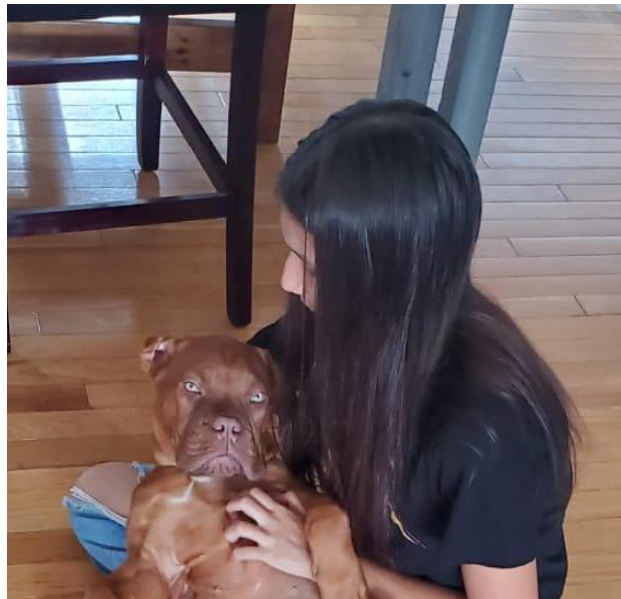


**VEX VRC – 2021 / 2022**  
**Career Readiness Online Challenge**

**I Love Robots and Animals**



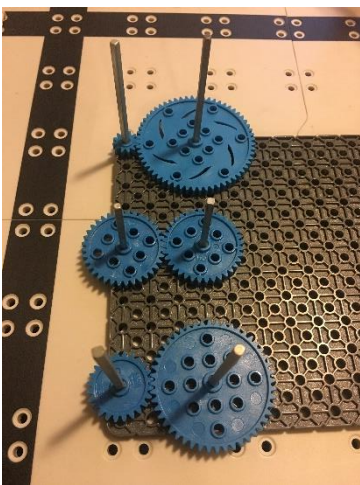
**Team No. 84294A**  
**Notre Dame du Sault**  
**Sault Ste. Marie, Ontario, Canada**

**Team: Gabrielle, Ella, Liam, Luc, Nicholas, Tieran**

# I Love Robots and Animals

Participation in robotics design and competition has opened my eyes to many possibilities in the science, technology, engineering, and math (STEM) world. Many might think robotics will only benefit you in the industrial, design and computer programming fields; however, robotics helps develop a plethora of skills you can apply to any future career you may choose. I am hoping to enter the profession of veterinary medicine to help keep animals healthy. I am passionate to pursue this career, as it allows me to demonstrate my affection and devotion to animals. Being part of the robotics team has sharpened my skills in; problem solving, teamwork, documentation, and much more which will be essential in this line of work. The skills I have learned through my four years of participating on a robotics team will continue to grow as I gain more experience each year.

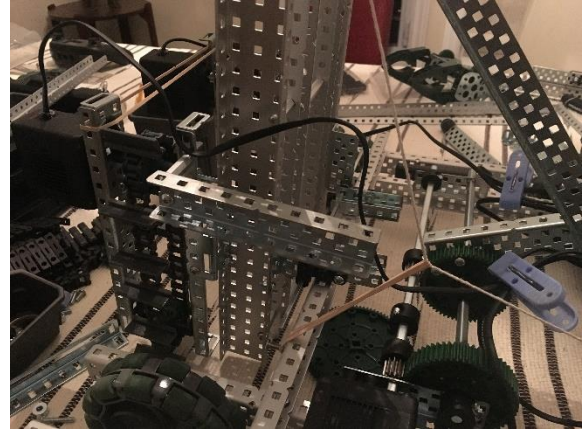
There are lots of problems a veterinarian encounters while diagnosing and treating animals. Biology classifies animals' systems such as respiratory, digestive, skeletal, nervous, circulatory, and muscular systems. The symptoms the animal displays indicate which systems are affected; for



