

The 28 Percent

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

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Art By Ruby Chew

the 28% newsletter



Welcome to the 28%!

The 28% is a women in stem newsletter written and designed by a team here at PHS. The goal of the team is to publish an original newsletter each month that features articles, artwork, programs, events, games, and more - all written by students at PHS.

Join us Mondays in E208 at lunch! There's a role for everyone - from writing, art, layout, social media & outreach. Everyone is welcome!



The vibrant feathered Honeycreeper is native to the islands of Hawaii, Maui, and Kauai and has a primarily nectarivorous diet. This means the birds like to feast on the flowers of native fruit trees and plants like the 'ōhi'a lehua or Hawaiian Lobelioids. With their curved beaks, they can collect nectar from these flowers and spread the seeds of these plants across the elevated mesic and wet forests they inhabit; they are one of Hawaii's most important pollinators. Hawaiian honeycreepers are closely related to finches and have a spectacular variety of colorful feathers. Not only do these birds help their environment flourish, but they are also crucial to the culture of Hawaii itself. They are considered spiritual guides for families, and their feathers have been used in clothing and accessories as a symbol of power for centuries.

Originally, over 50 species of honeycreepers covered the mainlands of Hawaii. But when settlers brought non-native species to Hawaii in the 19th century, avian malaria from mosquitoes began to plague these birds. Now, only 17 species remain, with less than 200 individuals in total. New predators have also affected these populations such as cats, rats, and mongooses. Grazers like pigs, sheep, deer, and goats contribute to habitat destruction, causing a food shortage for honeycreepers. In the past, these colorful pollinators have been able to avoid disease because both species favor different climates.

Honeycreepers reside in colder, elevated areas while mosquitoes prefer warmer territory. Climate change has been pushing the colder areas higher upslope and allowing mosquitoes to adapt to new temperatures while simultaneously pushing honeycreepers out of their habitats. This has led to an extreme outbreak of avian malaria in Hawaii's native birds. Laboratory research has shown that 90% of birds bitten by malaria-infected mosquitoes don't survive, which has made it difficult for rehabilitation.

Past relocation and captive breeding efforts in Maui for Kiwikiu honeycreepers failed due to exposure to mosquito populations.

In 2022, President Biden's Bipartisan Infrastructure Law invested \$14 million into the restoration of Hawaii's ecosystem. Quite a few organizations are taking action with these funds, such as the Department of the Interior. The DOI is currently making annual investments to restore habitat connectivity, advance habitat restoration, and control invasive species.

Endangered Species Spotlight: Hawaiian Honeycreeper

By: Kaley Simkins

They are collaborating directly with tribes and local communities to make sure their endeavors are most effective. The Department of Land and Natural Resources is another crucial organization to shout out. Using non-compatible mosquitoes on a landscape-scale basis, they plan on developing effective mosquito management for the Hawaiian Islands. They are also in the process of developing more captive propagation facilities at the San Diego Zoo Wildlife Alliance's Maui Bird Conservation Center. This will provide the birds with a safe space to breed in captivity. The U.S. Fish and Wildlife Service has gifted the DLNR \$6.5 million to fund their projects.



Created By Cecelia Bichette

Feminist Environmentalism: A Package Deal

By: **Paulina McConnell**

When you think of climate change, it's probably polar bears or angry hordes of vegans that come to mind. What's excluded from the picture is a newer term, but one which is vital to our understanding of combatting the climate crisis: feminist environmentalism.

Global warming, believe it or not, is inherently patriarchal. A new Swedish study reveals that, on average, men's carbon footprint is 16% higher than women's. Moreover, the top 1% of earners are responsible for more carbon emissions than the bottom 50% - and unsurprisingly, this top 1% is almost entirely male, heterosexual, and white (International Energy Agency).

Despite this blatant disproportionality, it is not these men who are impacted the most. The UN reports that, of the millions displaced by climate change each year, 80% are women. Women are less likely to survive natural disasters because of the systemic inequalities in information distribution, mobility, and access to resources.

For instance, in developing nations, most women work in agriculture. When natural disasters or sporadic weather are brought upon by climate change, the difficulty and pressure of their jobs intensify, and girls are often pulled from school to assist their mothers. If a woman fails to complete her job due to these environmental challenges, she will likely face severe punishment.

It is through these operations that, as the temperature of our earth rises, so do sexual abuse, domestic violence, child marriage, and human trafficking.

Climate change also poses threats to maternal health. The risk of stillbirth - a child dying in the later stages of pregnancy, or during childbirth - is worsened by extreme heat.

The environmental crisis is often labeled as a "threat multiplier", meaning that when climate change worsens, so do other world issues and injustices. This is where intersectionality comes into play. Humanitarian services often fail to account for the fact that migrant women, Indigenous women, Afro-descendant women, and LGBTQIA+ folks are more susceptible to the challenges posed by climate change.

“The thing about the climate crisis is that it affects everyone on Earth, and it can affect some groups more than others due to social injustices,” explains Morgan Gaskell, a junior at PHS.

They provide me with a longstanding example: “Factories that burn fossil fuels now are often located in low income communities, poisoning the people living there and leading to increased risk of developing deadly diseases such as cancer.” These communities are usually composed of people of color and immigrants, pointing to clear environmental racism.

As unsettling as it is to realize these connections between climate change and systemic bias, understanding their dualities are vital to defeating both.

“We cannot look at the climate crisis in a vacuum, because it affects so many aspects of human life and can be exacerbated by social injustices present in our society,” Morgan emphasizes.

The good news is that, across the globe, women and those affected most by global warming are spearheading the climate movement. Unfortunately, when it comes time to make major decisions, the veto is often still left to the affluent white male.

