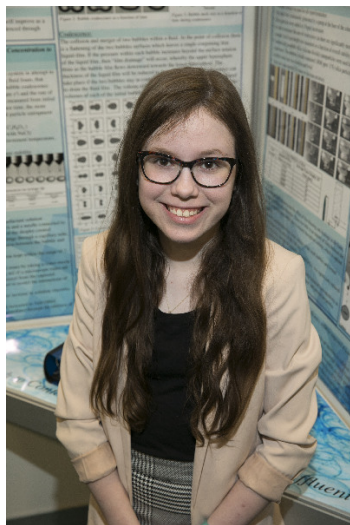


# CWSF 2017 - Regina, Saskatchewan



## Nicole Schmidt

### Optimizing Fluid Flow Systems

**Challenge:** Innovation

**Category:** Senior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Sir Winston Churchill High School

**Abstract:** I developed a method to create and stabilize bulk bubble foam, which was then used to successfully separate ultrafine heavy metal particles dispersed in industrial processing water and groundwater. Through a reduction in the frequency of bubble coalescence, I increased the agglomeration rate of the foam, improving overall stability and density, which increased the total recovery percentage of particulate matter from the fluid system.

#### Biography

My name is Nicole and I am a IB high school student from Calgary. I have participated in seven Calgary Youth Science Fairs to date, and this is my second CWSF. My projects in previous years have been focused on fluid mechanics, with application geared towards petrochemical processing improvements. I began my current project after learning about the difficulties that several prominent Canadian industries face when processing effluent wastewater, and the need for a sustainable, cost-effective solution. When I'm not working on science fair, I am involved extensively with my high school's Model United Nations team. I have been awarded for my efforts as a MUN delegate, and have had the opportunity to attend conferences across Canada. I am a nationally ranked Open-Championship level Irish dancer, and I will be competing at the North American championships this summer. My other extracurricular activities include Yearbook team, UNICEF club, and community volunteering efforts. Next year I will be pursuing a combined undergraduate degree in arts and sciences at the University of Calgary. I am incredibly excited to be attending the CWSF in Regina, as I believe that this event is a fantastic platform to promote the importance of science to young Canadians.

#### Awards

#### Value

Canadian Stockholm Junior Water Prize - Senior Sponsor: Canadian WEF Member Associations, the Canadian Water and Wastewater Association, and Jacobs	\$2 000
S.M. Blair Family Foundation Award - Senior Sponsor: S.M. Blair Family Foundation	\$1 000
Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
<b>Total</b>	<b>\$5 000</b>