

# JULIE SEVEN SAGE

Phone: (603) 930-2879  
j7sagelabs@yahoo.com

38 Deerwood Drive  
Nashua, NH 03063

## EDUCATION

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<b>HS</b>	Nashua North High School	2021
<b>EDX</b>	University of Washington, Introduction to Public Speaking	2016
<b>EDX</b>	Harvard University, Super Earths and Life	2015

## HONORS AND AWARDS

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<b>Innovation and Creativity Award from Rochester Institute of Technology</b>	2021
<b>Certificate of Merit with Honors from the Society of Women Engineers</b>	2021
<b>Top 10 in the Xprize Next Gen Mask Challenge</b> During the COVID pandemic, the Xprize organization hosted a competition of making a better face mask.	2021
<b>Featured in the book <i>Resisters: 52 Women Making Herstory Right Now</i></b> I was featured mainly for my science outreach.	2019
<b>Featured in the indie comic <i>Seekers of Science</i></b> I was featured as a citizen scientist.	2019
<b>Featured in the book <i>Etre: Girls, Who Do You Want to Be?</i></b> I was not individually featured in this book; I was one of the members of the STEAM Squad that was interviewed to represent our group.	2019
<b>Outstanding Student Ambassador Award from Cubes in Space</b> I was the first to ever receive this award, and it was for how much I promoted the Cubes in Space program.	2019
<b>3<sup>rd</sup> place in Astronomy and 4<sup>th</sup> place in Mousetrap Vehicle for Science Olympiad</b>	2019
<b>Featured in Marvel comic <i>The Unstoppable Wasp</i></b> This Marvel comic features women scientists in the back of the comic every issue. I was featured in the 1 <sup>st</sup> issue of the second run.	2018
<b>Front cover of NH Parenting Magazine</b> I was the main article and front cover because of my science outreach and scientific research.	2018

**NH State Merit Award in Discovery Education 3M Young Scientist Challenge** 2018  
This award was one for my Sage Survival System which is a water distillation/filtration system in emergency situations or disadvantaged areas.

**2<sup>nd</sup> place in the Middle School Division for the National Science Foundation's Generation Nano: Superheroes Inspired by Science** 2018  
The contest was making a small comic about our own superhero inspired by science.

**The Mars Generation 24 Under 24 Leaders and Innovators in STEAM and Space Award** 2018  
I was a part of their inaugural class.

**Top 20% in Breakthrough Junior Challenge** 2017  
I did a video about Tidal Disruption Events.

## RESEARCH EXPERIENCE

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**Experiment**, MIT Media Lab, Space Exploration Initiative, Climate CubeSat Co-building Outreach Program 2018 and 2019

Advisor: Ariel Ekblaw

- Designing and building a climate science CubeSat
- We were unable to launch due to complications

**Experiment**, Cubes in Space, Changes in Different Fabrics after Exposure to Space 2017  
Lead: Julie Seven Sage

- Nine different types of fabric were sent into space and were analyzed to see if there was any change after that exposure

**Experiment**, Cubes in Space, Aluminum Metal Foam VS. Aluminum Block 2017  
Lead: Julie Seven Sage

- Pieces of Aluminum Metal Foam and Aluminum were sent into space and the x-ray film inside was analyzed to see if there was any difference of how much radiation it let through, as well as strength test to see if radiation exposure would weaken it

**Experiment**, Cubes in Space, Single Board Computer Functionality on High Altitude Balloon 2017

Lead: Nathan Pennie

- An SBC that he designed and built was sent into space and we analyzed the data for any anomalies, failures, or data corruption

**Experiment**, Cubes in Space, Single Board Computer Functionality on Sounding Rocket 2017

Lead: Nathan Pennie

- An SBC that he designed and built was sent into space and we analyzed the data for any anomalies, failures, or data corruption

**Experiment**, Cubes in Space, Types of Glass and Blocking Radiation 2018

Lead: Julie Seven Sage

- Three types of glass were sent into space and the x-ray film was analyzed to see which type of glass better deflected or blocked cosmic radiation

**Experiment**, Cubes in Space, Different Shapes of Structural Foam 2018

Lead: Julie Seven Sage

- The voids inside of the structural foam were of different shapes. The strongest 4 shapes were chosen to go into the cube, where weights were placed on top, and the foams were strength tested afterwards

**Experiment**, Cubes in Space, Radiation Exposure to Blue Pigments 2019

Lead: Julie Seven Sage

- Four different blue pigments, including the most recent discovery of YInMn Blue, were sent into space and their color degradation was analyzed

