

Corvid Thanatology with Kaeli Swift

Ologies Podcast

October 29, 2018

Oh, heeyyy. It's that old guy sittin' on a shabby, chic couch in Anthropologie waiting for his daughter to try on pants that cost too much, Alie Ward, back for another episode of Ologies. A spooooky episode of Ologies! A scaarryy episode! Okay, fine. But does it get gothier than the inky blue sheen of a crow in the shadows, who also happens to be having a funeral for another crow? Nothing is more goth than that. Nothing! Not even a spider listening to Bauhaus on vinyl. A bat smoking a clove at a warehouse party is not as goth as a crow funeral. I've been sitting on this episode since July! I've been waiting to air it this week. I've just been building with nausea I'm so excited to talk about corvid thanatology; freakin' crow funerals!

But first, I will talk quickly as I tell you things that also matter. Thank you to patrons at Patreon.com/Ologies. Thanks to everyone for buying cool stuff at OlogiesMerch.com. And thanks for subscribing to and rating the podcast, especially for reviewing it, which helps get it seen by other people. And each week to prove that your reviews mean so much, I read you a fresh one. This week I creeped on Serious Beetle who wrote,

I have been experiencing an odd twilight zone effect, where shortly after listening to one of your shows, a moment in my life was so much richer from a thing I learned there. For just one example, snails. I met a tiny pack of wet sidewalk snails as I crouched intensely over their little googly eyes. I was overcome by an appreciation of their love darts, tiny hermaphroditic bodies, beauty products from their m-word, and french immigrant past so much, I cried.

Serious Beetle, that rules. Thank you for letting me creep your review.

Okay, corvid thanatology. What the fuck, Ward? Crow funerals!? Yes, you are about to listen to an hour long interview about the grieving behaviors of crows. From one of my favorite alive scientists on the planet. It's so good. She's so good.

Okay so, corvids —quick background— belong to a group of perching birds with a developed vocal organ. That's what makes a corvid. Sometimes these birds are called, songbirds, but apparently ornithologists have almost gotten into fist fights about the term, songbirds. So, which birds are corvids? Okay, they include: crows, ravens, rooks, jackdaws, jays, magpies, treepies, choughs, and nutcrackers. Which kind of sounds like an Alice in Wonderland chess set or a roll call of gnomes. Perhaps a menu of local draft beers from Portland. But, it's a real list I just read verbatim just to make sure I don't get any wrong and cause anymore ornithological fisticuffs.

Anyway, we're talking about crows and how they die. You're gonna hear about why crows have this death laden reputation and some unsettling science mask facts. We'll hear about desperate alarm calls and feeling like an outsider and how brains work and radioactive tracers and murders (but not the sad kind) and plague doctors. And all kinds of dark goodness that will have you sitting on a park bench, staring into the tree tops with this new found fascination, once you hear the bonkers tales of biologist and corvid thanatologist, Kaeli Swift.

Alie Ward: I'm so excited to talk to you! So here's this. There's your microphone. Here's mine. First thing that I always do is just ask people to pronounce their first and last name, just to make sure that I say it right.

Kaeli Swift: Sure. Kaeli Swift.

Alie: Okay, just checking. Umm, I believe you mispronounced it, though. I think it's *Doctor* Kaeli Swift.

Kaeli: Aaahhhh!!! [DJ airhorn] [laughter]

Alie: This is where I just lose my shit about it. I mean, how long have you been a doctor?

Kaeli: Like 48 hours.

Alie: Oh my god!

Kaeli: No, maybe 72. Since Friday night at 9:30. [laughs]

Alie: Oh my god! Tell me everything!

Kaeli: [sigh] It has been... a whirlwind sprint. I did two degrees in six years.

Alie: Oh my god!

Kaeli: So, it was really fast.

Aside: Dr. Kaeli Swift got her MS in Animal Behavior and Neuroethology—I think that's how the brain affects what animals do. I think that's what that means—at the University of Washington in 2015. Then she launched straight into getting her PhD. She completed her research about crow death behaviors in just over three years. She defended her PhD on the last night possible, before the end of the quarter. Her dissertation was due by midnight that day. And this breakneck pace was partly because there was a post-doctorate position in Denali that started right after. She wanted to be able to hop over and do that work. Also, the first time she mentioned she was moving to Denali for a while, I asked if she had to get a lot travel vaccines, and then I realized that Denali is a park in Alaska and not a small island in the malaria belt. Anyway, she's very smart and hardworking and she busted proverbial ass for that PhD.

Alie: You're not usually under the gun like that. How'd you deal with it?

Kaeli: I cried a lot. [laughs] I had a few moments where I was just like, [helpless voice] "This is impossible!" So I did that. I reached out to my peers and said, "I need you to text me and tell me I'm gonna do this and everything is gonna be okay." And they did it because they were wonderful, and I worked really hard! So, it was kind of a combination of those three things.

Alie: Okay, now tell me what it was about crows that made you so interested. When did you start really studying them? Did you always sit in parks in high school and stuff and gaze at crows or was there a moment?

Kaeli: No, there was definitely a moment. Since I was a little kid, I loved animals and always really gravitated towards science. I could stare at bugs all day. I just thought they were so cool.

Alie: I'm with ya.

