

happy black history month!

The 28 Percent

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

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INTERNATIONAL DAY OF WOMEN & GIRLS IN SCIENCE

SATURDAY FEBRUARY 11, 2023

The International Day of Women and Girls in Science is an annual observance adopted by the United Nations General Assembly to promote the full and equal access and participation of females in Science, Technology, Engineering and Mathematics fields. This year, the IDWGIS will focus on the role of Women and Girls and Science as relates to the Sustainable Development Goals(SDGs) such as clean water and sanitation, affordable and clean energy, industry, innovation, and infrastructure, sustainable cities and communities.



DID YOU KNOW?

- Women are typically given smaller research grants than their male colleagues and, while they represent 33.3% of all researchers, only 12% of members of national science academies are women.
- In cutting edge fields such as artificial intelligence, only one in five professionals (22%) is a woman.
- Despite a shortage of skills in most of the technological fields driving the Fourth Industrial Revolution, women still account for only 28% of engineering graduates and 40% of graduates in computer science and informatics.
- Female researchers tend to have shorter, less well-paid careers. Their work is underrepresented in high-profile journals and they are often passed over for promotion.

Dr. Dawn Wright

The 28% meets deep sea diver Dr. Dawn Wright, the first black person to visit the deepest point on Planet Earth

By Paulina McConnell

In early January, The 28% club had the opportunity of meeting oceanographer Dr. Dawn Wright virtually. The club, joined by AP Chemistry students, sat down in Pasadena High's auditorium to fill over forty seats with ears eager to hear about Dr. Wright's journeys into Challenger Deep.

Named aptly, this ominous landmark is the deepest known point on planet Earth, and sits in the Mariana Trench just off of Guam. Challenger Deep hosts three depressions - the Western, the Central, and the Eastern - the latter of which measures nearly seven miles from the ocean's surface to the very bottom.

In July 2022, Dr. Wright became not only one of twenty-seven people in history to reach this monumental depth, and not only one in five women to do it, but the first Black person of any gender to join that list.

Growing up in Hawai'i, Dr. Wright always felt a strong connection to the ocean. Apart from exploring the beaches in her beautiful state, she fueled her interests by tuning in to Disney movies or television specials about the ocean.

Today, Dr. Wright has worked in just about every aspect of her field that one can - she's served as a marine physicist, chemist, and biologist, and has a PhD in geography and geology. At Oregon State, she was professor of both.

Her most recent calling is mapping the bottom of the ocean's floor from her position as Chief Scientist at Esri, a GIS manufacturing company based in Redlands. Dr. Wright's maps, composed of landscape, depth, and even chemical composition measurements, provide softwares for government agencies - including NASA, who uses the information to map air quality and precipitation.

With a laugh, she details to us that the algorithms that she works with have many uses - and not just underwater! Starbucks, per say, uses these algorithms to determine the location of their next store.

**Watch the
recording here!!**

Last summer's expedition was the epitome of her expertise and passion so far. Dr. Wright joined dozens upon dozens of multinational biologists, chemists, physicists, captains, and even environmental photographers on the Pressure Drop American-made ship.

Alongside the exploration's patron, Victor Vescovo, Dr. Wright practiced getting in and out of the Limiting Factor numerous times before the trip. They would soon spend several hours inside the tiny (but mighty!) two-person submersible. The Limiting Factor can reach depths up to 36,000 feet, and would protect Dr. Wright and Vescovo from Challenger Deep's conditions along with the flame-retardant heating jumpsuits that the adventurers wore.

On her journey to the bottom of the sea, Dr. Wright was constantly at work. The Limiting Factor, equipped with a mapping device called a backscatter, was built to assist her data collection. This device sent out sound waves in all directions, then measured how long it took for the sound to bounce back. This process created a contour map of Dr. Wright's surroundings.

The technology could even be used to discover the type of material being encountered: if a sound signal came back strong, it was likely to be a metal object. This indicated the discovery of things like sunken ships on the descent pathway.

