CWSF 2007 - Truro, Nova Scotia

Laura Simandl

Contribution to Sustainability in Cement and Coal Production

Division: Earth & Environmental Sciences / None
Category: Junior
Region: Vancouver Island
City: Victoria, BC
School: St Margaret's

Abstract: The Quinsam Coal Mine rejects are a valuable resource. They have ideal proportions of major oxides for high-quality cement production and contain between 6MJ and 12.5MJ of energy per kilogram of rejects. Their use would extend the life of the mine, reduce waste piles, and provide a reliable source of raw materials and energy savings for cement producers. The industry, society and environment would benefit.

Biography
I have a strong interest in sciences, particularly in engineering and earth sciences. I am really excited about participating in the 2007 Canada-wide science fair. I have participated in the Regional Science Fair (Victoria) for several years. This has been very beneficial to me because I learned a lot about many scientific disciplines through my own experiments and exposures to other projects. I am an outgoing person with a positive attitude, and I like challenges. Outdoors activities and sport teams, such as camping, hiking, soccer and field hockey are a huge part of my life. In my spare time, I enjoy reading and drawing wild life.

Awards	Value
The University of Western Ontario Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: University of Western Ontario	$1 000
Bronze Medal - Earth & Environmental Sciences - Junior Sponsor: Petro-Canada	$300
Total	$1 300

CWSF 2007 - Truro, Nova Scotia

Simon Bild-Enkin

Dissolving Buildings:The Effects of Acid Rain on Limestone Structures

Division: Earth & Environmental Sciences / None
Category: Intermediate
Region: Vancouver Island
City: Victoria, BC
School: Esquimalt Community School

Abstract: Acid Rain dissolves our architectural heritage. Using hydrochloric acid as a proxy, I measured how limestone tiles dissolved depending on concentration and time of exposure, and measured the structural strength by dropping weights on the tiles. A protective coating resists the acid but cracks concentrate the damage leading to structural weakness. The real solution to acid rain is the reduction of sulfate and nitrate emissions.

Biography

Simon was born in Edinburgh, but has been living in Victoria, BC, most of his life. He is passionate about making music (sax, bass and guitar), and reading about history and science. He combines history and science in all his science fair projects. This is Simon's third project at the Canada Wide Science Fair, and he hopes to add many pins to his collection. Simon has been growing a rat tail for nine years, and will not cut it off.

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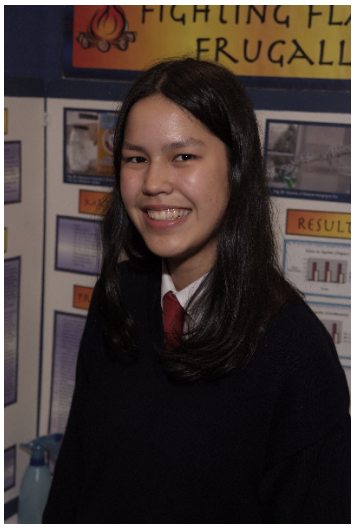

Adrienne Duimering

Fighting Flames Frugally

Division: Physical & Mathematical Sciences / None
Category: Intermediate
Region: Vancouver Island
City: North Saanich, BC
School: St Margaret's

Abstract: My experiment is designed to find out if baking soda and ammonium sulfate are effective alternatives to the expensive commercial fire retardants and the best concentration to use for different materials. My results were that the more concentrated the compound was, the better it worked. The baking soda and ammonium sulfate were both effective fire retardants and affected the flammability of the various materials differently.

Biography
My name is Adrienne Duimering. I am fourteen years old and attending Grade 9 at St. Margaret's School in Victoria, B.C. My favourite subjects are math and science, and I love to learn new things. I have been playing the piano for nine years. I live with my parents and older sister, Adele, on the border of John Dean Provincial Park. I would love to have a Nova Scotia Duck Tolling Retriever--that would be my ideal pet! My favourite TV show is Grey's Anatomy, and I would like to enter the medical field myself. I love skiing with my family on Vancouver Island. I enjoy visiting Strathcona Provincial Park and partaking in outdoor activities. I have competed in the Vancouver Island Regional Science Fair for the past five years, and this is my first trip to the Canada Wide. I am very excited about this opportunity!

Awards	Value
The University of Western Ontario Scholarship Silver Medallist - $1500 Entrance Scholarship Sponsor: University of Western Ontario	$1 500
Silver Medal - Physical & Mathematical Sciences - Intermediate Sponsor: EnCana Corporation	$700
Total	$2 200

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Alice Jourmel

Mechanical Properties of Hardwoods: A New Test

Division: Physical & Mathematical Sciences / None
Category: Intermediate
Region: Vancouver Island
City: Duncan, BC
School: Frances Kelsey Secondary

Abstract: This project assessed the effectiveness of the impact surface hardness test, developed by the exhibitor, as an alternate method of determining the mechanical properties of hardwood specimens. The nature of the relationships between density, modulus of elasticity (stiffness), and impact surface hardness within and between four hardwood species were determined. Clear, positively-sloped, linear correlations were found, confirming the impact surface hardness test's applicability.

