

CWSF 2016 - Montreal, Quebec



Katherine Teeter

Synthetic Limpet Teeth for Improved Joint Performance

Challenge: Health

Category: Senior

Region: Bluewater

City: Markdale, ON

School: Grey Highlands S.S.

Abstract: The construction of prosthetic implants by synthesizing the constituents of limpet teeth showed great potential as a viable alternative to current implants. Combinations of chitin, goethite, chlorophyll extract, vitamin B12, and isopropanol were tested against existing prosthetic composites. 581 physical, chemical, and biological stress tests concluded that synthetic limpet teeth prosthetic implants were more resilient and could reduce adverse health conditions associated with current prosthetics.

Biography

I am Katherine Teeter and in grade twelve at Grey Highlands Secondary School in Flesherton, Ontario. This is my sixth consecutive Canada Wide Science Fair competition and my seventh science fair project. A BBC article examining the extreme strength of limpet teeth inspired me to investigate this topic for medical applications. I enjoy being outside, swimming, reading, playing music and sports, and spending time with family and friends. I play lead clarinet in the concert band and practice piano with the RCM at a grade ten level. I love playing co-ed fastball, girls' hockey and volleyball competitively and recreationally. I am a Link Crew Leader, and I help to coach my younger brother's fastball team. I enjoy umpiring younger fastball games at my home centre and judging the Bluewater Regional Junior Science Fair. I assist my dad every day on the family farm during the summer. Science fair has and always will continue to positively change my life. My future endeavours may include doctoring or researching.

Awards

Value

The Manning Innovation Achievement Award - Senior Sponsor: Ernest C. Manning Awards Foundation	\$500
Challenge Award - Health - Senior Sponsor: AstraZeneca Canada	
Excellence Award - Senior - Gold Medal Sponsor: Youth Science Canada	\$250
Dalhousie University Faculty of Science Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$5 000
UBC Science (Vancouver) Entrance Award Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$4 000
University of Manitoba Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of Manitoba	\$5 000
University of Ottawa Entrance Scholarship Senior Gold Medallist - \$4,000 Entrance Scholarship Sponsor: University of Ottawa	\$4 000
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
McGill University Entrance Scholarship An Entrance Scholarship of \$2,500 is offered to each recipient of a platinum award. Sponsor: McGill University	\$2 500
Platinum Award - Best Senior Project Sponsor: Youth Science Canada	\$1 000
Total	\$26 250