Kaeli: Yeah, and I could look at pictures of bugs in books and read about them. But I wasn't journaling as a little kid, or taking fastidious notes. Then as I got older, in high school, I was sort of like, "Eh, whatever." But as I went into college, I had circled back around to wanting to do wildlife sciences or animal behavior, more broadly. I didn't really have a preference or an idea of what exactly that would look like. In thinking about what kinds of questions really interested me, the answer I kept coming back to was this idea of the social intelligence hypothesis. Which is this idea that being social and having these complex social lives may have really driven our cognitive advances because it's difficult to do that. It takes a lot of brain power. That question, and there's lots of nuanced ways you can look at that, has always really captivated me. So, reading *Mind of the Raven* and being like, "Hmm, I like birds. I like animal behavior and cognition. And ooh, look at this! There's this whole group of birds that now science is collectively saying, 'Oh, wow! Uh, I guess we were super wrong about the capabilities of birds. Look at what crows and ravens can do!'"

Alie: Did they have to issue an apology to birds at some point? Like, "Fuck man, we're sorry. You got great brains. You're doing games over here." Was there a moment in time, culturally, where we were like, "We're so sorry birds."?

Kaeli: [laughs] I don't know if that has happened, but if it hasn't it really should. One of the things I've experienced through my research, is still a lot of people don't really realize that. That's been one of the most rewarding things about doing my work is seeing people go, "Wow! I had no idea that they did this. That's so cool. I like crows more now." That's been, like I said, just one of the most rewarding parts of the research that I've done. So yeah, the marriage of all those things, birds and intelligence and animal behavior, is what lead me to crows, and then really serendipitously my undergraduate advisor at the time I was going through this revelation, happened to be working on the facial recognition publication with one John Marzluff.

Alie: Who's like, THE dude when it comes to wearing creepy masks around crows?

Kaeli: Yes. There's a handful of crow experts in the United States, and he is one of them. So, it was like, "Whoa! This worked out nicely!" [laughs]

Alie: Right! I feel like in your research, were someone to Google you, there would be photos of you wearing a ghastly Halloween mask that someone had left in their trunk for several years, and there's you holding a dead crow with the mask on... I have so many questions!

Aside: [record scratch] So really quick, Dr. John Marzluff, Professor of Wildlife Science at the University of Washington was Kaeli's PhD advisor and he's been studying crows for years! You may be familiar with his research in wearing certain masks around crows, which showed that hell yes, they very much identify human faces and they will squawk up a storm. This is technically called, "Scolding," when they see a foe. Kind of like we see in human beings at a professional wrestling match or an episode of *The Real Housewives*. Which, let's face it, those two scenarios are just two sides of the same coin.

So for example, if a researcher trapped a crow for observation wearing a certain mask, most of the local crows in the future will freak out if someone casually walks by them in the same mask. Human beings might also freak out. That they didn't study. But they started using this ghastly Cro-Magnon mask and a Dick Cheney halloween one, but ended up, in the end, employing some specially made masks later in the study which, I'll be honest, are kind of creepier because they're like someone's face, but just little bit off. Imagine Michael Myers with shoulder length hair, standing in a park [creepy piano clip from the theme song of *Halloween*, by John Carpenter], and writing down everything you did on a clipboard. But before we get to all of that work specifically, let's [truck reverse beep] let's throw this thing in reverse for a second.

Alie: Okay, I'm gonna start basics. I'm gonna go back a little bit. What's the difference between a crow and a raven? And, why do you study crows and not ravens? I'm sorry I don't know this. I think ravens are bigger.

Kaeli: No, don't apologize at all! It's a really common question. And well, why would you know this unless you'd asked someone earlier? So, crows and ravens are different species, but they're in the same genus. Like a lion and a tiger.

Alie: Okay.

Kaeli: But they're really superficially similar looking so it's easy to mix them up. The main things to look for is ravens are about 2.5 times the size of a crow. I always tell people if you're out and you see a crow and you go, "That is the biggest bleepity bleep crow I've ever seen," it's probably because it's a raven. In flight, the easiest way to tell them apart is crows have more sort of squared tails versus ravens have this really distinct wedge-shaped tail. And then if you are close enough to see one, or see a picture of one, you'll notice that the throat feathers on a raven are really textured, like a beard. Versus crows have really smooth hair-like throat feathers. On a raven we call those special feathers, "Hackles," and they articulate them and use them in a lot of visual behavioral displays. Once you get a look at a few photos, that feature becomes really easy to detect. So, those are sort of the three big physical ones. Their voices are really different.

Alie: How are their voices different?

Kaeli: Crows do the classic caw [crows cawing] and ravens have this much deeper, more hollow croak sound [raven croak] [Bart Simpson as The Raven: "Nevermore."] Both species make a huge diversity of really cool noises, but personally I think the vocal repertoires of ravens are cooler than they are for crows. [softly] Don't tell the crows I said that.

Alie: Crows are like, “She *just* defended and got her PhD and now she’s throwing us under the bus!”

Kaeli: [*whispers*] Traitor.

Alie: [*laughter*] Can ravens make voices?

Kaeli: Crows, ravens, and magpies are excellent, excellent mimics. They’re essentially parrots.

Alie: Crazy!

Kaeli: Maybe not quite in terms of the volume of their vocabulary, but their accuracy to the human voice... Outstanding.

Alie: Crazy!

Kaeli: Yeah!

Alie: Who is creepier or more goth? Crows or ravens?

Kaeli: [*sigh*] I would say ravens because they have more of a habit of plucking eyes out of living things. [Steve Carrell: “*Nooooo, god!!!*”] Crows will do that too, but I think ravens have more of that reputation.

Alie: That’s pretty hardcore.

Kaeli: Well you know, skin is thick! Mammalian skin is thick. So, if you’re hungry you’re gonna go for the easy part!

