

## Youth display innovative ideas for accessibility, literacy and the environment at Fair



By Brock Weir

Despite being in just Grade 7, Thomas Bianco is fast growing a reputation for out-of-the-box thinking.

The Pickering College student once again took home top honours at the 2018 Youth Innovation Fair, hosted by the Town of Aurora, for coming up with a simple solution ? using complex technology ? to a very personal problem.

Hosted November 14 at the Aurora Family Leisure Complex, Thomas' ?Easy Limb? presentation attracted many curious event-goers as he demonstrated how different 3D printing technologies can converge to make life easier for those experiencing accessibility challenges.

?This idea came from my uncle who was born with only half his arm,? said Thomas, displaying a 3D-printed model of a prosthetic hand and arm. ?I decided I would use the resources I have, which is my 3D printer, to help design something for someone I love.? Thomas' design fits onto his uncle's arm and features five fully mobile fingers each connected to a motor. The motor is attached to sensors that read signals sent down from the brain through the muscles.

?It tells the motor to open and close the fingers,? he said, noting the software he used to create the model. ?I designed this arm that is going to go to my uncle when it is finished. It's based on measurements I took of his arm, of whatever he has remaining. I built a place where his stump would sit and get strapped on there. This is unlike any other [prosthetic] because it is 3D printed and a lot cheaper than others. My uncle's first prosthetic, which he started wearing when he was about five, he wore until his teens and only stopped because it was uncomfortable and outdated. Not only is this cheaper, it is higher quality and has more advanced technology.?

Thomas, who won recognition last year at the same Fair for his paste-dispensing electric toothbrush, and the Easy Limb won the Most Innovative award for Intermediate students (Grades 7 ? 9) at the Youth Innovation Fair, a decision rendered by a panel of judges from a cross-section of the Aurora community, including Mayor Geoff Dawe.

Mayor Dawe took a keen interest in the Youth Innovation Fair last year, when it was supposed to be a one-off event to help commemorate the 150th anniversary of Confederation. But, he was so impressed with what he saw, he helped the Fair continue into the second year with a funding infusion through the Mayor's Charity Golf Classic.

?There is an incredible amount of hard work that goes into these projects and there is lots of support from moms and dads, aunts and uncles,? Mayor Dawe told the crowd while announcing the winners. ?This is a great opportunity to get kids involved in science, engineering and creative thinking. There are some fabulous ideas out there and I think our future looks pretty bright.?

Regardless of the age bracket, students who put their ideas forward came up with creative ways to address issues we hear about every day, from Hamza K., who offered a switch that controlled the power to non-essential household energy drains, to Elyse, Shonna and Victoria who proposed an innovative elevator designed just for disabled pets, inspired by Victoria's cat Trixie who struggles with mobility, while a multi-school team of Jessie, Shaylin, Edan, Chi, and Kadin looked to robotics to help pollinate

plants not only in space but also here at home.

Taking home prizes at the Youth Innovation Fair were:

Junior (Grades 4-6)

Most Innovative: Sara Stewart, Allie Dinsmore and Siera Zicaro for their creation of a Garbage Boat

Eco-Friendly: A tie between the team of Jordan Fox, Josefina Alberto, Maddy Loughlin and Chloe Bell as well as the team of Amelie Heng and Kaiah-Marie Sanderson for their respective innovations to keep dolphins safe from fishing nets

Community Leadership: A tie between Claire French with Mobility 4 All and Kayla Titherington & Mary Robertson for the Help App.

Intermediate (Grades 7 ? 9)

Most Innovative: Thomas Bianco with the Easy Limb

Eco-Friendly: Parsana Dehmeshki for bookshelves in bus stops and other public locations

Community Leadership: Matt Mellary for his invention of the Snow Caster

Senior (Grades 10 ? 12)

Eco-Friendly: Ian Rokas for the Solar Optimizer

Parsana said she was inspired to provide more opportunities for people to pick up a book or magazine on the go while waiting to get her braces tightened. She was in the middle of an interesting magazine article when her orthodontist called her in and she was unable to finish the piece.

?I was on the bus after and wondering where I could find that article and that gave me an idea of having books in public places, especially at bus stops because that way people won't get bored,? said the Grade 7 Regency Acres student. ?[With these shelves] they can read the book or magazine waiting for the bus. If they want to finish it, they can take it home and read it. People could even donate the books. I hope this actually happens because that way people will start reading more.?

With a little help from Ian Rokas, people could also have the ability to read by their phone, tablet or e-reader thanks to his innovation.

The Country Day School student's Solar Optimizer is a small solar panel connected on two motors that tracks the sun, generating energy to power and charge a cell phone, electronic devices, and small appliances. At the youth fair, the Solar Optimizer was powering a lithium ion battery, perfect for the smartphone of choice.

?I was reading about Elon Musk's solar city and there has been a lot of solar stuff in the news today with climate and everything and I thought this would be a cool way to actually find the sun,? he said. ?Climate change and greenhouse gasses are a huge problem now. Solar is a great green way to save energy and save costs also as well. That was my main point: save the planet.?