

Futurology with Rose Eveleth

Ologies Podcast

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Oh hey, it's just the podcast host that calls herself your Internet dad, Alie Ward, back from the holidays and my first work break in many years. I have a cold right now, but my heart's burning, ready to deliver a year's worth of brand-new episodes of *Ologies*. Hello again! Y'all it's 2020. We are no longer dabbling in the 2000s, like poking a gnarled toe in the waters of tomorrow. We're shin-deep in the century. The world is burning, new wars are abloom, drones deliver our lunches, we're in this bitch. It's officially the future. So what better time to talk about Futurology, the study of what happens next? It's a thing.

But before we move forward, let's pause a quick second to thank every single Patron who's ever supported the show and allowed me to do things like take the last two weeks off without sponsors. Thanks to everyone who's wearing fresh *Ologies* swag from OlogiesMerch.com. Thanks to everyone who's telling friends about the show, keeping it in the top science podcasts on iTunes – whaaat! – rating, and subscribing, and reviewing. You know I tenderly creep your reviews, it's true, so I can pull out a fresh one. Let's have at it. Okay, this week is from KillinKels:

Alie is my dad, my mom, my weird classmate who has really good points, and my best friend all in one. The thanatology episode with Cole Imperi changed my life and now I'm trying to open my own business helping people plan the last party of their life the way they want. Let's do end-of-life parties instead of funerals, okay? Okay, cool. Anyways, give it a listen. Okay, berbye.

Dang, that's a good idea. There's no better situation in which to be the end-of-the-life of the party. And I say, wear a tiara. We're all gonna die!

Okay, futurology. Very much a thing in a scholarly sense, and it's also called future studies, sometimes futurism, although we're gonna talk more with this week's guest about that. But it's the study of possible, probable, and preferable futures. So, it's a social science, like history, but the gearshift goes forward, rather than in reverse. And this guest studied Ecology, Behavior, and Evolution at UC San Diego, and has a Masters in Journalism Science, and has investigated topics like bionic human exoskeletons, and sex robots, and tech progress, facial recognition, some uncanny valleys, and space travel for publications like *the BBC*, *Scientific American*, *Vice*, *Vox*, *The Atlantic*, *Motherboard*, and more. And she's also produced, hosted, and edited over 100 episodes of the very highly lauded podcast *Flash Forward*, which is just pure auditory futurology. And in each episode she looks at possible future scenarios and talks to these experts about the trajectory that we squishy humans may take just marching toward tomorrow.

She's also just a badass advocate and a creative soul. I am a fanlady. She was leading a seminar at Sci Comm Camp in November and so I nabbed her for an hour to ask all about her full-time job studying, and examining, and forecasting the future. We talked about everything from crotches to *The Jetsons*, what scares her the most, what gives her hope, the many types of technology that she has buried in her own body, why some futurists don't want things to change, and if your phone is spying on you, and also why, amid all of this technology and chaos, she considers herself an optimist.

So cuddle up in your space blanket and have your cyborg butler brew you a goblet of the good stuff, and bolster yourself for the friendliness and the forecasting of *Flash Forward* host and professional, literal, futurologist, the Rose Eveleth.

[Intro music]

Alie Ward: Now, you're a futurologist?

Rose Eveleth: I am a futurologist.

Alie: [*both laugh*] What does that mean?!

Rose: Yes! Okay, so futurologist is not, like, a super common term, but it is the one that I like to use for what I do because I kinda sit in between a bunch of different things that have other terms. So, futurist is something that people probably have heard of. Futurists generally are people who are working in industry, so it's sort of like a vocation. There are degrees you can get in strategic foresight to become a futurist, which is very cool. [*laughs*]

Alie: Strategic foresight... ?

Rose: Mhm, there are various schools that have these programs, and those people tend to kinda work as consultants. They'll go into a company and be like, "Okay, let me help you project out, ya know, 5, 10, 15 years, and kinda think about the future of Coca-Cola, or Nike, or whatever it is." There's, like, professional groups for those futurists. And that's one bucket.

And then there's this, sort of, science fiction writers bucket, and many of them sorta consider themselves futurists – and there's overlap between all of these, right? Like, there are sci-fi writers who are also futurists. But those folks are imagining fictional futures and thinking about the future in that way. And then there are sorta like critical future studies people, or future studies people, and they're all on the academic side of, like, "What do we talk about when we talk about futurism?"

And I kind of straddle all of those. I think of myself as someone who studies futurists, and someone who studies science fiction writers, and someone who thinks about these academic fields. And so, I like futurologist cause it's kinda like a nice umbrella term. And also, people laugh when I say it. [*laughs*] That's all I could ask for.

Alie: How long have you been using it?

Rose: About two years now, I'd say, I've been using it. I don't mind if people call me a futurist, but I do like futurologist better.

Alie: I like it better, too.

Rose: I thought you would. [*laughs*]

Alie: Oh, of course. I mean, here we are! So yeah, if you were not a futurologist, would we be sitting on this couch today? I would have invented the word for you if I could. 'Cause I've been wanting to talk to you for so long about what you do and about how you got captivated by it, because you have a journalism background. And so when did you start studying journalism? When did you know you wanted to tell stories?

Rose: Yeah, so I thought I would be a scientist for a really long time. When I was a kid, I dressed up as Jane Goodall for many years in a row for Halloween – like, enough for people to be

like, “This is weird, this isn’t cute anymore,” ya know? *[both laugh]* And then I learned that, like, there’s Jacques Cousteau, and there was this underwater world. So I was like, “Great, I’m gonna be the Jane Goodall of the sea, this is great. I have my career plan. I’m ready.” I made my dad get me scuba certification when I was 12, which is the youngest age you’re allowed to do it. I got certified through NAUI, which was run by this ex-Marine, and I was this scrawny 12-year-old among former Navy Seals getting this training. So, it was extremely brutal, but I was committed to it.

So I was like, “I’m gonna be a scuba diver, I’m gonna study oceans, this is gonna be my thing.” I went to college in San Diego, I worked at Scripps Institution of Oceanography, and I was like, “This is great! I’m gonna be the Jane Goodall of the ocean. Excellent!” Turns out, I love science and actually doing science is not the thing I am the best at. And so I had a PI who I worked for who was great and was like, “What about this thing called science journalism?” Which was like *[mind explosion noise]*. It never occurred to me that that was a job someone could have. *[“You can do that?”]* So, that was really it. I had no journalism training, I had no journalism background. I applied to this program at NYU that’s a master’s program in science journalism specifically.

Alie: Oh, wow.

Rose: There’s not that many programs like that. And I did not get in because I was not a very good student in school and my application was all over the place. I had written this speculative fiction thing about a researcher who got obsessed with this squid and then was travelling the world. I put that in my application for journalism school, which makes no sense! *[laughs]* I was all over the place. And so the program coordinator, who I’m now close friends with – I didn’t get in, I was on the waitlist, I tease him all the time about it – he was like, “Yeah, your application was bizarre! I was like, ‘Who is this person?!’” *[laughs]* And by chance, it almost never happens at this program, somebody decided not to go, and so I got to go. *[Alie gasps]* So it was, like, luck of the universe. And so I got to go to this program at NYU and that’s really where I learned everything.

I didn’t know anything about journalism. And so I got thrown in with all these people who had worked at their school newspapers and had wanted to be a journalist since they were kids. And I was like, “Whuuut is a headline? Like, I don’t know what any of this means.” So, really it was a crash course and it was great. I am very lucky to have gone to that program. And that’s kinda how I got into journalism. I thought I would write about the ocean, I thought I would write about environmental science. And I just happened to start writing about prosthetics, actually.

The first couple of stories I wrote that were published... The first big feature I wrote was about whether Oscar Pistorius had an unfair advantage as a person with bionic legs, and this was a huge scientific debate. I wrote about it for *Scientific American* and then from there started writing more about bionics, and that led me into body hacking, and this weird world of futurism. And at the time everyone was covering it so badly that I was like, “Someone has to do a better job of doing this!” And so that’s kind of how I wound up starting to do it.

Alie: What is a bad way of covering it?

Rose: A lot of just, like, breathless coverage of technology companies being like, “Wow, look at this amazing thing that’s gonna be on our shelves in a year and solve all our problems!” And that’s not how anything works, ya know? No critical coverage. Now it’s much better, but a lot of technology coverage at the time was literally just like, “The latest iPhone! How does it work?” And there was nothing that was analyzing, like, “*Should* you be giving Apple your data?” [laughs] None of that stuff was really happening. And it was, like, early facial recognition, and I remember being like, “We should probably, I dunno, talk about this,” and no one was talking about it. So, it was really, honestly, easy to kind of be a person who could make a name as someone who was an interesting person in that field because there were so few people talking about that stuff in the journalism world. In academics and other places, people were, but in technology journalism about the future, it was pretty slim pickings.

Alie: How often do people come to you to ask you like, “Should I get an Alexa... Should I...”?

Rose: All the time. And I love it, actually. I’m really glad that people ask because it is kinda one of my bugbears, where I know it’s convenient but I’m like... It’s actually really hard. I think one of my jobs, honestly, is to help people understand what the risks actually are because... I think it’s less true of climate change now. I think people are more aware that climate change is important and a thing. I think a lot of people, with privacy and surveillance, they’re like, “Ugh, Google already has all my information, I’m not a serial killer, why do I care if they’re scanning my face?” It’s really hard to conceptualize the risk because it sorta feels nebulous, or it feels like, “oh, whatever,” and it’s convenient. I can ask Alexa what the temperature is or whatever. [*“Alexa, are we friends?”*] The most common question I get actually is, “Is my phone listening to me?”

Alie: Oh, yeah. [*with certainty*] Yes!

Rose: It’s not. No.

Alie: What?? Come on!!

Rose: It’s mostly not. There have been tons of studies that academics have done - and there are some really shady apps that you can install on your phone that might be doing this - but for the vast majority of people, it’s just that we’re, like, really predictable as humans. And figuring out what you wanna buy is actually, like, really easy, based on all the other data that you’ve given Google already. I think it’s also like a confirmation bias thing, where you only notice the times when, ya know, you were just talking to somebody about some product and then all of a sudden it shows up. You don’t notice all the times when that doesn’t happen. So that’s the most common question I get, “Is my phone listening to me?”

