



# **Welcome To The Wayland STEM Fair 2019**

**October 27, 2019**

**1:00 - 5:00 PM**

**Wayland High School Commons**

**Hosted by the Wayland High Robotics Team  
FRC Team 5735, aka The Control Freaks**



Dear STEM Fair Attendees,

Thank you so much for attending the FIRST ever Wayland town-wide STEM fair. STEM is obviously something we're passionate about, and very competitive too! Whenever we demo our robot at community events, it's neat to see how the kids get so excited and inquisitive. So we thought, what if we have an event that pulled lots of STEM programs together? We could really get the kids enthusiastic about the breadth of STEM and what's available to them. We presented our idea to Dr. Unobskey and then we ran with it!

This STEM fair wouldn't have been possible without the help of so many people. Thanks to Dr. Unobskey and the administration staff at all of the schools who were incredibly supportive. Thanks to the WMS PTO for letting us use their sandwich board and to the Wayland businesses who let us advertise. This event would have been very boring without our enthusiastic exhibitors! A special shout out to Claudia Wey for being our photographer and Ashley Boyer for getting the giveaways. And lastly to our Team Mentors, Eric Wang, Jennifer Dennis, Diana Lien, Jinglei Whitehouse, Christine Chiang, you put in countless hours and this isn't even your day job.

Have a great time checking out all of the activities! Stay inspired and we hope you join us on the WHS Robotics team or any of the STEM clubs when you get to high school. If you have any suggestions for next year, please contact us at [team5735@gmail.com](mailto:team5735@gmail.com).