Alie: Get the good stuff. It’s very Marilyn Manson. [clip from *The Beautiful People* by Marilyn Manson]

Aside: Man that is Halloweeny as all get out! So, when Kaeli got to graduate school she started looking into projects that involved these complex, fascinating big bird brains.

Kaeli: John had already started to do some studies with the functional imaging work that we do, where we look at crow brains. He had already been inspired doing that. Like, “Whoa, it would be really cool if we would show them a dead crow.” Humans for a long time have known that crows respond really strongly to their dead. That idea is not something that I contributed to humankind. He thought that that would be cool, but in order to do that you really need to have this field component so you can say this is what they do in their normal environment. This is the external manifestation of their behavior. And then we can look inside their brain and then try and tell the whole story.

Aside: So, their research involves observing the berbs in their natural home, externally, from afar. Then after that, they’re like, “Hey, hey psst berbs, come take quick science vacation with us, just a few weeks. We’ll look at your brain function before releasing you again into the wild to tell some pretty great alien abduction stories at your next crow party.”

Kaeli: We talked about that a lot and the advantages of that project were: 1. That it's awesome
2. It was feasible financially because I didn't need expensive tracking devices or tags or anything like that. So, it was low cost, which was important because I had *zero* funding. I had gotten an amazing fellowship from the National Science Foundation to support me personally through 3 years of graduate school, but it didn't include any research funds, and he didn't have any research funds for me.

Alie: Those masks aren't free, man!

Kaeli: Fortunately the masks had already been bought and secured before the previous facial recognition study. So, I'm just trying to make it work with what resources are already here.

Alie: Where do those masks come from? I'm so sorry; such a dumb question.

Kaeli: No, not a dumb question! Because nobody knows the answer. They had costume makers come and take molds of actual peoples faces. I always tell people to be gentle when they talk about the masks because Linda, Vivian, and Joe are all actually real people.
[laughter]

Alie: Whhhooooaaaa!

Kaeli: Yeah, which are not as scary in real life. I assure you. [laughter]

Alie: I'm sure, 1000%. But that's good to know. And so, you were like, "I don't have a lot of funding. I have zero funding." And so, this idea that instead of tracking and tagging or killing and dissecting the animals, you're like, "We can look at their brain activity using functional MRIs?"

Kaeli: So, not MRIs. We used a process called FDG PET. The reason that we don't use an MRI is that you could not train a crow to go into an MRI and not have, you know, a meltdown.
[cawing]

Kaeli: So they would just, so all their brain activity would be panic.

Alie: Yeah, that's a good point.

Kaeli: Basically what we do is we capture crows in the wild and we have an aviary that's fit to house crows. The housing is acceptable for a couple months. We give them a few weeks to get acclimated to captivity and just kind of calm down a little bit, and then the night before we're ready to image a subject, we take it into the radiology room and it goes in a smaller cage and we give it overnight to acclimate to that. Then the morning that we're ready to image, we take the bird out and inject it with something called FDG, which is a modified glucose molecule with a radioactive tracer attached to it.

Alie: Oh my gosh, so this is a PET scan like a cancer patient would get?

Kaeli: It is exactly the same process.

Alie: Yes! My Dad had to get a PET scan, and we had to tell him not to eat carbs for days before. He was like, "This is bullshit!"

Kaeli: Yeah, and that's one of the reasons they have to go in overnight, it's so that then they don't get any food. Basically, the idea of this process is we give them this glucose injection, your brain uses glucose as it works, and whatever part of your brain is working the hardest is going to use the most glucose. Once we give them this injection, we can show them something, like a dead crow, an empty room, the face of a familiar threatening person or a familiar caring person, and whatever part of their brain is workin', workin', workin' to process that information is gonna concentrate that glucose. The reason I described it as a *modified* glucose molecule, is that it's been changed such that the body can't metabolize it anymore, so it's just gonna stick there. Then what happens is, after that period where we've shown them the stimulus, which we only have about 15 minutes or so to do that, we can anesthetize the bird and put it in the scanner. The scanner, shunk, shunk, shunk, goes around and it detects where that tracer landed.

Alie: [*softly*] Wow!

Kaeli: We have about a 45 minute window before it starts to degrade. Then, once the scanner is done we can take the bird out, keep it while it wakes up, and then it's free to go.

Aside: Mmmmmmmkay byeeeeee!

Alie: Are you showing them pictures of birds that they know, so that it's familiar and they're like, "That's my uncle!"

Kaeli: No. So, that was one major caveat with all of the research that I did, we always controlled to make sure that they were unfamiliar birds. With the PET images, we weren't showing them photographs we were showing them actual taxidermied crows.

Alie: Right.

Kaeli: It was just like on a stool in front of the bird.

Alie: Oh my gosh. So it'd be like, "Okay, you're gonna go to a hotel overnight. In the morning we're gonna take you to the Dr.'s office, we're gonna give you some super weird soft drink that has radio tracers in it. Then we're gonna take you in a room with a mummified human being, and then we're gonna see what part of your brain lit up."

Kaeli: Yeah.

Alie: What parts of their brains would light up when it was another dead crow, or just like a pencil?

Kaeli: Soo, I can't talk about that yet...

Alie: Ooooooooooh!!!

Kaeli: I'm gonna keep that close to the vest until I get it approved by my scientific peers to make sure everything is up to snuff.