Also discovered on the descent were a plethora of deep-sea creatures. At 900 meters, Dr. Wright reported bioluminescent jellyfish. A little farther down, she was facing anemones and sea cucumbers akin to the ones we might find in surface tidepools - but withstanding pressure that would crush a human skull. With a depth of 8,000 meters came millions of red-eyed arthropods, giant decapods, and snailfish.

Yet to Dr. Wright, her monumental expedition is merely one outcome of the pursuit of dreams. She presents this advice to The 28%: Don't be afraid, and stick with things that seem hard. She has done exactly this.

Today, Dr. Wright lives her dream and is able to pursue her passion at work. "You can go anywhere, and do anything, with mapmaking," she concluded with a smile.

Thank you Dr. Wright!



In Honor & Memory of A Cool Woman: Beloved PHS Math Teacher Mrs. Hammond

*By Myron Hammond PHS Alum & Son,
with Tracey Willard*

Tribute to Harriet Hammond (1931-2022)

**PHS Math Teacher; retired from
Home of the Bulldogs at the age
of 88 years young
(1980-2020)**



How do we measure the impact a teacher had on our lives? Some may say they chose a profession related to the course taught by the teacher. Some may pursue a career in an unrelated field, but they fondly remember their time in that class. Some may say, 'That was the toughest teacher I ever had.' We may also hear that was the most fun I have ever had in school.

What if you met that teacher in an environment outside of the classroom (e.g. as a colleague, as a family member of a student, or as a person in the community)? In my case, I know her as Mom.

Her Early Life

Harriet Hammond grew up in Baltimore, MD and Washington D.C. as the eldest of 4 siblings. She graduated from Dunbar High School (with honors) in D.C. Following high school, she attended and graduated from Howard University, where by the age of twenty-two, she earned a Master's Degree in Mathematics - also with honors. After graduation, Harriet was actively recruited by leading firms in STEM such as IBM and NASA. The passion to become an educator and to follow in her father's footsteps, Harriet embarked on a sixty-five year career as an educator.

"If She Says [The Numbers] Are Good, Then I'm Good To Go." - John Glenn, NASA Astronaut referring to Katherine Johnson, a mathematician who was one of NASA's human "computers" and an unsung hero of the space agency's early days. The quote from the movie, "Hidden Figures" about a team of female African-American mathematicians who served a vital role in NASA during the early years of the U.S. space program.

Family and Career

In the summer of 1954, Harriet married Albert Hammond, Jr., a pastor in the United Methodist Church, in Baltimore, MD. As it is quite normal for pastors to move to new church assignments, it was indeed the case for the new Hammond family. Her career included stops in Baltimore, MD, Bronx, NY, back to Baltimore, and the final forty years in Pasadena, CA. While building a stellar career, Harriet made the time to fully support her husband, raise two children, and to be the cornerstone of the family. Instilling a strong work ethic, both children went on to have successful academic and professional careers.

Arriving in Pasadena, CA in the summer of 1980, Harriet had one interview. The Pasadena Unified School District (PUSD) virtually hired her on the spot; thus starting a forty year tenure at Pasadena High School (PHS). During her time at PHS, Harriet taught Math and Advanced Math. She served many years as department chair.

Having a teaching style that was tough (but fair), she required a lot from her students, but with a dash of compassion. Frequently arriving at campus before the rising of the Sun, being available during lunch, and staying after school to provide whatever help was needed goes to show the compassion she showed to her students. Moreover, one did not need to be enrolled in her class for her to be available to help. That was her nature. For the build of her forty-year tenure, everyone knew where they could find Mrs. Hammond on game night. If not in the stands, she could be found timing for swim and track meets.

After her forty-year run, Harriet retired at the young age of eighty-eight. Shortly after retirement, she moved to Little Elm, Texas to be closer to family.

