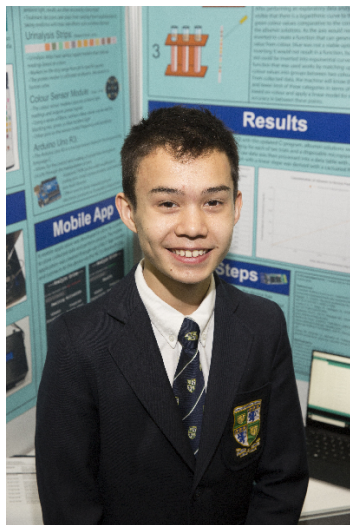


# CWSF 2019 - Fredericton, New Brunswick



## Ethan Chan

### Protein Problem: A Digitized At-Home Urinalysis Device for Kidney Disease

**Challenge:** Innovation

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Glenlyon Norfolk School

**Abstract:** To overcome the ambiguity of manually assessing urinalysis test strips, a cost-effective device was created to more accurately monitor and record kidney disease data. Depending on readings, treatment decisions take place from having to take medication, sometimes with toxic side effects, to hospitalized treatments. Additionally, this device automatically digitizes data, allowing for larger, more precise data sets to better research these rare kidney diseases.

#### Biography

Ethan Chan is currently a Grade 9 student at Glenlyon Norfolk School in Victoria, BC. He enjoys computer programming, learning various languages such as JS, Java, Python, and C, as well as developing electronic devices with platforms such as Arduino. Some notable achievements have been winning first place in the 2019 Sanofi Biogenius BC regional competition, 15th place nationally in the 2019 Junior Canadian Computing Competition and earning an invitation to the 2019 Junior National Debate Championships. Diagnosed with nephrotic syndrome at a young age, Ethan has been driven to aid patients with chronic kidney conditions. To achieve this he created a device through the disciplines of coding, 3D printing, and electrical engineering. In his free time Ethan enjoys network stress testing, rock climbing, and playing video games with friends. Ethan's advice is to find a project that combines your existing interests and skills so that the work won't feel like work.

#### Awards

#### Value

Engineering Innovation Award - Intermediate Sponsor: The Engineering Institute of Canada	\$750
Ted Rogers Innovation Awards - All categories Sponsor: Rogers Communications Inc.	\$2 000
Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$4 750</b>