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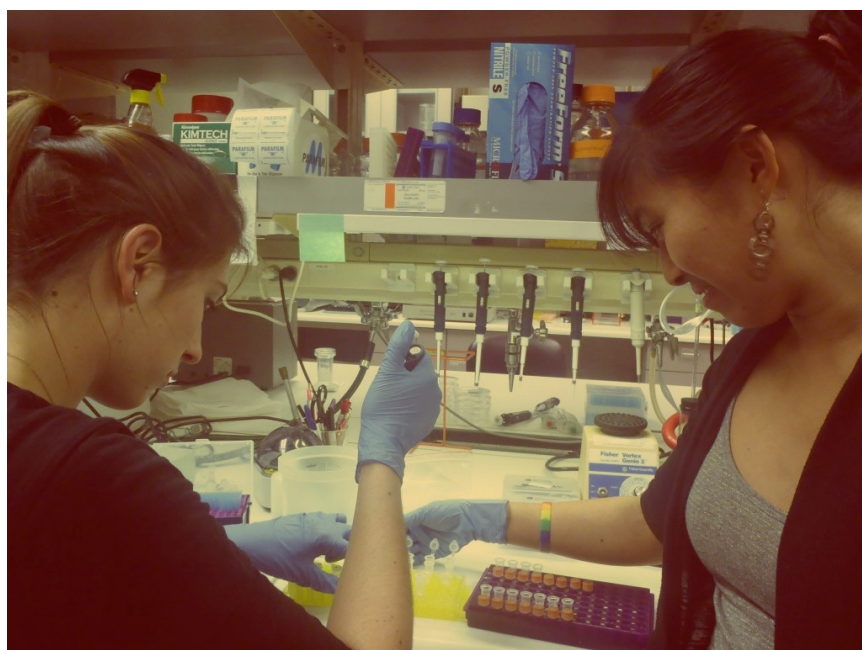
COSMIC GIRL: MARY BETH WILHELM

Mars is big business. There are “one-way ticket to Mars” contests, waiting lists for space flights, and most likely a Mars reality show in the works. Everyone wants to colonize and cash in on Mars, kissing Earth goodbye. It all sounds exciting enough — but no one is going anytime soon.

The reality is that a brilliant 25-year-old scientist from California named Mary Beth Wilhelm was part of the small team that discovered evidence of water on Mars and published their findings in the Journal of Geoscience.

The evidence is in the hydrated salts that were found in the images collected by the Mars Reconnaissance Orbiter (MRO). These salt crystals appear as dark patches and streaks on the mountains and canyons of the Red Planet. These salt crystals may prove the presence of water, but do not yield the finding of microbial life, at least not yet.

Marybeth is a Cornell graduate finishing up her PhD at the Georgia Institute of Technology whilst working at NASA, where she has been contributing to the Ames Research Center since being accepted as a civil servant at age 16. She tells me that NASA has a great tradition of mentorship. Her area of study is the geology of ancient Mars and the preservation of chemical biomarkers.



Mary Beth has an infectious enthusiasm for space and the red planet. She shares with me her passion for all things Carl Sagan, stromatolites, adventure, travel, dance, and her dream to embark on “a grand tour of every major desert on earth to continue studies of the preservation of biomarkers under Mars- like conditions.” This tour would include the Antarctic Dry Valleys, the Tibetan Plateau, and the Gilf Kabir in Libya. “I hope my mom doesn’t read this,” she says. “I’m sure she is already cringing.”



I can relate to worrying my own mother whenever I mentioned my remote travels, and I applaud her parents for their encouragement and support. Mary Beth states that her grandmother and parents have been a great influence in her life and



accomplishments to date.

While at Cornell, Mary Beth majored in earth sciences and minored in dance. For her, dance was a hobby to help keep centered during all the intensity of science research. She was one of three women in many of her male dominated classes, working in a very intense academic environment.

I asked Mary Beth about her most difficult obstacle to date. Her reply was honest and direct: “Academically, I really struggled with the transition from my bachelor’s institution, which had a huge amount of resources and research opportunities in space sciences, to my PhD program in Planetary Science, which is young and small,” she said. “It forced me to be independent in my thinking, confident in my own ideas, to build a strong network of external advisers and collaborators, and to travel...a lot.”

“For a year, I spent no more than three consecutive weeks in one place, traveling between different institutions on a shoestring budget in order to complete the majority of the work required for my primary PhD project,” Mary Beth continued.” I am glad for the adventure, though. I think it made me a more resourceful and broadly-aware scientist.”

I also inquired about how realistic all the talk of colonizing Mars and leaving our families, children and significant others really is at this point.

“It’s impossible to know exactly when we will be exploring Mars because there has to be the right synergy between public support, political backing/funding, and technological readiness,” she said. “Thankfully, NASA has its



sights set on Mars (as well as its engineers and scientists working toward the goal of getting humans to the red planet), and the public seems to be really excited about Mars exploration in general. I realize the enormity of the challenge, but I am confident that we will get humans to Mars within the span my career.”

