

gizmo

THE TETRA SOCIETY OF NORTH AMERICA: CUSTOM ASSISTIVE DEVICES

HIGHLIGHTS FROM 2018



CROSS COUNTRY: TETRA CHAPTERS AND UNIVERSITY CLUBS CONTINUED TO EXPAND ACROSS CANADA IN 2018

REFLECTING ON 2018, WE CELEBRATE INCREASED ENGAGEMENT, NEW COMMUNITY PARTNERS AND OF COURSE, THE CREATION OF UNIQUE CUSTOM-ASSISTIVE DEVICES TO ENHANCE THE QUALITY OF LIFE FOR PEOPLE WITH PHYSICAL DISABILITIES.

In 2018, we received over 300 requests for assistance and have helped 223 clients to date. In addition, we have engaged even more post-secondary students as volunteers, with Carleton University and the University of British Columbia both forming new Tetra student clubs, joining the ranks of an already successful chapter at Ryerson University in Toronto, and an active group of students at Northern Alberta Institute of Technology.

We are now working collaboratively with the Neil Squire Society on a project for TELUS. Tetra volunteers will have the opportunity to work directly with TELUS clients who may require custom assistive modifications to use their phone and tablet devices.

Tetra's reach was enhanced in 2018 with an increase in our online presence. We've been featuring volunteers, gadgets and clients, resulting in a reach of over 3,000 more people learning about Tetra. Look out for a new Tetra website to launch before the end of the year, showcasing how Tetra helps with a fresher design and a more user friendly experience to visitors!

These achievements are possible because of the volunteers and coordinators in our Tetra network. In this issue of Gizmo we feature students

at Carleton University, and the great work being done in St. John's, Newfoundland.

There are many more chapter highlights to celebrate and new initiatives in the works for Tetra in 2019. Stay in touch by following us on Facebook (facebook.com/tetrasociety) and Instagram (instagram.com/tetrasocietyna)

You can support Tetra's work by making a donation today or becoming a monthly donor so that Tetra can create many more assistive devices and enhance the quality of life for many more people. Please visit tetrasociety.org to donate.

www.TETRASOCIETY.org

TETRA SUCCESS STORIES AND VIDEO LIBRARY

With so many projects completed, we've compiled a vast library of adaptive devices and success stories. Visit our newly-updated website for resources, stories and innovations.



Carleton TetraClub!

A new collaboration between university students and Tetra

UNIVERSITY STUDENTS

are learning hands-on engineering basics through innovative partnerships between universities and Tetra. By joining the national Tetra network, university students get to work side-by-side with industry professionals and people with disabilities to design and build innovative assistive devices. Carleton University just joined Tetra's volunteer network to make a difference through ingenuity! We are proud to present the new Carleton TetraClub and introduce members of this new, brilliant group.

COLIN MIYATA is a PhD student that has helped set up the TetraClub.

Colin is currently working on his PhD in Mechanical Engineering and his research focuses on robot safety in human robot interaction. He's deeply invested in mechatronic systems and his main hobby is 3D printing! "I joined the TetraClub as I wanted to help individuals with disabilities and I have started the Carleton Club because I wanted to give back to the Carleton community," he says. "I am hoping the Carleton TetraClub will develop into an important aspect of the Carleton community with the network required to assist many people in the community with accessibility".

The first initiative that Colin has in mind is to establish a link to existing campus support systems, for instance Paul Menton Centre that manages accommodations on campus. Colin believes that these links could then refer clients to the TetraClub to solve any unique mobility limitations faced by the students.

"A second initiative is to reach out to the engineering design faculty and students to see if some of the designs could focus



on accessibility," he explains. "This would increase awareness about accessibility and would support Carleton's READ program to push for education in accessible design." The READ Initiative endeavours to establish Carleton as a Centre of Excellence in Accessibility, through research and development toward a world that is accessible and inclusive.

The final initiative Colin is looking into is the IDEA accessible design competition. He hopes that the experience developed through the club activities will create a strong team for the competition, and that the competition itself may attract more members to the club!

JACOB completed his bachelors of engineering, and is currently a first year Master's student in Aerospace Engineering. He is an enthusiastic engineering student who enjoys building electronics and robotics projects. Jacob was first introduced to TetraClub through his master's projects, which involves designing and building accessible human computer interfaces for people with essential tremor or Parkinsonism. Jacob became involved with TetraClub to advance his knowledge of accessible design principles and practices by completing practical engineering projects. The club also allows Jacob to volunteer his time and knowledge to a charitable cause, and to improve the lives of members of the community. In future, Jacob wishes to see the club take on more advanced robotics and accessibility projects.



“I AM HOPING THE CARLETON TETRA CLUB WILL DEVELOP INTO AN IMPORTANT ASPECT OF THE CARLETON COMMUNITY WITH THE NETWORK REQUIRED TO ASSIST MANY PEOPLE IN THE COMMUNITY WITH ACCESSIBILITY.” — COLIN MIYATA



NICK BEREZNY is a Master's student in Mechanical Engineering working primarily on rehabilitation robotics, a field which aims to create new tools for stroke therapists. Recently he completed the READ program at Carleton, a one-year program designed to introduce students to accessibility and accessible design. There he had the opportunity to work with a small team at St. Vincent's hospital as well as to observe and interview residents to gain a deeper understanding of the importance of inclusive design in a hospital setting. This sparked an interest which led to him joining TetraClub at Carleton! He thinks that this organization provides a unique opportunity to apply ideas from the READ program to real-life projects. Nick hopes that in the near future TetraClub will be an integral part of the accessible design community in Ottawa, and act as a way for students at Carleton to contribute to this community.



LIFE IS A HIGHWAY: MACKAYLA FAULKNER ON THE MOVE WITH HER TETRA-MODIFIED MINI.

Think in pink!

ALWAYS FORWARD THROUGH CREATIVE INNOVATIONS

The pink toy car project started last year for Avery, a 3-year-old girl with cerebral palsy. Avery has limited motor control skills and use of her legs. Essentially, the modification required was to replace the pedal and shift control with a big button on the steering wheel. On pressing the button, the car will move forward. The challenge was finding the right sized button and rewiring the controls.

For this project, Tetra St. John's Coordinator Leonard Lye and his team added an emergency shut-off button using the internet of things (IOT) technology and enabled the car to also be controlled via an app on a smart phone. The wireless connection is provided by a chip in the car and the app can move the car forward or backwards, to slow down or to speed up the car. This gives Avery's mother Samantha control over the car, if needed as an additional safety feature.

Next, Leonard and his team hope to apply touch technology to control the steering of the car via an app and the big button. They are currently modifying two more cars and envision this solution to be used for any toy electric car with minimal expertise.



INDEPENDENCE, FREEDOM & ACCESS

Tetra is a registered charity that enables people with disabilities to overcome barriers in the physical landscape. We recruit technically skilled and compassionate volunteers who work one-on-one with individuals requiring custom engineering solutions. The completed gizmos empower people with disabilities to live independent and active lives.

TETRA *Thanks!*

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- Allard Foundation
- Alliance Pipeline
- Al Roadburg Foundation
- Anna and Edward C. Churchill Foundation
- BC Rehab Foundation
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TETRA SOCIETY OF NORTH AMERICA

DEDICATED TO ASSISTING PEOPLE WITH DISABILITIES TO ACHIEVE AN INDEPENDENT AND FULFILLING LIFE, ONE ASSISTIVE DEVICE AT A TIME

Have an idea for a project? Want to know what's possible? Want to overcome a barrier?

Here's how to reach us...

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