

## 2022 HIGH SCHOOL-CÉGEP PHYSICS TEACHING AWARDS / PRIX DE L'ACP EN ENSEIGNEMENT DE LA PHYSIQUE AU SECONDAIRE ET AU COLLÉGIAL 2022

### British Columbia and Yukon / Colombie-Britannique et Yukon



#### **EDWARD CSUKA, Coquitlam School District**

Awarded in recognition of his passionate teaching of physics, in addition to his leadership of the Power of Ideas Exhibit and his dedication in seeking funding to launch and support a new STEAM program. Edward also provides extra-curricular opportunities for learners to develop their ideas and passions in the sciences through a robotics club, science fairs, and an innovation society, where students develop their ideas into designs and 3D-printed objects.

Edward Csuka has always had a great passion for science and in particular, physics. Deeply inspired as a teenager by Stephen Hawking's, "A Brief History of Time", Edward enjoys asking the big questions and revels in the pursuit of the elegant solutions that the Universe reluctantly reveals. His passion is contagious and ignites curiosity in students' brilliant minds seeking answers. Edward is recognized for his unique style of empowering others. Rather than giving students labs with predetermined procedures, he presents open-ended real world physics challenges. Students design their own experiments and report their results. Edward is invigorated when students find new and exciting ways to tackle difficult challenges.

Edward runs the Terry Fox Robotics Club and the Terry Fox Innovation Society for inventive, innovative, and entrepreneurial students. In 2014, he was one of only 40 physics teachers globally to be invited to the Einstein Plus Workshop at the Perimeter Institute for Theoretical Physics (PI). In collaboration with PI, Edward hosted the Power of Ideas Tour in 2017 as part of the Canada 150 Project. In addition to the Tour, Edward orchestrated 20 extra side attractions involving 75 professional presenters from top science institutions in the Greater Vancouver area. Many of Edward's students were highly involved and given prominent leadership roles. The Tour was well publicized in the media and over 1000 visitors came in from the community. The Tour also sparked the Fox Science Fair, which grew to involve hundreds of students. Following the Power of Ideas, Edward was awarded a Certificate of Recognition plaque from the SD43 School Board, and he continued to organize Power of Ideas events in 2018 and 2019. Edward is honoured and grateful to have enormous support from numerous exceptional leaders, colleagues and students who continue to motivate, lift, and inspire him.

## Prairies and Northwest Territories / Prairies et Territoires du Nord-Ouest

**CHRISTOPHER SARKONAK, Brandon School Division**

Awarded in recognition of his passion and dedication in teaching physics, particularly his ungrading policies, inclusive classroom, and commitment to sharing strategies to assist other physics teachers. Christopher's student-centered, equity-based approaches in the classroom have led naturally into his support and celebration of women through an annual STEM for Girls event. Notably, he has also twice received the Ceremonial Star Blanket, awarded annually within his school to a teacher who has supported Indigenous learners' successes as selected by a committee of graduating Indigenous students.

In 4 years of teaching Physics at Crocus Plains Regional Secondary School, Christopher has worked to create an exciting and engaging program that has seen the enrollment double during that time. Part of this accomplishment also comes through collaboration with the Electronics, Design Drafting, Welding, Music, and Photography departments to show the importance that physics has in a variety of fields.

It is through a number of professional development opportunities across the world, courtesy of CERN (becoming the first Canadian high school teacher selected by CERN through direct entry for their International High School Teacher Programme in 2019), the Perimeter Institute (of he is now the Regional Coordinator for Manitoba), the IQC, the CLS, the AAPT, and PASCO, that Christopher has brought unique experiences back to the classroom to engage and invigorate students. He has worked to start initiatives in the school to give students access to the CLS Students on the Beamline program, the Moon Camp Challenge from ESA, working with K-8 schools to promote STEM in the community, and encouraging participation in the local science fair. Last year saw Christopher mentor a group of students in advocating for the first hadron therapy facility in Canada for curing cancer. One of the most impactful initiatives that Christopher has spearheaded at Crocus Plains has been the development of a STEM for Girls program to get more female students interested in STEM fields. This has seen female enrollment in STEM increase significantly since its introduction four years ago. Christopher has worked to create an inspiring classroom where students are encouraged to take risks and explore the things that make them come alive.

## Ontario / Ontario

**ADAM MILLS, Assumption College Catholic High School**

Awarded in recognition of his dedication to the development of physics pedagogy and a classroom practice guided by physics education research. Adam's passion for active learning and student collaboration have had a positive impact on student learning and his students' interest and achievement in physics. He is also a mentor to other physics teachers through his work with the OAPT and as an Associate Teacher with the University of Windsor, mentoring trainee teachers.

