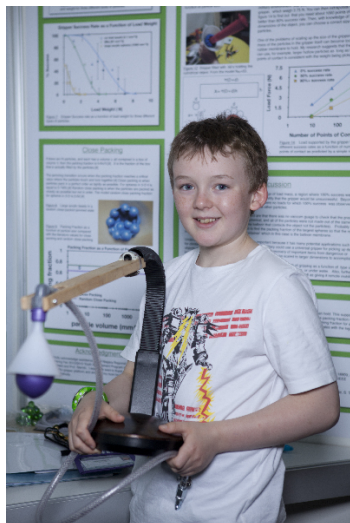


# CWSF 2013 - Lethbridge, Alberta



## Nicolaas Doyle

### Jammed Up! Investigating a Universal Jamming Gripper

**Challenge:** Innovation

**Category:** Junior

**Region:** Niagara

**City:** Grimsby, ON

**School:** Grand Avenue E.S.

**Abstract:** Granular materials are made of many particles of the same substance, and have a jamming transition which turns them from fluid-like to solid-like when the particles pack so closely that they can no longer move. A universal gripper was built based on the jamming process which can successfully pick up objects of different geometry. Its performance was evaluated as a function of particle size.

#### Biography

My name is Nicolaas Doyle. I am a grade 7 student at Grand Avenue Public School in Grimsby, Ontario. I'm on a swim team and play water polo. I also play baseball or soccer in the summer. I play saxophone in a beginner jazz band. My favourite hobbies are racing RC cars and riding my scooter. I got the idea for my project from my mom who is a physicist. She went to Boston for a conference and attended a presentation on a Universal Jamming Gripper. My mom told me about it because she knows I am very interested in robotics, and so I decided to investigate it further as my science fair project. For future work I would like to give my gripper remote mobility. The advice I would give other students about doing a project is to do something that you know will really capture your interest so that you will be excited to work on it for most of the school year.

#### Awards

#### Value

Excellence Award - Junior - Bronze Medal Sponsor: Youth Science Canada	\$100
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$1 100