terms & Conditions](#)
- [Disclaimer](#)

**CTVglobemedia**

© 2010 CTVglobemedia Publishing Inc. All Rights Reserved.

globeandmail.com and The Globe and Mail are divisions of CTVglobemedia Publishing Inc., 444 Front Street W., Toronto, ON Canada M5V 2S9

Phillip Crawley, Publisher

Top 20 Under 20, 2010

## Show me the money ... and they did

These young activists raise money for causes ranging from disease prevention to sick children, orphans and mental health resources for youth

Marjo Johne

June 07, 2010 03:58 PM EDT

### **Abid Virani, 19, Guelph**



Left to right: Abid Virani, Paige Lawson, Raphael Leclaire, Ivett Bell. Photo: J.P. Moczulski for The Globe and Mail

Abid Virani's humanitarian work has its roots in a blog post about child poverty he wrote at the age of 15. The comments from numerous blog readers were so positive that Mr. Virani, together with a close friend, decided to start a child sponsorship project in his high school, Centennial Collegiate Vocational Institute.

In its first fundraising campaign, SpartanKids brought in \$2,000, which was sent to support a baby in Niger. The early success of SpartanKids inspired Mr. Virani and his friend to expand their efforts. In April, 2007, the two formed Student Reach International, a global aid organization that calls on young people to pitch in with issues such as poverty and disease prevention in poor countries such as Lesotho, where HIV/AIDS is a major problem.

"Student Reach International was a response to recognizing that youth are passionate about our global community but not always given the opportunity to make a significant contribution," says Mr. Virani, who is now studying international development at McGill University.

He is also working on a book called Finding hope in a scary world.

### **Raphel Leclaire, 19, Montreal**

Raphael Leclaire was 12 years old and sick with non-Hodgkin's lymphoma when the Make a Wish Foundation offered him a chance to make a dream come true.

"I turned it down because I felt I did not need funds to achieve my wishes and should pass it to someone more deserving," says the Vanier College CEGEP student.

While he was undergoing chemotherapy, Mr. Leclaire met hockey player Saku Koivu, who had also battled non-Hodgkin's lymphoma and had started a foundation to raise \$8-million for the purchase of a PET scan machine to be donated to Montreal General Hospital. Inspired by this meeting, Mr. Leclaire began fundraising for the Saku Koivu Foundation. He raised \$50,000 in his first campaign.

In September, 2009, Mr. Leclaire cycled 100 kilometres with Lance Armstrong for the Tour de Lance fundraiser for cancer research. He got \$33,000 in pledges.

Mr. Leclaire is now the official spokesperson for Pedal for Kids, a \$750,000 fundraising event organized each year by

the Montreal Children's Hospital Foundation. Last year, he raised about \$20,000 for this event.

### **Paige Lawson, 19, London, Ont.**

When she was 12 years old, Paige Lawson began having panic attacks — frightening periods when she would sweat profusely, have dizzy spells and her heartbeat sped up.

"I couldn't concentrate in the classroom," recalls Ms. Lawson, who graduated recently from high school after taking online courses through various Ontario schools. "In addition to my anxiety impacting my academics, the stigma and lack of education surrounding mental illness resulted in me ultimately being removed from regular day school and completing over 10 online courses through virtual academy."

Ms. Lawson was determined to do something to spare other students the difficulty she had experienced first-hand. So in August, 2009, she began developing the DREAM project — short for Direct Resources for Education and Mental Health.

Last February, Ms. Lawson launched the DREAM project within the Thames Valley District and London District Catholic school boards. In the project's first 12 weeks, Ms. Lawson visited close to 20 schools, where she spoke to students and teachers about mental illness — how to recognize it, what resources are available and, most important of all, that it is nothing to be ashamed of.

Ms. Lawson was recently accepted into the broadcasting program at Mohawk College of Applied Arts and Technology in Hamilton. She hopes to become a TV host, producer and director some day.

### **Ivet Bell, 17, Vancouver**

Getting accepted by Harvard University, Cornell University, and the University of British Columbia is an achievement by any standard. But Ivet Bell, a Kitsilano Secondary School graduate, did so when she was only 16 years old.

In 2008, after becoming president of the Vancouver District Student Council, Ms. Bell created Beyond Borders, a project that engaged students in all 18 district schools to raise funds — through concerts, walkathons and barbecues — for orphanages in Peru and Vietnam.

"Beyond Borders was meant to cater to the interests of everyone, even those who have no relation and no interest in fundraising or volunteering abroad or helping orphanages," says Ms. Bell, who recently finished her first year at Harvard University, where she is majoring in economics.

The same year, Ms. Bell was elected as the first Canadian representative to the National Youth Council of America. Kitsilano Secondary School also gave her an Excellence in Service award to recognize her more than 600 hours of service.