Alie: So, when did you decide to take your futurism journalism and futurology career and make it into podcast format? Because you’re killing the game.

Rose: Aww, thank you!

Alie: And when did you decide to do *Flash Forward*?

Rose: Yeah, so I had worked in podcasts for a bit. I worked at *RadioLab*. I helped the *New York Times* launch their now-no-longer science podcast, so I knew... I was really interested in audio, and radio, and these things. And actually an editor, Annalee Newitz, who's an amazing writer, came to me... because she was the founder of io9, and she came to me and was like, "Hey, we really want to do a podcast. Do you have any ideas?" And I was like, "Boy do I have ideas for a podcast!" [laughs] And so we talked about it and this was the one that we were both really excited about because *Flash Forward* blends science fiction, and these audio dramas, and journalism. And that's what io9 did, too.

Aside: Okay, so if you haven't heard it yet, every episode of *Flash Forward* starts with this short radio play to set the scene, which kinda normalizes and humanizes what might be on the horizon for us all. But before we get ahead of ourselves, let's just take a step back in time and see how our elders saw our todays. Does that make sense?

Alie: So, when it comes to the history of futurology, what did futurology look like at different points? Did people even fathom, or try to predict, or draw the future before, like, the Industrial Revolution?

Rose: That's a great question. And it's actually something that academics debate a lot. So, obviously prophecy has been around for a really long time, right? Like, looking to the stars, trying to figure out what's gonna happen. But, ya know, this question of when did it become the case that we sort of assume that the future will be different, like really different than it is now? Because for a long time in human history, the future was kinda like, you still did your thing. You were in your cave, or you were in your house, or you farmed, or you did this thing. The idea that your future, even within your lifetime, would be radically different is not that old. And there are debates about when this happened.

Some people point to the Victorian Era, when a lot of social norms actually started really changing and you had people, sort of, questioning family structures. You had people questioning high society, you had all of that stuff. And that was sort of a gateway into being like, "Well wait a minute, why couldn't things be totally different?" Some people point to electricity as being the thing that was, like, the literal light bulb moment where things happen. Some people point to the Industrial Revolution, where all of a sudden all of industry changes. It sorta depends on who you ask.

Aside: While now it's pretty commonplace to point a tiny, handheld computer at our face, and use an image filter that changes us into a cat, and then beam that to millions of people across the world just for funsies, it wasn't until the mid-1800s that we even had flushing toilets! Or light switches! Life, man. It comes at you fast.

Rose: But yeah. People talk about futurism, and prophecy, and religion and all that stuff, but this idea that we have where, like, in a hundred years, who even knows? You know? That feeling? That wasn't always the case. But when exactly that started is actually up for debate.

Alie: What do you think about TomorrowLand? [*"When Disneyland opened in 1955, TomorrowLand, the World of the Future, seemed more science fiction than actual fact."*] In Disneyland?

Rose: I love it.

Alie: Oh, really?!

Rose: I do. Because I love nostalgic future stuff. Because you can kinda be like, “Oh, remember when we thought this was gonna happen? Remember when we thought that?” I think also, one of the cool things about being a futurologist is that a lot of futurism, especially looking back on it, says a lot more about the time that it was created than it does about the future. And this is the same thing with science fiction. Yes, in theory we're talking about the future, but a lot of the time you're talking about now.

You could see this in the ways that the kitchens of the future were presented in the 1950s, where you have all of these companies sorta realizing that housewives are no longer complacent to be at home and be cooking all the time. They got jobs during the war, they don't really want to stop having jobs. They want to be able to kinda “have it all.” And you see all these different companies presenting these ‘kitchens of the future’ to, basically, appease women and make it like, “Oh, no no no, you can still do all the housework and stuff and you don't need to go anywhere, you could stay.”

And I think a lot of the time when I see those, sort of, retro future things, it's really fun because it's a reminder of like, “Oh... that's how we thought about the future. And that's how we thought about the present then.” We still see it. I mean, in kitchen designs of today, you still see some of those ideas. Who is depicted in those promotional images? It's always women still. And you're like, “Okay, we can land a rover on Mars, but you can't imagine a man in the kitchen?”

Alie: Oh my gosh, I get a real bug in my bonnet when I see so many house cleaning products just for women. Only women are cleaning toilets! It drives me a little crazy.

Rose: There's a great book called *More Work for Mother* about how automation in homes has always been marketed to women as like, “Oh, it's gonna be a time saver, it's gonna be a time saver.” And every single study shows that it just puts more work on women every time.

Aside: I looked this up and there's a 1985 book by Ruth Schwartz Cowan called *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*. And it has a ton of data to support that the role of the homemaker has not, in fact, gotten easier. And this was before people Pinterested their kid's lunch every day! And granted, it was written 35 years ago, when people still smoked on airplanes, but every time nowadays you see a commercial for home janitorial products, just keep an eye on what gender is usually doing the scrubbing.

Also sidenote: on Amazon, *More Work for Mother*, the book, has mostly favorable responses, but there is one one-star review, which I, of course, read. And this person, who identifies themselves only as ‘Avid Reader’ said, “*More Work for Mother?* Gimme a break! The book we need is *Modern Marriage: What's in it for Father!*” Apparently, Avid Reader is often dissatisfied with their purchases, because another Amazon reviewer posted the response, “Every book you've reviewed received one star. Are you just really bad at

picking books?" I'll put the link up to this in case you wanna read this bloodthirsty book drama while you're killing time on your phone, waiting for a robot to bring you a panini.

Alie: Now, why do you think that at no point in history people realized that we were all gonna be staring at phones at some point?

Rose: Oh, I think people did. I think maybe not in the exact version of this, but people have been predicting, sorta like, video conferencing and video calling and screen-based interactions for a long time. I think that the exact form of these little glass boxes in our pockets might be slightly different, but you can look at some of the World Fair stuff in the early 1900s and you see people predicting, basically, FaceTime.

So, the exact details of what it looks like are different, but people have kinda thought about this a lot. I mean, as soon as you have things like yellow journalism, the attention economy that we talk about now, where it's like... Facebook is competing for your eyeballs and not really competing for your money necessarily, because what they want is for you to look at stuff so they can track what you're looking at and then sell that information to other people. That idea, I think, is actually relatively old, and that kinda plays into the phone thing as well. So, I think actually that kinda concept has been around for longer than we might expect.

Aside: Okay: 'yellow journalism' essentially means 'tabloid fodder.' Like, big, exaggerated headlines and sensationalized crime stories and just hot, hot celeb goss. Aka, pretty much the whole Internet now. But the term 'yellow journalism' arose during the late 1800s New York newspaper wars, between Joseph Pulitzer and William Randolph Hearst. And these two rag-magnates had a tug of war for the rights to publish a comic strip called "Hogan's Alley," featuring a character called the Yellow Kid, a child from a rough part of the city, wearing a mustard-colored nightgown and depicted with two big front teeth and a shaved head from a lice infestation, according to its creator. He looks kinda like Dopey, from the seven dwarves.

And the Yellow Kid was everywhere in the late 1800s, and these two rival newspapers competed to run "Hogan's Alley" in their dailies. And if you're like, "Wait, isn't 'Hogan's Alley' the name of the FBI tactical training center, and also a Nintendo game?" It is, and it's named after the same strip. So now, you can drop some ancient newspaper drama and comic trivia on your unsuspecting friends. Or maybe you can break the ice with your FBI interrogator. You're welcome. Oh, and speaking of cartoons...

Alie: What about *The Jetsons*? Did they get it right?

Rose: [laughs] *The Jetsons*! I mean, it's so funny, *The Jetsons* is the thing that people always talk about. Like, "Oh, flying cars, robot butlers, blah blah blah... and, like, super regressive family dynamics."

Alie: Yeah.

Rose: Although, you still have your... Jane Jetson goes to work, you know. And I was like, "Yay," that was a big deal at the time. You know, you have your robot butler who falls in love with another robot, which I love. It's one of my favorites. They have their food machine,

which I think is really interesting 'cause that's been a common thing in science fiction that we don't see. Like why don't... There are obviously vending machines, but why aren't there, like, push a button and the food comes out? [*clip from The Jetsons, Jane: "How's your bacon?" George: "Raw." Jane: "And your eggs?" George: "Cold. I don't get it; when we first got married, you could punch out a breakfast like mother used to make."*]

Aside: In the opening credits, a perky Jane Jetson is also shown taking George Jetson's wallet to go shopping in a floating skymall. [*fake perfect housewife voice*] As so many of us do these days! Ha! Gross. Anyway.

Alie: When you are looking at the future, how much do you think about yourself in those situations?

Rose: I try to think about myself in those situations, but I also try to remember that my experience is singular, and I'm a cis white lady born into the United States and all of those things. And so, one of the big things I try to do in my work with *Flash Forward* and elsewhere is think about like, "Okay, but what if I was somebody else? And what if I had less privilege than I have now? And how does this impact these people?" So, for example, in the episode I did about CRISPR – sort of like gene editing of human babies and stuff like that – which I was working on and had basically done, and then the news broke about the Chinese scientist with the CRISPR babies, and I was like, "[*groans in frustration*] I just finished this episode and I have to go back and redo stuff."

But that episode, most of the interviewees, most of the guests on that episode, were disabled people, and about, like, "What is it like to hear all these scientists talk about eliminating you, basically? How does that feel? What is that like? What would it be like to be the last deaf person on Earth?" You know? And is that something we actually want? So I think I try really hard, actually, to think about how people who are not like me might feel or find themselves in those futures. And I try to interview a lot of people on the show that are not like me, so I can kind of be like, "How do you feel about this? What do you think about this?"

For the episode about body swapping, everybody on that episode almost, except for one, is a trans person and it's like, "Okay, how does this correlate with your experiences, and your feelings about bodies, and stuff like that?" 'Cause I don't know what that's like. So yeah, thinking through who are the people who are going to be most impacted by this – and it's probably not me – and trying to find those people is really important, I think.

Alie: How much anxiety do you feel about the future?