Aside: She's not allowed to say for certain, but she did give me a clue that it's one of the three areas. Perhaps the amygdala, which is an area associated with fear acquisition. Or something called the NCL, which is essentially the avian analog to our prefrontal cortex and it deals with higher cognitive tasks. However, it might also be the hippocampus which is the little brain nugget responsible for learning and memory. She can't say yet. The paper is gonna be published sometime next year. I'm earnestly awaiting this like it's Oscar nominees. Okay, so if you're not looking at radioactive tracers in a bird head scan, what are some things you can see with your own human eyes?

Alie: Can you give me an overview of some crow mourning behaviors for those who have not seen it or haven't read your research? Like what happens when crows see a crow die or fly by and be like, "Oh shit! There's a dead one!"? What do they do?

Kaeli: The most common response is that the bird that discovers the body will alarm call. That results in recruitment of other birds to the area to form what we call a mob. So, if you've ever seen crows go after an eagle or red tail hawk or your cat, that's what mobbing looks like.

Alie: Whoa!

Kaeli: That's the most common response, but that said there's a lot of anecdotes of them doing other things. John and I get emails all the time from people who... We had one woman send us pictures of a crow she saw. It was carrying, I think a candy wrapper or some kind of food packaging, and it flew up to the dead crow and then it left the wrapper right there by the body.

Aside: [*Alie's Kermit the Frog voice*] I noticed you have died. Here is a Twix.

Kaeli: We've had other people send us photos of dead crows where the other crows had left sticks by the body. So, that's the more interesting stuff. I never witnessed anything like that myself in hundreds and hundreds of trials.

Aside: She did see one thing.

Kaeli: Sometimes, about a quarter of the time, particularly during the breeding season they come down and they touch the dead crows in a variety of ways.

Alie: Oh, boy.

Kaeli: And, it can manifest as just sort of exploratory touching, where they sort of gently kind of poke around with their bills. It can be this really aggressive pecking and they'll rip feathers out and pull the wings off and do all kinds of stuff. In a really small portion, about 4% of the time, they are sexual. [*sexy time music in background*] They will attempt copulation with the dead crows, but we also saw sexual behaviors manifest in other ways, actually. Sometimes they would just walk over to the crows and then solicit. They have this very particular posture when they're getting ready to copulate.

Aside: [*deep Alie voice*] "Oh, hey! You single?"

Kaeli: And then the other really interesting thing we saw was sometimes pairs would come in together and be like, “OH MY GOSH! IT’S A DEAD CROW! WE GOTTA FUCK!!” And they would have sex, like immediately.

Alie: [*horrified laughter*] Oh my god!!!

Kaeli: In the most rare cases the pair would come in —and these birds aren’t marked so, I believe they were a pair based on all of the observations I’d done leading into it, but I can’t absolutely, positively guarantee it— they would land on the ground and one of them would strut over and be like, “I’m gonna mate with you,” and it would get on top. And then it’s partner would get on top of that one and they would have a *sex sandwich* with the dead crow!!!

Alie: Noooooooooooo!!!!

Kaeli: Yes! And the first time I saw this you can just hear me in the video going, [*clip from Kaeli’s research video*] “Oh my gosh, it’s a three-way. It’s a fucking... They’re having sex on top with each other, on the crow. It’s a three-way with a dead crow.”

Alie: [*horrified*] Oh no! Why are they doing it!?!?

Kaeli: Why are you doing that?! Yeah!!

Alie: Do they think like, “This’ll wake ‘em up!”

Kaeli: [*laughs*]

Alie: Like is that what they’re thinking?

Kaeli: I think that they are just thinking, “I am full of sexy hormones right now because it is my breeding season, and there’s a thing down here, and I am horny and I’m mad because it’s on my territory. But I’m also kinda scared because it’s dead. And, all of those things are happening in me at once! So... Haaaaaaah! So, I’m just gonna do ALL of the things!”

Alie: Maybe they’re on the brim of the apocalypse and this is just the first... like *Patient Zero*. They’re like, “I gotta get it in before the party’s over.” Oh my god!

Kaeli: Yeah, we don’t know yet exactly what is responsible for this behavior, but I am very much under the impression that it’s related to the hormonal shifts that they’re experiencing in the breeding season and then probably manifesting as this sort of displacement behavior, which is essentially when animals are confronted with conflicting drives. Sometimes they just do this third thing that is totally unrelated. For example, gulls when they’re faced with a competitor and it’s kinda like, “Okay, am I gonna go fight with this bird, or am I gonna run away? Eh, I don’t know!” They’ll just pull grass. Because they’re like, “Aaaah, do run away? Do I fight? Okay, I don’t know. I’m just gonna pull grass.”

Alie: Oh no! That’s so confusing. That’s like the worst kind of procrastination.

Kaeli: Yeah.

Alie: That’s like when I have a bunch of emails due and a bunch of stuff to write, but instead I just clean out the silverware drawer.

Kaeli: Yeah, well at you're not, you know, fuckin' dead people. [*laughter*]

Alie: [*quietly*] How do you know?

Kaeli: [*laughs*]

Aside: I'm not! Okay so, this episode is about crow funerals. Do they show up in veils? Do they demand to see will and testaments? Do they confess to long term affairs with the dead's best friend? [*Dun dun dunnnnnn*]

Alie: What are some other ways that crows mourn the dead? I know that leave sticks. They might circle and caw. Are there any other things that you have witnessed in the wild that you're like, "Whaaaaaaaaaaaaat?"

