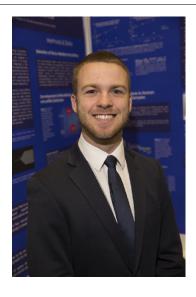




CWSF 2016 - Montreal, Quebec



Lucas Penny

Salivary microRNAs as a Novel Tool for Microfluidic Detection of **Breast Cancer**

Challenge: Health Category: Senior Region: Niagara City: Grimsby, ON School: Grimsby S.S.

Youth Science Canada

PO Box 297

416-341-0040

Abstract: A successful, low-cost system for detecting breast cancer in its early stages

is proposed. This study utilized a microRNA profile from saliva breast cancer samples to test early disease onset. A microfluidic device using saliva was then developed to test microRNA profile. The use of salivary microRNAs for diagnosing cancer is a novel, non-invasive technique that

would reduce cost and risk for patients and doctors.

Biography

Lucas is a passionate Grade 11 student, scientist, and volunteer. He is a competitive athlete, passionate musician, and is always looking to apply STEM in new ways. Lucas' past scientific work has ranged from discovering new molecular pathways in Alzheimer's disease to developing a new method for diagnosing breast cancer using saliva. Out of school, he is the chair of logistics for his region's mental health walk, a member of the Education Minister's Student Advisory Council, and is completing his Grade 8 RCM for piano. Lucas has been actively involved in sports all of his life, but developed a passion for rowing in high school. Over his high school career, he placed first with his crew at the American Scholastic National and Canadian Secondary Rowing competition. Currently, Lucas does research with microfluidics as a potential diagnostic platform for cancer. He is hoping that this technology will lead to improved patient care and will eventually be commercialized. At school, Lucas is the Student Council Vice President and DECA club President, a member of prefects, and his school's Student Senate representative. In his spare time, Lucas enjoys playing the piano and soccer.

Awards	Value
Canadian Society for Clinical Chemists Award - Senior Sponsor: Canadian Society for Clinical Chemists	\$1 000
The Manning Innovation Achievement Award - Senior	\$500
Sponsor: Ernest C. Manning Awards Foundation	ΨΟΟΟ
The Manning Innovation Achievement Award	\$4 000
and \$4000 Manning Young Canadian Innovation Award and also receive	,
an additional \$3000 towards their post-secondary education.	
Sponsor: Ernest C. Manning Awards Foundation	
S.M. Blair Family Foundation Award - Senior	\$1 000
Sponsor: S.M. Blair Family Foundation	
Excellence Award - Senior - Gold Medal	\$250
Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship	\$5 000
Senior Gold Medallist - \$5000 Entrance Scholarship	
Sponsor: Dalhousie University, Faculty of Science	
UBC Science (Vancouver) Entrance Award	\$4 000
Senior Gold Medallist - \$4000 Entrance Scholarship	
Sponsor: The University of British Columbia (Vancouver)	A
University of Manitoba Entrance Scholarship	\$5 000
Senior Gold Medallist - \$5000 Entrance Scholarship	
Sponsor: University of Manitoba	£4.000
University of Ottawa Entrance Scholarship	\$4 000
Senior Gold Medallist - \$4,000 Entrance Scholarship	
Sponsor: University of Ottawa	¢4.000
Western University Scholarship	\$4 000
Gold Medallist - \$4000 Entrance Scholarship	
Sponsor: Western University Total	\$28 750
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