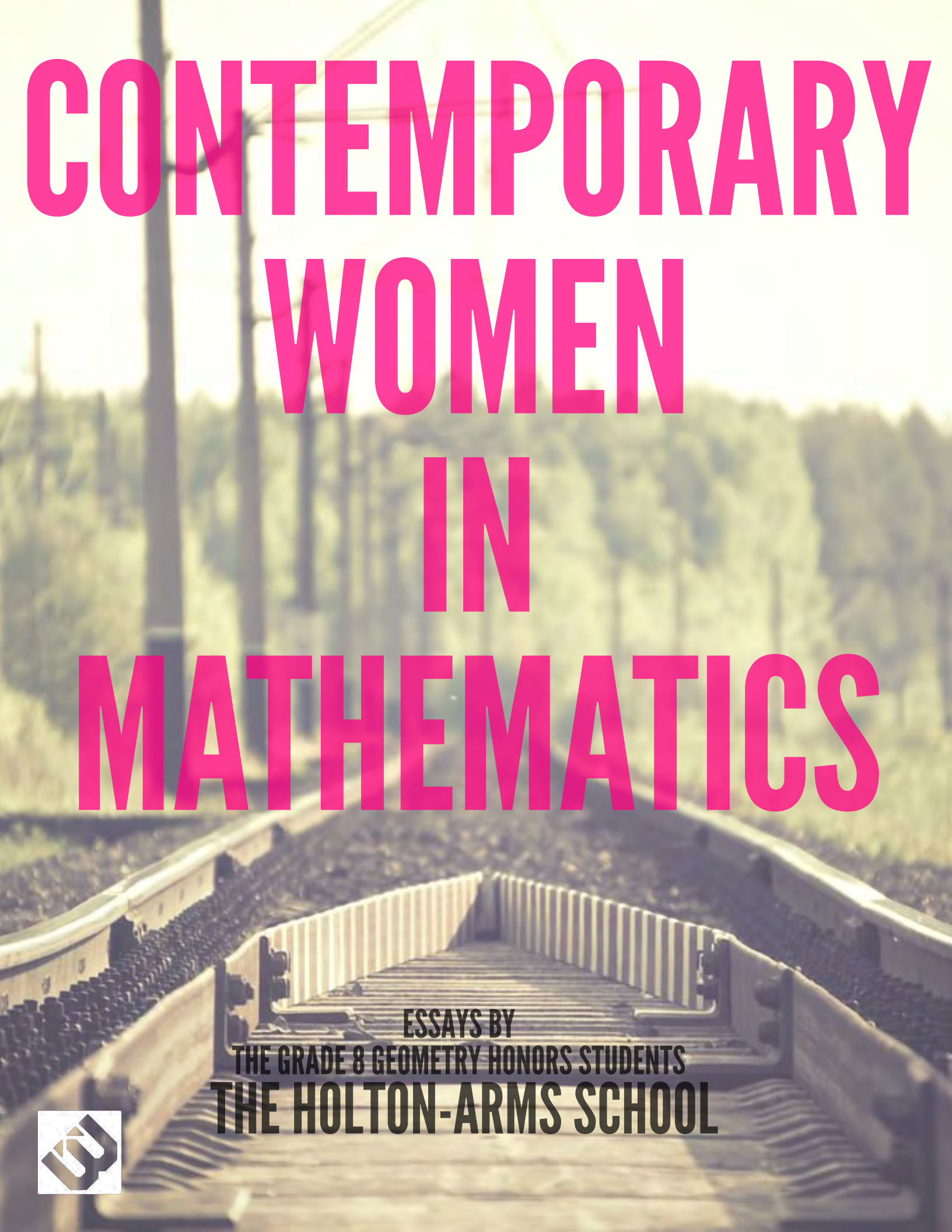
CONTEMPORARY WOMEN IN MATHEMATICS



ESSAYS BY
THE GRADE 8 GEOMETRY HONORS STUDENTS
THE HOLTON-ARMS SCHOOL

In Pursuit of a Dream

Ayleen Acosta

Lisset Jaen grew up in a time of political change and growth in Havana, Cuba. During her childhood, her mom – and her work in the mathematical sciences – was a continuous source of inspiration for her. Lisset admired her mom who always managed to balance studying accounting and taking care of her family, showing her daughters the importance of math and science in the real world. Her mom showed her that these two subjects held the solutions to countless problems in the world. As Lisset grew up, she often visited her mom's office, where she became greatly inspired to do the same work. Lisset says, in her childhood games, she always imagined herself following in her mom's footsteps as a woman in the mathematical sciences.