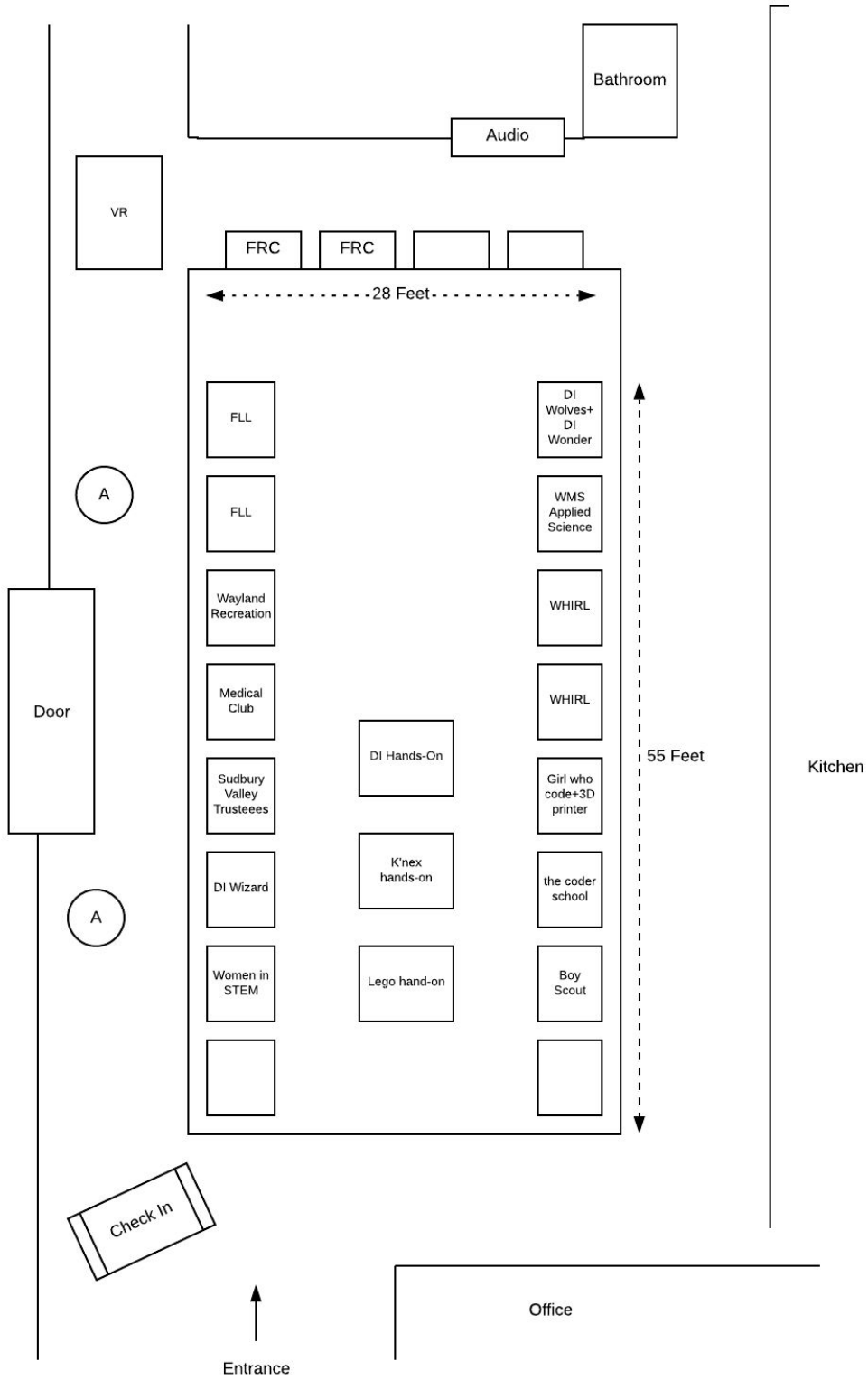
- The WHS Robotics Team

## Agenda

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12:00 PM	WHS North building Open
12:00-12:30 PM	Exhibitor Check-in at Reception Desk
12:00-1:00 PM	Exhibitor Set Up
1:00-1:15 PM	2019 Wayland STEM Fair Opening Remarks
1:15- 4:45 PM	Exhibition and Hands-on Activities
2:30 PM	Give Away
4:45-5:00 PM	Closing Remark and Give Away
5:00-6:00 PM	Clean Up

# STEM Fair Venue Map



## Wayland High School Robotics Team

The Wayland High FIRST Robotics, the “Control Freaks,” formed in the fall of 2014, comprising of six students, meeting in a tiny living room. In 2019, we have evolved into a well-organized, student-led organization that is supported by Wayland High School and the community. We are a competitive FIRST robotics team that inspires members to pursue knowledge in the STEM fields and teaches leadership skills. We engage in exciting activities that build science, engineering and technology skills and inspire innovation and foster self-confidence, communication, and leadership.

Through FRC 5735, we built a platform for volunteer parents, mentors, professionals and teachers who would like to get involved by offering their knowledge and expertise. We provide opportunities for students to participate in team building, fundraising, marketing and social media promotion. In addition, the team also enable students to share lessons learned with their community through outreach programs such as demonstrations, mentoring, and teaching sessions with younger students.

If you are interested in learning more about us, please contact us via the following

<https://frc5735.com/>

Facebook: <https://www.facebook.com/groups/FRC5735/>

Email: [team5735@gmail.com](mailto:team5735@gmail.com)



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## Troop 1 Cochituate, Boy Scouts of America

Troop 1 Cochituate is one of the largest Boy Scout troops in the Mayflower Council. Over 2000 young men have been members since its inception in 1924, with over 100 scouts achieving Eagle Scout rank. Hiking and camping in the White Mountains, rock climbing and a building project are just some of this year's planned activities. In addition to classic scout outdoor activities, there are several offerings for STEM badges such as Astronomy, Electricity, Energy, Engineering, Geology, Geocaching, Plant Science, Nature, and Sustainability to name a few.

If you are 11 years or older and would like to join Troop 1, contact Troop Committee Chair, Matt Karpacz at [MatthewKarpacz@gmail.com](mailto:MatthewKarpacz@gmail.com). NO PRIOR scouting experience is necessary and there is no commitment. We meet on Wednesday nights from 7-8:30 PM at the Scout House at 25 Parkland Drive. We also have activities geared toward the older teen Scouts. To learn more, visit <http://troop1cochituate.com/> or follow us on Facebook at [troop1wayland](https://www.facebook.com/troop1wayland).



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## Wayland High Innovation Realization Lab (WHIRL)

The Wayland High Innovation Realization Lab (WHIRL) is our high school makerspace where students learn to become leaders in our high-tech future. The lab is open to all high school students and staff and has a large-format laser cutter, several 3D printers, and traditional woodworking and electronics tools and supplies. In the innovation course taught in the lab, students follow the Design Thinking process to develop powers of observation and build deep empathy. They work collaboratively to uncover problems in the world and design and build novel solutions using cutting-edge engineering tools such as computer-aided design (CAD), 3D printing, laser-cutting, and Arduino microcontrollers (tiny cheap computers that can sense and act upon the world). Students refine their projects based on actual user feedback, learn to write patent applications, and strive to create new-to-the-world products. Projects are documented in an online portfolio (<https://wayland.nuvustudio.com>) that can be referenced in resumes and college applications.

If you are interested in learning more about our projects see <https://wayland.nuvustudio.com>.

Email: [jay\\_moody@wayland.k12.ma.us](mailto:jay_moody@wayland.k12.ma.us)



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## Wayland Recreation Department

Wayland Recreation is committed to enhancing our community through quality programs, activities, events, and parks that provide worthwhile recreation experiences. Our contributions are measured by community participation. We strive to offer 'Something For Everyone'. We currently offer programs in science, nature, Lego-Robotics and Lego-engineering, technology and coding too.

