

Q&A with Lauren Gunderson

Interviewed by Joelle Seligson

The United States' most produced living playwright brings stories of science into the spotlight. Lauren Gunderson (laurengunderson.com) first married science and the stage in *Background*, a production that journeys back through the life of a cosmologist and through time itself. She's now adding science, technology, engineering, and math (STEM)-oriented children's books to her repertoire, entrancing young readers with imaginative tales tied to the scientific process. Gunderson chatted with *Dimensions* about why she's driven to make audiences care about science and those who have advanced it.

Lauren, which came first for you, theater or science?

Theater was my first love, the first real sense of drive that I felt as a kid. Part of it was just the excitement of being on stage and telling stories. And also for me, the idea of writing, that was another big moment for me, realizing that you didn't just say the words, you could write them. But I found out really quickly when you're a writer and a performer, you get to ask yourself, OK—what I realized really quickly was, I mean obviously you need a subject. To be a playwright is a great thrill, but what are you going to write about? And I had a few wonderful science teachers, a biology teacher and a physics teacher, who used history and the scientists themselves to help teach us the core courses and the core themes and everything. And to me that was a big moment of oh, these are characters, and that science came from not just a mind but from a person, a personality, a time, an era. What was the combination of person and place that gave birth to these incredible ideas? And that felt to me not just interesting but particularly dramatic as in theatrical, something I could stage, something I could give a dialogue to. And that was really the beginning of my kind of dance with theater and science.

And so from there, what was your first stab at combining the two?

The first science play I wrote was a play about cosmologist Ralph Alpher, who won a National Medal of Science about a decade or so ago. He was a cosmologist who before [Arno Allan] Penzias and [Robert] Wilson, he came up with a mathematical prediction of cosmic background theory. So this was a story about him, and he didn't actually get the Nobel Prize of course, Penzias and Wilson did, and he wasn't mentioned, so it was a play both about a great mind but also the kind of resentment and grief of not getting a prize. But you know, the prize isn't the point—it's contributing an idea to the future of science, that's the point. But you know, that's very human, to feel jealous, so combining those things.

The other element that I realized you can do when you're telling stories but particularly dramatic stories about science, is use science as a metaphor. And in this case, this play, which is called *Background*, it actually goes backwards, because

of course you can't study the Big Bang without going backwards toward it. You can't go right to the beginning of time because it's impossible and math kind of breaks down right in those early moments. And so the play starts at the moment of his heart attack and goes backward in time and backward and backward and backward as we approach the kind of singularity. So it's really interesting and important for me to try to write the idea of studying this thing, not just the thing itself, and not just this kind of landscape around this character I was telling the story about.

I wrote a play about Isaac Newton called *Leap*, which was about him during his *annus mirabilis*. There was a plague in the city so he was driven home and he comes out a year and a half later with this incredible collection of discoveries. That was a play about that. I've written about Darwin and Émilie du Châtelet and Henrietta Leavitt, an astronomer at the turn of the 20th century. So there's been a bunch of things, and I really turn toward women scientists as well, which is of course a whole genre in and of itself to put on stage.

What have you learned about both the potential and any possible limitations to sharing stories about science on stage?

I mean, the potential is pretty endless, especially if you think about what theater does really well is empathy and personhood—so adding that to a story of science, it's not just about an idea or a fact or an algorithm, it's about the people. It's about how these discoveries are made inside the human experience. And that's always good to remind people, these facts come from a place and a person and a life. And I think that humanizes something that perhaps seems remote or cold, as it can. Of course, the limitations are it's not a lecture, so we can't put a bunch of equations on—you can, but people are probably not going to spend too much time looking at them with these actors all around. So we really want to make science bite-size, digestible—you want to understand something and you do want to teach, but you have a limited quantity of lessons that you can impart to an audience and have them stay interested and stay connected in the heart, not just the mind. So that's the balance I'm always trying to walk, is being accurate and true to the science but not overwhelming so we don't overwhelm the story itself.

That makes a lot of sense. And you're releasing a children's book right now, so how have you found that that medium compares to theater when you're trying to relay a science-related message?

Yeah, it's about enthusiasm, right? So kids, of course, their attention—if they're bored, it's really easy to tell. This is true in a children's book and also on stage. So this children's book is called *Dr. Wonderful and Her Dog Blast Off to the Moon*, and it's based on my musical, which is called *The Amazing Adventures of Dr. Wonderful and Her Dog!* And it's about a little girl who solves mysteries with science. The musical has all these science songs, which you can actually find online at drwonderful.bandcamp.com—they're free for everybody. And the book is about this specific journey to the Moon to find out why the Moon shrinks. During the month of course, the Moon gets smaller, and then goes away and then it's back—well, why

does it do that? So she has to of course go to the Moon to figure it out with her dog. And it's something like the—both the impossibility of that gets kids very excited: going to the Moon, and there's the dog, and the dog talks and that's kind of crazy. But you get to connect that enthusiasm for the exaggerated with the excitement and enthusiasm of solving a mystery using these incredible tools of logic and science and measurement. So that's really the goal, is to try to get the process of science in the bodies and minds of these kids, both on stage and on the page. Because that's where it is. It's not about the facts as much as it's about the technique. That's what I want to impart, is that anyone can be a scientist if you learn the scientific method and you learn what proof is and learn how to talk about your work with others—so that's the real goal of the book and the musical.

So do you think that's what you would point to of being your ultimate goal overall?

For kids, absolutely, because I think they can internalize a process of science, and then it helps them understand what's real and not real, what proof is, what it means to say a theory, and how to trust scientists that they hear about in the news or that teach them at school. So once they do the process, they can trust others who have done it as well. My goal in the larger field of telling stories about science history, women in science, and putting it on stage and in film is really to impart the appreciation of science—that it is the backbone of society and that we can trust it and find reverence in it, not just kind of reliability but the awe and wonder of a true proven thing, really imparting that to as many audiences as possible and helping people understand the struggle of those who have done this, who have done this incredible work, especially with the extra bias of being a woman or African American or handicapped in some way. So that's—it's all about the power of truth, the power of human ingenuity, the kind of wonder at the edge of the questions we still have and how there are always going to be more questions and theater's actually really good at asking questions. It's not really good at answering them, and science is of course incredibly good at answering them, but showing more questions, right? So I think that's where theater and science can talk to each other.

So as you're trying to create those sorts of moments and experiences for people, *Dimensions* and *ASTC* have a campaign going where they ask people in the field about their memorable or meaningful experiences in science museums. So I'm wondering if you have any experience like that that you'd want to share.

Oh, absolutely. When I was a kid growing up in Atlanta, Georgia, there was a children's museum, and I will never forget the perspectives exhibit, where they had a little house and it was painted a certain way that of course made it look like one side was larger than the other but it wasn't, so walking in there and having the optical illusion meet with the actual manifested physical experience was pretty cool to me. And again, it combines art and science, right? Where it's challenging the eye in a way that a story or a song can challenge different parts of our perception and science can say, "Wait, I will correct that for you." And I will of course never forget

the first time that I looked through a telescope and saw the Moon. And the Moon has such a history in art and literature, too, all the symbolism and beauty attached to it, and metaphor. So really—seeing the real thing with my dad during an eclipse, I was probably 7 or 8, is impossibly cool. And talking to scientists at my planetarium about it afterwards. I was just so thirsty for knowledge and that was a pretty important experience for me.

This interview appeared in the 2016 year-in-review issue Dimensions magazine, published by the Association of Science-Technology Centers, astc.org/publications/dimensions.