girl scouts of the green and white mountains

The Trailblazer

A Newsletter for Girl Scout Alumnae and Supporters

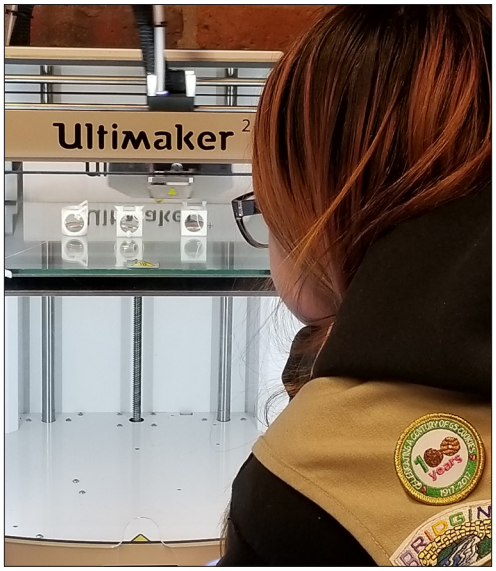
Winter 2019 **Vol. 3**

Girl Scouts get 'ARMI' of support for STEM

Girl Scout STEM programming stands apart on a local and national level as offering the best hands-on STEM experience for girls. Our programs are unique because research consistently shows that engagement with Girl Scout STEM programs is tied to the development of leadership skills and improved academic outcomes. With national data showing that STEM occupations are growing at double the rate of other professions, Girl Scouts is committed to filling the STEM workforce pipeline. GSUSA has launched the Girl Scout STEM Pledge—a multi-year initiative to put 2.5 million girls through hands-on STEM programs by 2025.

Those attending the G.I.R.L. Expo in October were fascinated by the demonstration of bubbles being filled with smoke. It was one of many opportunities at the expo to learn about and interact with STEM-related activities. (GSGWM)

Girl Scouts has long been committed to challenging stereotypes and providing girls of all ages with interactive and engaging programs that increase their interest in STEM. The Girl Scout effect is proven: in the U.S., 90 percent of female astronauts, 80 percent of female tech leaders, 75 percent of current senators, and 50 percent of female business owners are Girl Scout alumnae. Girl Scouts offers dozens of STEM-focused programs and badges, affording girls the opportunity to combine STEM learning with leadership development, growth mindset development, and other socially desirable skills in a flexible, informal environment that supports student-driven exploration and experimentation.



A Girl Scout examines the 3-D printer at the University of New Hampshire. (GSGWM)

Locally, GSGWM takes seriously the challenge to grow the number of girls who have access to STEM programs in which they are empowered to take the lead and become change-makers in the world. Thanks to our new partnership with Advanced Regenerative Manufacturing Institute (ARMI) and BioFabUSA which has awarded a three-year Education and Workforce Development project to GSGWM, we are building our capacity to deliver STEM programs. ARMI/BioFabUSA was founded by Dean Kamen, also founder of FIRST Robotics and inventor of the Segway personal transport, a drug infusion pump, and the LUKE prosthetic arm.

We are pioneering this collaborative partnership with ARMI/BioFabUSA to increase girls' awareness of and interest in the STEM fields, with emphasis on the biofabrication industry. Girl Scouts will learn about the industry, the value it brings to society, and meet professionals already working in the field. GSGWM staff will partner with industry experts through its membership in BioFabUSA to offer biofabrication-related activities to enhance existing Girl Scout STEM programs, and create web-based resource videos that will help local troop leaders and other volunteers to deliver learning on such complex subjects as mechanical engineering, robotics, coding, and more.

For More Information

To donate to Girl Scouts of the Green and White Mountains, visit: ***girlscoutsgwm.org/donate***.

To learn more, contact the Advancement office by emailing ***advancement@girlscoutsgwm.org*** or calling 888-474-9686.

Girl Scouts and NASA:
A partnership that is out of this world!

In 2017, GSGWM was chosen as just one of 11 Girl Scout Councils nationally to pilot a new program called Reaching for the Stars: NASA Science for Girl Scouts. Funded by NASA's Science Mission Directorate and led by the SETI Institute, the program offers girls opportunities to explore STEM topics and careers through new Space Science badges. These badges were created at the national level in partnership with NASA and offer activities for girls at every Girl Scout grade level. Combined with Girl Scouts' other national STEM programming, this new partnership with NASA provides a seamless pathway for girls to develop a lifetime love of the cosmos and its endless possibilities.