Rose: I feel like I feel a healthy amount of anxiety about the future, which is to say I feel anxious about the future, but I also... I think that you can't get buried in it because otherwise it's really hard to do anything. A lot of the future is scary, but also the future isn't written yet. And I think that's something that we need to remember. Yes, certain things are in motion and yes, all of us are kind of like one person, but in fact the future has not happened yet. There are things that we can do, and things that you can try, and also ways to kind of mentally think about the future.

I've been thinking a lot about... there's a concept in psychology called mental time travel, which is basically that you can kind of imagine yourself in future situations. And certain people with certain forms of amnesia actually cannot do that, which is kind of hard to even fathom. They talk about being marooned in the moment, which is really terrifying

sounding. But also they know that people with depression actually have a really hard time with this, where it's like, if you're depressed, it's really hard for you to imagine yourself in the future.

But they also find in these studies that if you can, and when you do, imagine yourself in the future specifically, imagine what you're going to do, imagine your next steps, people are happier. People tend to be more productive. People tend to just feel better because they can actually be like, "Okay, here's my plan, here's what I'm going to do."

So, I always say that when people are like, "How do I cope with this horrible anxiety that I'm feeling about the future?" - which is totally normal given what's happening in the world - is actually thinking through... imagining yourself and what you can do can be really calming because it's specific and it's you. It's not just like, "Oh my God. I don't know. Climate change is in the hands of nine companies, you know?" which is really terrifying unless you're one of those companies, I guess.

Alie: In which case it's just...

Rose: These companies are like, "Yes! Money, money, money!"

Alie: Party every day... As the world burns.

Rose: Yeah, exactly. Literally.

Alie: And so, what do you think... Based on all the episodes you've done - like, a hundred - what do you think is gonna change the most in, like, the next decade?

Rose: [*deep breath*] I think that, and this is an unpopular answer given that I live in Berkeley, which is in tech central kind of area, but I think it's social stuff that's going to change the most. I think right now we're seeing a really awesome moment with, like, gender for example, where people are sort of like... we're finally realizing in the more popular culture that gender is not binary, and that people have different options, and it's more acceptable to kind of talk about those questions. I always say that trans people are the original body hackers, because they actually do all the stuff that the body hackers talk about doing and are doing really amazing stuff.

I mean, you're seeing people question the value of capitalism, which was probably unfathomable to people 20 years ago to even say like... I mean, people did say this, but to have it be a more common thing you see on Twitter being like, "Blegh, capitalism, the worst." You did not see that for a long time. So I think a lot of it is gonna be more social change than technological change. I think people assume when we talk about the future that we're always talking about, like, flying cars, and jet packs, and these tech things.

But I think that a lot of this, especially coming out of these climate change conversations, it's going to be people asking, "Why have we made the decisions we've made culturally and socio-politically, and are they actually the right decisions, and can we change the way that this whole thing works?" And like, "Should we have prisons?" That's a question that I think is getting a lot more attention now that you didn't see 20 years ago as much.

So yeah, I think those are the questions that people are going to be asking more of as opposed to, you know, "Which app should I get?" or, "Is there gonna be a The Next iPhone?" which is a thing people love to ask and it's like, who cares? It's not important, you know?

Alie: Well, how do you reconcile some of the regressions it seems that are happening socially? Like, we're in a moment that is so progressive in some areas and so not in others. What the fuck's going on?

Rose: Yeah, I mean, I think that different people have said this where, you know, this is common, right? You make progress and then you move back. I should say that I do not actually believe that, like, the arc of history bends towards justice, which is a quote from Dr. Martin Luther King that I'm probably butchering.

[clip from Dr. Martin Luther King Jr.'s speech]

Where Do We Go From Here”, Dr. King: “When our nights become darker than a thousand midnights, let us remember that there is a creative force in this universe, working to pull down the gigantic mountains of evil, a power that is able to make a way out of no way and transform dark yesterdays into bright tomorrows. Let us realize that the arc of the moral universe is long but it bends toward justice.

But I do think that you are seeing some huge regressions. You're seeing the rise of populism and, sort of, the rise of fascism in countries like the United States. And that's hugely problematic. You're also seeing people come show up to say no to that. So I think that yes, we're seeing a lot of bad, bad things, but we're also, I think, seeing a lot of people sort of realize that they need to actually show up and do something to stop those things from happening. Whether that's about populism or just climate change, which is the thing that a lot of people ask me about, and they're like, “Well, why should I have kids if we're all gonna be on fire or underwater in the next three years?” Which is not true.

But yeah, I think that's the thing. I'm sort of muddling this answer, but to remember that you *can* do something, and we *can* do something, and it's not predetermined. They haven't won yet, right? *[laughs]*

Alie: Well, I have another question: why should I have kids, if the world is going to be on fire or underwater? *[Alie and Rose dissolve into laughter]*

Rose: I mean, I cannot tell anyone to or to not have kids. At the same time, I think that it's a really interesting question. And there is a whole movement of people, right, who believe that we just shouldn't have kids and we shouldn't put them into this situation.

Aside: As discussed in the Eschatology episode from last November about the apocalypse – which is really more relevant than ever this week – the choice to nope babies is called ‘voluntary childlessness’ or ‘a childfree lifestyle’. And a more scholastic term is ‘anti-natalism’, which includes the philosophy that you can't get the consent of a child to exist, therefore it's immoral to procreate.

So, do you have a child who, when told to do a chore, has screamed, *[angsty whine-yelling]* “Whatever, I didn't ask to be born!”? Well congratulations, you have engaged in philosophical discourse about anti-natalism. Oh, and if you're childfree but your relatives insist you should pop out some shorties, here's an idea: you can present them with the data that one American child has the same carbon impact per year as 75 roundtrip transatlantic flights, or that it would take 150 meat eaters going vegan to offset a kiddo.

But on the flipside, babies are cute and their heads smell like powder and milk, and they turn into adults that keep hospitals and government and the world running. So to all the smug, childfree folks who have dogs instead, and I'm talking to myself right now, bad news. Our meat-hungry, hairy children have substantial carbon pawprints too. So what to

do? I don't know. Go with your heart, man. Rose says that having kids, or dogs, is just a deeply personal decision. So cut bangs, text your crush, and decide on your own terms if you want to have babies with them. And if the babies will have bangs.

Rose: If you really want to have children and you are not having them because you think climate change is scary, then you should do something about climate change. You should actually get off your butt and do something about climate change. And that's hard to do, right? As we've said, you know, climate change is largely in the hands of very huge companies. But there are protests you can go to. There are local politics you can get involved in. There are local issues you can work on. I can't tell people to or to not have children. I do not have children myself.

Alie: Nor am I planning to myself.

Rose: Yeah. Right.

Alie: I've been worried about overpopulation.

Rose: Don't worry about it.

Alie: Oh, okay. Really? 'Cause I've been worried about it since, like, high school.

Rose: Yeah. So this was a huge topic in the 1980s which is maybe when you and I were both in high school.

Alie: Yes.

Rose: I guess the '90s. Largely, a lot of it came out of, honestly, just racism of like, [*with light sarcasm*] "Oh, all of these countries like India, and China, and places in Africa suddenly have all these people, and they're gonna, like, want rights, and they're not gonna want us to just tell them what to do. And oh, suddenly we have an overpopulation issue."

And I think that a lot of that... There's a lot of really good work done by researchers and scholars that basically say that is not the problem. The problem is racism, you know, or the problem is distribution of resources among the people on Earth. There are a lot of people on Earth, but if you want to talk about what's the problem with climate change? Overpopulation is pretty low on the actual list. If we all stop having children right now, the climate will still warm. You know, that's not necessarily what's happening.

So yeah, I think that there's been a lot of really interesting stuff. *Mother Jones* had a big series about this, I think, a couple of years ago, about trying to push back on this narrative of overpopulation and reveal that a lot of people who first posited this as 'the problem' were basically just racists.

Alie: Wow. Oh, man. 'Cause I remember looking at population density curves of, like, deer, and mice, and certain populations. And looking at the human population density curve, and I was like, "Well, something's going to give."

Rose: And it's already leveling off too, right? We are not still in the highest, highest upswing. Humans are having less children generally as, I think, a global trend.

Alie: I hear millennials are having fewer.

Rose: Yeah. Right. Getting dogs instead, is what I hear.

Alie: That's what I did.

Rose: Congrats on your dog, by the way.

Alie: Thank you.

Aside: Population curves can make a shape like a J, or really more like a backwards L, which is when the headcount for a species kind of lopes along steady for a long time and then has a huge upswing and goes up sharply in a really short matter of time. So for instance, in the year 1900, Earth's population was 1.6 billion, but we just hit 7.7 billion in 2019, partly – oddly – because of better agriculture and just figuring out how to make ammonia from airborne nitrogen. How weird is that? Anyway, there's a bunch of us.

And when a population hits what's called a 'carrying capacity', it tends to level off rather than continuing to shoot up. So think of that J kinda taking a right and forming an S-shaped curve. It doesn't necessarily plunge downward into extinction. It's not like a good party that is so lit, so off the chain, as you children say, that it suddenly gets shut down by the cops. In the great mysterious kegger that is life, we're so worried about the apocalypse of a squad car, we forget that some parties just kinda peter out, 'cause they suck.

Alie: When it comes to topics to explore in the future, how do you decide which ones are worthy of exploring?

Rose: Yeah, that's a great question. I feel like for *Flash Forward* I always want to do something that's interesting and surprising that people haven't heard before. So there are certain topics that part of me is like, "I just don't know what I'm going to say about this." Like self-driving cars. I feel like they've been just like... *everyone* writes about them. People know. I've always struggled with, "What is the version of this that I can do that no one's thought of before or people aren't talking about?"

There was one that I did... One of the most requested episodes always is living forever, which is a future that I'm not particularly interested in. It's really just the purview of the rich, basically. And it's like, "Oh, living forever is great if you are making compound interest," you know? Wonderful. And so it's just a thing that, like, really, really rich white guys are obsessed with. And for me, I'm like, I just feel like there's so many other things that are more interesting. But it was requested so often and finally I sort of figured out how to do it. And I did it as an episode about what would happen if we had that technology and applied it to the criminal justice system and prisoners could be sentenced to, like, 300 years in prison? [*Alie gasps*] And what does that look like?