example, if the dog is having difficulty moving his leg, a veterinary surgeon will have to diagnose if the problem is from the bone, nerve, or artery. One of the most important skills robotics has helped me develop is the ability to look for the defect in the system when something goes wrong, or if we were to put this idea into the medical terms “diagnosing” the issue. For example, during a robot match, the robot was not performing at its highest power, so we looked at every system on the robot; we had to examine all parts of the robot and fix the issue that had occurred. It was an electrical system problem as the

robot was losing power, and upon examination we replaced the battery to solve the issue. Though mechanical systems and biological systems are different, they have many similarities. For example, a wiring problem could easily be compared to a nerve problem, the gears could be compared to joints and the frame of the robot could be compared to the skeletal system. Diagnosing the systems is assisted by documentation which is another of the many skills robotics has helped me develop.

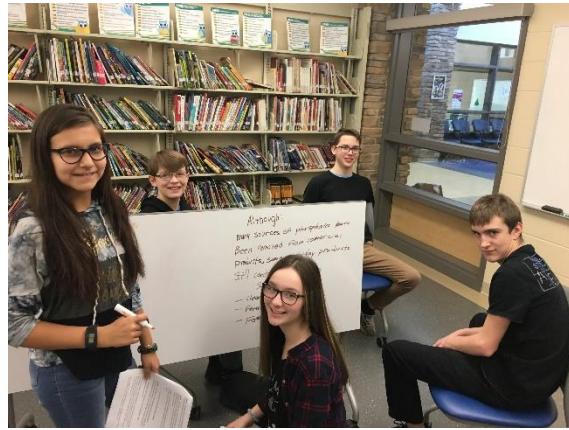
Consistent and clear notes are not only a good practice but are essential in the medical and robotics fields. We must write down all the improvements and changes made on the robot. This skill is transferable to the veterinary field as it is professional requirement to document all the assessment findings and treatments including medication taken, and procedures done on the animal. These notes must be



clear and precise. Written data collection of objective and subjective information also known as charting can help analyze the animal's issues and will keep track of improvements or declines in the animal's health. Using notes, you can prevent yourself and others from repeating the same steps, and always move forward with the plan or treatment. Learning how to document assists with remembering steps taken as well as communication with the team. This is an especially important skill to learn since it will not only help you keep track of your plan and progress but can also give you a second opportunity to realize if you have made a mistake so you may correct the issue at hand.

When performing intensive procedures on an animal, many unexpected issues may arise. Thanks to robotics, I have experienced solving problems in high stress situations. This is important since it will help me think ahead and resolve situations that may occur. A common saying on our team is anything that can go wrong will go wrong. This perfectly explains how my robotics team has helped me develop the confidence to be prepared to fix any issues as soon as they surface. When problem solving you must look at the big picture and the total situation, we cannot be tunnel visioned as it limits our ability to diagnose properly. Solving issues quickly is valuable when it comes to robotics. Time is limited in a match the same as in surgery you cannot keep an animal under anesthetic for too long. Robotics has taught me time management skills. Problems and stressful situations can be caused by your coworkers; this is where communication and teamwork come into play.

Whether you are working alone or others, communication is needed in every Veterinarian must possess this skill. Great written and body language skills make sure understand and consent with treatments. Effective communication occurs with coworkers, teammates but also with the patients. My time in robotics spent interacting with judges, coaches and peers has helped me develop a clear thought pattern and adjust my way of speaking with different audiences. When speaking to pet owners, a Doctor of Veterinary Medicine must speak professionally and clearly. Successful teamwork is based on good communication.



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Medicine and robotics have so much in common; all the skills learned with my years in robotics will be advantageous to my future field of work. I have insight into the systematic process of diagnosis and how biological and robotics systems are similar. The documentation process I have used while building and coding will prove beneficial as a veterinarian since there is a lot to keep



track of while caring for an animal. Also, one of the most valuable skills being a part of a robotics team has helped me develop is to solve problems in a stressful environment. This will be especially useful to me in the future; since even outside of work there will always be problems and stress; we must learn how to deal with calmly and rationally. Communication in teamwork is essential in every field; one must know how to speak to different audiences as well as discuss plans of treatment and ideas with coworkers. I encourage all youth to participate in robotics, it is a wonderful experience and will be beneficial to their future.