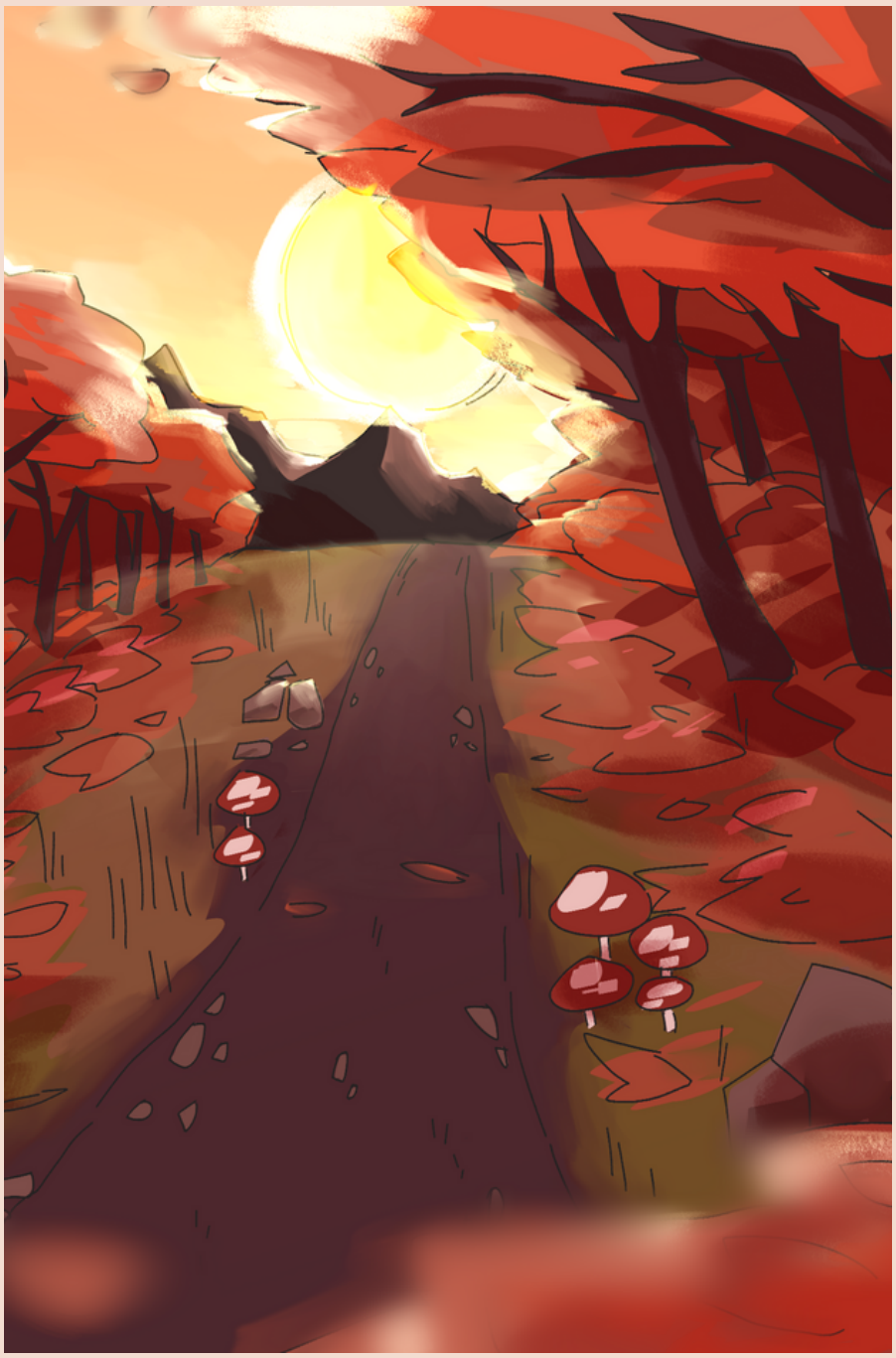
2 YR ANNIVERSARY ISSUE

The 28 Percent

Women make up only 28% of the STEM workforce. This newsletter aims to change that.

ISSUE XIX // November 2022



COVER ART BY CECELIA BICHETTE

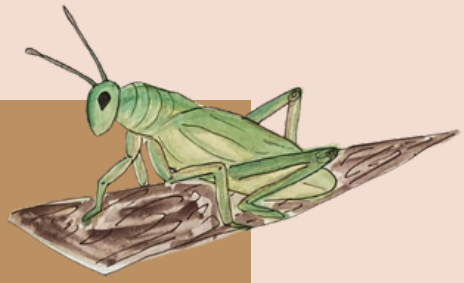
01 Events Calendar

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GIRLS IN STEAM NIGHT

November 16, 6 - 7:30PM
FREE Online Workshops!