Lisset focused her attention primarily on math. She found an immense enjoyment and satisfaction in solving problems and exercises. During her education, she had very experienced teachers that never failed to help her further develop her passions. They created interactive and collaborative classes that motivated Lisset to participate in advanced courses, even when her previous knowledge was challenged with new ideas. The educational support she received nurtured her desire to work in a STEM field. In university, she decided to study Civil Engineering because not only was it directly related to math and science, but also Lisset dreamed of being able to design and build her own unique projects. She fell in love with the fact that you could start with an initial calculation and end up with distinctive final products. When she graduated, in Cuba, the department of education of her university determined where each students' first job would be. Lisset was glad to be given the opportunity to work in a firm where they designed boutiques for hotel lobbies. In this job, not only did she calculate spaces, but also all the construction materials that would be needed. Additionally, she designed what decorations and furniture would be put in each boutique.

In the midst of her career, she realized she had to abandon her home country and move to the United States, in order to reach her ambitious professional goals. When she arrived in Miami, Florida, finding jobs was not easy because of the language barrier and her lack of American education and work experience. However, after only a month in Miami searching for jobs, Lisset had the opportunity to work for an engineering company that was created by the university where she studied in Cuba. It was a pleasant surprise to work somewhere where she was recognized for her talents and her work ethic. This gave her the ability to gain work experience in a new environment. Lisset learned many new concepts and tools that had never been introduced to her in Cuba. In the first few months at her job she worked hard in order to keep herself up to date with many aspects of engineering, like new designing programs and different construction materials.

Even though she struggled with the language barrier, she was proud she could demonstrate to her children that there is no obstacle in this world that cannot be surmounted if there is perseverance and sacrifice. Lisset was a big motivation for her children as they are both pursuing a career in the mathematical sciences. Her older son has already graduated college with a degree in engineering and her daughter is studying accounting.

Lisset is currently working at an engineering company called AM American Consulting, Inc. At this job they offer many engineering and consulting services. They make large durable structural solutions, like buildings, where Lisset calculates, draws, and designs doors, windows, balconies, curtain walls, fences, and canopies. This is an important part to the structural integrity of the building because she can provide budgets and avoid dangerous outcomes for future designs. Lisset wants students that are interested in a job in the mathematical sciences to know that every minute they devote to developing answers, practicing exercises, and being persistent and hardworking, will give them a wide range of possibilities of work. She believes that no matter your race, gender, or class, the international importance of the mathematical sciences means that anyone can pursue this career. Diversity in this field is essential to creating new solutions to the world's many problems.

My name is Ayleen Acosta and I'm in eighth grade. I'm taking Geometry Honors at Holton-Arms School. Geometry makes students think about math in a completely new way, similar to how this contest widened my perspectives of the mathematical sciences. I've always loved learning math and being curious about how it connects to the real world since a young age. This essay furthered my passion to pursue a job in the mathematical sciences because it helped me realize that many international problems can be solved using math and science. I aspire to be a woman in the mathematical sciences so that I can help and inspire others

Interview with Li-Jen Chen

Mari Clark

Li-Jen Chen is a Research Astrophysicist at NASA who goes to my church.

When asked why she was first intrigued by math and stem she said, "Math is so amazing, in that it's language made by human beings, but by operating math, you can predict what happens in the universe. It's just amazing how you can use formulas and pieces of paper, and then get an answer, and then go to the lab.... and you can find *ah! wow! how come*?" Although she has always been clearly enraptured with math, it wasn't exactly easy for her to get to where she is now. Li-Jen is originally from Taiwan, where in her community being a girl interested in stem or even seeking a good education was frowned upon. You had an obligation to have kids, stay home and do housework. But her mom, who was a farmer, didn't have the same opportunities that Li-Jen did growing up and encouraged her to stay in school and study. However, this supportiveness only went to a certain extent. After middle school, she considered pulling Li-Jen out, feeling that she'd completed enough school and that it was time for her to work at the factory. Her middle school principal was the one who really made sure her journey through STEM was kept on track. He arrived at her house one day and tried to persuade her mother that she was making the wrong decision, and that it would be valuable for her daughter to keep getting an education.

After moving to Maryland, Li-Jen started working at NASA Goddard Space Flight Center, but was later recruited to work on a four-spacecraft mission striving to learn more about magnetic explosions in space. As a Research Astrophysicist, Li-Jen studies space and physics, specifically plasma, the 4th state of matter, which - as she explained to me - makes up much of the matter in space. She also specifically studies space explosions, and how they release energy into the ionosphere, creating things such as geomagnetic storms and the aurora borealis. Using calculus to combine theory and computer simulators with spacecraft measurements, she is able to simulate these magnetic explosions/shocks, and research further off of them. When asked about advice for students looking into STEM, she emphasizes the importance of developing basic math skills, even if it seems boring, saying how they are the foundation for having a job like a physicist. She explains that although they come naturally to her now, you have to build them up and practice over and over so that they can become subconscious. She also advises all students to have an open mind, ro always be observing the world around you, to take advantage of all your opportunities, to see what's happening in space, and to just be captivated by it all. She says that all the math she's learned over the years has brought her to really appreciate everything that goes on in her environment.

