

Volume XV // March 2022
celebrating women's history month!

The 28 Percent

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



COVER BY RUBY 10TH

01 - Front Cover & Art
02 - A Cool Woman

05 - Crossword Puzzle
06 - Credits & Contact

LAYOUT DESIGNED BY
JAIDYN, 10TH & GIANNA, 9TH

March is Women's History Month and We Celebrate the Story of one of our very own Bulldog Parents: Dr. Margie Homer

by Tracey Willard

I understand you work at Jet Propulsion Laboratory (JPL); can you share with our audience a little about this gem in the Pasadena community? The Jet Propulsion Laboratory (JPL) is a federally funded research and development center (FFRDC) in northwest Pasadena in the Arroyo Seco. In the 1930s Caltech researchers started going up into the Arroyo to launch their test rockets and jet engines. The Army later got involved in the research and JPL was born. In 1958, JPL was transferred from the Army to the newly formed civilian space agency, NASA. Since then JPL has been a world leader in robotic space exploration.

As a child did you study space?

I was interested in space and I checked out the book "The Stars, a New Way to See Them", by H.A. Rey from the public library, over and over again. I loved looking at constellations, loved the myths and stories that went with them. The Smithsonian Institute had a phone number you could call that would have a recording to tell you what you could see in the night sky that evening. I was excited when Viking landed on Mars but I never imagined I would work at the laboratory that built it. In sixth grade, I fell in love with the Bohr model of the atom and headed towards chemistry ever after.

What is the work you do at JPL and how does it fit into the overall operations there? My research has been focused on the development of chemical sensors and related instruments. JPL's main mission is space exploration beyond human reach, most of JPL's research involves planetary exploration and astronomy. The instruments I have worked on have been focused on monitoring the air quality of breathing air in crewed cabins.

How long has a job like yours existed and did it have its own evolution? I have been at JPL for over 25 years. My job has evolved as my interests have changed, and as I have been offered new opportunities. My background in chemistry, research, and my ability to learn new things are my foundation. I have worked on different types of instruments; I have spent time working in a program office where we worked on policy and planning for missions. I am a sup-topic manager for research calls for small business innovation research and I review proposals. In addition, I have mentored summer students and younger career hires, as well I participate on different committees within the institution (including DEI and safety).

Dr. Margie Homer (continued)

Please share with us a little about your background? Did you by chance happen into the role you are serving at JPL or was it intentional? I grew up in Maryland outside of Washington, D.C., attending public high school where my favorite classes were chemistry and French. After I graduated I went to Swarthmore College where I played varsity soccer and graduated with a B.A. in chemistry. At that point, I didn't know what I wanted to do and I was tired of being in school so I got a job as a lab technician at The Aerospace Corporation in Los Angeles. All of my summer jobs during college had been as a typist so working in a lab was thrilling for me. Eventually, I decided I wanted to be in charge of my own research so I applied to graduate schools in chemistry and went to UCLA. Jobs and postdoctoral positions were hard to come by when I graduated from UCLA. I only had one offer but it was an exciting offer from JPL and I have been there ever since

Is there one thing in particular, speaking as a scientist, you think people would be surprised in general to learn about individuals in your field? So many chemists I know grew up setting things on fire and blowing things up. I think I was the only one in graduate school who didn't do that. I baked instead. Lots of people like to think that scientists are just nerdy people who like numbers, details, and technology. Scientists are humans and have a vast array of interests: music, writing, art, and hiking. I know JPLers who are not only scientists but also quilters, blacksmiths, jazz musicians, a Jimi Hendrix historian, authors, and social activists.

I understand you are a facilitator at JPL with the Diversity, Equity, and Inclusion (DEI) committee? Please share with us briefly about what that is? I am on a DEI committee that primarily focuses on internal communication. We organize talks, panel discussions, and raise awareness of DEI issues. Some of our talks were by amazing individuals such as Hakeem Oluseyi (astrophysicist, inventor, educator) and Joan Schmelz (unconscious bias). One panel discussion included people from NASA headquarters and JPL upper management who had focused on diversity within their teams and talked about how that fostered excellence. Another panel discussion was made up of the three women at JPL who had achieved "fellow" status; they shared their experiences and answered questions. One of the lab's approaches to address the benefit of additional training or information was to encourage management sections to have listening sessions where people could share their experiences in a smaller setting. The lab trained facilitators for these sessions, I completed the training and have facilitated sessions over the past two years.

Dr. Margie Homer (continued)

Why is DEI important in the STEM field? It seems like an admirable task in such a global community as JPL; your thoughts? DEI is important because in every field you want people with different experiences, different backgrounds, and different approaches to problem-solving. You also want to attract the best, brightest which means you look everywhere and not just the same four or five universities. If you always pull from the same pool you will miss out.

