

## CWSF 2014 - Windsor, Ontario



### Ajantha Nadesalingam

#### Small Particles, a Big Effect: Nanoparticles and Blood Cells

**Challenge:** Health

**Category:** Intermediate

**Region:** Toronto

**City:** Toronto, ON

**School:** North Toronto

**Abstract:** Currently, nanoparticles (NPs) are being tested for treating cancers and delivering medicine through the bloodstream. I hypothesized that certain NPs could damage blood cells. My controlled experiments show that silver, but not gold and iron NPs (10-nm size), substantially damage red blood cells and kill white blood cells. Endothelial cells take up gold and silver NPs. Therefore, certain NPs could be dangerous to patients.

#### Biography

I enjoy exploring, learning, writing, public speaking and reaching for the top. I have been breathing in science since birth. I went to kindergarten in Oxford, graduated as valedictorian from Toronto Orde St primary school, and was the Principal award winner and the received the award for excellence in science at Deer Park middle school. I actively participate in community services: I started a Free the Children Club in primary school, fundraise for charities, and train in the Youth Leadership Program. I also enjoy dancing (classical) and playing field hockey. Since grade 4, I have been participating in the Toronto Science Fair. Last year, I won gold in Toronto and CWSF. These exposures aspire me to discover and achieve high academic standards. I got the idea for the nanoparticle study when I was on a plane to Nova Scotia. I found that silver nanoparticles seriously damage blood cells. I think nanoparticles destroy many of our blood cells. I want to find out the long-term effects of nanoparticles on humans. Scientists change the world and I aspire to become one. Science fairs are fulfilling and provide a wonderful learning experience. Your imagination is the limit. Go for it.

#### Awards

#### Value

Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	\$300
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 300