

## CWSF 2011 - Toronto, Ontario



### Birch Bansgrove

#### Compost Disposal in Saanich: An Economic and Environmental Comparison

**Challenge:** Environment

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Saanich, BC

**School:** Reynolds Secondary

**Abstract:** This project looks at three methods of handling the kitchen waste produced by Saanich residents: land filling as usual, a curb-side pickup program, and a backyard composting program. The three methods were examined by comparing the economic costs and benefits and environmental pros and cons of the ways to deal with kitchen waste. I concluded that a backyard composting program is the best method.

#### Biography

My name is Birch Bansgrove and I am 14 years old and I go to Reynolds Secondary School. This is my second time going to the CWSF and my fourth time participating in the regional science fair. I am a big fan of hockey and the Vancouver Canucks (this is the year), and I also love to travel. I play the guitar, but I am not very good at it, and I also am one of those people that can find 101 uses for a pencil. I am usually rule abiding and a slightly obsessive pin trader.

# CWSF 2011 - Toronto, Ontario



## Hannah Bild-Enkin

### Slumber Sucking: A New Apparatus to Measure Infant Sucking Characteristics

**Challenge:** Health

**Category:** Senior

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Esquimalt Community School

**Abstract:** An inexpensive pressure-sensing pacifier has been prototyped and proves effective. This equipment allows a range of studies to be done which would be difficult to conduct with standard expensive equipment which requires operation in a laboratory setting. With this equipment it was found that sleeping infants suck with shorter bursts, longer pauses and decreasing amplitudes when compared to awake infants, while maintaining a similar sucking-rate.

#### Biography

Hannah Bild-Enkin takes pleasure in her work but also takes her hobbies seriously. She sings in several choirs as well as studying solo voice. Hannah also enjoys the artistic athleticism of figure skating along with the freedom from friction that comes with gliding on ice. Her family is very important in supporting her creative and academic ventures while accepting her goofiness. Hannah has participated in eight regional science fairs and is excited to be returning to the CWSF for the fourth and final time.

#### Awards

#### Value

Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	\$300
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
<b>Total</b>	<b>\$2 300</b>

## CWSF 2011 - Toronto, Ontario



### Alex Chlysta

#### Rover Robotics: A Better Approach to Rover Planetary Exploration?

**Challenge:** Discovery

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Claremont Secondary School

**Abstract:** Using physics simulation software, three rover designs were created. One "crab", one "dainty" walker and a wheeled design were individually evaluated using nine different levels of gravity and eight levels of surface friction. Gravity and friction were increased incrementally until failure of the rovers occurred. Observational data was used to determine the most universally adaptable rover design. The short-stride "dainty" walker was the most robust.

#### Biography

My name is Alex Chlysta, I am a Grade 10 student at Claremont Secondary School. I play piano, electric guitar and tenor saxophone. I am an avid swimmer, and I'm working on my bronze cross. My hobbies include golfing, skiing, rock climbing, photo editing, web design, and coding. In my spare time I act as a webmaster, a server operator and volunteer at my local library teaching seniors how to use computers. When I graduate, I plan on pursuing a career in medicine or computer science.

# CWSF 2011 - Toronto, Ontario



## Caitlin Doherty, Vicki Kleu

### Pumping Plaque; Reducing Arterial Turbulent Flow Through External Stents

**Challenge:** Health

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** , Lambrick Park Secondary

**Abstract:** Utilizing plastic tubing and an accordion pump, we investigated if varying stent type and stent placement could reduce turbulence in arteries subjected to additional plaque deposits. Through videotaping and calculating Reynolds numbers we showed that external stents significantly reduced turbulence and could become a major medical improvement.

#### Biographies

Caitlin - My name is Caitlin Doherty and I am in Grade 8 at Gordon Head Middle School. I love animals, singing, theatre and swimming. I have a dog named Ladybug and have volunteered in the past at the SPCA. I have been with the Victoria Youth Musical Theatre Society as well as, the District 61 Honour Choir for three years. At school I participate in leadership, choir and musical theatre. As I was growing up I spent most of my time singing and swimming at the Y. I have been taking vocal lessons for three years.

Vicki - My name is Vicki Kleu and I am 14 years old. I was born in South Africa and relocated to Victoria, BC when I was ten years old. While in South Africa I participated in ballet and modern dance. I currently take ballet and hip hop. Last year, I was leadership chair of my middle school. Last year I also sang in my school choir and had a minor role in our musical "Grease". I volunteer weekly at a neighboring school. I'd like to be involved in dance, medicine, and teaching when I'm an adult. This is my third time participating in a science fair and my first time attending the CWSF.

#### Awards

#### Value

The Actuarial Foundation of Canada Award - Intermediate Sponsor: The Actuarial Foundation of Canada	\$750
Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	\$700
The University of Western Ontario Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Western Ontario	\$2 000
<b>Total</b>	<b>\$3 450</b>

# CWSF 2011 - Toronto, Ontario



## Austin Sawyer

### Slurpy Colour Magic: Colour Disappearance versus Sugar Concentration

**Challenge:** Discovery

**Category:** Junior

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Gordon Head Elementary

**Abstract:** Different concentrations of sugar solutions were made. To these, green food colouring was added. They were frozen in dialysis tubing. The freezies were vacuum-suctioned to see the effect of sugar concentration on colour disappearance and ice crystal shape. It was found that as sugar concentration increased, colour disappearance happened more easily and crystal shape changed.

#### Biography

My name is Austin Sawyer and I attend Gordon Head Middle School. I have a Swedish/Canadian background and currently live in Victoria B.C. I play soccer, basketball, tennis, baseball, and I ski. I hope to become a Engineer or Chemist when I'm older because I really enjoy math and science. I play on all the school teams and usually obtain good grades. I really enjoy science and my first science fair has been a great experience so far.

#### Awards

#### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	\$700
The University of Western Ontario Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Western Ontario	\$2 000
<b>Total</b>	<b>\$2 700</b>

# CWSF 2011 - Toronto, Ontario



## Katherine Silversides

### Grab It, Drop It: the design of a robotic arm

**Challenge:** Innovation

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Esquimalt Community School

**Abstract:** As part of a FIRST Tech Challenge team, we create a robot to compete at tournaments. This year's game required a scoring arm that I designed, built and programmed. As part of the research, I investigated mobility aids (reachers and grabbers) only to discover there was nothing commercially available to pick up multiple items. My arm could be adapted as a reacher or grabber.

#### Biography

Katherine has been home school all her life, until last fall when she joined the curling academy at Esquimalt HS. She is a competitive curler who has spent the last season improving her technique, and helping coach the novices at her club. She's part of Movimento!, an early dance and theatre company. Katherine was delighted to visit Egypt last year and explore the tombs and monuments that have fascinated her for years. She enjoys being part of the Girl Guides, and has lots of fun being a Jr. Leader for girls from 9-11 years old. Katherine is part of a competitive FIRST Tech Challenge robotics team and her project relates to part of the robot her team used in this year's competition. With all these activities, she's working at learning time management skills!

#### Awards

#### Value

Excellence Award - Intermediate - Bronze Medal Sponsor: Youth Science Canada	\$300
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
<b>Total</b>	<b>\$1 300</b>