This has also brought her to loving hiking. She feels as though, like science, she is brought back to her childhood, knowing so little because what you are studying is so big, yet learning more and more each step along the way. She describes that in hiking, she has to use her whole body, her whole being, and that in the end she just feels this amazing presence when being engaged in the nature. Being a someone who studies space as well as being a hiker has brought her a feeling of deep unity with the creation of this universe, and she told me how science was her church before she found christianity. Even though some parts of Taiwan may have seemed restricting in her childhood, she told me how every night she could see the Milky Way from her country home, and in a way Taiwan is also something that brought her where she is now. Li-Jen's accomplishments and journey to having her amazing job now all seem daunting, but in reality she is very sweet and humble. I am so appreciative of the opportunity of being able to interview someone like her.

My name is Mari Clark. I'm an eighth grader at the Holton Arms School taking geometry honors. I enjoy doing math like algebra, and even sometimes geometry, even though it's been a large adjustment from the algebra course we took last year. I also enjoy doing logic problems, because they are really problems that you need to wrap your brain around to solve. These types of problems can also feel like a nice break from all the numbers, angles and proofs. As I get older, I would like to look into the fields of engineering, architecture, or possibly astronomy

Good Chemistry With Science Teachers is Important

Divya Devarkonda

Tiffany Reddinger is a very inspirational woman. She is a science (mainly chemistry) teacher for grades 8 and 10 at the Holton-Arms school in Bethesda, Maryland. She absolutely loves her job, and says teaching is the “most pleasing job on the planet.” She has and continues to inspire many young women to go into to STEM (mainly chemical) fields.

Mrs. Reddinger was inspired to pursue a chemical degree by her father. After spending some time in middle school learning about the field of engineering, she was intrigued and wanted to learn more. Her father supported her ambitions to become an engineer, and her mother was a secretary at an engineering school, and they both pushed and helped her to gain even more interest in the field. After doing some research into the money she could make in engineering fields, she decided to go to chemical engineering school at the University of Virginia, and got her B.S. degree there.

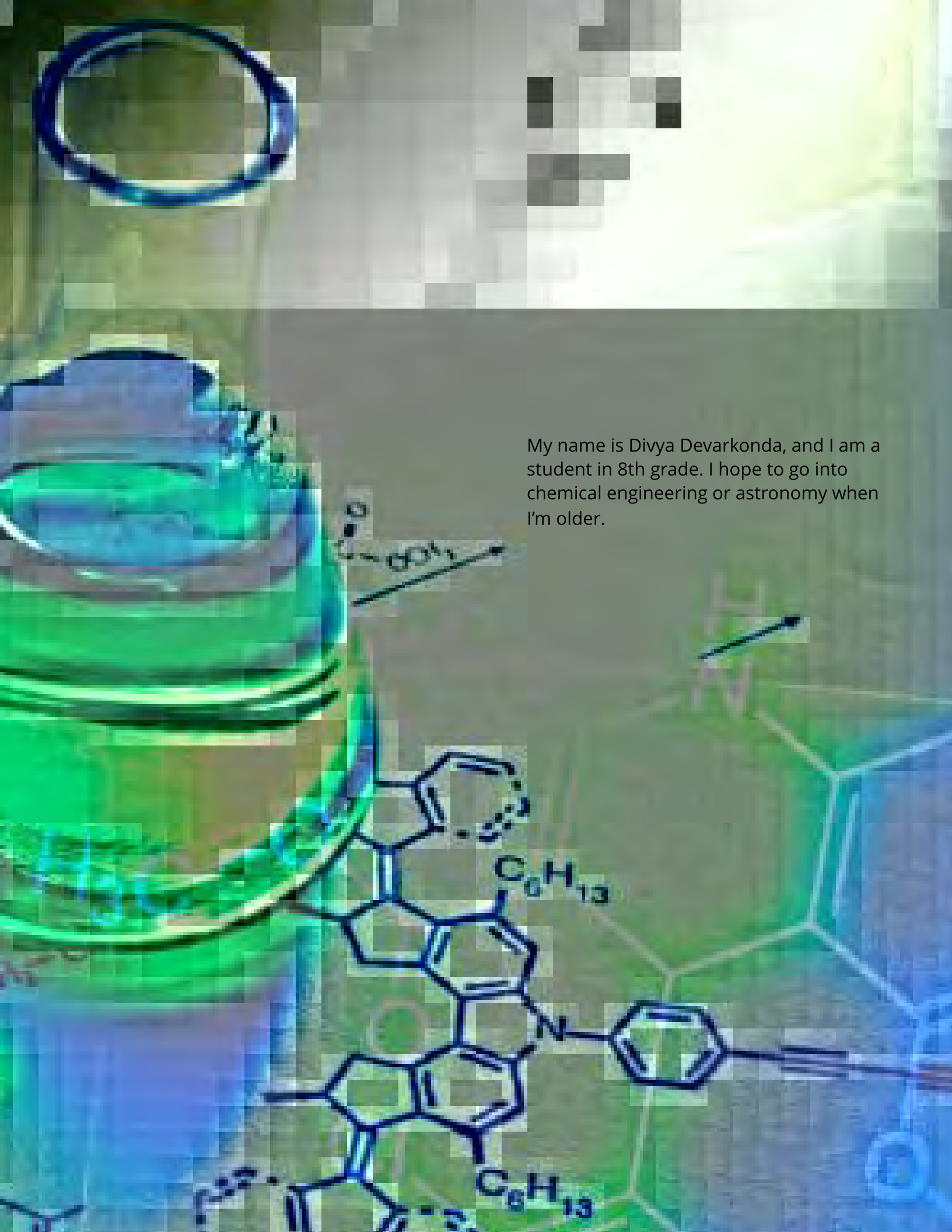
In fact, Mrs. Reddinger is the first person in her family to graduate from a prestigious college. Her mother grew up very poor, and didn’t have running water in her house. Neither of her parents attended college. She has an older brother as well. She is a black women from Virginia Beach, Virginia, and she’s very proud of her cultural heritage.

