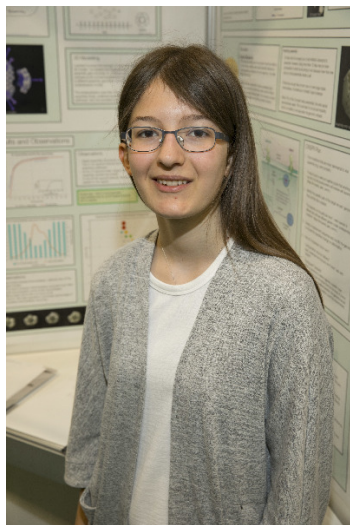


# CWSF 2017 - Regina, Saskatchewan



## Sophie Hoyer Pacholek

### Going Viral: Exploring and Inhibiting Viral Assembly

**Challenge:** Discovery

**Category:** Junior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Louis Riel Elementary Junior High School

**Abstract:** Viral assembly mechanisms were explored using a 3D printed physical model. Incremental assembly rates and assembly intermediates and pathways were investigated. Two attempts at viral inhibition were performed. The most successful method of viral inhibition was substituting mutated pentamers for regular pentamers. A possible application of this work is using the CRISPR Cas9 genome editing technique to implement this mutation.

#### Biography

Hi, I'm Sophie Hoyer Pacholek, currently a grade 8 student at Louis Riel School in Calgary. Ever since I was 9 I've wanted to work as an aeronautics engineer for NASA, and science fairs have been about expanding my learning in a variety of fields. In addition to science, I love classical and jazz music, burying my nose in a good book, and spending time with my new puppy and two cats. I'm inspired by the natural world, and enjoy hiking in the summer and cross-country skiing in the winter. Science fairs have always been the highlight of my school year, and in the past I've won three mathematics awards, and the top elementary and junior award at the Calgary Youth Science Fair. Last year, I won the top junior platinum award at the Canada Wide Science Fair. I believe that it is important to engage in science, and I'm looking forward to my second Canada Wide Science Fair.

#### Awards

#### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000