The program and funding allowed GSGWM staff to implement three unique and innovative programs to our membership: Badge pilots, after-school Space Troops, and Star Parties. Daisy, Brownie, and Junior Girl Scout troops were selected to pilot the new Space Science badges, the first to be scheduled for release. Troops received the curriculum and support to pilot the badges and provided feedback to GSUSA to aid in the development of the program. Additional support from GSUSA allowed GSGWM to start several new after-school Space Troops serving 82 girls. Girls were able to learn about space through a variety of hands-on activities, including the new badges. We were particularly excited to try out the new Space Science badges through outreach troops because girls in this program represent some of the most at-risk and marginalized girls we serve, with families facing a number of barriers to service, such as finances and transportation. After becoming involved with the NASA program, it was easy to see how many girls loved the curriculum and were interested in increasing their STEM knowledge.

With the Daisy through Junior Space Science badges fully field-tested and now released at the national level, GSGWM is currently piloting the older girl Space Science badges for Cadettes, Seniors, and Ambassadors among 147 girls in troops across New Hampshire and Vermont. Like the pilot program developed for younger girls, these troops are engaging with the

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Members from the New Hampshire Astrological Society show girls how to use their various telescopes at a Star Party held at the McAuliffe-Shepard Discovery Center in Concord, NH. (GSGWM)

New Year, New Commitment

Dear friends,

As we enter a new year, Girl Scouts of the Green and White Mountains remains committed to helping every girl reach her full potential. In today's world, supporting girls in science, technology, engineering and math (STEM) is essential to their future success. STEM activities are incorporated into every aspect of our lives, whether it is designing the latest fashions, communicating with our friends, or building a bridge so we can ford every river and stream.

Girl Scout councils have joined with Girl Scouts of the USA to make a bold commitment: 2.5 million girls in the STEM pipeline by 2025! How will we reach that audacious goal? By providing STEM experiences for every Girl Scout in the United States and by raising awareness amongst families and our volunteers to gain their support.

There are hundreds of badges and activities that girls may try in Girl Scouts today – from cybersecurity to mechanical engineering and everything in between, either indoors or outdoors, touching the ground or reaching for the stars! Given our unparalleled reach, we know we are the only organization that has the depth and breadth needed to bridge the STEM gender gap which exists today.

Here in New Hampshire and Vermont, we continue to offer STEM programs to girls individually and with their troops. To ensure we can provide program throughout our jurisdiction, we are raising funds for a Mobile STEM lab. In combination with our Council properties and vendor partners, the Mobile STEM lab would allow girls across our two states to experience professionally supported and fun STEM programs.

We are excited by all that the future holds, and know that our girls today hold the key to our success tomorrow. Thank you for all that you do to support our council and the girls that we serve.

Yours in Girl Scouting,

Tricia

Tricia Mellor
Chief Executive Officer, GSGWM
Gold Award Girl Scout

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Space Science badges through volunteer-led troops that will closely monitor the girls' participation with the new curriculum, allowing us to make thoughtful recommendations to GSUSA before the badges are released at the national level, tentatively scheduled for this spring.

We also expanded access to the Space Science badges by offering two large-scale Star Parties earlier this year at the Fairbanks Museum and Planetarium in St. Johnsbury, Vermont, and the McAuliffe-Shepard Discovery Center in Concord, New Hampshire. These events allowed girls from across our council to experience activities from the new badges and learn from experts in the astronomy field.

GSGWM has been honored to be a part of piloting this exciting new curriculum. Volunteers across our council are now bringing the Space Science badges to their Daisies, Brownies, and Juniors through the Volunteer Toolkit, which offers volunteers all the tools they need to bring the expertise of NASA scientists to their local troops.

Save the Date

50-Plus & Baby Boomers Expo

February 2, 2019
DoubleTree by Hilton Conference Center, Burlington, VT

Stop by the GSGWM alumnae booth at the annual Vermont 50-Plus & Baby Boomers EXPO. The EXPO is open to all ages and offers more than 90 exhibitors and an exciting roster of informative seminars and workshops, a dance party with DJ Charlie Rice, a Broadway Music Revue by the Lyric Theatre Company Singers, and much more! Ticket prices are $4 in advance or $5 at the door.