When she graduated from college, she had planned to go into the sales department in Monsanto. She wanted to help market Nutrasweet and sell it to various other companies. She was going to hold seminars and convince companies to incorporate Nutrasweet into their products. However, when she graduated from college, there were no available jobs in the field. So she took a job in teaching, and planned to keep that job for a year. However, she enjoyed it very much and decided to continue.

Some advice she has for students who plan on going into STEM fields is not to get obsessed with grades, but she advises getting high grades in high school especially. She says that any girl who wants to go into engineering needs to have grit, and that one really needs to dig into their field. She highly commends self-advocation, and she says to never walk out of room with any questions. She has her students review the material every night to ensure maximum retention of the material.

Her hobbies include napping whenever she has the time. She likes walking, especially with her husband. She loves to shop. She loves drinks with lots of whipped cream and her favorite food is ice cream. She loves solving 1000-piece puzzles. Her favorite app is work cookies, on which she competes with her husband.

Tiffany Reddinger is a truly inspiring woman. She is a very smart and talented teacher, and her students love her. She has motivated several students to pursue careers in chemistry and engineering, and one of the best teachers I’ve ever had.



My name is Divya Devarkonda, and I am a student in 8th grade. I hope to go into chemical engineering or astronomy when I'm older.

The Candela Family Business: Math

Madeline Feldner

Calene Candela has been passionate about math since high school. She wasn't always the top of her class, but she always worked hard. Calene loved the challenges math gave her while attending La Salle High School in Miami, Florida. She continued her education at the University of Florida, where she majored in Finance. In her first years at UF, she took two rigorous calculus courses. These classes were challenging, but they helped her develop stronger problem solving skills, which she applied in her other classes. She furthered her education by earning a Master's degree (with a focus on Finance) in Business Administration at Duke University

After graduation, Calene applied her math knowledge in her first job at Bank of America. Her job there was to evaluate and grant loans to different companies. In her job, she managed and underwrote loans by predicting the profits of the companies that she gave loans out to in order to determine their ability to repay the loans. Calene's first job was a mix of financial and mathematical concepts that she used to make loan to companies that were working with Bank of America.

After a few years, Calene attended Duke to further develop her knowledge of business and finance. After graduating, she went to work for Ryder Systems, where she has worked for over twenty five years. One of the jobs she worked there was the complete opposite of her former job at the Bank Of America. In Treasury, Calene worked to secure loans from banks for Ryder to fund their businesses. Calene evaluated the best options and best ideas for borrowing money. She analyzes bank loans to see if they are too difficult to repay, or too restrictive. Calene used her skills from her prior job and the finance and mathematical concepts she has learned to help Ryder succeed.

In her current job with Ryder, Calene works in Investor Relations. Now, she helps others to analyze Ryder stock and educates them on Ryder's financial statements, and their projected growth. With all of her experience in different roles at Ryder, she has become a "leading woman" that travels the country explaining the complicated details of Ryder's business. Calene said that the most important part of her job is explaining the "concepts", and she has developed the skill of explaining things in a quantitative sense, and can directly communicate it to other people who are not as familiar with the company and how it operates.

She has had many role models on her journey to where she is now. At her jobs, she had two women mentors who impacted her success. Her old boss, Sandy, provided her with guidance as a figure of authority and a friend. And, she granted Calene's sons, Cameron and Connor, their first summer internships. Georgina, another boss of Calene's, helped her establish a good foundation for a happy work-family balance through advice. However, the mentor closest to her was her father. Calene has had similar professional roles as her father, Ron Feldner, as they both worked in finance. She said that he was always supportive of her in her choice to follow a similar career path, and he was always available to provide advice about her career. Cameron and Connor, Calene's two sons, are both graduates of the University of Florida, where they studied business as well!