You know, we already have issues when people get out of prison and they have never seen a cell phone before. Right? And what does that look like times, you know, 300? So that was kind of my way into that episode of like, "Okay, what's the interesting thing that I can say about this that people aren't talking about?"

Alie: What about the way that we'll look at animal rights in the future?

Rose: [*gasps*] That's one of my favorite topics.

Alie: I mean, it's something that is just... It's something that you do and there's a lot of 'somethings that you do' in the past that are egregious.

Rose: Totally.

Alie: What is going to happen with that? What's your stance?

Rose: I'm so fascinated by this because I think, you know, the more you look into animals and their intelligence, everything we ever thought about them and how smart they are has been wrong because they're smarter, right? We've consistently underestimated

nonhuman animals just over, and over, and over again. And so, yeah, this question of at what point do we start to decide, actually, we can't do it, we should not do this? I mean, there are people who believe we shouldn't have pets. There are people that believe that zoos are unethical. And then there's this question of what is the point of some of these things?

And some pets, right? Like, dogs and cats evolved with humans in a way that, like, most people's dogs would not survive out in the wild. Some cats would. Not all cats. [*high-pitched cat meowing*] So this question of, like, what are our obligations to these animals and what should we be doing? Like, should we be training dolphins to do tricks in zoos? It's hard to say.

I am obsessed with this question and I should say, I don't know what I think still about it. It's really hard. On the one hand, you know, it's not something... I'm not totally comfortable coming in, particularly as a Western white lady being like, "You have to stop eating meat!" That's a hard proposition to make. At the same time, the more you learn about what these animals are capable of, the more it's like, "Oh... Should we really be doing this? Is this really okay?" What do we owe to these creatures that we've destroyed their habitats? All of this stuff. So, I'm obsessed with this question of the future of animal rights. And if we could actually communicate with them, how would that change things? Or if we could understand what they were saying, or they could understand what we were saying better, how would that change things? And I've done a bunch of episodes about that, and this question of where do we draw the line? I think it's really hard. [*small child: "Can we talk to dogs?"*]

Certain places have passed laws. Last year, India passed a law, I think it was actually just a region of India passed a law, that basically said that animals had human rights, basically. And then when you get into it, what does that mean? Because if that's the case then you can't eat meat, right? Because that would be murdering someone. But the details of the law are actually kind of confusing and it's unclear if it's actually going to change anything. But yeah, these questions of, like, what should we do about these other creatures that we share the planet with that are actually way smarter than we thought they were?

Aside: I looked this up and recently, the Indian High Court of Punjab and Haryana has determined that all animals are persons and that humans in Haryana are de facto parents to all the animals, giving animals rights in the courts and the eyes of the law. Also in India, the Ganges and the Yamuna Rivers – plus all of their streams and all of their li'l tributaries – are also considered persons.

And sidenote: I'm the youngest of three daughters and by default, I was usually just a dirty faced rugrat tagging along with older siblings and their friends. And my mom, your grandpodma, Fancy Nancy, taught me to respond to any bullying by saying, "I'm a person with rights and feelings." And I hope that when you're feeling down, whether you're a turtle, or a stream, or a hairless ape, you remember that you're a person with rights and feelings. So take that into the... future.

Alie: What are some other things that you are looking forward to in the future? What are you most stoked about?

Rose: Ooh, most stoked about? This makes me feel kind of old, but I'm stoked about the youth and their obsession with climate change. Honestly. I feel like the last couple of years, there's been such a huge change in the way that younger people are talking about climate

change. I did a series recently on *Flash Forward* where I had a bunch of teen actors come in and do some stuff.

And then I was asking them, you know, "How do you feel about privacy?" And they were basically like, "I don't care about privacy. I care about climate change." Literally they were like, "Privacy is not going to end the human race." And I was like, "Whoa." And they were very intense about it. And just to see that, like them be like, "No, this is a thing that we care about. We are out in the streets, we are doing this." I think that's honestly quite exciting to me as someone who has watched people, sort of, be apathetic about climate change for so long. So I think that is really exciting.

I'm excited by the advances in health services for trans people and the way that that has advanced. The ways that we talk about gender is cooler now, I think, in general. That's great. I generally don't get excited about technology stuff 'cause so much of it, it's like, is it really going to happen, first of all? And also, is it only going to be available to super rich people? Question? Probably, you know. But I think those are... Yeah, the kids these days. [laughs]

Alie: [old woman voice] These kids are doing such good things. It's so great. Sci-fi movies.

Rose: Ooh.

Alie: Do you avoid them because it's your work or do you see every single sci-fi movie set in the future?

Rose: I feel like I'm in between. I do not avoid them. I like them, but I also just sometimes don't find time to watch them. It's not like an on-purpose thing. But I watch a lot of sci-fi movies. I am not someone who gets caught up in like, [annoying nasally voice] "That's not realistic!" or like, "Warp drive doesn't work like that!" I just don't care. I'm totally happy to suspend disbelief and have a good time at a movie. I get much more annoyed if the character development is bad, you know, and the women are only there to suffer or whatever it is. Like, that's what I care about. I don't care if whatever technology thing doesn't make sense. That doesn't bother me.

Alie: Yeah. Do you think that there are any sci-fi movies that predicted this time in history right?

Rose: Ummmm. I mean, *2001* got a lot of stuff right about the way we were going to communicate with one another. Like, the way that space has no sound. I mean, that movie's really interesting. The movie that I always talk about that no one has seen is called *Born in Flames*. It's this old movie from the early '90s [clip from *Born in Flames*: "Police have been puzzled in the past week by what they describe as well-organized bands of 15 to 20 women on bicycles attacking men on the street."] And it has Kathryn Bigelow in it, who was *Zero Dark Thirty* Kathryn Bigelow. She's an actress in it. It's very weird. It's an indie movie. It's so interesting, and some of it has not aged well because it's about these dueling feminist radio stations in New York City.

Aside: So, Rose explained that the plot involves a futuristic socialist state. But there's a lot of police brutality, feminism that is not intersectional, and she says it's eerily prescient. Also, good news: You can stream *Born in Flames* on Vimeo for three bucks and I'll put link on my site at www.alieward.com/ologies/futurology.

And I asked Rose if at the heart of futurology is just wanting to believe that things will be better than they are today. And she said that one reason she uses the term futurologist for herself, as someone who studies the future, is because a lot of professional futurists are people hired by big Fortune 500 companies who have an interest in maintaining the status quo because it's how those corporations make their money. And ethically she doesn't feel aligned with that.

So, the future. Not everyone has the shiniest, most gleaming intentions. Now, on that note:

Alie: Why do you think our visions of the future involve so much metal? So much shiny, silver metal.

Rose: So much shiny silver metal. The techno-utopianism is so alluring. We love the robots with their beautiful shiny-shiny. In 1909ish the Italian art movement called Futurism, the main guy there published a manifesto about Futurism. It's not the same futurism we're talking about, but I think it is deeply connected. Because basically, his manifesto was like... I mean, they were fascists. His manifesto was like, "We don't care about what's happened in the past. We only care about the future. We like speed. We like youth. We like disruption." It's kind of eerie how much it sounds like the way that people talk about [*Alie and Rose say at the same time*] Silicon Valley.

And the Italian Futurists art movement, they were really into shiny, gold, smooth, that kind of aesthetic and you see it still in some of this future imaging. So, I think some of it has to do with that. I'm not an art historian but I feel like there's a shared aesthetic among some of this, where it's like this beautiful, perfect, shiny chrome. And that's not the future I'm interested in.

Alie: Do you think that in the future we'll just, kind of, lose control over our own lives more and more? Or do you think that we have more control of our voices because social media has democratized things. Where does the control lie?

Rose: I think that we are ceding a lot of control to algorithms right now that kind of tell us what we want. Right? There's some really interesting work right now going on about the ways that suggestion algorithms kind of create a monoculture. So, when you go into Spotify and it recommends what you should listen to, we're all kinda getting recommended the same stuff. You're not finding these new interesting things. You're not stumbling upon a book in a bookstore because Amazon is telling you what should read based on what you've read before.

And those kinds of recommendations can be really useful, but I think a lot people are really worried that we're, kind of, collapsing everything down into one taste, that people don't have their own aesthetic anymore. They don't have they're taste. They have whatever taste sort of fits within the Spotify algorithm or fits within the Amazon algorithm.

And I think a lot of people have written about the attention economy, this idea that our eyeballs are what all of these apps want. And we're all looking at the same couple of apps all the time, many of which are owned by Facebook. WhatsApp, Instagram, Facebook, all of that. So, I think that's the thing that I worry about, that all of our communication and... All of the cool creative stuff that people do in group texts, right? When you think about the jokes you make, and the gifs and whatever, and all that stuff, that is constrained by the

technology. That is constrained by what they allow to do. You only get a certain number of reactions on the iMessage thing, right? So, it's sort of collapsing down what we can do and what we can say and the ways we can communicate.

And that's why when people complain about there being too many emoji, I'm like, "No, Unlimited Emoji! Gimme all the emoji!" You want this ability to be able to pick and choose emoticons and emoji that are not just the six smiley faces or the four reactions that Facebook gives you. It kind of collapses emotion, and reaction, and the way that we talk to each other. The ways that we are allowed to react to each other and interact with each other are constrained by these design choices that I think we aren't interrogating enough.

Alie: That's such a good point. Someone once also said, – I forget where this quote comes from – [*as if over a megaphone*] "If the app is free, you are the product."

Rose: You are the product, yeah.

Alie: Yeah, I don't know who said that but, Ahhhhhh! It's chilling and so obvious.

Aside: PS. I needed to know who said that and I did a little digging and nine years ago on the website MetaFilter, the user blue_beetle, aka a guy named Andrew Lewis, wrote this, regarding the internet: "If you're not paying for it, you're not the customer. You are the product being sold." And he later said he wasn't quoting anyone directly but merely re-stating a fairly common sentiment and for some reason the internet just seems to have picked it up and ran with it.