Kaeli: Not really. So, a lot of people will write to us and say, "I saw a vigil of crows and they stood around the body for four hours." I never saw anything like that. Definitely one thing that happens though, is they'll come in and they'll scream and all their neighbors will come in, and it'll be this really raucous thing for about 15 or 20 minutes. [*crows cawing*]

Aside: So, I grabbed that and a few other crow noises for this episode from Dr. Swift's YouTube channel which has so many good videos and will be linked via the show notes. She also has some new, amazing ones up from her time in the tropical balmy island of Denali.

Kaeli: Then they kind of just start to calm down. So, it's hard for me to say when I get those stories if what people are seeing is just kind of the end of this behavior, when the birds have started to be like, "Okay well, we said our thing." Or if when, because you asked earlier if we're showing them familiar birds and we're not, so if maybe the explanation to some of these other ritual-like behaviors is that they do slightly different things if it's a bird that they know. And I can't offer an answer to that just yet.

Alie: And how smart are crows?

Kaeli: Crows are primates, essentially.

Alie: REALLY?

Kaeli: Yeah! So...

Alie: I mean, not actually, but they're on par with...

Kaeli: Yeah... [*laughs*]

Alie: Someones gonna be like...

Kaeli: [*sarcastically*] No, they're actually monkeys. Did you not know this, Alie?! God... Some science communicator you are!

Aside: [*echoy Alie voice*] Disclaimer: Crows are not actually monkeys. Please do not come at me fools!

Kaeli: Yeah, it's really amazing because the crow brain, the avian brain, is really quite different in a lot of ways than the mammalian brain. One of the main features that's different is that when you close your eyes and you think of a brain, you picture something really folded and squishy, right?

Alie: Uh-huh.

Kaeli: Yeah, avian brains don't have those folds. It's totally smooth.

Alie: Whaaaattt?!

Kaeli: So, they have managed in that tiny, walnut-sized package, with vastly less surface area, to create these systems that do a lot of the same things that primates do. Just to give you some examples: Corvids, there's some evidence that they can count. They possess some kind of numerical, quantitative abilities. New Caledonian crows were the first species, besides chimpanzees, that we discovered make and use tools. And that distinction between make and use is really important in terms of its cognitive implications. There's a lot of studies that suggest that these birds have theory of mind, which is essentially the capability to be like, "I am me and I have my motivations. You are you and you have different motivations." They seem perceptive to when they're being spied on for example.

Alie: Is this because you've spied on them?

Kaeli: *[laughs]* I have definitely had experiences where it seems... For example, to do my field work I always targeted breeding pairs, which means I needed to follow them around and identify their nest. I didn't want to be right next to their nest for one experiment and 100 meters away for another one, so I wanted to control that distance.

Alie: So, what you're telling me is that you were wearing a mask and a wig and you were deliberately following mating couples? *[laughter]*

Kaeli: The mask doesn't go on until the experiment starts, fortunately. Because if that had been the case, then I would have never made it out alive.

Alie: *[laughs]* Just the idea of you just lurking behind a tree and you're in a full thing just spying on a mating pair is the best kind of creepy I can possibly imagine. It's like the creepiest thing I can think of, it's so good.

Aside: So no, she was not wearing a mask during this research. I'm sorry. I got excited at the visual. But to finish the story, she was following and watching breeding pairs building nests and...

Kaeli: I had multiple experiences where I would be following them around, watching them carry sticks to their nesting tree and I'd be like, "Yes I found it! Look, I watched them deposit all these sticks there." Then I would leave and come back and I'd be like, "Huh. That pile hasn't changed at all," and I would go hide and I'd watch them. And I realized they were actually nesting in a totally different tree.

Alie: *[gasp!]*

Kaeli: I 100% think that they were doing it on purpose, that they saw me watching them and were like, “Da da da, my nest is over heeeerrreee!” So, that is one reason. But there was actually a really brilliantly designed study looking at ravens that more scientifically showed that they are thinking, that they are imagining, competitors that they can’t see, which is so incredible. But yes, to return to the masks, I did... I should look at my phone. I bet I did one of my experiments like a block from where we are right now.

Alie: Really?

Kaeli: Oh yeah, I did it all over downtown Seattle, which was... hard. *[laughter]* It was an adventure because I was working 15 hour days. I was getting into downtown Seattle at like 5 in the morning, with my scary mask, and I saw a lot of stuff.

Alie: Wait, like at 5 in the morning in a mask... how many people were so scared of you?

Kaeli: It depended. So, most people at 5 in the morning are not scared of a person in a scary mask, is my experience. Most of the people who are out at 5 see somebody in a mask and they’re just kinda like, “Meh, whatever.” It’s the 3 o’clock people who get really scared of the mask person.

Alie: Did you have a sandwich board or anything the was like?

Kaeli: So we did. It took a couple of trials before I was like, “Oh, we are never gonna get through this unless people know.” And even then, we were doing an experiment at Magnuson Park which is this really lovely, big park in Seattle. There’s a big play area for kids and we were out in the parking lot, right? It’s not like we’re being inconspicuous. I mean how can you be? And we had our taxidermied hawk and our crow. I’m standing there, I’ve got a clipboard and a camera and my volunteer is helping, Joel Williams, who was my volunteer for my first couple of years and then became my full-time taxidermist, actually. He is a very tall man. He’s about 6’ 7” and he really likes black and camo. Which, you know, personal style. No problem, but that combo in a scary mask is not great. I had woman come over and she was like, *[yelling angrily]* “You are scaring the crap out of my grandkids!” I look over at the kids and they just have totally blank, neutral faces. So I’m like, “Okay!” So, I explain, “I’m sorry we’re doing this research on crows. I’m happy to talk to them about science.” And she’s like, “I think you’re lying. I’m calling the police.”