Calene's best advice to young women or anyone who wants to pursue mathematics as a career, or just anyone trying something new, is to challenge yourself. Calene is viewed as an expert in finance, and to gain that level of expertise you need to have worked hard and gain a lot of experience. Her advice is, "Anybody should challenge themselves as much as they can, take the tougher route. The more challenges, the more competence, and the more opportunities you are granted with." She reflected that back to when she was in high school, she did not always get straight A's in math, but she always worked hard, and that helped her get into the Duke University Masters in Business Administration program. Calene wants to educate people to the fact that once you demonstrate competence, no one can hold you back in a mathematical field. Being competent and bringing confidence to anything you do gives you the most credibility.

Overall, Calene Candela is a woman who has strived for success in life, and embraced the challenges of it as well. She has always felt that even the hardest challenges will end up making you a better person – and not just in her work life, but also in her home life. That message is the message she shares with the people she works with, her friends, and her family today.

Madeline Feldner is an eighth grader at the Holton Arms School in Bethesda, Maryland where she enjoys lacrosse, Spanish, ice hockey, and taking Geometry. She enjoys math, especially Geometry, because it helps her approach problems in her daily life logically and analytically. In her free time she participates in club lacrosse and loves to ski.

Irene Parker

Emi Hakutani

Many women have careers in math that are fascinating, but Irene Parker's job is also important and interesting. She is the Chief Information Officer for National Environmental Satellite, Data, and Information Service for the National Oceanic and Atmospheric Administration.

Ms. Parker has a long history involving mathematics, and she has always loved math. Her love of math comes from understanding how it is used in our everyday lives. She has a diverse cultural background. She is South Asian, was born in Pakistan and raised in the United States. Her father is from India, and her mother is from Burma. As Ms. Parker went through middle and high school, she did not always know that she would want to pursue a living involved with math. For her, it was trial and error to see what she liked. Ms. Parker went to Johns Hopkins University, thinking she would become an engineer. At first she wanted to work towards being a computer engineer, but she changed her mind. After trying chemical engineering and biomedical engineering, she focused on what she actually enjoyed. She realized later on that the only thing she liked about engineering was the math component. With math, there were many choices and opportunities for Ms. Parker. Throughout her school and college career, mathematics was a field dominated by men. She had to work harder and also smarter to navigate the field and to be recognized. Being a race other than white also proved a challenge to her. Through all, she worked hard and persevered. Once she graduated from Johns Hopkins with a degree in mathematical sciences, she received a masters degree from American University in public administration. After that, she found a job at the National Oceanic and Atmospheric Administration(NOAA). Ms. Parker builds weather satellites for NOAA, and in particular she works on the communication between the antenna and satellite in space. Her job requires cryptography through mathematical algorithms. The cryptography is for protecting what information the satellite sends back to the people on earth. Her team ensures that the cryptography is unbreakable and completely secure. Once they launch satellites into space, they can control the satellites from the ground. Ms. Parker works closely with the National Security Agency on cyber security for the satellites. The satellites help the government know what kind of weather to predict. If there is supposed to be a large storm or hurricane, the satellites inform the people that control them. This information must be encrypted so that if someone wants to change the weather messages the satellites send back, they cannot. This makes Ms. Parker's job incredibly important for the safety of the nation.

Her hobbies include oil pastel painting and baking. She is also currently pursuing a masters degree in business administration from University of Pennsylvania. Math has always been Ms. Parker's passion, and she loves how it usually has an answer. There are multitudes of ways to solve math problems, and the end is always achievable. Ms. Parker loves how there is logic behind math that makes it understandable.

Mathematics has greatly impacted Ms. Parker's life. Through a career involved in the mathematical world, Ms. Parker is improving our citizens' safety and doing something she loves.

arker is improving our citizens' safety and doing something she loves.

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My names is Emi Hakutani, and I am an eighth grade student at the Holton Arms School in Bethesda, Maryland. I am currently in Geometry Honors. I play club field hockey, and I have been playing the piano for 6 years. Since I was a child I loved math. From learning how to use fractions by baking, to doing a summer camp o cryptography, math has been a part of my life.

Using Math to Make a Difference

By Jessica Lian

Dr. Jessica Hu Jiang is a mathematical statistician at the Food and Drug Association (FDA). She grew up in Beijing, China, and worked extremely hard to come to the United States. She came to the U.S. to go to graduate school. She has a PhD in applied math and statistics. Although she has gone through many challenges and battled many obstacles in order to come to America, she appreciates everything the United States has brought her, and she is especially glad about her math career and the opportunities she has been given. Jessica has developed a love for math since she was just a young girl, and has loved everything about it ever since. She loves how math can be challenging at times and how it requires elaborate and abstract thinking.

A normal day at Jessica's job involves reviewing all submission data from sponsor applicants like the pharmaceutical companies. Sponsors send in their clinical trial data to FDA so that they can be reviewed to get approval on drug and biological products. She usually does analysis on this data to ensure the drugs or biological products submitted by sponsors are safe and efficacious to use. She is enthusiastic about her job because she realizes how much it can help our society and community alike. She uses her knowledge in math to help in the real world. The job Jessica practices "involves a lot of interesting statistical questions and involves those real world problems." She used to work for National Institutes of Health, but switched to FDA a few years ago. She has been working for public health for over fifteen years now and loves every minute of it. Being a statistical reviewer in FDA has allowed her to play a role in people's lives everyday by testing and recording her findings in her specialized field of medicine. She enjoys math with a strong passion and is always ecstatic to arrive at her job every morning. Her job allows her to be a lifelong learner and she loves that she is constantly finding new discoveries.

