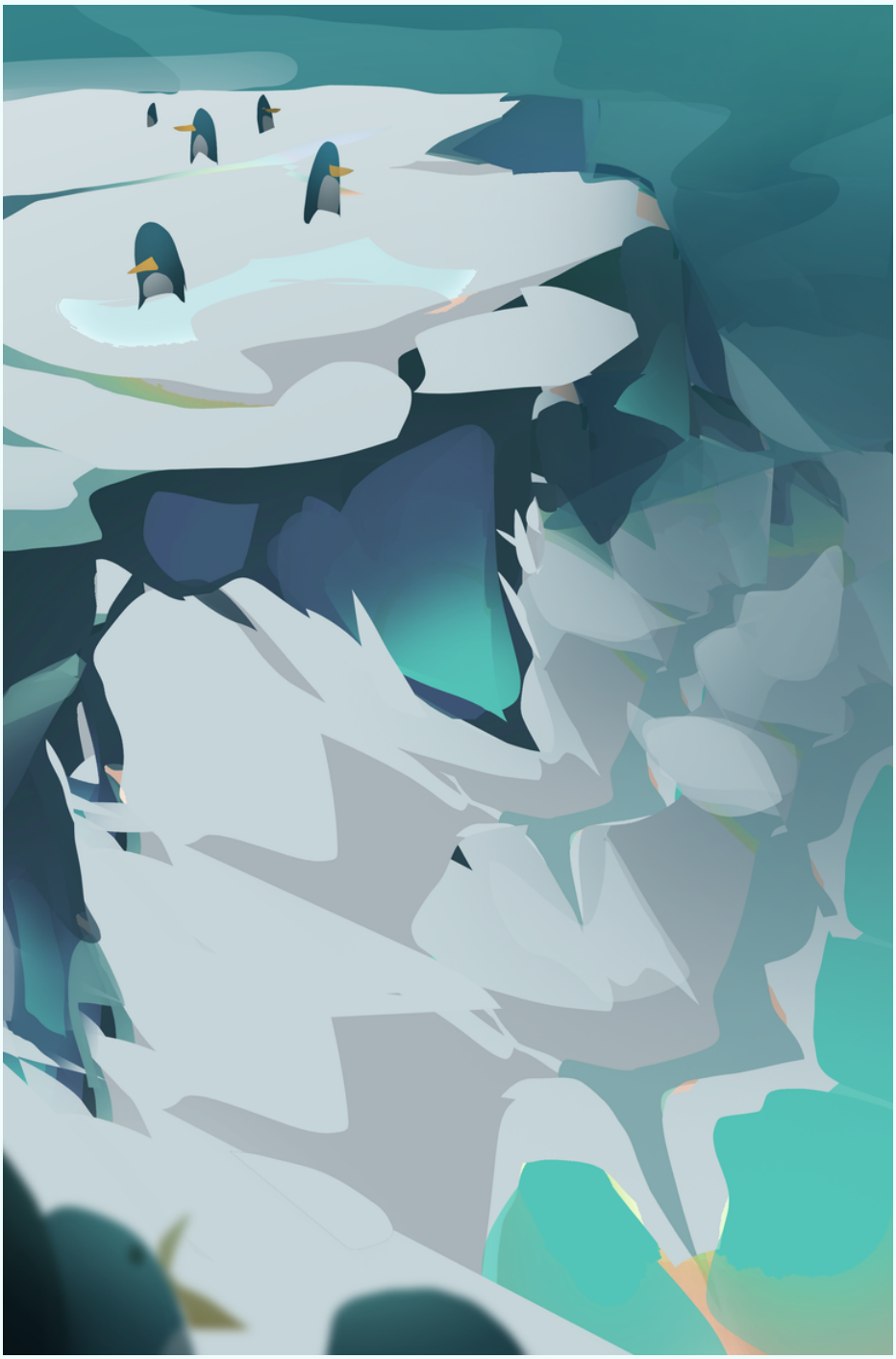
Happy Holidays!

The 28 Percent

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

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WINTER FESTIVAL

December 16, 4 - 6PM
PHS Center Quad

THE 28% IS HOSTING A WINTER FESTIVAL!

Stop by after school on Friday, December 16 to buy holiday gifts, listen to carols, and get some hot chocolate and popcorn.

The team has been making clay earrings, crochet accessories, holiday cards, and more! We have invited a number of other clubs on campus to come and host their own booth.

All the money raised will be going directly into the teams efforts to build and improve this newsletter, as well as attending and putting on events for women in STEM in this community.

Thank you for all the support this year. We hope to see you there!



WINTER Festival

MUSIC
RAFFLE
HOT DRINKS
FESTIVE FOOD
GIFTS



16TH
DECEMBER 16TH, 2022

4-6PM
FREE ADMISSION AFTER SCHOOL

QUAD
CENTER QUAD

GRAPHICS BY GIANNA GULLON

A Cool Woman: Heather Lim

By Paulina Mcconnell

"I always lead with 'I do scientific arts and crafts', then based on people's actual interest, I go down from there," muses Heather Lim, when asked about her profession. Scientific arts and crafts translates to Engineering Development Technician, which is Heather's official job title at Jet Propulsion Laboratory (JPL) in Pasadena.