GlobeCampus is The Globe and Mail's site dedicated to undergraduate education in Canada. Through its innovative search, compare and rank tool called campus navigator, Canadian and visiting students can quickly find the school that would fit them best. The Globe and Mail's annual Canadian University Report (formerly University Report Card) collects the opinion of over 40,000 students across the country. This site will guide parents in evaluating universities and colleges and help students make the right pick from the rich array of qualifiers and indicators available from each of the school's profile.

- [Privacy Policy](#)
- [Terms & Conditions](#)
- [Disclaimer](#)

**CTVglobemedia**

© 2010 CTVglobemedia Publishing Inc. All Rights Reserved.

globeandmail.com and The Globe and Mail are divisions of CTVglobemedia Publishing Inc., 444 Front Street W., Toronto, ON Canada M5V 2S9

Phillip Crawley, Publisher

Top 20 Under 20, 2010

## From climate change to solar paint, young scientists go green

These science enthusiasts have developed a novel climate-change theory, a more environmentally friendly pesticide, and even patented inventions, such as a solar tile that uses paint made from organic dyes.

Kira Vermond

June 07, 2010 04:00 PM EDT

### **David Castelino, 19, Mississauga, Ont.**



From the day David Castelino hammered together his first solar-powered toy car in Grade 5, he's been following a passion for surface chemistry and engineering.

Now a chemical engineering student at the University of Toronto, the 2008 Manning Innovation Achievement Award winner, SMART Network leader and Mississauga Mayor's Youth Advisory Council participant has something that is generating excitement: A patent citation for his breakthrough invention, Sol-Tile.

The thin-film solar tile uses solar paint made from organic dyes, which can fit existing roofing. It's a sustainable source of renewable energy.

The idea came to Mr. Castelino back in high school, as he watched weeds in his parents' garden grow like, well, weeds. He determined how they produced electrical energy and then used that material to fashion solar paint.

Although the project required ample work, to the science fair enthusiast, who has also created holographic images and improved food labelling systems, it seemed more like play.

"It's passion and commitment. If you're interested in something, all of a sudden it's not like homework. You'll do it in your spare time," he says.

### **Emma Graham, 15, Ottawa**



Living in China as a child, Emma Graham found breathing difficult. Areas of her hometown of Dalian, a coastal city, were so contaminated, white crust covered swaths of land.

Now living in Ottawa and attending Lisgar Collegiate Institute, she discovered her love of organic chemistry — but couldn't forget the pollution she'd left behind. She connected with university professors and industry mentors to become a lab volunteer, eventually developing a compound added to pesticides that decreases their overall environmental impact.

"I thought the best way to pursue my interest was to see what actually goes on in real life instead of just reading a textbook," she says today.

Her initiative continues to pay off. In 2009 she won a Youth Science Team Canada Award for optimizing a synthetic pathway for a drug used to treat infections in AIDS and organ transplant patients. Representing Canada at the Intel International Science and Engineering Fair, she won Gold for her division.

When she isn't hitting the books, she's playing viola with the Ottawa Youth Orchestra and taking to the water as a rower with Olympic dreams.

### **Cody O'Neil, 17, Kelowna, B.C.**



When Cody O'Neil gazes at the sky at night, he's not seeing stars, he's looking for opportunities.



The Kelowna Secondary School student is the 2009 national champion of Wendy's Classic Achiever Scholarship Awards. It's his commitment to pushing the boundaries at national and international science fairs that sets him apart.

In Grade 11, he decided to take a different spin on climate change by relating it to astronomy. His astrophysical theory, "orbital forcing," examines variations in the earth's orbit and how they influence long-term climate change. It also attempts to correlate sunspot cycles to rising temperatures today.

Placing first at the 2009 Taiwan International Science Fair, he also attended the Australian National Youth Science Forum.

"Climate change is so multidisciplinary. We have to consider many different things at once. This is examining one of those facets, rather than just assuming climate change is all our fault," says the teen, who will be attending an Austrian high school on educational exchange next year before heading to Princeton University.

GlobeCampus is The Globe and Mail's site dedicated to undergraduate education in Canada. Through its innovative search, compare and rank tool called campus navigator, Canadian and visiting students can quickly find the school that would fit them best. The Globe and Mail's annual Canadian University Report (formerly University Report Card) collects the opinion of over 40,000 students across the country. This site will guide parents in evaluating universities and colleges and help students make the right pick from the rich array of qualifiers and indicators available from each of the school's profile.

- [Privacy Policy](#)
- [Terms & Conditions](#)
- [Disclaimer](#)

**CTVglobemedia**

© 2010 CTVglobemedia Publishing Inc. All Rights Reserved.

globeandmail.com and The Globe and Mail are divisions of CTVglobemedia Publishing Inc., 444 Front Street W., Toronto, ON Canada M5V 2S9

Phillip Crawley, Publisher