Register for our STEM programs at [waylandrec.com](http://waylandrec.com), download our Fall program brochure too.

TOWN OF WAYLAND  
Recreation Department  
41 Cochituate Road, Wayland, MA 01778  
(508) 358-3660  
[waylandrec.com](http://waylandrec.com) and [wayland.ma.us](http://wayland.ma.us)



# Wayland Public Library

## Girls Who Code

The Wayland Public Library offers two Girls Who Code clubs, one for girls in grades 3 to 5, the other for girls in grades 6 and up. These clubs teach basic coding in an engaging and creative way. We meet weekly, and there are fall and spring sessions of each club.

Girls Who Code is a national organization whose mission is to bridge the gender gap in the technology fields. The leaders are Wayland parents and Wayland teachers who are volunteering their time.

Questions? Contact Pam McCuen, Head of Youth Services, at [pmccuen@minlib.net](mailto:pmccuen@minlib.net).



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## 3D Printing Program

Wayland Reference Librarian and Computer Specialist Tyler Kenney offers 3D printing classes monthly for children ages 8 and up. Younger children, ages 6 and 7, can join but need to be accompanied by an adult. In these classes, children have designed and printed key chains, sliding boxes, rocket ships, and snowmen. Programs used include Tinkercad, Blender and Sculptris.

Patrons may also get 3D objects of their own printed at the library. Whether designing from scratch, or just downloading a design, patrons can send the .stl file to Tyler at [tkenney@minlib.net](mailto:tkenney@minlib.net) and he will print it at no charge. Print jobs must not exceed 8 hours.

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## STEAM TEAM and other STEM programs

Wayland library offers STEM programs on a regular basis. Recent STEM programs have included making a Rube Goldberg machine, designing and building bridges out of paper, making a zipline, and lego challenges. Our STEM programming provides an opportunity for Wayland High School students to earn community service hours!

Last year our Let's Build program, which taught basic engineering and problem solving skills, was planned and led by two Wayland High School seniors.

# Sudbury Valley Trustees

Sudbury Valley Trustees works to protect natural areas and farmland for wildlife and people in the 36 communities that surround the Sudbury, Assabet, and Concord Rivers.

We care for some of this region's most important forests, wetlands, and grasslands—natural areas that support wildlife habitat, working farms, and recreational trails. As of Fall 2019, SVT cares for more than 5300 acres on 91 reservations and 88 Conservation Restrictions, and we maintain more than 65 miles of trails. Since our inception, we have assisted other organizations and governmental agencies in protecting an additional 3000 acres in the region. We work in three major areas to fulfill our mission:

[We conserve land.](#) Through collaboration with individual landowners, local land trusts, and our municipal, state, and federal partners, SVT employs a number of strategies to protect land, from assisting communities and other organizations with local efforts to working with landowners to permanently protect their parcels.

[We take care of natural areas.](#) Our job does not end once a parcel of land has been protected. We actively work to steward these parcels, ensuring that the values that originally inspired protection are cared for in perpetuity. Stewardship tasks include invasive species control, habitat restoration and management, trail maintenance, and boundary monitoring.

[We provide people with opportunities to connect with nature and to act for conservation.](#) SVT recognizes that we must engage a greater number of people to care and act for natural areas, and we work to provide a diversity of opportunities for people of all ages to learn more about our region's open spaces and wildlife. Our trails are open to the public free of charge, and we sponsor dozens of outings and educational programs every year. We also provide a wide range of volunteer opportunities, both in our offices and on our properties.

## How to Contact Us

Visit our website: [www.svtweb.org](http://www.svtweb.org) to learn more about our work and our programming. Please reach out to Elizabeth Wallace, Director of Development and Community Engagement with questions about getting involved or supporting SVT!

Email: [ewallace@svtweb.org](mailto:ewallace@svtweb.org) Tel: 978-443-5588 x111



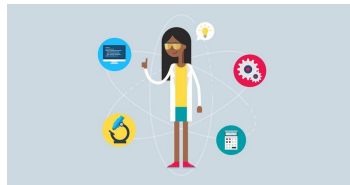
Sudbury Valley Trustees

## Wayland High Women in STEM Club

We are three high school seniors (Amelia Ao, Yana Lipnesh, and Amanda Michelson) that started the Women in STEM club, a club that tries to promote female involvement in STEM fields. The goal of this club is to educate girls about STEM fields, encourage them to participate in STEM programs, and consider pursuing STEM in the future. Our club will be focused on educating younger girls - specifically, girls in elementary schools. We chose elementary school children because we realized that a lot of what we are taught when we are younger becomes incredibly formative in our interests as we mature. There is currently a severe lack of females in STEM education and occupations compared to males; our physics class last year had 4 girls in a class of around 16. We wanted to help change that, to lessen the gap and make sure that young girls know they have both the opportunity and the ability to pursue whatever field they want to pursue.