And if you're like, "Damn, that should go on a t-shirt." Don't worry. Andrew Lewis has set up a CafePress store and you can get a t-shirt bearing that wisdom for \$14.95, which honestly seems pretty fair. And since you'd be paying for it, you're not the product.

Rose: Totally. Yeah, right.

Alie: So obvious!

Rose: It's your data, all that stuff, it's definitely something I think about. And even if the app isn't free you still might be the product. I mean, Alexa is not free, but you are absolutely still the product. So, it's definitely something that I think about a lot. And it's hard also, because I want to talk to my friends, and we all use these same apps. I'm not going to be able to convince all my friends to use an encrypted messaging app that I want to use. I'm that friend that's like, "If we could use Signal, that would be great." [*laughing*] And everyone's like "Nooooo." [*both laughing*]

Alie: I love that about you. I want to be on your plot of land during the apocalypse.

Rose: Oh, trust me. I literally look at land. I literally am like, "I could build a compound."

Alie: What do you think about *Doomsday Preppers*?

Rose: Oh, I mean. They're funny. It's silly. I enjoy because why not think about it. A lot of it is really rich people buying land in New Zealand for that, and they'll be fine. You've talked about this on the Disasterology episode about how we're actually more pro-social during these kinds of things than we think we're going to be. So, I'm ready to fight with everybody else.

Alie: Oh! That's so sweet. Just get solar power. Some dehydrated potatoes.

[notification ding in background] Oh! You know what? A message just popped up on my computer. "Off work in 10 minutes." 'Cause I try to put a thing for myself that I'm off work at seven o'clock. So, what happens is every night at seven o'clock, I say, "Shut the fuck up."

Rose: You're like, "Ha ha. Funny joke."

Alie: Yeah. It's like, "Not today!"

I'm going to ask you questions from Patrons.

Rose: Yay! I did peek.

Alie: Good for you. This is because you're prepared for the future.

Rose: Listen, if I can't prepare... It's funny, I was talking to psychologist recently about this mental time travel thing because I'm really interested in it and I think that it actually is very meta, what I want to talk about with them. I talk about the future where I'm sort of like, "No, no. If we think collectively about the future it actually makes us more prepared, it makes us happier, it makes us less freaked out." But there is a fine line, right? Where if you think too much about the future, you're like, "Oh, god." And you imagine every possible, terrible scenario, which I do sometimes. So yeah, it's a fine line.

Alie: Would you say that in general you're a prepared person? Do you prepare for the future well? Do you pack well for trips? Do you pay your taxes well before they're due quarterly? Things like that?

Rose: Yes and no. I find that I'm very prepared if I think it's important, but if I don't then I'm not. And so, things that fall into my 'meh' bucket are probably things that are in fact important like paying taxes. No, I do pay my taxes. Do not audit me please. But yeah, there are certain things I'm good at and certain things that I at some point, I just have to be like, "It's going to be fine." But packing I'm very particular about.

Alie: Oh! When there is someone who is very smart and knowledgeable and prepared, I like to just parasite onto them and ask them advice about everything. Which is what I do I feel a lot. Like, "Rose! What are we doing?"

Rose: [laughs] "What's happening?"

Alie: Yeah. Okay, so, Patron questions.

Aside: But before we dive into your questions, dear Patrons, a few words from sponsors who make it possible for us to donate to a charity of the Ologist's choosing. And this week Rose chose the Gender Reveal Grant, which she says is a grant program run by the amazing Molly Woodstock through their podcast *Gender Reveal*, which is a super good, funny, and informational podcast about gender. *Gender Reveal* describes itself as a podcast for non-binary folks, for people who don't know what non-binary means, and everyone in-between. Rose is a huge proponent of direct giving and the Gender Reveal Grant gives directly to trans artists, activists, and educators around the world doing rad shit. In her words. So, more information is up at www.GenderPodcast.com/Grant. And now you may hear some words about sponsors of Ologies who make that possible.

[Ad Break]

Okay. On to your questions.

Alie: Sabine DeShazo wants to know: How do we remain optimistic about the future when it feels like things are going badly on a global scale? [*clip from MacGyver: "So, just how screwed are we?"*]

Rose: Yeah. That's a great question. And I think, first of all, that's honestly probably actually the most common question I get. I said earlier that it was about phones or whatever. I think that's probably the most common question I get. Which is like, "Ahhhhhhh!" And I feel that, and that's totally normal, and if you don't feel that, then you aren't paying attention. A – Normal, regular. You're a regular person.

But I think a lot of it does come down to this thing I've been thinking a lot about. If we can pause for a second and actually think about specific things we can do. Like, get involved with local community stuff. And, we joked about preppers earlier, but I do think actually that in our climate change future, in our future where things might get kind of dicey, if that's where we're going, being a part of your local community is actually the best thing you can do because those are the people you're going to want to rely on. And whether that's because there's an extreme weather event in your area because of climate change, or whether that's because the global economy collapses, whatever it is you're worried about; those are the people you're going to rely on.

So, I think the first step, I would say, is small, local community stuff can make you feel plugged in and connected to people who genuinely care about the future. And that makes a huge difference; if you feel like you're not going it alone. We are a social species. As much as I joke about hating people, we all want to be with other people. And so, the biggest thing I say... And you are not necessarily going to fix climate change by getting involved with a local community group, but you will feel better about it. And also, you *can* move the needle. I feel local community politics is so overlooked and so important. Just getting in touch with people, and talking about it, and figuring out what are specific things that we can do, is really important.

The other thing I'll say is - I've sort of been going on and on about this mental time travel thing - the studies I'm reading about it are really interesting because they do show students who mentally visualize doing well on an exam tend to actually do better on the exam. And obviously, to a point. It's not magic. It's not like *The Secret*. But you can kind of, if you think, "Okay. What do I want the future to look like?" And actually being specific about what that is. What do you want to see? And thinking about, "Okay, if that's what I want, how do I get that? Where do I go? What do I do?"

So, really visualizing what you want out of the future in specifics. Like if you have kids, "I want my kid to have a world where 'blank' happens." Then you kind of work back from there and figure out, "What are the organizations that are trying to work towards that? Who are the people that I can..." Even if you can't donate your time, donate your money, or do something where you can spread the word about it. Those little things actually make you feel a little bit like you are in more control and can actually try to push towards the future. So that's what I would say to that.

Alie: That's some great advice.

Aside: Humans, obviously, mentally time travel. And there's great debate among ethologists, folks who study animal behavior, as to whether other apes, and ravens, and crows, and jays can imagine their futures. And for more on bird brains listen to the

Halloween 2018 Corvid Thanatology episode about crow funerals with expert Dr. Kaeli Swift. Dead birds, man. Whoop! It's a wild world. I promise. Also, fun tidbit. Another word for mental time travel is chronesthesia. So, if your boss is not the Googling type and you envision a day off work eating corn dogs on a beach, just call in sick with chronesthesia. You won't even be liar; you'll be a hero. My hero.

Alie: G.X. Barnett wants to know: What do you think has been the biggest misstep in future technology? Examples might include the Ford Edsel, Crystal Pepsi, or Friendster.

Rose: *[laughs]* I would say that, broadly, surveillance culture and our willingness to cede so much of our personal space to devices and companies. That's, like, facial recognition, that's the always-on listening devices... *[robotic voice: "I can hear you"]*

Aside: Shit. Okay, also, this next part is really interesting from a futurological, legal prospective.

Rose: And I think that it's important because yes, you might think, "Oh, well Google already knows everything about me so why not just add Google Home into my house?" And my answer to that is that there is this idea in law that you are protected from unreasonable surveillance. That means in certain states you can't record somebody without them knowing. Or, you're really not supposed to wiretap people, in general. And that's because we have a reasonable expectation of privacy, and that's what the term is that they use. So, if I were to sneak into this room, and put a recorder here, and leave, and record you, that would be a violation of your privacy because you have a reasonable expectation of being in your hotel room and not having a recording device.

If we all accept that we are going to put these devices into our homes and let them listen all the time, we're basically telling a court in the future that, "Actually, I don't have a reasonable expectation of privacy in my house anymore." And that also means that anybody that walks through the door no longer has a reasonable expectation of privacy in your home. And that, I think, is scary because that means basically that law enforcement can subpoena. We know that Amazon and Google both have worked with law enforcement to give over certain records. We know that law enforcement targets certain individuals more than they target other individuals. We know ICE, for example, can sometimes use facial recognition systems to try to find people they're looking for.

So, maybe those of us who don't have to worry those things are making it much harder in the future for other folks who do have those concerns because they can no longer be protected in their own homes from surveillance. I think that's the big thing I worry about. Obviously, fossil fuels is probably the better answer to this question now that I'm thinking about it. You know, burning dinosaur bones that have been liquified. But I think that's the other big one I think a lot about, that we sort of throw our hands up and say, "Ugh! Well, there's nothing we can do at this point." And I think actually we are still at a point before we have completely lost the battle for privacy, but we are getting there.

That's my big treatise against always-on listening devices. At some point there will be a case in the future in which a judge has to decide; did that person have a reasonable expectation of privacy? And if everybody has these devices it's possible that judge will be like, "Nope. Not anymore."

Alie: And there's no such thing as, "It's not listening to me unless I say its name."

Rose: Correct. I mean, in theory that's how it works but there have been so many documents that employees at these companies are listening in on conversations as part of either testing, or by accident, or whatever it is. I would say that, correct, you should expect that they can hear anything you say.

Alie: [*concerned*] Ehhhhh. Do not like.

Jessica Janssen wants to know: What do you foresee for the future of healthcare? Using our own immune systems and genetics to defend us against the world? What do you think about healthcare?

Rose: Yeah. I mean, there's such interesting work going on with genetics and with the ways that we are using gene editing. I think that it's very exciting. My worry always is the way that the healthcare research system works is that a lot of things don't get developed because they don't make sense, financially, for a pharmaceutical company. Which means they're not going to make money on a population even though the people need that stuff. That said, there is some really cool stuff going on with genetic advances. Personalized genomics is something that people have talked about for a really long time, but I think is finally getting some real progress.