Camp Farnsworth 110th Anniversary Celebration

August 3, 2019
Camp Farnsworth, Thetford, VT

Come and enjoy Camp Farnsworth's rich history with Girl Scouts and camp alums. Tour the camp, partake in the flag ceremony, paddle a canoe across the lake, swim in the pool, and try out the new Camp Farnsworth history patch program. Includes ceremonies to celebrate the history of camp and decade photo sessions for those who attended camp in the past. Register at girlscoutsgwm.org/Farnsworth110th.

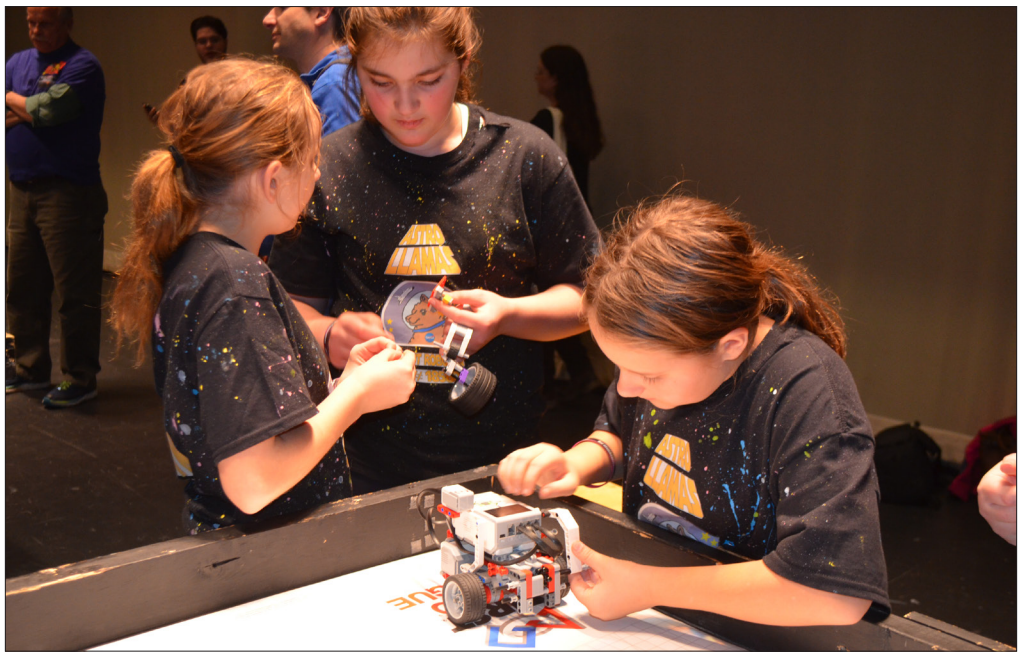
Farnsworth Weekend

September 6-8, 2019
Camp Farnsworth, Thetford, VT

Farnsworth Weekend, held at Camp Farnsworth, is an energizing and informative weekend. Workshops, training, and outdoor activities including hiking, swimming, and archery, are all on deck. You can also come to simply relax and have fun. The weekend is open to all registered adult Girl Scouts and girls in grades 10-12. Look for more information about this event in summer 2019.

Girl Scouts compete in FIRST Lego League

The Astro Llamas of Wolfeboro were a unique team at the FIRST Lego League state championship held on Sunday, Dec. 2 in Windham, NH. Not only are they a team of girls, they are a team of Girl Scouts. In their fourth year of participating in FIRST Lego League, these girls are developing a range of skills not just in STEM, but also life and leadership skills.



Members of the Astro Llamas, the only Girl Scout team at the FIRST Lego League regional championship in Windham, NH, put their robot through a practice run before their competition. (GSGWM)

Programming a robot to accomplish certain tasks is only one part of the competition. Teams are scored on the design of their robots, a project presented to judges which addresses a problem, and demonstration of the core values of the program. The Astro Llamas chose the issue of depression and isolation in space, and talked to a veteran, Glen Houghtaling, about how hard it is to be away from family for an extended time, as well as trying out a virtual reality experience to see how their ideas on helping astronauts might work out. They also met with a therapist to learn about depression, and with Marty Lee, a NASA scientist at UNH to learn more about what scientists do to help NASA reach its goals.