Jessica loves her job and she loves using math in the real world. She chose her job because she wants to use her expertise to ensure the public health of the U.S. She loves using her knowledge to benefit the people of the U.S. Every day, she can come to work and realize how she helps others. Jessica knows that math is an amazing way to make an impact in the world. Her father was a huge influence in her life, and he really helped her become a good student and learner. When Jessica was young and lived in China, her father also worked in a math related job. They shared a common interest in math, and her father helped Jessica learn and practice math problems every day and become an expert in math. When she first studied math, she quickly realized her talent in math, and she knew that when she was older she would want a job in the mathematics field. In many other jobs, people get to a certain point in life and stop learning. However, Jessica's job keeps her interested because she learns something new everyday.

Jessica constantly helps and tutors young people like me. She has started several math tutoring sessions at our Chinese School and at her daughter's school where she can help students learn more about math. She is extremely passionate about being a role model to other students who are realizing their talent in math. She wants other people like her to grow up and find a job where they are passionate about what they do. Jessica realizes that in the past, rarely any women found a job in mathematics. She wants girls today to realize that this shouldn't hold them back. She wants more and more women to work in the mathematics field and she continues to inspire young people every day. Jessica has a daughter in 9th grade who also has an interest in math. She wants to set a good example for her daughter and she hopes that her daughter will grow up to become a powerful woman. Jessica hopes that every young girl who dreams of working in the math department will persist through every challenge they have.

My name is Jessica Lian, and I am currently an 8th grader at Holton-Arms School. I am taking Geometry Honors, and I have learned so much from it. I am currently learning about proofs and how to prove shapes congruent. Geometry was definitely a huge step from Algebra 1, and it really helps me with creative thinking. My mathematical interests are logic problems and patterns. I love solving logic problems and patterns because they stretch your brain and urge you to think outside the box. In the future, I want to be able to use math to help people in the real world.

The Challenges of Being a Woman in Math

By Sunny Schulman

Being a successful woman in math takes perseverance and strength. You are faced with many challenges while trying to accomplish your main goal, success. Not only did Mary Schulman work hard at being a mother, wife, and daughter, she also fought against people belittling her and thinking of her as less. Mary Schulman first started her math career at ISSRA where she worked side by side with a male partner. At ISSR her mathematical role was in finance, were she would tally votes along with figuring out company profit. She and her male colleague had the exact same role in the company and she had always thought they were equals. One day her views on that changed when she was headed to the copy room and saw on the printer his paycheck. He was making more money than her even when they were doing the exact same thing. She decided to stand up and say something knowing this was wrong but in response the boss said he had just worked harder. She had worked as hard as she could but she wasn't rewarded for that. She decided to quit.

Mary Schulman didn't exactly know where her life was headed or the work laid out in front of her but she knew she was going to be her own leader and not talked down to by anyone else. She and her husband decided to save some money and take a risk. They decided to start a healthy snack food company together; they had a daughter on the way and they realized there was a lack of healthy snacks, something they wanted their daughter to be able to enjoy. They put in long hours and hard work, but it paid off. At Snikiddy Snacks she worked in sales where she sold the product to grocery stores and retail stores. In order to do this she had to figure out a reasonable price as well as one that made them enough money to support the company. There were many hard decisions along the way including the firing of her own husband. The company she created all on her own became a success. It was later sold to UTZ snack food company. This is not the end of her mathematical trail, though: she didn't want to go back to work under a man who would disrespect her so she and a friend decided to start up another company, PYT beauty.

At PYT beauty she is a leader and works with many other women. She does much of the finance including structure cost which include how they buy and sell goods. The manufacturing cost of the product subtracted by the selling cost is the profit they make. Mary Schulman is in charge of over viewing and leading this process to make sure they have at least 40% profit. This is only one example of how she uses math in her everyday life. She thinks it is amazing how much math comes in to play and never would have thought it would have been this useful. She enjoys being surrounded by empowered women and loves being her own boss. She still has the challenges of managing her personal life and work life but now she enjoys both.

In her free time although she says “there isn’t much of it”, she enjoys to do solid core and read books. She loves spending time with family but continues to put long hours and hard work into her up and coming company. She thinks that women are not represented as they should be for all the hard work they do. She says “ if you are a girl wondering if you should pursue a math career, um just do it”. She doesn’t want to see anyone be held back by others and their talents going to waste. You should take the risks, as she did, and be rewarded by your hard work.

My name is Sunny Schulman, I am in 8th grade and enjoy playing tennis and piano in my free time. I go to Holton-Arms School and a, taking geometry honors. I enjoy challenges and problem solving.

