

AGENTS OF G.I.R.L.

Guhhhh! Bad feelings! Bad feelings! Shake it off! Okay, Mother is just horrible, but let's forget about her. Hi, everybody, it's Nadia again! We have a special treat for our readers this month: not only are these G.I.R.L. recruits science ladies, but they're celebrities! Guys, I'm gonna freak out. Have you heard of *MythBusters: The Search*? Well, Dr. Tracy Fanara (@inspectorplanet) and Tamara Robertson, EIT (@tlynnr85) were on it, teaching people all over the world about science, technology, engineering and math ON TV! I'm gonna go sit in a corner and take deep breaths. Tamara and Tracy, take it away!

TRACY



TAMARA



WHAT KIND OF WORK DO YOU DO AND WHY?

Tracy: I am an environmental engineer PhD and manage the environmental health program at Mote Marine Laboratory. My expertise is in water and stormwater treatment, sustainable development, and hydrologic restoration of watersheds. In my current role, I research how natural and manmade toxins affect the environment and then develop sustainable designs to protect human and ecosystem health. I grew up in Buffalo, NY, and learned about the Love Canal catastrophe--this began my passion for science and the environment. I saw how everything in the world is connected and that each one of us makes an impact, and I wanted mine to be a positive one. I believe that science education has the power to spark change and sustainable behaviors, which is why outreach and education are focuses of my research program.

Tamara: My specialty is chemical and biomolecular engineering, which, when combined with my knack for tinkering and fabrication, has led me to a career in process/product designs and builds. I've worked in a varied range of fields including biofuels, vaccines, additive technologies, and consumer packaging. What I love about my degree is that it's given me the flexibility to really pursue my passions within engineering! The latest passion it let me pursue was getting onto *MythBusters: The Search* as a finalist--I got to build some really amazing things, including a vacuum pack that I scaled a seven-story building with!

WHAT EXCITES YOU ABOUT YOUR WORK?

Tracy: What most excites me about my work is that I have the opportunity to help people and wildlife on a global scale for generations to come; that I can be creative and propose research and designs that have never been attempted while inspiring people to fall in love with science by showing them how it impacts their lives. In short, what excites me most is the power to make the world better place.

Tamara: The exciting thing about my work is that, every day, I know that I am working to help people. Whether I'm retrofitting a biodiesel plant to provide my alma mater, NC State, with biofuel for their farm, or helping to design and build a vaccine facility, there is never a doubt that what I'm doing is enriching the areas and people around me. Working in these fields as an engineer is even more exciting because I get to focus on efficient designs and help alleviate the cost burden to consumers while still meeting their needs. In a world

where we all are working to make ends meet and provide for our families, I think it's important to help keep costs down for necessities.

WHY ARE YOU PASSIONATE ABOUT YOUNG WOMEN GETTING INTO SCIENCE?

Tracy: I am passionate about inspiring young women to pursue science not only because of the exciting opportunities it presents and the need for great scientists as well as unique ideas, but because I want to show them that they can, that there is no stereotype to science, and STEM is for anyone with a passion for knowledge, curiosity about how the world works, and willingness to work hard.

Tamara: As a woman in science, I feel that it's vital to connect with young women and let them know that they can be anything they want to be, regardless of whether it seems like a "boy" or "girl" job. Growing up, I was really good at math and science. I struggled a lot with the realization that I wasn't really drawn to any of the "women" jobs, and was labeled a tomboy because I chose to pursue sports and building. At the time, I didn't know any engineers (let alone female ones) so I never even considered it as a potential path. It wasn't until my second year in college that I met a female mathematics professor that helped me find my way in life, and I am grateful for that. Now I want to pay that forward and teach little girls they can hold their own among the men. As the only female finalist on *MythBusters: The Search*, I think I accomplished that. :)

WHAT FEMALE SCIENTISTS (REAL AND/OR FICTIONAL) HAVE INSPIRED YOU?

Tracy: When I was younger, I was not aware of actual female scientists--pop culture didn't do a great job of presenting them. Penny was the brains behind Inspector Gadget--a blonde, young genius who didn't need credit for her work in saving the world. Dr. Brennan from *Bones*, Dr. Jo Harding from *Twister*, and "Murph" from *Interstellar* are inspiring characters --I loved to see their passion for their work drive them to success. As an adult, I see that there are many real, inspiring female scientists, one being Dr. Eugene Clark, who followed her passion for research, philanthropy, and outreach, shaping the institution that I work for now.

Tamara: I didn't know any female scientists growing up--I don't think I could name any aside from Marie Curie, who was inspiring to me as the mother of physics. I got most of my female science role models from comics and sci-fi shows instead! I was a huge fan of X-MEN and *Star Trek* growing up, and getting to see women as

scientists, leaders, and warriors helped me to feel like I could do anything! I think that's why the role of toys is so important in inspiring kids to pursue STEAM because it helps to make science and tech fun and introduces kids to these concepts at a young age--much like comics and sci-fi did with science and me.

DO YOU HAVE A FAVORITE EXAMPLE OF NONSENSICAL SCIENCE IN POPULAR CULTURE?

Tracy: Time travel--not only do you go through time, but space as well in *Back to the Future*! I have thought long and hard about possible ways to make this a reality...let's just say I haven't completely abandoned it. Time travel is number one. However, X-Men super-powers (telepathy, strength, speed) and shape-shifting (as presented in *True Blood*, although *Supernatural* is my preferred show) would come in quite handy.

Tamara: I always loved the idea of Peter Parker becoming Spider-Man--that a bite from a radioactive spider could give you super-powers. To me, it's quite neat to think of the alterations to the genome that would have to occur to give him all the amazing traits he has. I remember becoming super interested in bugs after learning about Spider-Man when I was little and thinking that perhaps they could give me super-powers too. Most of them were friendly and didn't bite, so I didn't quite get to test my hypothesis--but I did learn a lot about entomology, so that was a plus. :)

HOW LONG HAVE YOU BEEN READING COMICS AND WHAT WAS YOUR FIRST COMIC BOOK?

Tracy: I have been reading comics for as long as I could read, started with *Transformers*, but X-MEN and *Captain Planet* were my favorites (I always felt that I was different from my peers, so unique characters with good intentions drew me in).

Tamara: I started reading comics when I was a kid--I hung out mainly with the boys I knew, since they always had cooler toys and games, so I got to learn about the comic book world. X-MEN was always my favorite--there were so many strong women characters to connect with and see do amazing things! Storm was my favorite, though--I loved how she could control the weather and fly! I grew up in Hurricane Alley, so I always thought that she was out there flying around when we would have storms. I think too, as a redhead who knew that my hair color was a genetic anomaly, that the life of a "mutant" made sense to me. I got made fun of a lot for my hair, but now I wear it like a badge of honor--the X-Men made me realize it's my own super-power (and comes with a temper like She-Hulk's!).

Now, tell me that wasn't cool! Go look online for videos of Tamara climbing a wall like Spider-Man using a vacuum! *HEART EYES EMOJI.* Anyway, see you again next month so you guys can see how we save Ying (I hope!).

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Nadia