Alie: NO!

Kaeli: Yes! *[laughs]* I was like, “*[deep breath]* Okay! That’s an elaborate lie but you do you, lady.”

Alie: Did you take the mask off during this exchange, or did you keep it on?

Kaeli: So, I was never the mask wearer. I always had a volunteer do that, fortunately. So she was talking to me, the unmasked person. But there was a time an officer drove up to one of my volunteers in the mask and made her take it off because there had just been a bank robbery.

Alie: Oh no!

Kaeli: Like the day before. A masked bank robbery! So, we had lots of adventures like that. It's one of those things where these stories can often be, because they panned out and it was never a problem, can be funny to tell. But, there's this flinch of pain when I do so, because I recognize how incredibly privileged I am that the stories always ended up being fine, and the police were like, "We believe you. Have a good day!" I have to recognize that there are so many people that could not have done this work safely, in terms of their interactions with the police and with the general community. Because another part of what I was doing with this nest searching is walking around neighborhoods with binoculars looking into people's yards. So, I had to deal with the police, or just with the general public, a lot. And, you know, most of the time people were like, "Oh, crows? Oh, I have to tell you this story about this crow..." And it ended up being wonderful. But there's a certain percentage of the population that is not ever gonna be cool with you just loitering in front of their house in any capacity, but *especially* with binoculars.

Alie: But you're like, "I'm a white lady just here with some binoculars." Everyone is like, "Cool have fun."

Kaeli: Yeah, and that sucks. It was good that we were able to do the research, but the broader cultural implications of that sucks. Because this research is freaking cool and every kind of person should be able to do this research safely.

Aside: Ahh! I love her!

Alie: And, now what is your background when it comes to STEM? I saw you tweet something yesterday, that got like 5000 retweets already, a little bit about your background and your lead up to getting your PhD, that maybe this wasn't a career that you would have expected or that people would have expected of you.

Kaeli: Yeah so, I mentioned earlier when I was a kid, that I could just stare at bugs all day and I did. Teachers would be like, "Kaeli, we need to learn about division right now." I was like "Division?! That's a street in downtown Spokane! La la la la la." [laughs] I had a really hard time in school. When I was in grade school, the culminating moment was we had an art project in third grade. We had those little pinnacle flags, you know the triangle flags. And, I had the wide end on the right hand side and the narrow end on the left hand side. To me, it made so much sense that the first letter of your name should start at the wide end, and then it should go as it gets smaller. And so, I wrote my whole name backwards on it! It just made so much sense to me that that's how you would do it. My teachers were like, "Yeah, we can't deal with this." We had a very intense parent teacher meeting, where they were like, "We're gonna hold Kaeli back because she cannot read and she's dyslexic." And I was like, "No, I don't wanna do that." So, I switched to a school that had a program for kids who were behind, basically, who had all kinds of different learning disabilities. Then I worked up until basically 8th grade. I was failing classes regularly. I was medicated for a little while and I hated it! So, I told my parents, "I have to get off this medication. I will figure out how to make this work." For a couple years I didn't. I was unmedicated and I was failing my classes.

Alie: Was it like an ADHD kinda?

Kaeli: Ritalin, yeah. I went to child therapists and learning therapists and it was really hard and I cried. I can remember coming home from school regularly feeling like every day was just the worst day ever because there was a lot of shame coming from my... I mean, I had close friends, but there was a lot of shame from other kids. Because you're going to the class with the kids who are behind. Little kids are just not always nice about that. I just, I didn't understand why this was so hard. You know, I was looking around and it was so easy for so many of my peers and I just could not understand these words in front of me, or how I was supposed to just sit in a classroom for 5 hours and not just think about bugs and wolves and stuff.

Then, right before 8th grade we moved from Spokane to Seattle, and I switched schools again. The level that my new school was at was essentially a year behind where the school I had been at was. So, I kind of got to repeat the same grade, actually, without being held back. And something in that 8th grade year just sort of started to click. I had figured out tools for developing really good time management. Then after that things started to settle into place and school became a little bit easier for me. And now, I still... you can see it in my tweets. I'm a terrible speller. I make mistakes all the time.

Alie: I've never noticed. I'm always like how do you do it?! You're getting your PhD, your tweets are fire, you've got this super comprehensive blog, you're getting published in papers. I'm like what kind of time management does this woman have?! It's astounding!

Kaeli: That is one skill that I can say that I definitely have and have worked really, really hard to make work for myself. So, that was kind of the story but there were definitely so many moments in my life where I was like, "I am never going to succeed in school. I'm just different from these other children." Even when I applied to college I can remember going to certain colleges, to the admissions office, and having people be like, "Uh, don't waste your time. You are not going to get in here."

Alie: [*gasp!*] Oh my god!

Kaeli: And just being like, "Well..."

Alie: And now you're a doctor.

Kaeli: And now I'm a doctor and I got an NSF grant, so... screw you! [*laughs*] There are many ways to succeed. So, that's been just tremendously amazing and I'm so happy to share that story and remind people that it is painful, and it is a lot of work, but people figure it out. If you support them, if you give them tools, and try new things, it is possible for people to figure out how to make it work within this system that's really designed for a very particular type of learner.

Alie: Do you think that you developed a lot of empathy that made you more interested in animal behavior? Do you think empathy is part of what you do observing behavior?

Kaeli: That's a great question! I mean, maybe! I consider myself an incredibly empathetic person, but I think for me the draw to animals was that animals are so non-judgmental, right?

