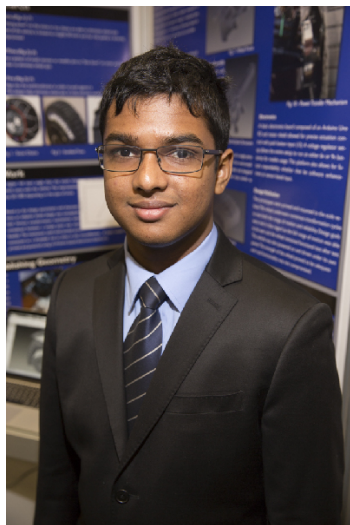


# CWSF 2016 - Montreal, Quebec



## Tahmid Khan

### The Development of Adaptive Wheels

**Challenge:** Innovation

**Category:** Intermediate

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Sir Winston Churchill High School

**Abstract:** Traditional tires are designed as a compromise to function on a variety of driving surfaces with a strong bias towards roads which compromises off-road performance. Adaptive wheels are a solution which involves a shape changing wheel to accommodate varying terrains. This project aimed to develop functioning prototypes of adaptive wheels and suitable power system, based upon my past work on ideal off road wheel shapes.

#### Biography

My name is Tahmid Khan. I'm a grade 10 student at Sir Winston Churchill High School with a passion for engineering. Over the years I've been able to indulge this passion by taking part in both the Calgary Youth Science Fair and the CWSF. Initiated by my love of automobiles, I began work on my project, Adaptive Wheels, after observing vehicles stuck in snow in my home town of Calgary, Alberta. These wheels change shape to accommodate different terrain types to provide the most effective driving experience possible. Last year, I proved the merit of non-circular wheels in off road scenarios and this year I focused on developing fully functional adaptive wheel prototypes for a scale vehicle. Future plans for this project include further optimization of the design and going to a larger scale prototype. I also participate in the FIRST Robotics Competition, compete in debate tournaments and participate in Model UN club. Recently, I've also participated in Science Olympic tournaments. My past experiences at CWSF were fantastic and I am greatly looking forward to this year's fair in Montreal!

#### Awards

#### Value

Excellence Award - Intermediate - Gold Medal Sponsor: Youth Science Canada	\$250
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
<b>Total</b>	<b>\$4 250</b>