Her Legacy

I have often thought about how I would like to be remembered when I leave this life. I have finally come to the conclusion how I will be remembered is completely out of my control. I am positive that my mother never dwelt on that thought. Through, what I like to call, her compassionate toughness, here is a brief list of some of her legacy:

- Wife of 50 years.
- Mother of two.
- Grandmother of two.
- Taught over 6000 students at PHS alone.
- Taught children of students she had in years prior.
- Prepared students for college entrance exams and wrote letters of recommendation, thus sending countless students to higher education.
- Many former students became educators themselves, with some returning to PHS to become teachers there.
- Mentored teachers to become the best they could be, with some becoming principals and others moving on to positions with the school district.
- She even inspired the deliverer of her eulogy to learn about the meaning of pi



Endangered Species Spotlight: The Amur Leopard

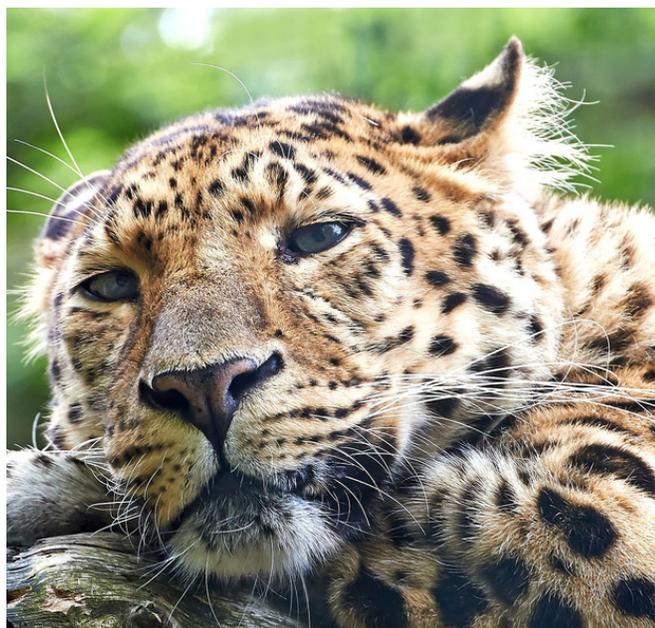
By Kaley Simkins

Native to Southeastern Russia and Northern China, the Amur Leopard's thick fur and large paws have helped it adapt to the snowy forests that make up its habitat. As one of eight subspecies of leopard, its coat is the palest of the bunch to help it camouflage when hunting for prey. Its diet is made up of roe deer, sika deer, badgers, and occasionally hares when the bigger prey isn't an option. After leaping 15 feet to snatch their prey under the darkness of the night, they hide tomorrow's meal from other competing predators. Not only can they jump impressive heights but they also can run at up to 37 mph. These solitary, nimble-footed cats live about 10-15 years in the wild and up to 20 in captivity. Unfortunately, the Amur Leopard is one of the most critically endangered felines in the world, and there are estimated to be about 80-100 individuals left.



Illegal wildlife trade is one of the main threats responsible for the state of this species, but it also attacks the leopard's prey. The forests in Southwest Primorye are one of the most popular areas for poachers, as the areas around it are densely populated and it is easy to access. They poach for profit and (prey most of all) for food. The impact this has on prey means Amur leopards can never be fully repopulated until the prey population is restored as well. Forest fires and development also have detrimental consequences to the survival of these cats. Without trees to use as cover or to hide food, hunting would be much more difficult. Some other threats to Amur leopards include inbreeding and disease.

One organization doing tremendous work for this species is the World Wildlife Fund for Nature. They are a Swiss-based international group working in wilderness preservation and reducing human impact on the environment. They have implemented programs to block illegal trade in Amur Leopard habitats, held harmful organizations in Russia accountable for their contribution to the endangerment of their native species, and are currently monitoring the animals to ensure their protection. They are especially known for their "adopt" program where a supporter can donate and said supporter receives an adoption certificate representing the animal of their choice, as well as extra gifts! If this interests you, feel free to visit worldwildlife.org for more information.



Credits & Contacts

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Avery Aldoroty
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Gianna Gullon
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Emma Hungerford
Madeleine Lees
Cam Leyva
Olivia Lopez

Paulina Mcconnell
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Adeline Peterson
Alissa Santana
Maxine Scott
Mallika Sheshadri
Kaley Simkins
Patil Tajerian
Marley Thach
Emma Thatcher
Chloe Vuong
Tracey Willard
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**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?

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