

## Energy in Motion:

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# Energy in Motion

## Filmmaker Crystal R. Emery is a Force for Change in STEM

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**Georgina To'a Salazar, PhD**, Research Coordinator at The University of Texas Health Science Center at Houston  
AWIS member since 2013

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**Crystal R. Emery** is the Founder and CEO of URU The Right to Be, Inc., a nonprofit content production company. She is a filmmaker, virtual reality producer, AAAS IF/THEN Ambassador, and member of both the Producer's Guild of America and New York Women in Film and Television. Her socially conscious work explores diversity, inclusion, equity, accessibility, STEM education, and environmental stewardship. Dr. Georgina To'a Salazar interviewed her about her work toward broadening participation in STEM and medicine.

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**GTS: I heard that you wrote and directed your first play when you were in fifth grade. Can you tell us more about that first play? I am curious to learn how you were motivated to create and how you recognized the power of storytelling at such an early age.**

**CRE:** In fifth grade I wrote and directed my first play in response to being bused out of my community into an all-white community. That was quite a hostile experience. The play was about Harriet Tubman's efforts to free enslaved people.

Even before that, in third grade, I started directing plays with my brothers (at that time I didn't have sisters), plays about Batman and Robin versus Kato and the Green Hornet, about good versus evil. And I always ended these little plays with the song "I'd Like to Teach the World to Sing in Perfect Harmony."

We lived next door to a nature preserve with a brook that ran along our street. Every day we saw deer and other animals outside our window. I would go to our little park with my blanket and read and listen to the trees talk.

Storytelling is a gift that all of us possess. But then it's formed and shaped by our external experiences.

At an early age I recognized that we have a connection to the world around us, whether we sense it in sounds or smells or butterflies or lightning bugs. I wanted to know

about where this connection comes from and how it affects us.

**GTS: Which of your films would you say has been the most influential? What was your vision for that film? And how do you judge that your message has been successful in reaching the audience?**

**CRE:** I don't have a favorite film, because each one of them is like my child. So who is your favorite child? Everything I do has its own life energy, its own vibration. I also don't have a vision for what success is. I'm more interested in impact. How does my work make you feel? And what does it motivate you to do differently?

My film *Black Women in Medicine* has been seen worldwide by over 12 million people. I loved making that film and showing the beauty and the wonder in the triumph of the human spirit. Despite all of the odds against them, these women became great doctors.

Right now I am working on *Deadliest Disease in America*, a documentary about racism in health care. I'm also working on Changing the Face of STEM. Through this film and initiative, I am demonstrating that through science, we transcend racism, gender, and all the other "-isms." Science teaches us that the earliest human remains are from central Africa. That means all of us are Black. Our early ancestor Lucy was Black. That is what science tells us. Science tells us that race is not a real thing. It's a social



Photo by Uriah Monk.

construct. It teaches that our DNA is more alike than it is different, that if you're looking at someone's DNA, you really can't say, "Oh, that's an Asian person," or, "That's a white person; that's a Black person." So science, for me, is the way to unravel the ignorance around race.

**GTS: One of the reasons I became a professional in science was because of the opportunities it provided. Could you tell us more about what made you turn your efforts toward medicine and STEM?**

**CRE:** I believe in a power greater than myself that guides me where I need to go. I once interviewed Dr. Doris Wethers, one of the first three Black women to have graduated from Yale School of Medicine and the first Black attending physician at St. Luke's–Roosevelt Hospital Center. Here was this little lady whose work around sickle cell anemia had changed life expectancy from 18 years to over 50 years, and nobody knew about her, right? Nobody knew about this great work that she had done. And I said, "Somebody should tell your story."

Two weeks later, I was in Washington, D.C., and I met Dr. Beatrix Hamburg. Dr. Hamburg was the first self-identifying Black woman to graduate from Vassar and the first Black woman to graduate from Yale School of Medicine. And her story wasn't easy, though she made major contributions to research in childhood development and psychology.

In my work I have wanted to capture the triumph of the human spirit. You know, that in all their struggles, the Black

women focused on their vision of being healers. They did not allow racism, sexism, or social economics to define who they were and what they could accomplish. Most of the doctors whom I interviewed did not initially go to school to become doctors. They were in school to become chemists, physical therapists, and mathematicians. And yet they ended up on the path to becoming a doctor.

**GTS: Now you are also a strong advocate for women's equity in science. Can you tell us about that?**

**CRE:** Scientists, and particularly women scientists, are so rarely seen, right? We have to change that. I'm part of the AAAS IF/THEN® initiative. Its goal is to get young girls to look at possibilities for STEM careers, for example, through such role models as Dr. Kizzmekia Corbett, the Black woman who led development of the COVID-19 Moderna vaccine.

I love Marcia McNutt, who is president of the National Academy of Sciences. She's amazing. She and I have discussed that we must include men to help us change the face of STEM to become more diverse, as they are still the gatekeepers in the science community. We all have to work together.