Heather runs a micro-assembly lab - she receives material like designs and schematics, then uses this material to write processes for hardware to be built. "I do a lot of micro-soldering," Heather explains, referencing the process of using heat to join two pieces of metal together.

Her work also consists of something called hybrid assembly, which, if you're well-versed in engineering, "...is like the RF side of an instrument, and the soldering is the DC side." In layman's terms, hybrid assembly uses alternating electrical charges to manage power buildup on the material in question.

This is a lot of technical terms - so where do we see Heather's microscopic work come to life?

"Mostly, we build radiometers, radars; things like that. Usually the higher the frequency, the smaller the instrument will be," Heather says. "I specialize in higher-frequency instruments."

Some of these instruments include radars for the Mars Landers, and radiometers for Juno - two NASA projects that you may be familiar with. Radars are used to gauge distance, so in the case of a Mars Lander, based on the radar information, the landing system can be cued at the correct time.



Microwave Radiometer (MWR) is an instrument on the Juno orbiter sent to planet Jupiter.

Funny enough, radiometers can be explained by the sonar system that bats use: they send out a signal, and what returns essentially tells you what you're hitting. "It's using those waves to paint a picture of the environment," Heather offers.

"In earth science, a lot of the instruments I work on are about water vapor and water density - so you're looking at how much water there is, how much water there isn't," she elaborates. "Then things like Juno, where you're bouncing your signal, getting it back, and you're able to discern what kind of elements you're hitting on Jupiter's surface." For someone whose job requires a great deal of formal expertise, Heather's career path is surprisingly atypical.

Heather attended community college in Los Angeles, then went on to major in fine arts at USC - which, I know what you're thinking, seems as far from STEM as you can get. Concerned that she couldn't make a living out of art, she switched gears to the medical field, working for USC County Hospital and Cedars-Sinai Hospital under a program that would help pay tuition. Soon, Heather's career took yet another turn as an acquaintance at JPL sought her out for micro-assembly. Heather, who did robotics in high school and whose training in fine arts gave her skilled fingers, fit the job criteria exactly.



"It was great, because I always liked arts and crafts," Heather says, smiling. She finds the whole story rather serendipitous: "It was the right skillset, at the right time, knowing the right person. And here I am now, still at it."

In the beginning stages of her career, Heather cites her well-known mentor, Mary Sorial, as being a crucial force in navigating the field, specifically hybrid assembly.

Since then, Heather's job has opened several more doors - today, she weighs in on process development, assesses documentation, and suggests improvements at JPL. "It kind of just led into all that," she shrugs.

And yet, as a mother of three (let alone a newborn!), Heather feels that women shoulder more responsibility at home. Hence it's often a harder struggle to manifest a career. "There is space for you - but you kind of have to earn it more than anyone else," she explains.

This left me to wonder: what support system do women in the STEM field turn to? How are they compensated for having to work harder?

Heather shakes her head in response to my question. "We don't ask for help," she says. "I think it's a cultural thing - definitely a women-in-stem thing - that you're not supposed to tell people that you can't handle it all."

That being said, she acknowledges that once her job was secured, JPL turned out to be sufficiently supportive and civilized about absences, leave, and equality in that regard.

"But there's still a little bit of 'Oh hey, Heather, would you run over and pick this up?' or 'Schedule lunch today?'" she laughs, mimicking her male coworkers. "It's sort of like you're the default errand person."

Heather may chalk her success up to good luck, but her experience coming in from a completely different field and being a young - and at one point, single - mother pursuing a highly technical career speaks volumes about her perseverance and skill.

Her advice to girls pursuing stem is simple: "Just keep at it. You deserve to be there as much as anyone."

Written By You: Identifying Caribou

By Kaley Simkins



You might mistake a Caribou for a reindeer, which are widely appreciated during this time of year! While they are the same species, there are actually quite a few differences between the two. Caribou can be found in the arctic/mountainous tundra or northern forests where they live in the wild. Every spring they migrate further north, and they are actually known to be some of the most long-migrating mammals to date with an average of four months annually! Reindeers on the other hand work in domestic herds in places like Russia and Scandinavia.

Every year the Caribous migrate, their species grow more vulnerable. The deer are built to survive in freezing temperatures, so as climate change warms the Earth they become more susceptible to virus and disease. Change in terrain such as deforestation or industrial development on their trails can be extremely dangerous; Caribou use dense forests as cover when escaping predators. They also use old trails to find food for winter. Though wolves often get the blame for the spike in Caribou deaths in boreal forests, the real threat is human activity.

In order to prevent the endangerment of yet another fascinating wild species we must steer clear of human development within these thriving natural areas. It is important to keep the seasons undisturbed, for they rely on them so heavily to survive. Many of us hope we can keep witnessing the magical, historical migration of these deer for many years to come. Who knows, maybe you might see their cousin trotting on your roof this holiday season?





Credits & Contacts

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Follow Us on Instagram!

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

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