Alie: [*laughs*] That's a good point. They're like, "I'll fuck my dead brother!"

Kaeli: Yeah! They just do their thing and I can watch them from afar. They're beautiful and interesting. So, it was just such a nice escape from the classroom where I just felt like shit all the time. I think that was mainly what drew me to wildlife.

Alie: That's interesting. I'd never thought about it that way. I think that when you struggle yourself with filters, and how to assimilate, how to be the person people want you to be versus what you want to be, or what you struggle with. Yeah, you look at animals, and it's like, "I'll sit here in front of you. I'll make eye contact and then lick my asshole."
[laughter] You really get to see nature being so unfiltered and I think that is kind of a relief.

Kaeli: I think the patterns in animals can be a little bit easier to detect for some people than the patterns in human beings. Humans are so complicated!

Alie: How has working in corvid thanatology, changed maybe your relation to mortality or mourning practices? I'm hoping that you haven't had to interface with any human funerals but do you find yourself looking at it differently?

Kaeli: I know that's such a good question and I don't have a great answer for that, so far. No, I have gone through funerals, but for people for whom death was the conclusion of a very well lived, long life and not a surprise. I often wonder if the reason for that, that there hasn't been this translation between what I do as a scientist with death and then my perspective personally, is because unlike something like a primate or a cetacean like a whale, crows, in some ways, aren't incredibly human like. I wonder if I was studying primates if I would have more of that experience than I have had studying crows. And I'm not sure of the answer to that.

Alie: I feel like we need to have louder more raucous funerals, maybe. Let people scream if they want to! Someone over there is makin' out, getting to third base.

Kaeli: [laughs]

Alie: I don't know. It's mourning in all ways. Can we do a quick rapid fire round?

Kaeli: Yes! Tell me how this works.

Alie: These are questions from listeners.

Kaeli: Ooooooooooh!

Alie: So, these are from patrons from the Patreon page. Sarah Preston, first comment, just said: "How weird and amazing." No question.

Kaeli: Okay, agreed! [laughs]

Alie: Gary Jungling: "Yes, do crows wear black to their funerals? Oh, never mind. Answered my own question." Look at these jokers right off the bat! I didn't screen these ahead of time and I'm finding it delightful.

Dain Goding asked: "Have birds ever been observed using bones of other birds to build their nests?"

Kaeli: To my knowledge, there's no bird that builds a nest primarily out of bones. But, I do have an example of a raven where the nestling died and so the parents just shoved it into the side of the nest.

Alie: [*gasp!*]

Kaeli: On the exterior. Not even on the interior. It's not like they just scooted it out of the way. They took it out of the nest and just shoved it into the side of it! So, does that answer your question?

Alie: OH my god! Can you imagine? It's just like, "Well, the baby died. Well, we got a hole in the side of the house anyway." Wow, that's rough! They're like, "We didn't like it anyway."

Alie: Jasmine Wells wants to know: "Okay, only kind of about bird death but kinda not. Why is a group of crows called a murder? And do they ever murder each other?"

Kaeli: Great question! So FYI, a group of ravens is often called an unkindness. Both of those words are not scientific words. They are totally colloquial. You'll never hear me see a big group of crows and go, "Oh! A murder of crows!"

Alie: Oh, I didn't know that. I thought that was just what we called them. Like a parliament of owls.

Kaeli: Yeah no, those are totally just lay terms that you will never see in academic papers. I know, we're just such wet blankets.

Alie: But I mean, they seem very heavily weighted with people's own kind of subjective...

Kaeli: Exactly! The origin of those names is probably very closely tied to the relationship that developed between humans and crows during the Crusades and through the Medieval period where you had a lot of dead bodies. So, you had a lot of scavengers coming to take advantage of those dead bodies. And I think that, the feasting on human corpses by corvids for people of that time period is a big part of what sort of cemented this ominous, bad relationship.

And to boot, during the plague, because the smell was so overpowering the doctors would wear these really black bird-like masks, that had a beak and they would stuff flowers and other really strong smelling scents in there so they wouldn't pass out from the smell, and they looked like these walking ravens. I think that's really where it comes from, though interestingly, that's fairly unique to western cultures. In many parts of Asia, like Japan for example, these birds aren't signs of evil. They are the birds that hold the most wisdom, actually. So it's important to recognize that our perspective of the cultural implications of these birds, that is a cultural norm that's not the case globally. Now, to answer the question, do they ever murder each other? Totally.

Alie: [*gasp!*]

Kaeli: Particularly during the breeding season, if they can they will absolutely kill a territory intruder. Generally they try and get the bird on the ground and then they go for the wing joints and then they go for the head.

Alie: Oh my god!

Kaeli: Yeah, it's brutal. Part of that is because crows engage in extra pair copulation so that might be a way to sort of keep that from happening. But yeah, they are incredibly territorial. During the winter, it's really rare. These killings don't happen very frequently because most of the time the bird can get away. But yes, they will kill each other and it's very dramatic when it happens, because the bird that is the victim produces this really specific distress call, [*crow distress call*] and that is like a magnet for crows and they all come in. And they'll attack the bird that's being attacked or sometimes they'll attack the attacker. Another really common myth is that they will execute crows that failed at their job of watchman. There's no evidence of that.

Alie: Really? So wait, there are crows that are watchmen?

Kaeli: In a group feeding situation, you're always going to have some birds that are more sentinels. They're on more alert. Whenever you see groups of animals feeding in the same place, you'll see these kinds of patterns. A lot of people think, if a bird didn't do its job watching out for the group and a predator comes in, that they'll go and seek revenge on that bird. There's no evidence of that.

