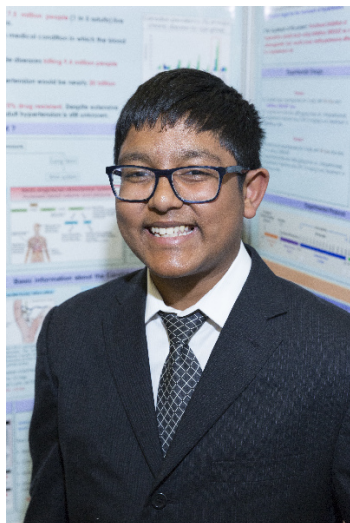


# CWSF 2018 - Ottawa, Ontario



## Aaranyo Ghosh

### A Novel Chemogenetic Approach to Treat Drug Resistant Hypertension

**Challenge:** Health

**Category:** Junior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Tom Baines Junior High School

**Abstract:** Overactivity of the carotid body increases blood pressure. The study showed that, overactive carotid body containing DREADD (a genetically engineered designer receptor microinjected into the carotid body) when treated with CNO (a designer drug which exclusively binds with the receptor) decreased blood pressure in hypertensive rat. This is a novel chemogenetic approach, with minimum side effects, to treat hypertension without surgically removing the carotid body.

#### Biography

Aaranyo Ghosh is an exemplary grade 8 student at Tom Baines School, Calgary. Passionate about Health Sciences, Aaranyo dreams of making a difference by serving Canadian Armed Forces as a Medical Surgeon. The passing of his grandfather due to hypertension inspired Aaranyo to address this significant global problem and build on his project, "A novel Chemogenetic approach to treat drug resistant Hypertension". Aaranyo's future plan is to test this method on genetically modified hypertensive rats and the outcome would lead to clinical trials. As an active CYSF participant, Aaranyo is the recipient of "Devon Top Junior Award 2018". Aaranyo advises other students to start working on projects early and find a mentor to evaluate and guide. As a young leader, Aaranyo aged out from Navy League Cadets as CPO2, in command of 60 cadets and in charge of the Drill Team. Presently, he serves as a Royal Canadian Sea Cadet. In 2017, Aaranyo was awarded the "Best Navy League Cadet of Alberta." Selected as unique personality, Aaranyo represented Canada at the "2017 Florida Kumon Conference". He is the recipient of "School Life Award 2017". Aaranyo's interests include performing magic and playing First Trumpet in School Concert & Jazz bands.

#### Awards

#### Value

|   |         |
|---|---------|
| Excellence Award - Junior - Gold Medal<br>Sponsor: Youth Science Canada                                       |         |
| Western University Scholarship<br>Gold Medallist - \$4000 Entrance Scholarship<br>Sponsor: Western University | \$4 000 |
| Total   | \$4 000 |