A STEM-inist

Josephina Wang

Cherrie Wang, a computer scientist, an artist, and a feminist. She embodies all of those things. She is a feminist in STEM, hence the word “STEM-inist”. Cherrie graduated from the University of Southern California as a member of the Class of 2018. She majored in computer science, and now works as an engineer in the virtual reality platform for Google. Virtual reality involves the calculation of foveation, which is graphical processing. Matrix math is frequently used as well. She has a passion for learning new technology and solving problems in a world where innovation is key.

Cherrie grew up in Rockville, Maryland and attended public school. She had many passions, including art and tennis. A skilled tennis player, she earned many titles in the county and state. She is also an extremely talented artist, receiving many awards for her work, including a full scholarship to USC. At college, she and some of her peers founded an organization called Spark SC. Spark SC encourages students, girls especially, to pursue careers in STEM. As the president of the organization, she was committed and very involved in working with her peers and guiding them to starting a STEM career. Cherrie is a strong feminist, and she believes that more women need to be represented in STEM, which is a male-dominated field. She always knew she wanted to be an engineer, because “the world is changing through math” she says, and she wants to be a part of this new technology and innovation that is happening now. Her path to success was not easy though. STEM careers almost always have more men than women, and sometimes it was lonely for her to be one of the few women in the field. She sometimes felt like her accomplishments were not as valued, but she believes that since math is so objective, nobody can take away the truth of the solution that you came up with. If it works, it works, there’s no ambiguity, it’s all facts. And if you can solve the problem, you deserve the job you have. Cherrie pushed through and earned her Bachelor’s of Science in Computer Engineering, proving to herself and to others that she is capable of a working in the competitive STEM field.

Cherrie advises all young women who are pursuing careers like hers to focus on the foundation. She says, “Math is very practical, although it may be hard to see that when you’re studying. The foundations you develop are incredibly important and you will need them for the future.” She didn’t think that she would ever see matrix math again after college, but she uses it every day at her job. So even though if may feel hopeless and unnecessary while you are studying, it pays off in the future. Her motto is to not give up, even when it feels like you’re lagging behind. As a student, she developed a newfound appreciation for math. While taking Calculus 2 in college, she had an epiphany and saw the true beauty of math. It was the first time she really got it, really understood what was going on. Her professor, whom she remembers fondly, showed her how elegant the solutions can be. Cherrie was blown away with how everything worked out in the end. Now, she loves math and looks forward to solving new problems everyday.

Art is still a core part of her life. She loves to draw and paint, and aspires to open up a gallery to showcase her work. She has always been especially fond of fractal art, which combines math and art together. Math intrigues her, in all forms. She also enjoys listening to and writing comedy, and has done gigs as a stand up comedian for her entertainment. Reading has always been important in Cherrie's life, and she has been an avid reader since elementary school.

As she makes her way into the world as a young adult, Cherrie continues to learn new things, and advocate for women. She is still involved with Spark SC, and continues to fulfill her dream to have more females in STEM. The future is female, she says, and technology is the way to go in a modern world like ours. Cherrie Wang is a feminist, an engineer, and an artist who strives to make the STEM field a more female-friendly place to be.

My name is Josephina Wang, and I'm an eighth grade at Holton-Arms. Math is something that has been challenging for me, but it is a challenge that I am working to overcome. This year, geometry was totally new to me and I learned so many new and fascinating things that I had no idea existed. I learn something new everyday in math class, and it is so cool to see everything that I have learned come together.

