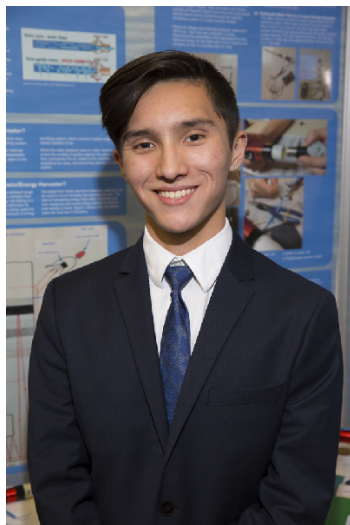


# CWSF 2016 - Montreal, Quebec



## Danté Wong

### An Untapped Source of Energy: Creating a Water Hammer Arrestor/Energy Harvester

**Challenge:** Energy

**Category:** Senior

**Region:** Greater Vancouver

**City:** Burnaby, BC

**School:** Alpha Secondary

**Abstract:** Water hammers are an unrecognized source of harvestable energy. This project demonstrates that energy can be generated by a novel water hammer arrestor/energy harvesting device. Adding an energy storage device to this system will allow that energy to be captured for later use. While the energy harvested from a domestic plumbing system is small, from larger systems, it will be both significant and environmentally friendly.

#### Biography

You know how when you shut off a tap, sometimes you hear a knocking or clunking in the pipes? I wondered about that sound and decided to investigate. After learning it was a pressure surge called a water hammer, I wondered if there was enough energy in this pressure spike to try to harvest it. After some experiments, the answer turned out to be yes. Then I wondered if I could build a device that could harvest the water hammer energy. I conducted some more experiments and the answer was again yes. Now I am wondering about scaling up this device to harvest energy from water hammers in larger structures. My advice to other students thinking about doing Science Fair projects is to always wonder. Wondering can lead to interesting questions and answers and generate more questions.

#### Awards

#### Value

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