At the heart of my work, whether as a filmmaker or as a STEM advocate, I'm a human being working to bring people together to create a more equitable society. And people working in the technology and science fields can help us get there.

**GTS:** You are a quadriplegic with two chronic conditions, but you haven't let your physical limitations prevent you from finding your potential. Can you describe what that takes? And do you have any advice for others with physical challenges?

**CRE:** I believe in a power greater than myself, and I love life. Every day I learn something new. So, yes, I'm currently a quadriplegic. I am a Black woman. I use a wheelchair; I live in a wheelchair. But does that define my capableness? No! As a matter of fact, it actually makes me smarter than the average able-bodied person. Because every day I have to figure out how to get out of a bed, how to do all of these things while still retaining a sense of normalcy.

And so it's my faith and my love that help me. But the other thing that's helped me is how I always describe myself. I say I am a space creature, in a spacesuit, on an intergalactic journey to understand the relationship between self, body, and God. I chose my gender—my spacesuit gender—my race, and my different abilities to help me understand that. In truth, I am energy in motion. And doesn't science say that nothing ever dies? It just transmutes into something else. Isn't that what science says?



Photo by Uriah Monk

A young praise dancer from New Haven, CT performs in front of a Black Panther mural outside of the New Haven Public Library. Faithful Servant, a short film by Crystal R. Emery, highlights the integral role that faith-based organizations play in the lives of Black and Brown people and calls upon viewers to stop the spread of COVID-19.

**GTS:** What would you say you face at the intersection of three marginalized identities? How has this intersectionality influenced your advocacy?

**CRE:** The greatest challenge is just being in the wheelchair. Imagine a day during which you can't brush your teeth, and you depend for all of your daily needs on somebody else. The other challenge is, can I come into a room and be viewed as a capable, independent person? No matter how brilliant I am, people talk to the person who's with me.

I have lived around the world. I have made two great films. I have done more work in a year than most people do in a



Photo by Uriah Monk

Crystal poses with a group of future scientists at URU's Changing the Face of STEM Conference at Morehouse School of Medicine in Atlanta, GA in September 2018.

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whole lifetime. And yet someone who doesn't know me talks to the person next to me as if I can't hear. Or as if I'm invisible.

That is one of the greatest challenges, that people equate disability with not being able to function at all. And that actually pisses me off.

**GTS: Your advocacy as a very visible role model helps a lot to change that image in society. Thank you for that. Can you share more about Changing the Face of STEM? What are you most proud of accomplishing with this initiative so far?**

**CRE:** I love this effort. There are a lot of policy makers out there who have never seen a marginalized community. They send people to collect data on such a community and to deliver it back, they write a report, and somebody makes policy. The policy makers never even see the actual community. So I bring all the stakeholders to the table.

In 2019 we did an event in Dallas. PricewaterhouseCoopers loaned us the artificial intelligence, and it was amazing to see our young mentees, for the first time, interfacing with A.I. Ninety-eight percent of them had never done that before.

Dr. Bernard Harris was the first Black man to walk in space. He lives in Houston and traveled to Dallas, so that the Black, Latino, and Native American young people who participate in our program could interact with him and see what they can become.

They played my virtual reality game, “You Can’t Be What You Can’t See,” using an Oculus headset. In the game they get to be the doctor or an IV technician at an emergency scene. It was exciting to watch them take on that role and to see a lightbulb go off in their heads, to have them realize, “Wow, I can do that too,” or, “I can see beyond my current limitations.”

**GTS: Do you have advice for those who want to pursue STEM careers but who might be discouraged, because they don't see others like themselves in those professions?**

**CRE:** There's a great need for talent in America and in the world. Don't let anyone tell you what you can't do. There

are programs that can help. There are people who can help. There are so many women who want to reach back, support, and mentor you.

You can do anything as long as you're determined and willing to commit to working hard. Because STEM is hard work. But there are also jobs in STEM beyond doing scientific work in a lab. There are computer scientists and technicians who support scientists in the lab. There are people who support engineers. There are so many jobs out there. Don't limit yourself. Dream big, believe it, and you can achieve it.

**GTS: How can our members support or get involved with your current or future initiatives?**

**CRE:** We have a project at URU The Right to Be called “Building Bridges: The Power of the Sisterhood.” I would welcome any of your members to host a virtual workshop. Because we, as women, are so used to being the only one in the room, right? And we are learning how to be able to build alliances. White women and women of color have to learn to work together better, or else we will not be able to carry the next generation of women forward. If you want to help, join us in Building Bridges: The Power of the Sisterhood; join us with our mentoring program.

**GTS: Thank you for that. You've given us a lot to think about, and I hope that many of us can be involved in these programs in the future. 🌟**

*This interview has been edited for length and clarity.*



**Georgina To'a Salazar, PhD** works to create innovative solutions in science communication, research, and policy. With a bachelor's degree in chemical engineering from Stanford University and a doctorate in biomedical engineering from the University of California, Irvine, Dr.

Salazar fulfilled her dream of exploring the world by taking research positions in Singapore and Japan, before returning to the United States and shifting her focus to science communication.