The Astro Llamas used their creativity to illustrate a comic about astronauts on a long mission. Girl Scout volunteer and Astro Llamas assistant coach Delina Bickford is proud of her girls' performance at the state competition where they logged their highest score for the season. The team landed at 29th out of the 50 teams in state competition, and Bickford pointed to their growth in problem solving and teamwork throughout the season and over the years.

The Astro Llamas set up their Lego robot at the competition. (GSGWM)

"It helps me with speaking in public," Girl Scout and Astro Llama team member Amelia said. She loves learning the technology, and said, "I'm what I like to call a creator. I like having a challenge."

Although they have wrapped up competition for the year, the Astro Llamas will be pitching in to help mentor a Girl Scouts FIRST Lego League Jr. team this year.

"The funding provided by BAE Systems and FIRST for our Girl Scout robotics programs gives girls the opportunities to flex their leadership and teamwork muscles while exploring creative solutions to real world problems," said Patricia Casey, Director of Advancement for GSGWM. "We are so grateful for their support."

GSGWM is seeking additional adults to mentor girls in 2019 as we continue our partnership with FIRST and its robotics program. Adults or girls interested in learning more can email customercare@girlscoutsgwm.org or call 888-474-9686. Financial support is available and you don't need to know computer coding – the program teaches it as you participate.

Girl Scouts prove computer coding is for girls, too

Cadettes' Silver Award project embodies STEM focus; Liberty Mutual supports girls with their Coding with LEGIT program

If you had to program a computer to play a game, could you do it? Could you do it when you were 13?

In Dover, a trio of Cadette Girl Scouts are not only learning how do to just that, they are working on a way to spark interest in computer coding among their peers and proving that girls can be successful in the computer fields. They are in the middle of earning their Girl Scout Silver Award with their project called Coding with LEGIT, and they are unleashing their potential as G.I.R.L.s (Go-getters, Innovators, Risk-takers, Leaders)™.

The Girl Scout Silver Award is the highest award a Girl Scout Cadette can earn, and it is available to girls in sixth, seventh and eighth grades. It requires a girl or small team of girls to spend about 50 hours to plan, share, and complete a project that makes the world a better place. It is the second-highest award a Girl Scout can earn, with the Gold Award being the highest, which is available to older Girl Scouts.

April McGough of Dover, leader of Cadette Troop 10931, found a perfect match for her girls through her employer.

"I work at Liberty Mutual in IT (information technology)," she said, "so I know the value to women in that area! My girls were talking about the Silver Award last year, about the time the new badges came out."

Girl Scouts now can earn 30 new badges in the fields of computer science, robotics, space and more.

Liberty Mutual was already involved in doing an Hour of Code program with elementary school children, and was looking for ways to reach more students. McGough asked if they would be interested in working with Girl Scouts. "They were ecstatic," she said. "It was a nice fit."

From left are Ella McGough, Grace Marshall and Gabby Patterson, all middle-schoolers from Dover, NH. The girls are working to earn their Girl Scout Silver Award with their project, Coding with LEGIT. (Courtesy Photo)

The company has a mission to empower, support, and inspire the global community of women in technology, and has a Women in Technology group. A subset of that group is LEGIT, which stands for Liberty Encouraging Girls in Technology. That group wanted to build a program for girls to potentially earn a badge, said McGough.

"I met with the LEGIT people," she said, "and thought: Why don't we have the girls do it instead of me, and then thought it could be a Silver Award."

McGough's daughter, Ella, along with Cadettes Grace Marshall and Gabby Patterson, decided to work together as a team for their project, which is now in the works. They want to create a STEM workshop or curriculum and possibly even a smartphone app that would allow their friends to create a computer game. They've already worked with a training instructor from Liberty Mutual and collected feedback from their peers on what they'd like to learn through a questionnaire they presented at a World Thinking Day fair.

The girls all agreed that it's important for girls in particular to learn more about coding and the STEM (science, technology, engineering, math) fields.

