

# CWSF 2007 - Truro, Nova Scotia



## Connor Emdin

### Predicting E. coli induced beach closures using artificial neural networks.

**Division:** Engineering & Computing Sciences / None

**Category:** Intermediate

**Region:** Quinte

**City:** Picton, ON

**School:** Moira S.S.

**Abstract:** Lengthy water quality tests result in beaches which remain open while E. coli levels may be dangerously elevated. Neural network and multiple regression models were developed to predict E. coli levels at eight Ontario beaches from local hydrometeorological data. Neural network models achieved more accurate predictions with a co-efficient of determination of 0.92, than those of multiple regression models with a co-efficient of 0.0029.

### Biography

I am a fourteen year old student from Prince Edward County, Ontario attending a pre-IB Program at Moira High School in Belleville. I have attended three previous Canada Wide Science Fairs at which I won two bronze and one gold medals. My previous projects examined a milk-based treatment for mildew in watermelons, and an environmentally safe treatment for Vincetoxicum rossicum, an invasive weed. I participate on my school's programming, math, soccer, ski and badminton teams and on student council and volunteer at the YMCA. I am attending the Deep River Science Academy this summer. I enjoy waterskiing, windsurfing and freeskiing.

### Awards

### Value

The Actuarial Foundation of Canada Award - Intermediate	\$750
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
Bronze Medal - Earth & Environmental Sciences - Intermediate Sponsor: Petro-Canada	\$300
<b>Total</b>	<b>\$2 050</b>