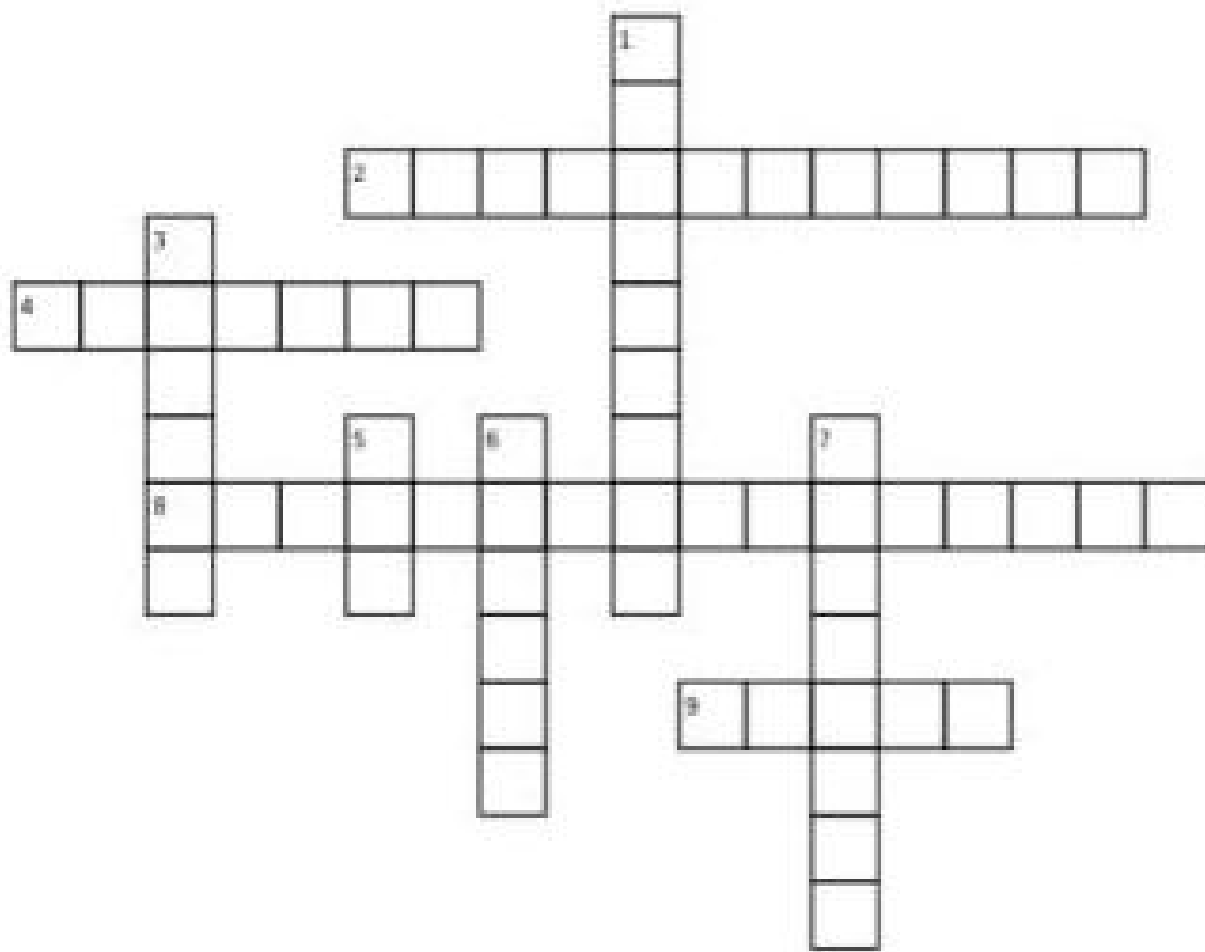
What would you tell a young female; a student with a passion for STEM but perhaps not the formal background or support about pursuing those interests? I would tell a young female who wants to pursue STEM to look for support. There are so many more avenues and options available on the internet. Look for a mentor at school or the library. Join student science groups that are in your area or start one. Different professional societies, like the American Chemical Society, support high school clubs. It is more difficult to find lab jobs or internships for those under 18 because of liability laws but computer-based internships are available. JPL used to have high school internships, a program with John Muir High School but that program doesn't exist anymore; high school internships are few and far between.

Would you say there is anything unique that a female brings to science that is valuable and irreplaceable? I'm not really sure how to answer that question. What I have seen in my work experience is that more diverse teams are a more comfortable team for me to work on and diversity is more than gender. Any team that is composed of a group of people who are very similar can get stuck in old thinking patterns. Some of the best innovations I've seen in the lab are from young people who are willing to step outside of the box and try new things.

I wanted to say something about JPL's incoming director, Dr. Laurie Leshin. She will become the new director of JPL in May and she will be JPL's first female director. As much as I have always wanted to see more women in leadership roles at work it was not something that people said out loud without getting dirty looks and getting labeled as someone who was more interested in feminism than science. JPL recently held a virtual "town hall" meeting to introduce her to the lab. Dr. Leshin's speech was a breath of fresh air and unlike any other town hall meeting, I have been to.

Created by Emma, 10th

Crossword Puzzle



Down:

1. the first american woman in space
3. the planet in our solar system with 53 moons
5. the kind of tree that acorns come from
6. Ag is the symbol for this element
7. the largest moon in the solar system

Across:

2. what bats use to sense their prey
4. the hardest known natural material
8. this scientist's work led to the discovery of the molecular structure of DNA
9. the largest bone in the human body

Solution will be released in next months newsletter!

06 // Credits & Contact

the girls that made this newsletter possible

Emma Hungerford, 10th Grade
Violet Chandler, 10th Grade
Madeleine Lees, 10th Grade
Jaidyn Carrol, 10th Grade
Morgan Gaskell, 10th Grade
Celeste Acosta, 10th Grade
Alissa Santana, 10th Grade
Ruby Chew, 10th Grade
Cecelia Bichete, 10th Grade
Mallika Sheshadri, 9th Grade
Gianna Gullon, 9th Grade
Maxine Scott, 9th Grade
Tracey Willard
Ms. Orret, Advisor

have a question? want to get involved? want to be featured on the newsletter?

Email Ms. Orret!

orret.deborah@pusd.us