AVAILABLE WORKSHOPS

Engineering Inventors (Recommended Grades 2-3):

- Students will get hands-on experience with engineering and electronics projects by building a cool Magic Light Up Wand (materials will be distributed free of cost).
- Please note that we cannot ship materials internationally at this time.

Coding with Scratch (Recommended Grades 4-5):

- Students will be introduced to the basics of coding using Scratch to learn how to code the game Space Rescue!

Website Development (Recommended Grades 6-12)

- Students will be introduced to the programming languages HTML and CSS to make their own website using Repl.it!



RESERVE A SPOT

ART BY KALEY SIMKINS

Celebrating Native American Women in STEM

By Morgan Gaskell

November is Native American Heritage Month, so here, we highlight Indigenous women who have made crucial contributions to STEM in addition to uplifting their Native communities. Through colonization, westernization, boarding schools, and disempowerment, American history has tried very hard to obscure and inhibit the accomplishments of Native Americans. Organizations that focus on supporting STEM-related research and education, like the National Science Foundation, often choose to concentrate on "modern" problems in the field of STEM rather than addressing the painful history and systemic reasons for why Indigenous people are so underrepresented in STEM fields to begin with. The following Native American women serve as role models for generations past, present, and future who aspire to pursue (often white) male-dominated fields.

Mary Golda Ross (Cherokee) was born in 1908 in Park Hill, Oklahoma and has been considered the first Native American woman in engineering. She began her career as a public school teacher and taught courses in both math and science. When World War Two began in 1939, many women, particularly women of color, began entering the work force in fields that had typically been held by men. Ross jumped at this opportunity and joined the Lockheed Aircraft Corporation in Burbank, California as a mathematical research assistant in 1942. While there, she focused on how aircrafts responded to aerodynamic forces, helped to improve the design of military aircrafts, and contributed to NASA's Interplanetary Flight Handbook, Vol. 3 (1963), which details spacecraft flight paths to Mars and Venus. She eventually retired from Lockheed in 1973.



Chamaea fasciata by Paulina Mcconnell

Through the Los Angeles chapter of the Society of Woman Engineers, Ross lectured students in secondary school and college classrooms, funded scholarships, and served on the organization's national leadership board. Through her work with the American Indian Science and Engineering Society, Ross was also able to support Native students who were pursuing careers in science and engineering.

Bertha Parker (Seneca and Abenaki) has been considered the first Native American woman archaeologist and ethnologist. She was born in 1907 in Chautauqua County, New York. Her father was an archeologist and anthropologist and Parker would often accompany him to excavation sites as a kid; that is until Parker's parents divorced when she was seven years old. Parker moved to Los Angeles with her mother and the two pursued show business. She later met her first husband, Joseph Pallan, in Hollywood and the two had a daughter.



Pallan became abusive and when Parker tried for a divorce, he kidnapped her and her daughter. Parker and her daughter were rescued by Mark Raymond Harrington, Parker's uncle and famed archeologist. He offered Parker a job as an expedition secretary and cook.

While not formally trained in archeology, Parker picked up numerous excavation techniques and honed in on her own skills too, eventually tackling her own sites where she made numerous important discoveries. One such discovery was found in Nevada's Gypsum Cave site, where she discovered a Pleistocene ground sloth skull alongside human artifacts, proving the idea that humans and ice age animals coexisted. This discovery came during a time when human migration across the Bering Strait was hotly debated and it definitively put human migration to the Americas earlier than what was believed at the time.

Parker was later appointed secretary at the Southwest Museum in Los Angeles where she documented her discoveries related to the Gypsum Cave expedition. She went on to become an assistant archaeologist and ethnologist at the museum, focusing on documenting the culture, traditions, history, and folklore of Native American tribes in California, including the Maidu, Paiute, Pomo, and Yurok nations. Her research was published in the museum's journal Masterkey. Parker later returned to the film industry and advocated for accurate and respectful Indigenous representation in films and media, while also working to support Indigenous actors.

Lori Arviso Alvord (Navajo) is the first Navajo woman to become a board-certified surgeon. She was born in 1958 and grew up on the Navajo Reservation in Crownpoint, New Mexico. After graduating from high school on the reservation, she attended Dartmouth College as a first-generation college student and graduated cum laude in 1979 with a double major in psychology and sociology and a minor in Native American studies. Alvord decided to pursue a career in medicine, graduating from Stanford School of Medicine and completing her general surgeon residency there by 1991.