"It helps you get out of your comfort zone," said Grace. "We really want people to know that Girl Scouts isn't just arts and crafts. It's connecting with the world. We want older girls to try new things, like coding."

STEM programming is virtually everywhere

With over 80% of our girl membership residing in rural and hard-to-access areas where traditional troop experiences may not be available, we are working to break down barriers to STEM (science, technology, engineering, math) programs so that girls in every corner of New Hampshire and Vermont (and beyond!) can access these programs. One of the most effective ways to break down barriers is through offering virtual STEM programs, which bring the power of Girl Scouts' unique curriculum directly to girls online. The ability to participate in STEM programs online makes a dramatic difference in our ability to serve girls.

FIRST Lego League gave girls a chance to try out the programming and competition of tiny robots at the G.I.R.L. Expo this past October. (GSGWM)

Every year we offer girls the opportunity to join virtual "clubs" where they can engage with diverse STEM topics and interact with other girls. As a result, girls are exposed to new and exciting STEM concepts, build their STEM confidence, and learn about the value of STEM in the world today. Girls earn badges as they work individually and with other participating girls to complete weekly challenges and lessons.

Older Girl Scouts learned 3-D printing at a UNH workshop. (GSGWM)

With help from a dedicated program facilitator, girls navigate STEM concepts entirely online in an engaging and exciting curriculum. Each club culminates in a "Take Action" project where girls put into real-life practice some of the lessons they've learned in order to identify and then create a practical plan to address an issue they see in the world around them.

In addition to the many non-STEM virtual programs, between June and December 2018 we have offered three different online STEM clubs covering computer programming, environmental ecology, and engineering. The girls who participated in these clubs ranged from Daisies to Ambassadors and were introduced to coding, creating algorithms, environmental advocacy, engineering careers, and more.

In 2019 we will continue to offer these diverse and exciting STEM programs online with clubs dedicated to environmental advocacy, coding, mechanical engineering, astronomy, and robotics. Not only do girls learn about the incredible world of STEM, but they also develop confidence and the tools they need to be leaders. According to one Junior Girl Scout who participated in the virtual "Engineering Makes the World a Better Place" curriculum, "I learned that you can't give up. You just keep trying and never give up." One Cadette Girl Scout's mom reached out to GSGWM to say "Engineering has not been my daughter's favorite thing in the past, but the activities and information were so interesting that she ended up learning a lot and remaining engaged. Thank you for that! I'm glad she had a chance to give it a try."

> ***"I learned that you can't give up. You just keep trying and never give up."***
>
> "Engineering Makes the World a Better Place" Girl Participant, 2018

Alum Profile: Erin McKenney

Gold Award Girl Scout alum Erin McKenney of Londonderry, NH, was named one of the BBC's "100 Women 2016," a list of inspirational and influential women, under the Science Award category. Her Gold Award project, Curiosity Science, focused on giving young girls the confidence and opportunity to participate in STEM classes and to consider possible careers in STEM. The program, still active today, gives girls hands-on experiences and inspiration from female scientists around the world. "After researching the subject, I found that a lack of confidence was one of the determinants in not going into a STEM career," said Erin. She created a website, also named Curiosity Science, with resources for STEM activities and profiles of notable female STEM leaders.

Erin recognizes the importance of valuing diversity of thought. "People matter as individuals. Different backgrounds bring different viewpoints," she said as an explanation for why the female voice is so important in STEM fields. Mae Jemison, the first African American woman in space and a notable Girl Scout alumnae, said that until women started research on breast cancer, the only solution was radical mastectomy. After entering the field, women developed less-invasive solutions. "That story made me understand the value of diverse thought," said Erin.

Erin McKenny is a Gold Award Girl Scout and lifetime member, and is part of the GSGWM Gold Award Support Committee. She founded the Curiosity Science Program, and is a student at Lafayette College. (Erin McKenny)

Erin McKenny hopes to discover new ways to help those with autism. (Erin McKenny)

Erin is majoring in sociology, anthropology, and psychology with an eye toward earning a PhD in clinical psychology. Reflecting her interest in finding holistic solutions to problems, she would like to study positive interventions for autism. "I am definitely more interested in doing research and diagnostics," said McKenney. "Right now I am busy preparing for a semester abroad in Copenhagen. I hope to bring my Curiosity Science program to WAGGGS (World Association of Girl Guides and Girl Scouts) in Denmark. "