That's a classic one where it's sort of like nuclear fusion; always ten years away! But I think at this point there is some really interesting research on that. There's another bit of research that I find really interesting about biomedical tattoos. Let's say you want to monitor your glucose; you could have a tattoo that turns a color when your glucose is low. That kind of stuff is really interesting to me. Things that are personalized medicine, I think, is really interesting and it's kind of a buzz word and it can get kind of pseudoscience.

Aside: If you're like, "What is the deal with nuclear fusion?" Don't worry. I looked this up for us because I wasn't sure either. So, the gist is: nuclear power we're using now is fission, where we split uranium atoms and it generates a ton of power but also, some radioactive waste. Oops! Now, nuclear fusion would instead jam two hydrogen atoms together into a helium and would theoretically give off more power than fission without the waste. Now, there's one giant proof of concept already in use and it's the Sun. Same shit happens in the Sun.

But when Rose said that everyone keeps saying it's ten years off, she's not whistling Dixie. News articles from 2014 promise it'll be a reality by 2025. And in a report that was out just last week, two labs in the UK are apparently neck and neck to get it figured it in, yup, the next decade. Using deuterium and tritium, which are two isotopes, or forms, of hydrogen. And, I want to say that if I had a pair of hamsters, I would like to name them Deuts and Trit. I know you don't care, but this is my podcast and I'll say what I want to.

Alie: Kaydee Coast wants to know: If there is one thing that we currently don't know about the future that you could be magically gifted with the full understanding, what would it be? What do you want to know?

Rose: What do I want to know? What do I want to know? That's such a good question. I wish I had read that one in advance and thought of an answer. What do I want to know? I mean, what would I want to know about the future? I think that what I would love is to just be able to teleport 100 years from now just to kind of look around. There'd be so many... It's

not like one thing. There'd be so many pieces of information I'd be getting from being... How the cities are laid out. What people are wearing. What people are using. What people are doing. If we exist at all. If we're still here.

I think that would be... 100 years is a cool time not because it's just a nice round number but because it does feel like enough time that it's really hard to know what's going to happen but not so much time that we might be primordial slime on some other planet.

Alie: I picture coming out of the teleporter and it's just smoldering ashes.

Rose: And you just turn around and get back in.

Alie: Yeah. You're just like, "Ooooh. Yikes. We did it." [*Rose laughs*]

I mean, I always think, and maybe this is terrible, but I feel like it's just logical that we're going to get wiped out, and that's fine.

Rose: You're ready for it.

Alie: I'm ready for it. I don't feel like we need to put ourselves on any other planet.

Rose: We had our shot.

Alie: We had our shot.

Rose: It was a good run

Alie: Yeah, it was a good run. Buhbye.

Rose: Even the Sopranos had to end.

Alie: Right! Get the check! Let's get out of here. 99.9% of all species that have existed are extinct and if we fuck ourselves up beyond the ability to survive, that is how the game works. [*as in a video game*] Womp womp womp womp. Like, Game Over.

Rose: You can't be like, "No, no not fair!"

Alie: Yeah, no. It's like, "You did this to yourself, and you took a *bunch* of species with you, and buhbye. We're going to take your atoms and make them into new interesting animals."

Rose: I think on a long enough time scale that's absolutely true. Humans are not forever. Nothing is forever. Not even James Bond. So yes, we will absolutely... The question is, "Is it in 100 years or is it in 10,000 years?"

Alie: I feel like it's in 12, but...

Rose: 12 years? Or 12,000?

Alie: 12 years.

Rose: 12 years. Okay, but why 12? Because I was recently with some teens and they were like, "Is it true that climate change is going to kill us all in twelve years?" And I was like, "Where did you get that number from?"

Alie: That seems a little conservative, but I just was thinking, enough time where I'd still have a house payment. Enough time where you definitely wouldn't be ready for it.

Rose: People still have student loans they have to pay off.

Alie: Yeah, yeah. You'd be like, "Fuck!" I'm sure there's still boxes in the garage I won't have unpacked.

Rose: Right. Mail I have not opened since I moved four houses ago.

Alie: I mean, I feel like I have had spices for over 12 years. I'm like, "How long have I had this garlic powder?"

Rose: And you moved it between every... Yes, totally.

Alie: So many apartments!

Rose: 'Cause you can't throw it away!

Alie: Ya know, it's still garlic powder!

Rose: It won't go bad!

Alie: I feel like it's the same, where it just... where it catches you off guard.

Rose: Yeah. 12's good. Yeah, okay. Yeah.

Alie: But is climate change gonna kill us in 12 years?

Rose: Um, no. It will kill a lot of things in 12 years, potentially all the insects.

Alie: Oh no! [*slowed down, deep and drawn out*] Ohhhh nooooo.

Rose: 12 years? No, I don't think so. But 12 years is long enough... I mean, we're already seeing the impacts of climate change, right? There are already things happening. I think 12 years, it will start to become *very* clear to *everybody* that this is happening and things are changing.

Alie: Is there anything that you do in your personal life differently because of climate change?

Rose: I don't eat meat. I feel terrible, I fly a lot, which I don't like but I do pay for carbon offset stuff. I try to do as much reusable non-plastic kind of things and I donate a lot of money.

Alie: Good for you.

Rose: I mean, 'a lot of money.' I'm not Bill Gates, you know, [*laughs*] I donate as much money as I can.

Alie: Right now you have an open briefcase full of hundred-dollar bills.

Rose: Yeah, listeners can't see this but I'm just rolling around in cash right now.

Alie: [*laughs*] Your overalls are just brimming. Overflowing.

Rose: I just have nowhere else to put it! [*laughs*]

Alie: Kacey Wight says: MY DREAM HAS FINALLY COME TRUE! *Flash Forward* was my first podcast love. Hi Rose! Anyway... on to the question. Do you think true equality (across race, gender, sexuality) is actually possible in the future?

Rose: *[drawn out sigh/gasp]* Hi Kacey, I love you. Umm, possible? Possible? Yes. Very, very difficult. I mean, I don't want to say it's impossible, I think that's too defeatist. But I think it's reallllly hard. Absolute power corrupts absolutely, right? Anybody who's at the top of a chain is always going to want to maintain that, and so I think it's really hard, but I want to believe that it's possible because otherwise I think it's hard to push forward. I think it's possible but very, very hard and we all — like literally every person — has to be working toward it all the time.

Alie: Every person.

Rose: Yeah.

Alie: Or put the ones that we don't like on an island.

Rose: Yeah. *They* can go to Mars.

Alie: Now this next great question was also asked by Patron Ron DagDag. Great question, Lindsey Beasley: With the high frequency of robots replacing the human workforce, what changes do you predict for our society? How will the vocational options available to us change?

Rose: That's such a good question.

Alie: I knowww!

Rose: So, two things I will say. Number one, because this is a bugbear of mine: Robots are not replacing us; managers are replacing us with robots. It's a specific choice that people who are making money are making. The robots are not doing this on their own, yet.

Brian Merchant, who used to work for Gizmodo, has written a bunch of really great pieces about this, basically being like, "Stop saying that the robots are taking our jobs." It's managers that are doing this, it's CEOs, it's specific people who are making the decision to fire employees and replace them with these sorts of machines.

[robot voice: "Honestly, we don't even want your jobs.]

Rose: And often that's not necessarily because the machines are going to save them more money in the long run. It's because machines don't unionize, machines don't complain, machines don't need labor protections. There's no OSHA protection for machines. So it is a specific choice that human beings are making.

That said, it is happening at lots and lots of places. There are always reports about automation. Depending on who you ask, automation is killing jobs and making a lot of people unemployed. Some people believe that those people are finding work elsewhere. There was recently a study that looked at this and found that people who had been

automated out of their jobs wound up with, I think, 11% lower income wherever they moved on to.

There's an interesting problem with automation, which is that a lot of the actual "good jobs," mid-level jobs, things like accounting, even like car manufacturing assembly lines, blue collar, but like union jobs, have good worker protections... those are the things that are pretty easy to automate. The jobs that are hard to automate are often the ones that we consider "low skill" jobs. I think there's no such thing as a low-skill job, working at McDonald's is very challenging. But things like working at McDonald's, being a waiter, those sorts of jobs where it requires being able to process a lot of information at once and do a lot of things at once, machines are really bad at that.

Machines are really bad at picking vegetables in a field, because in a car plant it's all on an assembly line. The environment is completely regulated, everything looks the same, every windshield is the same size. If you're out in the field, every pepper is not the same size, every apple is not the same size, every tree is slightly different, and so a lot of agriculture is really hard to automate. That's a place where there is a labor shortage, where people don't want to do those jobs because those jobs fucking suck.

There's a name for this. It's called Polanyi's Paradox, which is basically that the jobs that people, kind of, want are the ones that are getting automated and the jobs that people don't want are the ones that can't be automated 'cause it's really hard.

Aside: And if you're like, "Who is Polanyi and why does he have a paradox?" Okay, quick *CliffsNotes*: Michael Polanyi was a Hungarian-born and British-based chemist, and a philosopher, and a professor who essentially posited that we know way more than we can explain. So, we can perform some duties so intuitively that they're just hard to describe, let alone map out for artificial intelligence to then replicate. Things like advanced facial recognition, or driving a car on windy roads, or picking out the most magical pumpkin on the farm. (See the Cucurbitology episode about pumpkins to know what the hell I'm talking about.) Now, Polanyi explained this whole theory in his book *The Tacit Dimension*, which came out in 1966.

But, I did a little lookin', and perhaps some credit should go to the U.S. Supreme Court Justice Potter Stewart, because just two years prior in a famous case about the First Amendment and obscenity in an arthouse film, Justice Stewart legendarily addressed hard-core pornography by saying:

I shall not today attempt further to define the kind of material I understand to be embraced within that shorthand description. And perhaps I could never succeed in intelligibly doing so, but I know it when I see it.

We know more than we can tell. Sometimes robots just don't get it. ["Yeah."]

Rose: So neither of those things answer the question, but I think the answer is that we're going to see a lot of those sorts of jobs that are really hard for robots to do. That's like food service, customer service, anything where you're, kind of like, really having to think across a range of disciplines, those we'll see more of. This is why unions are really important, because it

does help buffer against some of the automation. I think we'll see a lot of creative jobs; robots can be creative in their own way, but they're not going to be able to do a lot of the stuff that we currently think of as uniquely human creative work.