Alvord returned to the Navajo Reservation after her studies and cared for tribal members using both Indigenous and Western medicine, particularly focusing on how cultural traditions and ceremonies help to improve both mental and physical wellbeing. Alvord summarizes this idea in her memoir The Scalpel and the Silver Bear (1999), which discusses her life journey from reservation to operating room and her process of combining medicine and healing practices from two worlds. Alvord was nominated for surgeon general of the United States in 2018 and has received numerous awards and honorary degrees. She is currently with Astria Sunnyside Hospital and Astria Toppenish Hospital in Washington state as chief of staff and focuses on Indigenous healthcare.

Women make up only 28% of the STEM field, and Native women represent a significantly small fraction of this percentage compared to other racial demographics. As more awareness is brought to the phenomenal accomplishments of Indigenous women and other minority groups in STEM, as more people conduct intentional and intersectional outreach to address the lack of equity in such fields, as people continue to learn their stories, a more just environment can be achieved where anyone can flourish regardless of how they identify.

*To learn more about Native women in STEM and the personal journeys of two more Indigenous women in the field, please visit **this website** for a panel discussion conducted by the Museum of Native American History.*



College Spotlight: Caltech

By Violet Chandler

As college application deadlines approach little by little, it become increasingly more important to be aware of your options. Even as a freshman with little to no concept of college, a sophomore procrastinating thoughts about life after high school, or a junior waiting until senior year to start thinking about applications, considering possible schools to apply to, especially in the field of STEM, is still just as important for those not in their senior year. In the name of preparation and getting a head start, here is everything you should know about the California Institute of Technology.

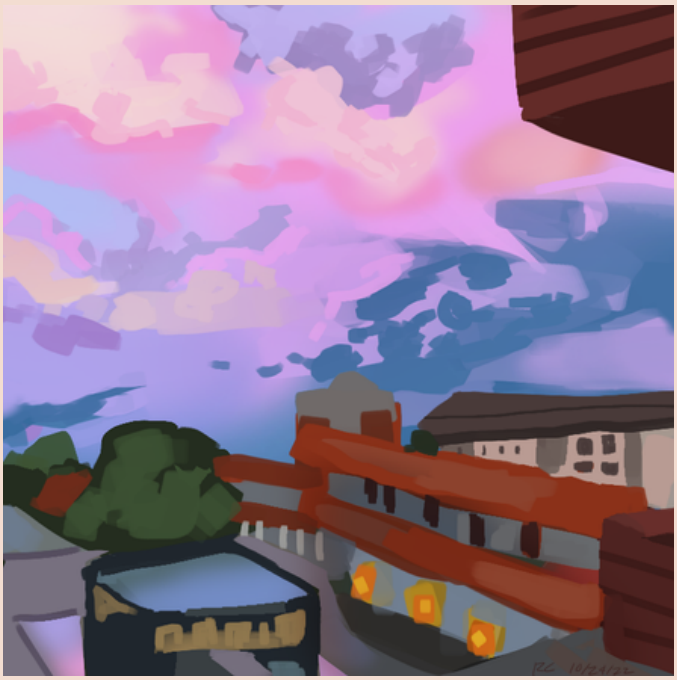
Currently coming in at rank #9 according to the 2022 U.S. News and World Reports list, California Institute of Technology (usually referred to as only 'Caltech') is known for being a top college in the field of STEM, with a special emphasis on engineering. Though it is a very prestigious private college, Caltech is also known as one of the best schools in terms of financial aid.

Some Basic Stats about Caltech:

Financial Aid:
- Average cost of tuition: $60,864
- Average cost of tuition after financial aid: 26,542

Cost of Application: $75
Acceptance Rate: 4%
Deadline to Apply: January 3, 2023
Applications Accepted: Common Application/Coillition
Top 5 Most Popular Majors in 2021:
1. Computer and Information Sciences and Support Services - 39%
2. Engineering - 29%
3. Physical Sciences - 18%
4. Mathematics and Statistics - 10%
5. Biological and Biomedical Sciences - 4%

Total Enrollment: 2,397 (Fall 2021), 987 Undergraduate



Claremont Colleges by Ruby Chew

Life on Campus at Caltech:

At Caltech all Freshman are required to live on campus, and are housed based on their sortment into 'houses' by their particular interest. Past Freshman year, 93% of students continue to live on campus throughout attending Caltech. Pranks are a common pastime of attendees, with even some staff participating in them. Both individual houses and the school as whole engage in many community activities and traditions, a fast approaching one being Splatterday. Every year, on Halloween, students gather at midnight to drop liquid-nitrogen-frozen pumpkins off of the roof of the tallest building on campus. In addition to fun community events, Caltech also boast a beautiful campus of 124 acres that includes many picturesque stone buildings and multiple turtle and lily ponds.