How can we move past this one-sided, patriarchal approach to the climate crisis? After all, in saving our planet, is the goal not to create a better world? One in which everyone can prosper?

Tale as old as time, we must work together on every front if we wish to combat climate change. In doing so, it is imperative that we elevate the voices of those impacted the most. Then, and only then, will we truly reach a solution.



Created By Alissa Santana

An Interview with Ornithologist Dr. Young Ha Suh

By Morgan Gaskell

I recently got the pleasure of meeting Dr. Young Ha Suh when she came and visited the bird banding station that I intern at in December. Young, a recent PhD graduate for her study in the behavioral ecology of Florida Scrub-Jays at Cornell University, was recently hired as the new ornithology collections manager at the Natural History Museum of Los Angeles (NHM). You can learn more about Young at her website younghasuh.com.

I emailed Young questions about her experiences as a woman of color in STEM and what her new role at the natural history museum means to her as she works to make scientific knowledge more accessible to the public. Below is the interview. Some parts have been lightly edited for flow and brevity.

What inspired you to pursue a PhD and career in science?

I was always interested in the natural world and wildlife but didn't know I could study it as a career until I got to undergrad. I couldn't believe that I could get paid to do fieldwork and study animals in their natural habitat. Once I got to college, I plunged into a lot of different internships and projects. After trial and error, I realized I loved working on long-term projects that had a lot of demographic data for me to study population-level trends and individual behavioral responses. I did a senior thesis on population trends in Wood Ducks across northern California and fell in love with studying variation in life history traits. After graduation, I took a gap year working as a field assistant in the Kalahari Desert [in Southern Africa], collecting data on meerkats to gain more field skills. I soon realized that I wanted to be the one asking research questions.



Dr. Young Ha Suh

Based on the insight I gained on what to and not to do when conducting field research, I applied for grad school and the rest is history.

What kind of inequities and disparities towards marginalized groups did you notice in college while pursuing a PhD in STEM?

For one, in my department, there were more male professors than female but there were more female than male graduate students. This could have resulted from gender-biases in attrition, but it could also signify a generational change as older folks retire and open up positions. But this gender ratio only shows part of the story; service roles (i.e., mentoring, IDEA work [Inclusion, Diversity, Equity, Access], administration) are often done by female faculty and graduate students, which is good in itself but takes time away from research or other metrics that are considered in hiring or tenure decisions (see articles like this, this, or this). Female graduate teaching assistants often get harsher reviews than their male counterparts which can have damaging consequences downstream. These disparities become more apparent when it comes to historically excluded demographic groups in terms of sexual identity and orientation, ethnicity, disabilities, and so forth. There were times when me or my friends experienced microaggressions and had to consult our peers to make sure we weren't overreacting or being too "emotional" about it.

So it can be hard to simply do good science when there are a lot of systematic barriers in the way! But at the same time, I met some wonderful friends and mentors who understood and also experienced these disparities, and made me feel like I still belonged in the community. And there have been many efforts to reduce this gender gap—acknowledging its existence has been the first step.

What projects did you work on before becoming the ornithology collections manager at NHM?

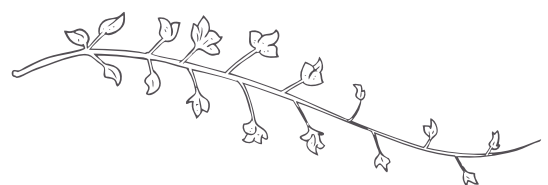
For my dissertation, I studied individual variation in movement of Florida Scrub-Jays at one of the longest demographic studies in North America. Florida Scrub-Jays are cooperatively breeding birds, meaning that more than the breeding pair attend to a nest and raise the young with usually the young delaying dispersal and staying at home for 1-6 years. I wanted to understand why some offspring stay for such extended periods since they don't produce any of their own young and it would be beneficial for them to leave and start their own family. So I wanted to know: Are there certain social or environmental factors that cause some birds to adopt different strategies? When doing fieldwork, I also noticed that there were a number of instances where the young would leave their own family and help out another—what's up with that? Despite being studied for over 50 years, Florida Scrub-Jays still seemed to have mysteries waiting to be answered. With technological advances, I was able to ask questions that were not answerable before - deployed small locator tags to get fine-scale movement patterns of young birds to

I see how they utilized their landscape and possibly gain information on their "next step in life". It was a lot of work, but I had a great time spending half my year in Florida avoiding the cold winters of upstate New York.

When I was on campus, I worked as a teaching assistant for various courses from introductory ecology and evolution classes to higher level taxonomy and graduate classes. I also taught a writing class for freshmen on conservation biology which was extremely fulfilling to design and teach.

I loved fieldwork, but I was ready to settle down and own a dog (which is impossible when you're spending half the year at a remote site). I saw the position [at NHM] being advertised by chance and the description was everything I wanted in my next career stage: working with museum specimens, public outreach and education, community science work, and living in a diverse city.

Fortunately, I had been doing specimen preparation (i.e. stuffing birds) every week at the Cornell Museum of Vertebrates and had fallen in love with specimen prep as a medium for art and science. I had also done some collection work as part of my fellowship when I started my fieldwork in Florida, so I had some experience on collection management. My decision solidified when during my in-person interview I was welcomed by a young and supportive all-women team; a stark contrast from my close-to-retirement White male committee. Even after six months of working at the museum, I still get excited when I walk into work and see dueling dinosaurs and walk by glass cabinets. It's the best.



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Check out our website:

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

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WANT TO BE FEATURED IN A FUTURE NEWSLETTER?**

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