“The current Rover is akin to a geologist; the next generation would be a Rover biologist looking for chemical signatures. We are not going to put humans on Mars until we have things sorted, such as the effects of a year of space flight. How do we deal with human needs in space for a year? How do we perform surgery? Food supplies?

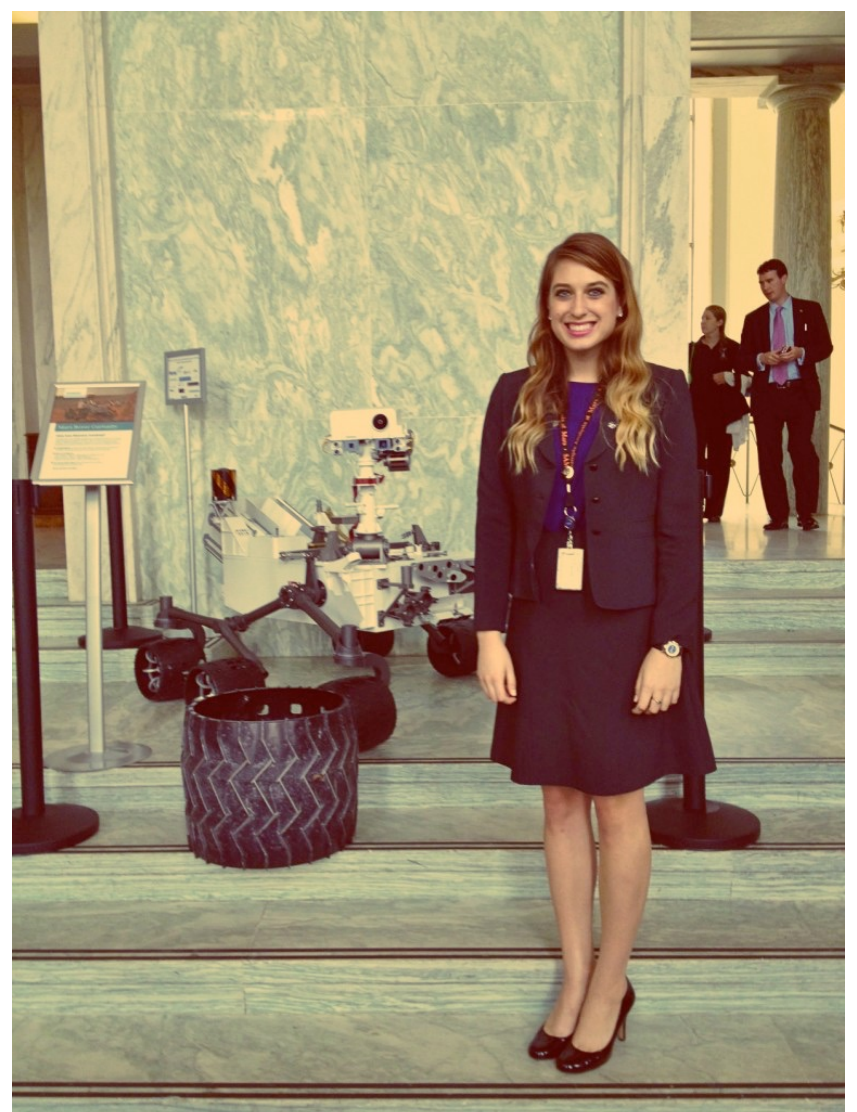
We still have lots to deal with before we send people on a one-way mission”

I wondered what a 25-year old Mars research scientist grew up watching that may have influenced her love of space. Was she a sci-fi movie gal?

“I’m not super into sci-fi, or at least not into it more than other types of genres — I guess it’s because I live the science every day. But, I do try to balance my Netflix intake with some science fiction. One of my absolute favorite movies is Another Earth. It’s directed by Mike Cahill and follows what happens to a young woman when a twin Earth that was hiding at a Lagrange point suddenly appears in the night sky. It’s a beautiful film and I love how poetically scientific concepts are intertwined with drama and music.”

“Right now, I have been watching a TV show called The 100,” Mary Beth added. “It’s a great mix of both Earth and space adventures with a strong female protagonist. Growing up, I was a huge Star Wars fan, and probably watched Carl Sagan’s Contact only a billion times.”

I must admit, after our several conversations and countless emails and texts, I feel much more intelligent about Mars and its colonization realities thanks to Mary Beth. She has the ability to impart her knowledge effortlessly and smoothly so that it’s easy to absorb and understand. She would be a great speaker or presenter for



any conference or event.

I have a final question for our Cosmic Girl: What is the best advice for young women who want to get involved in the future of space exploration and science?

“I would advise them to find something that they are really passionate about — inspiration is everything — and to learn absolutely everything they can about that topic,” she said. “A very wise mentor of mine once told me to first figure out what questions I was most interested in answering, and then to do whatever I had to do to answer them!”

I would say that she has taken this advice to heart and done well with it.

Until our next adventure, pack away your wrinkle cream and put on your traveling boots....