When asked about the role Girl Scouts has played in her life and decisions, Erin said:

"Girl Scouts has introduced me to so many incredible mentors and friends, each of whom has taught me something new. The program has given me opportunities, like interning at the State House through the Girls Rock the Capitol Program, which helped me determine my career interests and practice leadership skills and public speaking. The experience helped me to be more civically engaged. I frequently call and email senators, representatives, and occasionally the governor, utilizing the skills and voice that Girl Scouts helped me to gain. Even as I was entering college, my Girl Scout family was still influencing me and recommended I apply for the Next Scholar program by the Global STEM Alliance of the New York Academy of Sciences. I was paired with an incredible woman in the psychology field and have stayed in touch with her, seeking advice on searching for graduate schools and her experience in academia.

"The Gold Award program provided a framework and resources to help me pursue a large project and make a difference in my community. Having this support network makes it possible to aim high, knowing there are people ready to help you work through ideas and ensure you succeed. I appreciated that structure and the push to aim high as a girl, and now I love being a Gold Award Support Committee member where I provide this aid to others. I can't help but be grateful that I had such a strong mentor-filled, girl-led experience while I was growing up. The benefits of being a Girl Scout are countless while you're growing and learning, but it's also a community that you're in forever and that I know I will continue to be involved with and appreciate throughout my life."

HELP US MEET THE CHALLENGE

The Finlay Family Foundation has challenged Girl Scouts of the Green and White Mountains supporters to support the Mobile STEM Lab project!

All gifts will be matched, dollar for dollar, to raise $25,000 for this project. Gifts or pledges must be received by June 30, 2019*.

**Gifts made with the enclosed envelope will support the challenge.*

GOALS OF THE MOBILE STEM LAB

Contributions to our Mobile STEM Lab will provide*:

- Program space for girls and program facilitators.
- State-of-the-art technology including but not limited to mobile broadband, mounted SmarTV monitor, Surface tablets, microscopes, and a 3D printer.
- On-site delivery of STEM programs and activities focused on the needs and interests of girls.
- Detailed facilitation instruction for volunteers to further expand the capability of the council to reach girls with innovative and specialized programming at the community level.
- Dedicated program staff to ensure consistent delivery of Girl Scout curriculum.

Full 'STEaM' Ahead:

Finlay Family Foundation issues challenge to support GSGWM Mobile STEM Lab Project

Girl Scouts of the Green and White Mountains is working to ensure that the over 10,000 girls we serve across Vermont and New Hampshire have access to science, technology, engineering and math that are specifically tailored to inspire and foster a love of STEM in girls.

Our goal is to deliver state-of-the-art STEM programs to every part of our council territory. It will take an initial investment of $150,000 to purchase, outfit, and customize a van, and to support the costs to run the programs. The Mobile STEM Lab will be utilized and available during the full program year, and can be requested and reserved by troops or communities. The van will visit and be a feature at our day and resident camps during the summer, giving camp staff the opportunity to enhance outdoor programs with unique STEM activities. This new vehicle will allow us to serve Girl Scouts across New Hampshire and Vermont, including the many girls and their families who would not otherwise have the opportunity to participate in hands-on and innovative STEM programs.

Access to quality STEM programs is crucial. Our Girl Scouts are hungry for female empowerment programming, and the Mobile STEM Lab vehicle will allow us to deliver quality programming to the 80% of our membership living in rural and hard-to-access areas. When girls who are interested in the sciences don't see a future for themselves in those fields, their career choices are limited. The Mobile STEM Lab will bring programs to girls no matter where they live, what their backgrounds are, or what their socio-economic status is.

A mock-up of GSGWM's proposed Mobile STEM Lab. (GSGWM)

Plans for GSGWM's proposed Mobile STEM Lab include state-of-the-art technology such as mobile broadband, a mounted SmarTV monitor, microscopes, a 3D printer, and Surface tablets such as those demonstrated at the 2019 Cookie Rallies. (GSGWM)

We can make all of this, and more, happen with your support of the Mobile STEM Lab initiative. For more information, or to get involved, contact GSGWM at 888-474-9686 or advancement@girlscoutsgwm.org.