But I think this is why social safety nets are so important, because there will be a period of time where a lot of people are kind of like, "I don't know what to do," because again, managers and CEOs have made a decision to automate a process. The future of work, unfortunately, right now looks like a lot of freelancing, which I think is not good for stability for a lot of people. But, yeah, it'll be a lot of, 'what are the things that robots are really bad at', things where you kind of have to generalize information across domains. Those are the jobs that are going to take longer to automate.

Alie: What's your take when you see really advanced robots that are, like, running and jumping, that are so *Black Mirror*? 'Cause I know that all of us are like... I have a fear deep in the core of my being that turns, like, icy. How? What? [*overwhelmed unintelligible questioning noises*]

Rose: War robots are very scary, and that's what those are. Boston Dynamics, they are creating robots for DARPA, basically.

Aside: Okay heads up if you're like, "DARPA? That's *also* a great hamster name." Cool your jets. It stands for the Defense Advanced Research Projects Agency, and it's part of the Department of Defense. It makes new war toys like insect spies, and submarine drones, and computer brain implants, and robots that could probably tear our limbs off like rose petals.

Rose: The one thing I will say — and this doesn't necessarily make me feel better or worse — but the video you see, you don't see all the failures. You don't see all the times the robot just fell on its face, which is like 99% of the time. [*DJ airhorn*] It's really hard to get robots to run and jump.

That said... yeah, it's terrifying, right? Especially given what we know about the ways that the military industrial complex treats certain kinds of people. Imagine ICE having that robot. That's scary to me. I don't like that. And I think there's a lot of conversations right now among technologists about what *are* the ethical questions that people who work at places like Amazon, or whatever it is, what should they be thinking about? Like, a bunch of workers at GitHub recently quit because GitHub was working with ICE. Where do you draw the line? And a lot of people who go into technology, and especially go into robotics and engineering, they don't have any kind of training in ethics and thinking through these questions.

I did an episode about deepfakes a couple of years ago and my question was like, "Okay, what about people who create these videos of their exes, and it's sort of a revenge porn situation?" And I asked the engineer, "Do you ever think about that?" And it had *not* occurred to him. So, I think there is a wall sometimes between people who are technical, and people who think about, "Oh, how do I make this robot's legs work really well?" And then this bigger like, "Okay, but *should* I?" The scientists didn't stop to ask if they should.

[Clip from *Jurassic Park*: Jeff Goldblum as Ian Malcolm, "They didn't stop to think if they should."]

Rose: In the words of Goldblum. I think there is that question, and I think more and more it's becoming common for technologists to start thinking about that. But many of them don't have the training, they don't have the background, they don't have the frameworks to even ask, "Okay, but why are we doing this and should we be doing it? What is the benefit here? Who wins and who loses?"

Alie: But we can look forward to a future that might have war robots.

Rose: Oh, we already have war robots.

Alie: We do have them.

Rose: Yeah.

Alie: Well, I guess we have drones, so...

Rose: Right.

Aside: Okay here's a really big, important question. Sarah Iannucci wants to know: Will Brad ask me out for the spring fling? Uh...

Rose: I mean if you want him to, I hope so. If not... um, fuck Brad. [laughs]

Alie: Okay. Or *don't* fuck Brad.

Rose: Or *don't* fuck Brad. And if you do, please use protection.

Alie: [laughs] Always thinking about the future.

Rose: You know what, I'll just let you know: family planning, very important.

Aside: Okay speaking of kids and populations, these patrons: Anna Vallery, Jamie Pickles, Vanessa Frey, and Tara McNee asked about family sizes in the future.

Alie: Family planning. Very important. Do you think anything's gonna change family planning-wise in the future?

Rose: Yes, absolutely. I mean, male birth control has been on the horizon for a really long time. Whether it will ever actually happen I think is open to debate. It sort of feels like nuclear fusion in that, like: theoretically possible. Will it happen? Don't know. There are people who believe that birth control is actually the most impactful technology that has ever come up post-Industrial Revolution. Some people argue that that's refrigeration. So it's sort of like those are the two camps: [laughter] birth control or fridges! Both actually were incredibly important, but birth control is huuuge in the way that it has changed how we think about the future, and how our social structures and like, you know, people who could have babies are now free to not have babies if they don't want to, which is a *giant*

shift. I often say that the IUD is the original body hacking. I write about how I have an IUD and a RFID chip in my hand.

Aside: Wait, WHAT?! Rose, futurologist, has a radio frequency identification chip *in her body*? Before we all lose our shit, it's pretty much the same thing my dog Gremmie has. But unlike Gremmie, Rose also has an IUD, or an intrauterine device, which — although it's fully analog — she says is a way more powerful technology.

Rose: I talk about how anybody who has an IUD is basically a cyborg, and you should own it. Yeah, the RFID chip is just like a party trick and the IUD actually makes my life better. *[laughs]*

Alie: So you have an IUD and you have an RFID chip?

Rose: Correct.

Alie: Implanted...

Rose: ... in my hand. *[laughs]*

Alie: Okay. I'd like to know more.

Rose: Yes. So if you have a dog or a cat that is microchipped, it's basically the same exact technology. It's like a small glass bead that is in my hand. If you would like to feel it, you can.

Alie: I would like to feel it.

Rose: Okay. So if you touch like right there... It's like right here. Right there.

Alie: *[squeams]* It's a little nugget!!

Rose: Yeah, it's like a little nugget. It's smaller than a pill. It's kind of the size of a Tic Tac.

Alie: Yeah, or a grain of rice maybe.

Rose: Yeah, like a grain of rice. Yeah. And inside of it is an RFID chip, which cannot communicate with satellites. There is no power source in here. It can only contain a very small amount of information. So if ever you used a fob to get into a door or, like, Apple Pay, it's like that. So you would swipe it, you sort of touch it to something. I can use it to unlock my car door, unlock my house door... It's really kind of a party trick. At one point I had it set to be a geocaching site so if you found it, you could get a little gif that would pop up when you would scan it and, like, dance. But yeah, that's my li'l hand thing. I got this years ago, and when I wrote about it, I got a lot of emails from people who believe that I am now, like, cursed by the devil. So, uh, there's that... which might be true? Who knows? *[laughs]*

Alie: Do you have to have some sort of receiving site to open your car door? I know that's such a dumb question.

Rose: It's like if you have a little black box on your office to touch your card to, you have to install that on your car or on your house. But these are easy to buy, you can buy them at Best Buy.

Aside: So you can buy the receiver at Best Buy, or online. A whole door handle with a chip reader will set you back around a hundred bucks, or a simpler reader is three dollars on Wish. But the chip itself, the part that lives all snugly in your flesh, is not in an electronic store, like, sold in a kit with a syringe.

Rose: You cannot buy an RFID chip to implant into yourself at Best Buy. You *can* buy it at a website called Dangerous Things if you would like to do that. Obviously, if you want to do it you can purchase it there, I would suggest taking it to a piercer who actually knows what they're doing and don't try to do it yourself. But yeah, you can buy them.

Alie: So all of the talk about like, [*dude-bro voice*] "Oh one day we're just gonna have, like, microchips in our hands!" You're *living that dream*.

Rose: Yeah, people like me have them. And there is a company that, as almost a stunt, did this and they offered it to all their employees as actually a way to get in and out of the building. I would say *don't do that*, in part because your employer should never have access to something that is physically inside of your body, in my opinion. [*laughs*] That's how I feel about it.

Alie: Does that freak people out, do you think, more than it should?

Rose: The RFID chip? I think as soon as people understand what it actually is, they're less freaked out. The first question I always get is like, "So are you being tracked right now?" And no, it can't communicate with satellites. It is not powerful enough to do that. It's really, truly just like a silly thing that I have. And once they kind of understand what it can and can't do, they're like, "Oh, okay. That's cool."

It is interesting, when I am in body hacking spaces, *this* is totally normal, but when I try to talk about my IUD as a body hacking piece, there are definitely dudes who are like, "Muhhhhh, it makes me uncomfortable!"

Alie: Why do you think that contraception isn't regarded the same way that, like, [*dude-bro voice*] "I have way more concentration when I put coconut oil in my coffee?"

Rose: I think it's because it's largely the domain of women. I mean, in the same way that Soylent is just SlimFast marketed to men, right? When you repackage something as a 'disruptive technology' that is 'cool' and 'that men do', then as soon as you start to try and say, "Actually, all this other stuff then also counts." That makes it less cool to men.

Aside: Please see Diet Coke vs Coke Zero. Or Pepsi Max, which actually used images of a Playboy Bunny in its ad campaigns. Why not just shape the bottle like a dong?

Rose: So, I think that's mostly part of it. There are people in the body hacking space that are totally on board with talking about IUDs as body hacking. It's not all of them, but I go to

these body hacking conferences and I've had moments where men have been like, "Ooh, that's gross. You're talking about periods." I'm like, "You came out of one of those."

[wet splat] [distant, echoing voice: "I'm here!"]

Alie: I mean what could be more disruptive, literally, than an IUD?

Rose: Truly, literally, than an IUD where people who bear children no longer have to have just unlimited children until they die. Like, whoa! That changes a lot, you know? Yeah, yeah.

Alie: My grandma had 11.

Rose: Man.

Alie: Before 30!

Rose: That's a lot.

Alie: Hoo! Just pumpin 'em out.

Now, okay. The worst thing about being a futurologist. What sucks the most? Is it people trying to force gadgets on you? Is it... depression...?

Rose: I would say the worst thing about being a futurologist is men on the internet telling me that I'm being too pessimistic.

Alie: Oooh. "Smile, sweetie!"

Rose: Exactly. Or like, "Oh, you just don't understand the benefits that this is gonna have." And I'm like, "Mmm I do, actually." And I don't actually think of myself as particularly pessimistic. I think of myself as kind of like a skeptical optimist. I actually do think that there are lots of people who are doing really amazing things and that are making the future better as we go.