Adam Mills (BSc Honours Physics and High Technology, 2005) has served as an incredibly respected, admired, dedicated, and innovative science, math, and physics teacher for the Windsor Essex Catholic District School Board since 2012. Adam currently teaches (among many other subjects) International Baccalaureate Physics at Assumption College Catholic High School in Windsor, Ontario. His passion for

teaching has previously earned him recognition as a recipient of a University of Chicago Outstanding Educator Award in 2016. He has devoted tireless service to his profession, serving as both vice-president and president of the Ontario Association of Physics Teachers, an organization with over 400 members. Adam has facilitated numerous teaching workshops for this association and for local teachers, presenting to colleagues and peers his experiences with the implementation of innovative teaching pedagogies like the use of inquiry-based classrooms, the design of novel assessment and evaluation methods, and the use of cognitive therapy and neuroscience to develop a more “scientific model for learning.” Along with this service to his profession, Adam has remained dedicated to his students, advising a Canadian Young Physics Tournament team, coaching senior boys soccer, and advising his school’s Math Club and Science Olympiad Team. Adam has inspired and motivated numerous young students to pursue careers in STEM fields and through his work with the University of Windsor Faculty of Education he strives to help prepare the next generation of teachers by improving the experiences and education of Teacher Candidates and by providing subject-specific feedback to the university students training for International Baccalaureate qualifications.

### Quebec and Nunavut / Québec et Nunavut



#### **HÉLÈNE NADEAU, Dawson College**

Awarded in recognition of her dedication to teaching physics and the development of students’ experimental and research skills. Hélène has developed unique cégep courses combining neuroscience and the physics of brain imaging techniques. In addition to supervising and encouraging students in a variety of research projects, she also supports them in extra-curricular competitions, such as “Science, on tourne!”, PontPop, and Concours Génie Civilisé. Teaching interdisciplinary content with a collaborative, problem-solving approach, Hélène sets students up for success in pursuing careers in the sciences.

Dr. Hélène Nadeau has taught a wide variety of physics courses for over 25 years. Her courses are all designed to be interactive and student-centred, with many group activities and problem-solving sessions, so that the students participate actively in their own learning. She has also extensively mentored students in designing and building objects to perform specific tasks, so that they could experience physics in the real world.

Over the years, Dr. Nadeau identified a significant weakness in the science program. CEGEP students dream of becoming tomorrow’s innovators but have very little opportunity to get acquainted with how science is really done. There is a crying need for a strategy for introducing a large number of students to the ins and outs of authentic research projects. As today’s students are attracted by multidisciplinary research, Dr. Nadeau has designed a combination of programs in which students work on projects combining several disciplines under the umbrella of neuroscience:

1. In the summer internship program in research in neuroscience, students work on projects with partners in various labs in the Montreal area. This began in 2015 and has been pursued every summer since, growing enormously in popularity.
2. In the Fall of 2017, an extra-curricular activity was started, in which a large group of Dawson students is led through a year-long research project. This too has become an annual event.

- In 2019 a new science option course was created, entitled Topics in Physics: Introduction to Brain Imaging. And in 2021 a complementary course, open to students of any program, was given: Contemporary issues: Introduction to research in Neuroscience.

### Atlantic / Atlantique



#### **APRIL BUTLER, West Kings District High School**

Awarded in recognition of her passion and dedication in teaching physics, evidenced through her students-first approach and wide-ranging involvement in school life and professional development. April's enthusiasm for physics permeates her classroom practice. Beyond the classroom, she has supported students' engagement in events such as the brain wars, theme park physics, Lego robotics, science fairs, and physics olympics. Additionally, she shares her professional expertise by mentoring trainee teachers and has been involved in the development of provincial curricula and

examinations.

Described as a “master teacher” by her colleagues, April Butler is a physics teacher who has devoted herself to inspiring young people to learn valuable life lessons through their study of physics. In addition to the countless students she has inspired in her classes, she has mentored many student teachers over the span of her 28-year career at West Kings District High School in Nova Scotia. A self-described life-long learner she has participated in and lead numerous professional development opportunities for herself, her students and her colleagues. Her impact extends far beyond the walls of her classroom as she played a key role in the development and implementation of the Nova Scotia high school physics curriculum. A common theme among the comments of those who have studied with, been mentored by, and worked with April is the lifelong impact she has had on them all. April is a highly trained, energetic, passionate and creative educator who is highly sought after, and the students, staff and community of West Kings District High counts themselves as extremely fortunate to have her amongst them.