“No” is Not the Answer

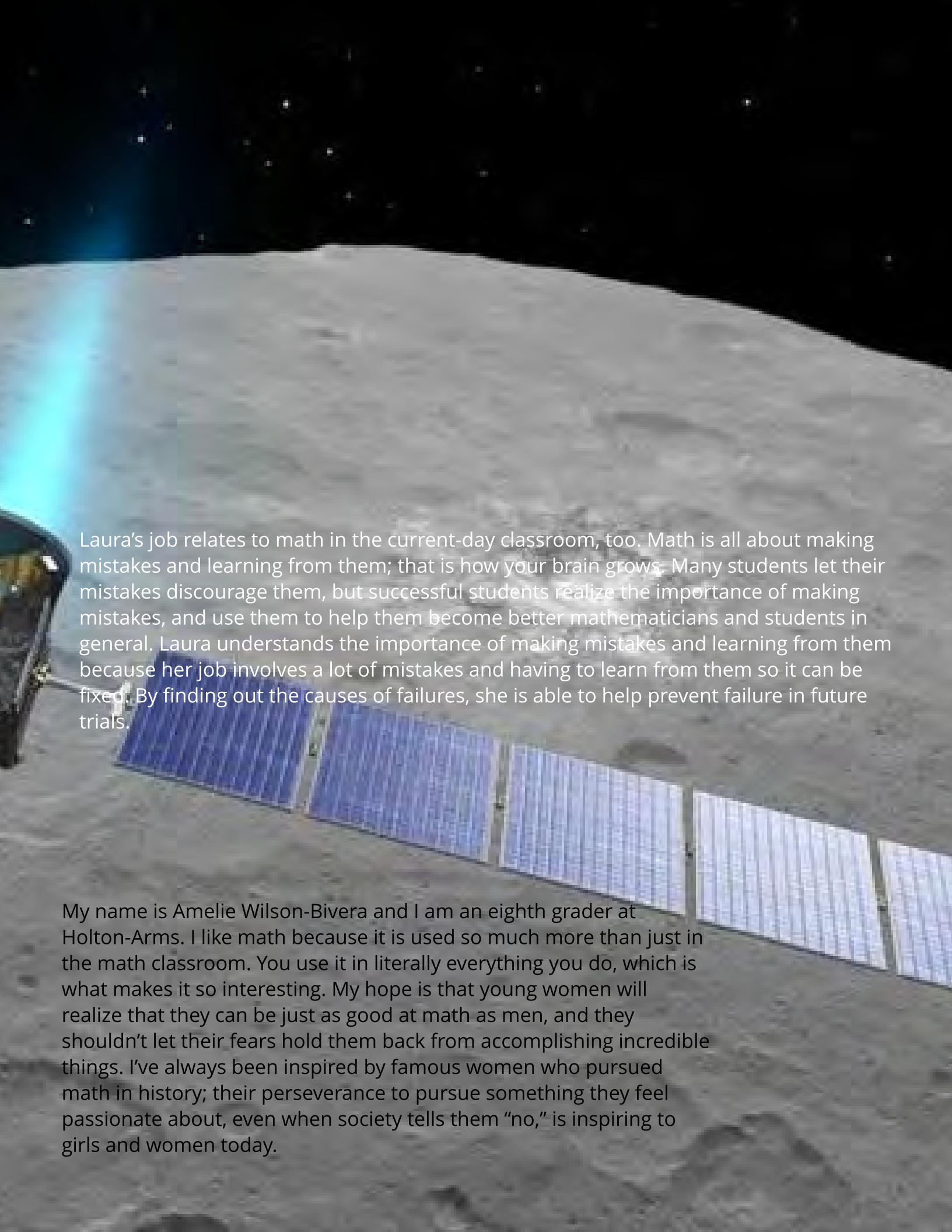
Amelie Wilson-Bivera

Some students dislike math simply because they don’t think that they are “smart” enough to be a math genius or ever pursue a job in STEM. Other students dislike math because they do not see the applications of it to the real world. Not everyone is quick to realize that math is applied to everything, whether it’s quantum physics, or in Laura Cardine-Sardella’s case - protecting lives.

Laura works as a System Safety/Reliability Engineer at the Kennedy Space Center (NASA). In her job, she uses math to calculate failure rates of equipment and systems. This is important for being able to have equipment fail safely, so it doesn’t hurt other people or damage other equipment. Laura helps make equipment safer, allowing for incredible achievements while reducing the risk of malfunction. She takes pride in the important work that she does, but that doesn’t mean she isn’t constantly faced with challenges. One of the biggest challenges she is faced with is when there is limited data for her to use in order to calculate failure rates. Other times there is data available through industry calculations; however, it is more beneficial when there is data associated with the actual equipment that supports the systems.

Laura grew up exposed to a lot of math. Her mother earned her PhD and was a math teacher. When Laura was in school however, she didn’t love math the same way her mother did and enjoyed science much more than math. Her parents would buy her biology and chemistry sets when she was younger, so she ran a lot of her own experiments. She particularly enjoyed participating in her school’s science fair - especially when she beat the boys for first place!

Due to her early exposure of math and her love of science, Laura had always aspired to pursue a career in STEM; she had never really considered other options. She had always been interested in science and knew that she wanted to pursue a job that related to it. In fact, Laura went on to earn her Bachelor’s Degree in biology, as well as a Master’s Degree in management. Although she wasn’t a huge math fanatic as a child, she appreciates the mathematical applications in her job. She enjoys understanding “how things fail” and finding ways to prevent or limit the failure.



Laura's job relates to math in the current-day classroom, too. Math is all about making mistakes and learning from them; that is how your brain grows. Many students let their mistakes discourage them, but successful students realize the importance of making mistakes, and use them to help them become better mathematicians and students in general. Laura understands the importance of making mistakes and learning from them because her job involves a lot of mistakes and having to learn from them so it can be fixed. By finding out the causes of failures, she is able to help prevent failure in future trials.

My name is Amelie Wilson-Bivera and I am an eighth grader at Holton-Arms. I like math because it is used so much more than just in the math classroom. You use it in literally everything you do, which is what makes it so interesting. My hope is that young women will realize that they can be just as good at math as men, and they shouldn't let their fears hold them back from accomplishing incredible things. I've always been inspired by famous women who pursued math in history; their perseverance to pursue something they feel passionate about, even when society tells them "no," is inspiring to girls and women today.