If you are interested in learning more about us, please contact us via the following

Amelia\_Ao@student.wayland.k12.ma.us,  
Yana\_Lipnesh@student.wayland.k12.ma.us,  
Amanda\_Michelson@student.wayland.k12.ma.us



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## Wayland High School Medical Club

The Wayland High School Medical Club was created by Ciara Murphy in 2018 for a Girl Scout Gold Award project. The Medical Club is the first medical club in Wayland's recent history. The purpose of the club is to give high schoolers access to hands on activities and information sessions with medical professionals that live in Wayland. The classes' goal is to inspire young STEM students to consider the many professions of the medical field. Some of the classes that were hosted last year:

- Trainer Chris, WHS's Athletic Trainer (Gold Award Project Mentor): How to Tape an Ankle
- Ruth Mori, Town Nurse: Public Health
- David Houghton, Chief of the Wayland Fire Department, Wayland Emergency Response: EMT/ First Aid
- Julie VanRooyen, OBGYN and Wayland High School Bio Teacher: Suture Lab and Medical School
- Cindy Reardon, Stop the Bleed Movement: Stop the Bleed Certification (What to do in a mass casualty situation)

If you are interested in learning more, please contact us

@ [Ciara\\_Murphy@student.wayland.k12.ma.us](mailto:Ciara_Murphy@student.wayland.k12.ma.us)



## Destination Imagination (Wayland Wonder)

Wayland Wonder DI team is a group of kids who come together to solve a team based challenge. We pick our challenge from one of several offered by the DI organizers. We work to solve it over several months and then perform our solution at the tournament where we compete against teams from other schools.

Through DI project, we learned how to be creative and use our science skills to solve problems. We learned how to work as a team, and how to break up big things into smaller more manageable tasks. We learned how to take an idea, no matter how crazy, and bring it to life.

How to Contact Us

susansgarfield@yahoo.com.

<https://www.destinationimagination.org/>



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## Destination Imagination (Wayland Wizards)

We are the Wayland Wizards Destination Imagination team composed of 5 members (Abby Raftery, Ella Harris, Elsie Hwang, Missy Prince and Sophie Roman) and 1 team manager (Scott Harris: the Wayland DI Coordinator.) We first established our team in 2015 and we had 7 members, the following year we lost 3 members, but we gained Sophie! Since then our members have grown closer and we have strengthened as a team. Our teamwork and bonding over the years was emphasized when we won 1st place at our states competition and moved onto Global Finales in Kansas City Missouri.

How to Contact Us:

Team Manager/ Wayland DI coordinator Scott Harris:

Email - S22harris@yahoo.com

Cell # - 508-479-4782 or

Work # - 339-222-1925

<https://www.destinationimagination.org/>



## theCoderSchool Sudbury

At theCoderSchool, we want to do more than just teach coding. We want aspiring coders to use their new found passion as a stepping stone to thinking outside the box, as a way to channel their ideas in a creative way and most importantly, to have fun.

If you are interested in learning more about us, please contact us via the following  
sudbury@thecoderschool.com  
(508)808-8241



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### FIRST Lego League & Team Short Circuit Breakers

Wayland's FIRST Lego League (FLL) teams started over eight years ago when a group of kids decided they wanted to combine their love of Legos and use the Lego Mindstorms to learn about robotics, software programming, and how to develop solutions for real-world problems. During the season, each FLL team researches a problem, designs and programs a robot to complete tasks, and presents the solution and their robot design to a group of judges during competition while also competing in the robot games during a tournament. By the end of the season, the team not only becomes educated about robotics and how to conduct research, but more importantly, they learn the core values of FLL: Discovery, Innovation, Impact, Inclusion, Teamwork and Fun.

The Short Circuit Breakers started over six years ago and consists of a team of 8th graders who will participate in the 2019 City Shapers FLL Challenge. This team meets on a weekly basis during the fall which culminates when the team competes in a local qualifier to earn a spot in the regional Massachusetts championships. This year, the team will conduct research on how the Wayland Town Center can overcome challenges to become a destination that fosters a greater sense of community in Wayland. They will also design and program a robot to complete missions for the robot game. Throughout the season, the team combines their sense of fun with learning and gains a deeper understanding of FLL's core values and what it means to them.

#### How to Contact Us

If you're interested in learning more about FLL, please contact [diana.lien123@gmail.com](mailto:diana.lien123@gmail.com). You can also go to the FIRST Inspires website <https://www.firstinspires.org/> or scan the QR code to get more information.