Upcoming Caltech Programs for High School Students:

- Alexa Café (age 10-15): Computer camp with entrepreneurship and social activism.
- Summer Research Connection (age 15-18): Summer research program for teachers and students attending Pasadena Unified School District high schools.
- Da Vinci Camp (age 11-17, 6th-12th grade): 21-day math program integrating science, engineering, and the arts.

The 28% Newsletter: 2 Years & 19 Issues Later

By Deborah Orret

"I have an idea of creating like a type of group newsletter - either on Discord or on Remind where I can push out information and ideas and we can all view or add on or talk about it! If you come across anything cool for women in STEM (related to CS or not) - I'd love to know or see it too! I'm still trying to learn :)

I'd love to know what you think of this idea - if you think it would be helpful, or overwhelming and another thing to think about, or whatever your opinion may be!"



NOVEMBER 2020 COVER

"That is an excerpt from an email I sent to 16 girls on September 24, 2020. Seven responded. Those seven girls took this idea and turned into something bigger and better than I ever would have. In just a couple weeks, we had assigned articles and cover art. We had voted on a layout and name. We had discussed themes, colors, events. We had become the 28% WIS newsletter team. All over Cisco Webex.



2021 TEAM PHOTO

On November 1, 2020, we put out our first newsletter. We had 9 subscribers.

It's been two years since that first newsletter came out. Today we have a team of 20+ girls spanning across all four grades. We have layout designers, writers, artists, and social media managers. We send the newsletter to over 100 subscribers. This is our 19th issue. I am so incredibly proud of all the girls that have been apart of the 28% these past two years and all the work we have done.

Thank you to everyone who has supported and subscribed these last two years. There's so much more to come!



2022 CLUB RUSH



2022 TEAM PHOTO

Word Search created by Emma Hungerford

C	R	R	F	Z	R	I	P	N	C	P	M	N	L
H	T	E	X	Z	R	O	F	D	H	A	J	A	M
L	V	O	K	D	M	A	C	E	R	H	F	T	A
O	M	V	G	E	Y	F	S	C	Y	F	L	I	R
R	A	O	D	F	Y	V	K	I	S	W	B	V	I
O	I	S	C	I	U	R	I	D	A	E	E	E	E
P	Z	V	G	X	O	Q	B	U	N	J	A	H	C
H	E	L	U	K	A	E	B	O	T	M	V	E	U
Y	F	O	L	I	A	G	E	U	H	Z	E	R	R
L	E	W	X	X	F	T	U	S	E	L	R	I	I
L	Z	T	X	T	O	G	O	G	M	O	M	T	E
K	A	H	A	R	V	E	S	T	U	P	O	A	E
O	H	E	C	E	Y	X	O	L	M	Y	O	G	Y
J	U	C	V	F	Q	K	Q	N	Y	W	N	E	O

Find all the words below!

1. Marie Curie - She was born in November!
2. Chlorophyll - Plants lose this, causing them to turn orange and yellow. Leaves are actually naturally those colours, but since they are overflowed with chlorophyll during the spring and summer, they appear green!
3. Native Heritage - November is Native American Heritage Month!
4. Chrysanthemum - The flower of the month!
5. Foliage - It's everywhere in November!
6. Beaver Moon - It's what some call the first full moon of November!
7. Harvest - November is the season of harvest!
8. Maize - The OG name for corn!
9. Deciduous - These trees look really nice in the fall!
10. Sciuridae - The scientific name for squirrels!

Credits & Contacts

Adeline Peterson
Celeste Acosta
Maxine Scott
Mallika Sheshadri
Paulina Mcconnell
Emma Thatcher
Jaidyn Carroll
Cecelia Bichette
Violet Chandler
Jadyn Addicott
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Morgan Gaskell
Emma Hungerford
Chloe Vuong
Ruby Chew
Marley Thach
Olivia Lopez
Daniella Novo
Elena Hatener
Avery Aldoroty

Ms. Orret, Advisor
& everyone else on the WIS newsletter team

Check out our website:

https://msorret.wixsite.com/ onlineclassroom/women-in-stem-newsletter

HAVE QUESTIONS? WANT TO GET INVOLVED?
WANT TO BE FEATURED IN A FUTURE NEWSLETTER?

Email Ms. Orret!

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