I think there's a lot to do. I'm not naive about how much fucked up stuff there is out there. Like, children are in cages... There's *a lot* of work to do. But I think that sometimes I get people who are like, "Oh, you're being overly dramatic," or, "Oh, you're overstating how important this is," or, "Oh, why should I care?" Or whatever it is. I have a lot of conversations with people about Alexa and Google, and the always-on operating systems, and people being like, "It's so convenient, why should I care? You're just being a downer. Why are you being such a downer about this amazing technology?"

I have my whole spiel that I give: "Well, if you allow these always-on listening devices into your house you're setting a court precedent to no longer have privacy." That is an important thing and that's something I care a lot about. And I think that's a thing that scares me is this willingness to kind of just cede control to these companies that do not have our best interests in mind.

Alie: Do you think that what was once paranoia is now just becoming fact of life? [*nervous laugh*]

Rose: Well, I think this is the challenge, right? I joke that I am a tinfoil hat person. I'm also very, very careful about my home address and my phone number. I was doxxed during Gamergate and they came to my house and were like, "We're gonna kill you."

Alie: Fuuuck.

Rose: So I am very careful about those things. I am definitely the person who's constantly like, "Get your two-factor authentication; use encrypted services! Don't put your home address places, don't post where you are." And my threat model is different than other people's. But I do think that it's hard because: yes, there are certain things to worry about. But then because we know these companies are so powerful, we kind of almost over-index on what we think they can do.

So, this idea that our phones are always listening. I think most people I talk to believe that their phone is listening to them all the time. And that's actually probably not true. It's hard to sometimes know, 'cause yes the Alexa is listening to you but your phone isn't. So you should be worried, but you shouldn't be worried. It's hard sometimes to know what to actually worry about. 'Cause it's like, which one of these things is spying on me? [*laughs*]

Alie: So many things to be paranoid and cautious about.

Rose: Yes. I understand people being exhausted by it where you're just like, "I know, I know. I shouldn't do this and I shouldn't do that and dah, dah, dah." I totally get that, and you just have to make whatever reasonable decision for yourself that makes sense.

Alie: Right. I do see more and more people just giving up.

Rose: Totally. And I get it. I get it. I have a PO box because I don't ever use my home address and that costs money to have a PO box. It is a lot of time, and a lot of money, and a lot of effort to make sure that you have X, Y, and Z. And I want to say, I don't think it should be the user's responsibility. I think it *should* be on these companies to *not* constantly take as much as they can kind of like, "Oh, well you didn't read the privacy policy." Who can read every privacy policy? They're also written in a way that there's *no way* a regular person would understand them. So, it's not on you and me to fix this. The companies need to be held accountable for, like, all the shady shit they're doing.

Alie: What about your favorite thing?

Rose: My favorite thing? I get to talk to such cool people all the time. Being a journalist, you have the excuse of, literally, calling anybody that you want to. And most of the time they talk to you, which is, like, wild, right? And you're like, "You don't have to do this." But it's so fun. Also, and I think this is why I often feel like I'm maybe more optimistic about the future than a lot of people, is that I get to talk to people everyday who are doing stuff that is going to make the future better, that are, like, committed, and working really hard at making the future better. And that's, like, a balm. It's not that I don't wake up some days and I'm just like, "Oh my god, I can't." I definitely have those days where you're just like,

“Ugh. It just feels totally hopeless, and there's nothing we can do.” But then I get to go call people, and listen to people, and talk to people who are, in their small communities and their small ways, making a change.

I often like to point to this woman, Aisha Nyandoro, who is working on a universal basic income program specifically toward black mothers in the South. It's a small program but they're giving money away, and they're helping people in this very specific way and this very specific context. And they're working really hard and it's having these impacts. It's not going to solve the nation's problem but it is a small thing that is making a difference locally.

Aside: This program's called Magnolia Mother's Trust, through the Springboard to Opportunities program, and there's more information on that at SpringboardTo.org. An additional donation went their way as well for this episode, so it's a Futurology twofer, because dammit, let's turn this boat around and make the world a little better if we can.

Rose: And I think that's why I can sometimes be a little more, not optimistic, but hopeful about the future, because I get to talk to all those people every day. It's such a joy, and I'm so thankful that they give me their time and make time to have me talk to them. But it's so fun to talk to people who are smart, and interesting, and working really hard on something, and really care about it.

Alie: Yeah, if you're not a journalist or don't have a podcast it's hard just to call someone and be like, “Hi, I think you're cool. Talk to me?” *[laughs]*

Rose: Yes. I will say, Twitter is good for that, right? Especially people who are working really hard on making the future better, they want to talk to people. I mean, they also feel like they are toiling away at, like, a hopeless problem a lot of the time. So, if you find someone who's doing something cool, literally just being like, “Hey! I think you're doing something cool!” that keeps people going. I'd say that if you admire somebody's work, absolutely say something because it truly does make a difference.

Alie: That's very good advice, because probably people think that it would be weird to compliment someone.

Rose: No. Compliments are never weird. That's not true... Compliments can absolutely be weird. But in general, if you're like, “I just love what you're doing.” And also, often if you are like, “I don't know how to get involved, is there something I can do?” Just reach out to people. They won't always be able to reply because a lot of them are strapped for time and stuff, but people... Like, community building, and making a difference, we all want to make the world better, I think. Especially *Ologies* listeners, *Ologites*. So yeah, reaching out to people and being like, “How can I help? What can I do?”

Alie: Any words of wisdom, or anything that sticks with you on the day-to-day that keeps you going?

Rose: Yes. There's a quote by Octavia Butler that I come back to over and over again, and I will read to it you because I worry... She's such a pillar and important person that I don't want to, like, butcher her words because she's so good at them.

Aside: How prepared for the future is Rose? She had this quote readily available on her phone.

Rose: I'm going to read it to you. It says:

There's no single answer that will solve all of our future problems. There's no magic bullet. Instead there are thousands of answers—at least. You can be one of them if you choose to be.

Alie: Ah! Goosebumps.

Rose: I know. That's the thing I think about a lot. You can be a part of the solution. It doesn't have to be hopeless.

Alie: So you just have to figure out what your priorities are, figure out what kind of future you want, work backwards from there, and then get to work.

Rose: Yeah. Get on it.

Alie: Get on it! So, the future is ours, whether we would like it or not, and so we might as well try to make it better.

Rose: Yeah! The future is not set yet. It hasn't happened. It can be what you want it to be.

Alie: That's so exciting! We can fix this!

Rose: Yeah, I know! *[both sharing a relieved laugh]*

Alie: I feel so much better.

Rose: Sometimes I feel like people's therapists, where they're like, "I need to talk to you about the future!" I'm like, "It's going to be okay."

Alie: *[laughs]* Oh my gosh, thank you so much for doing this.

Rose: Thank you for having me. I'm a huge fan. I love this.

Alie: Oh, I'M a huge fan!

Rose: No, you!

Alie: No, you! *[shared laughter]*

So if you are now a huge fan of professional Futurologist Rose Eveleth, feel free to board your Internet space car and just zoom over to RoseEveleth.com. She's at [Twitter.com/RoseEveleth](https://twitter.com/RoseEveleth); [Instagram.com/RoseEveleth](https://www.instagram.com/RoseEveleth). And of course listen to her wonderful podcast *Flash Forward*. That's at FlashForwardPod.com. She's on Facebook at [Flash Forward Pod](https://www.facebook.com/FlashForwardPod), Twitter, [@FlashForwardPod](https://twitter.com/FlashForwardPod), Instagram too.

We are @Ologies on [Instagram](https://www.instagram.com/Ologies) and [Twitter](https://twitter.com/Ologies). I'm [@AlieWard](https://twitter.com/AlieWard) on both. And more links about all the things we talked about will be up at AlieWard.com/Ologies/Futurology. There's a link to that, and to the causes, and the sponsors for this episode in the show notes. For merch you can head to OlogiesMerch.com or AlieWard.com. Thank you, Shannon Feltus and Boni Dutch of the comedy podcast *You Are That*. They handle all the merch. Thanks to Erin Talbert and Hannah Lipow for adminning the [Facebook group](https://www.facebook.com/Ologies). Thank you to Emily White and all the Facebook transcriptionists who make transcripts available at AlieWard.com/Ologies-Extras. We're getting through all the past episodes still.

Thank you, as always to Jarrett Sleeper, host of the podcast *My Good Bad Brain* about mental health, for assistant editing. And to the man whose mustache resides in both the past and the future at once, Steven Ray Morris, host of the cat podcast *The Purrrrcast* and the dinosaur pod *See Jurassic Right*, for piecing all these clips together for me each week. He is a hero. Nick Thorburn of the very good band, Islands, wrote and performed the theme music.

And if you stick around to the end you know I tell you a secret. This week's secret, it's going to be three-fold, because I just took two weeks off. I'm just like a chicken holding eggs over here. One: that I've been trying to use mental time travel before things that stress me out to imagine a good outcome, and it's helped me shake off the jitters a bunch! So, thanks, chronesthesia. Also, since the Chronobiology episode, I've been sleeping in a bed, with the lights off, way more, and it's glorious. But also I think I'm getting sick more, and my doctor said that that can happen when you finally rest. So yes, we need an immunology episode, stat.

Also, I have a potato for a brain, and I used way too harsh of a cleaner on an engineered quartz countertop, and now it's spotty, and dull, and if anyone has done this, or fixed this, please tell me your secret because, wow, it looks real bad, and it's my fault.

Okay. Let's meet back here next week in the Fuuuture. We have a whole year of brand-new episodes, now that I'm all rested up. 2020, let's make this ding dang future better together, okay?

Berbye.

Transcribed by:

Emily Staufer

Hannah Dent

Outer Space-loving Office Drone, Brian Davis.

Clara Chaisson, Cambridge/MA.

Some links you may find of use:

[GenderPodcast.com](#)

[SpringboardTo.org](#)

["Born in Flames" clip](#)

[Watch "Born in Flames" on Vimeo for \\$2.99](#)

["The Jetson's" breakfast machine clip](#)

A portion of Dr. Martin Luther King's ["Where Do We Go From Here" speech](#), August 16, 1967

[Andrew Lewis's "you're the product" tweet](#)

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