Biography
I am in grade 10, and attend a self-paced, public school on Vancouver Island, BC. I have been doing science fair projects since I was in grade 1, and this is my third CWSF. I am a member of the Current Global Issues Club at my school, and I am a certified Streamkeeper. I enjoy nearly all subjects at school, but I especially like math and the sciences. As such, I plan to attend university after graduating, where I will get a science degree; I hope to some day receive a doctoral degree. I love to read - comics, blogs, science magazines, non-fiction books, short stories, and novels of all sorts. I also like hiking and running, creating bead jewellery, baking cookies, watching Star Trek (a special treat since we don't have television), and spending time with my family and friends. As well, I enjoy listening to and playing music. I am studying for my grade 6 RCM examination in cello this June, and I have been a member of the Cowichan Valley Youth Choir, which this year was selected to compete at the Provincial Music Festival, for four years.

Awards	Value
The University of Western Ontario Scholarship Silver Medallist - $1500 Entrance Scholarship Sponsor: University of Western Ontario	$1 500
Silver Medal - Physical & Mathematical Sciences - Intermediate Sponsor: EnCana Corporation	$700
Total	$2 200

CWSF 2007 - Truro, Nova Scotia

Michael Peters

The Actuator: a New Wheelchair Designed to Prevent DVT

Division: Health Sciences / None
Category: Intermediate
Region: Vancouver Island
City: Victoria, BC
School: Glenlyon Norfolk School

Abstract: This new wheelchair design that I invented increases circulation to the legs to prevent deep vein thrombosis in wheel chair bound people. The secondary purpose is to increase range of motion of the legs and prevent excessive scar tissue post-operatively. This project is dedicated to my grandmother, Mary Kozlo, who gave me inspiration after her stroke and death from artery occlusion of her left leg.

Biography
My name is Michael Peters from Victoria BC. I moved from Ontario when I was four, I am currently 15 years old, my birthday is April 1st. I enjoy practically every sport, among my favorite are any water sport, soccer, and almost any individual sport. I particularity enjoy both water skiing, skiing, surfing, wind surfing, and sailing. The clubs I am in at school include climbing, sailing, debate, and jazz band. As for music I've been taking piano outside of school since I was five, trombone since I was eleven, and alto sax since last year. I am also involved in the senior jazz band and concert band.

Awards	Value
The University of Western Ontario Scholarship Silver Medallist - $1500 Entrance Scholarship Sponsor: University of Western Ontario	$1 500
Silver Medal - Health Sciences - Intermediate Sponsor: Canadian Institutes of Health Research	$700
Total	$2 200

CWSF 2007 - Truro, Nova Scotia

Avery Noonan

Tseycum: est-il propre?

Division: Earth & Environmental Sciences / None
Category: Junior
Region: Vancouver Island
City: Victoria, BC
School: L'ecole Victor Brodeur

Abstract: The effectiveness of a wetland to improve the water quality of a creek receiving runoff from agricultural land was investigated by measuring physical/chemical water quality parameters and assessing the benthic community upgradient and downgradient of the wetland. No significant difference was measured between physical/chemical water quality parameters. However, benthic community results indicated that water quality below the wetland was better than that above.

Biography

I was born in October 1993 in Toronto. At the age of three I moved to the small town of Summerland in the interior of BC. I moved to Victoria halfway through grade six and entered my very first science fair immediately after. During school I have made it my goal to join every club and school sports team I can, and I have done this from a health club in grade 5 to a basket ball team in grade 8. I have also done a bit of volunteering work: I was a reading buddy at the library and a camp leader last summer. I have always loved sports and my favorite sport is soccer. In grade six I joined a school juggling club and learned to juggle. This year my ability to juggle got me into a major Victoria Ballet production as a jester. I was also invited to juggle at a few clubs and a parade. I play the guitar and am preparing for the grade 4 music exam this year. I have always loved the ocean and everything in it, especially whales. I plan to be a marine biologist, go boating, scuba diving, and travel the world.

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Daniel Bild-Enkin

Voila les Voyelles: French Vowel Pronunciation in a Victoria High School

Division: Physical & Mathematical Sciences / None
Category: Senior
Region: Vancouver Island
City: Victoria, BC
School: Esquimalt Community School

Abstract: Part of learning a new language is learning the pronunciation. Pronunciation is simply the physical system of sound source and vocal tract resonances. Articulatory features of vowels can be determined from acoustic ones. Software was developed to determine formants (resonances) of vowels spoken by students of various levels of French instruction. Significant correlations were found between French instruction and acoustic indicators of French proficiency.

Biography
Daniel is ecstatic to be attending his third and final Canada Wide Science Fair. His projects have been on the physics of sound and the quantification of qualitative phenomena. He is heavily involved in his school's environmental and social justice clubs. Daniel sings bass in the Victoria Philharmonic Choir, has been in his school musical five years straight, and plays piano badly. Next year plans to study linguistics and physics at university, with his ultimate goal being omniscience.

Awards	Value
CAP Physics Prize Sponsor: Canadian Association of Physicists	$1 000
The Manning Innovation Achievement Award Sponsor: Ernest C. Manning Awards Foundation	$500
The Manning Innovation Achievement Award and $4000 Manning Young Canadian Innovation Award Sponsor: Ernest C. Manning Awards Foundation	$4 000
The University of Western Ontario Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: University of Western Ontario	$1 000
Bronze Medal - Physical & Mathematical Sciences - Senior Sponsor: EnCana Corporation	$300
Total	$6 800