

CWSF 2019 - Fredericton, New Brunswick



Teryl Bates

A Fibonacci Solution ? Mitigating Landslides and Avalanches (v2)

Challenge: Innovation

Category: Senior

Region: Central Okanagan

City: Kelowna, BC

School: Kelowna Senior Secondary

Abstract: My project is about natural disaster protection against landslides and avalanches implementing the Fibonacci Sequence pattern so that people around the world can mitigate damage and loss of life with minimal cost. I propose a low environmental-impact mathematical barrier solution using locally-found resources such as trees, totem poles, pillars or combinations. The most important factor is the pattern itself, not what it is comprised of.

Biography

I am a grade 11 student at Kelowna Secondary School, Central Okanagan. Soccer, camping and gaming are my hobbies. Scouting has been a major interest since I was 6; now a 3rd year Venturer and travelling to the World Jamboree this summer. I've always been intrigued by natural disasters and this is my 3rd time attending the Canada Wide Science Fair through engineering barrier patterns to protect against the elements. My inspiration since grade 6 is the mathematical Fibonacci Sequence (0-1-1-2-3...) to mitigate disasters such as tsunamis, wind gusts, flash floods, landslides and avalanches. This year's project is an expansion on last year's protection against landslides and avalanches. I used a 1:100 size scale while testing inside with dust-free rice (instead of outside with actual snow and dirt that was subject to weather conditions) to tighten up controls and utilized trees and pillars combined in the Fibonacci Sequence pattern as an environmentally-friendly barrier system that can be implemented by anyone around the world using locally-available resources. I have confirmed that it is the pattern itself that is most important, not what it is comprised of. My advice to others is to passionately explore what interests you and keep challenging yourself.

Awards

Value

Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2500 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 500
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
University of New Brunswick Canada-Wide Science Fair Scholarship Silver Medallist - \$2500 Entrance Scholarship Sponsor: University of New Brunswick	\$2 500
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Ottawa	\$2 000
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$11 000