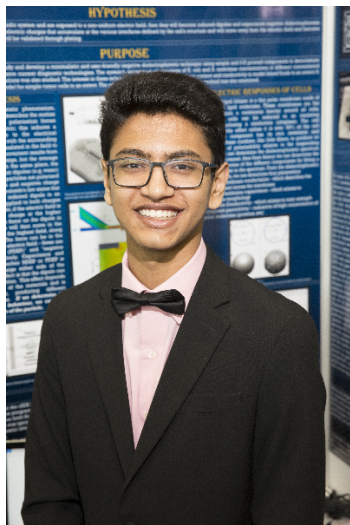


# CWSF 2019 - Fredericton, New Brunswick



## Devarsh Shah

### A Novel Dielectrophoretic-Based Separation System for Cell Identification

**Challenge:** Health

**Category:** Senior

**Region:** Lambton County

**City:** Sarnia, ON

**School:** Northern C.I. & V.S.

**Abstract:** The need for the rapid detection of diseases is becoming crucial in modern times. A novel approach is proposed to advance dielectrophoresis as a label-free and low-cost diagnostic technique that utilizes principles of polarization and motion of bioparticles in applied electric fields. A flow-based microfluidic system was designed and handbuilt: numerous results from in vitro experiments suggest this system can enhance current cell identification techniques.

#### Biography

My name is Devarsh Shah and I am an eleventh-grade student enrolled at Northern Collegiate Institute & Vocational School in Sarnia, Ontario. Science has always been one of my greatest passions and I plan on pursuing a career in the medical field. Apart from science fair, I enjoy playing badminton, tennis, and volleyball. I believe community involvement is an important aspect of being a good citizen, which is one of the main reasons I volunteer at the local hospital, Trillium Villa, CogecoTV, and other organizations. I have also participated and placed in many academic competitions such as CEMC Competitions, the Caribou Math contest, etc. At school, I am a part of Student Council, Peer Mentoring, Multicultural Awareness Club (MAC), and Canada's only high school Eco-Team. This year my project is based on developing an 3-D printed and cost-effective system that can separate cells to enhance current diagnostic tools. Participating in the science fair is a great experience and I'm looking forward to attending the CWSF in Fredericton this year!

#### 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>