**Experiment**, Cubes in Space, Different Wall Thicknesses of Structural Foam 2019

Lead: Julie Seven Sage

- Four different wall thicknesses of the strongest structural foam from the previous structural foam experiment were placed into the cube with weights on top, and the foams were strength tested afterwards

**Experiment**, Cubes in Space, Different Glass Shapes and Deflecting Radiation 2021

Lead: Julie Seven Sage

- Four different shapes of the glass that is most commonly used for space vehicles were put into the cube, and the x-ray film will be analyzed to see how the cosmic radiation was deflected

**Experiment**, Cubes in Space, Centrifugal Forces on Different Wall Thicknesses of Structural Foam Approved for 2022

Lead: Julie Seven Sage

- The same four different wall thicknesses of structural foam from the previous structural foam experiment were placed into the cube, with a cut out in the middle to put weights, and the foams will be strength tested after they are launched

**Experiment**, Cubes in Space, Rocket Forces on Tattoos Approved for 2022

Lead: Julie Seven Sage

- Tattoos on fake skin were put into the cube in different orientations, and will be analyzed for any movement of the ink inside of the skin

## TEACHING EXPERIENCE

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**Boys and Girls Club of Greater Nashua**, Nashua, NH 2017 and 2018  
**Teaching Assistant**

- My mom and I taught young, disadvantaged girls how to code using Scratch and HTML as a Girls Who Code

## PATENTS

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Sage, J.S., “Amplifying Acoustic Ring”, Unites States Patent, Patent Pending

Sage, J.S., “Mask Inflatable Bladder Seal”, Unites States Patent, Patent Pending

## PRESENTATIONS AND INVITED LECTURES

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**Keynote Address**, “Student Spotlight Speaker” Christa McAuliffe Conference, 2021

**Panel**, “How to Help Launch the Future” Women in Space Conference, 2021

**Panel**, “Youth in Ham Radio Panel” ARRL New England Division Ham Radio Convention, 2017, 2018, 2021

**Panel**, “Gen Z in Space” Satellite 2020 Conference, 2020 – it was cancelled the day before because of COVID but I was then interviewed on their On Orbit podcast

**Speaking Engagement**, “Science is Amazing” St. Christopher’s Elementary School STEM Fair, 2019

**Keynote for Kid Side Event**, “Cubes in Space” Women in Space Conference, 2019

**Session Host**, “Session 5” TEDx Youth @Beacon Street, 2019

**Panel**, “Sally Ride” Twitter Panel hosted by GoBeyond, 2019

**Speaking Engagement**, “Science Superheroes” local Girl Scouts Chapter, 2018

**Speaker**, “Cubes in Space” ARRL New England Division Ham Radio Convention, 2018

**Speaker**, “Cubes in Space” Skyscraper’s Inc AstroAssembly, 2017

**Speaker**, “Cubes in Space” 900<sup>th</sup> meeting of the Amateur Telescope Makers of Boston, 2017

## PROFESSIONAL AFFILIATIONS

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Cubes in Space, 2021-Present  
Communications Intern

## COMMUNITY SERVICE

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### **Birthday Food Drive for Nashua Soup Kitchen**

Organizer, my birthday party, 2011 to present

## LANGUAGES

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**English:** Native Language

**Spanish:** Novice Listener, Speaker, Reading, and Writing

## COMPUTER SKILLS

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**Programming:** Full capability in Scratch, a little bit of HTML

**Applications:** Adobe Illustrator, Adobe Photoshop, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Google Doc, Google Sheets, Google Slides, Blender, Anime Studio

**Platforms:** Windows, Google

## OTHER

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- Started my YouTube channel, 7 Sage Labs, with Supernova Style Science News in 2016, and since then has added 3 more shows: The STEAM Squad, Sage Lab Notes, and SciFacts, with a 5<sup>th</sup> show planned to be added in the future, Science Sage
- Co-founded the organization The STEAM Squad, a group of some of the best young scientists from around the world, in 2016 grade, and have continued to co-run it
- Filmed an episode with the kids TV show called Wonderama to teach about the Bernoulli Principle in 2018
- Helped run, and for many nights was the main educator, for the Public Observatory Nights at the Dexter-Southfield School in 2017 and 2018
- Got involved in kids' rights and protection with online accounts and the COPPA regulation in 2020
- Youngest to ever be invited to be at the private EduCon conference meant only for educational YouTubers in 2019
- Delegate to the America's Promise Alliance State of Young People Conference in 2019
- Wrote an article on the Planetary Society website about Cubes in Space in 2017
- Wrote an article for Step Up Magazine about girls coding in 2017
- Was on Japanese television for an interview about my friend Gitanjali Rao in 2021