Alie: Oh my god. I'd never heard that. Maria Kumro wants to know: "What's been the strangest thing you learned so far in your study of this?" [*sexy music*]

Kaeli: That they have sex with dead crows. [*record scratch*]

Alie: Ding ding ding ding!

Kaeli: [*laughs*]

Alie: Charlotte Milling wants to know: "What is the evolutionary significance of corvid grieving behavior? If there isn't any, why would it become a thing?"

Kaeli: Great question. I think the answer to that is —and we've been able to demonstrate some aspects of this in our research— that it is a way for them to learn about and avoid danger. I think that's probably going to be the crux, the sort of seed of these behavior in most animals, including ourselves. If you're a social species and you are capable of the kind of rapid, complex learning that crows and primates and cetaceans and humans, are capable of, it makes sense that if you see a dead member of your species you'd be like, "Uh oh! What happened? How do I make sure this doesn't happen to me?" I really think that's kind of the foundation of this behavior. And in complement to that, you can include a lot of other motivations, too. I think that's probably the adaptive reason how it starts.

Alie: That makes sense. Jen Evans had a great question: "Do crows react differently to a natural death, old age, versus an unnatural death like an injury or poisoning?" If they're doing it to learn how not to have it happen, are they like, "How do I not get old and die?" Like does that ever enter their brains?

Kaeli: Great question and I don't know the answer to that. That certainly could have been another one of the aspects I looked at, in terms of my graduate studies. It wasn't, but that's one of the next steps I absolutely think that we should take in this line of questioning.

Alie: For reals. Someone else get on it! Pass the mask down! You're on deck! Go to the park with a clipboard!

Alie: Aki wants to know: "Do crows visit the burial place of other crows and do they bring offerings to pay their respects?" You mentioned that sometimes you see them toss sticks over there?

Kaeli: Mostly I don't know. My suspicion is that once they come in and do their thing, they're not coming back, because that's an energy investment. But it also could be dangerous. You could have scavengers lurking in that area. In fact, my research suggests that crows are more wary in the places, the immediate locations where they find dead crows, in the days that follow. My guess would be that they're not coming in to check those locations, even from afar, once they go through their thing.

Alie: What usually kills crows? Are we talking hawks? We talking BB's?

Kaeli: It depends on the age class. First year birds, baby crows, have about a 50% survivorship rate in places like Seattle. They're getting taken out by things like cars and cats and window strikes and just lots of stuff. Adult crows have a much higher survivorship, about 80%. They're getting killed by things like red-tail hawks and eagles and great horned owls.

Alie: And sometimes they'll kill it, eat part of it, and then like... peace out?

Kaeli: Yeah.

Alie: They're like, "I'm done here." That would confuse me because if I order a burrito, I'm finishing the burrito. Do you know what I mean?

Kaeli: Yeah, but you have to think like, especially in an urban environment, they're having to contend with a lot of disruptions. Sometimes it's just not worth it because someone is walking their dog, you gotta fly up and then your like, "Am I going to just wait here? I could just go catch another one." Or, "Maybe I'm full or whatever."

Alie: Little to-go boxes with your talons. "Can I get this wrapped up?"

Alie: Donatellia Austin wants to know: "Can you determine the cause of death just by looking or watching the decomposition of a bird?"

Kaeli: No, I can't. There are amazing avian pathologist folks that work for government agencies whose job it is, that is their whole job, is that they get bodies sent to them and they have to figure out the cause of death to try and figure out if somebody is doing something that requires legal action. But, I am not that person. I can look, and if feathers have been pulled out, it's clearly a raptor that did it. If the neck is broken and they're by a house, it's probably a window strike. If it's disease, that can be really hard to detect unless you do a necropsy where you actually cut the bird open.

Alie: So, just looking at it you can't be like, "It died of sadness"?

Kaeli: No. *[laughs]*

Alie: Just checking. Aerial wants to know: "Do crows ever engage in cannibalism?" That's a yes, right?

Kaeli: Uh, yes. It has been observed, but it's really, really rare. I think a lot of people would guess, if they didn't know much about crows aside from the fact that these are birds that they see eat a lot of garbage and roadkill, they might guess that they are totally eating dead crows all the time. It seems like a pretty rare behavior that's more biased towards inexperienced, younger birds.

Alie: Wow! So they're not living up to the murder name.

Kaeli: No.

Alie: Interesting. Jordan O wants to know: "Why do crows gather in such large numbers at certain times of the year? I'm talking thousands."

Kaeli: Yes, great question! Crows engage in what we call communal roosting, and this is not an uncommon behavior in birds.

Aside: During the mating season, the spring break, swipe right, let's get it on season, it's all couples-gate, all the time. But, when there's a chill in the air and the leaves drop, things change.

Kaeli: Come fall, crows start to all group together and sleep in central locations called roosts. In Seattle, for example, and I totally recommend you check this out, Alie if you have enough time, we have two big roosts. One of them is at the UW Bothell campus that houses about 15,000 birds every night.

Alie: [*gasp!*] What??

Kaeli: It's amazing! There's this incredible viewing area on top of one of the parking lots and it's just a river. A river of crows. It's incredible!

Aside: I looked up a video of this and it seems like CGI. It's this gorgeous tide in the dusky sky and it's beautiful and captivating and yes, a little scary. Kind of like watching a thunderstorm. Or an activated mob shuffling through the mall on Christmas Eve.

Kaeli: Ravens do this, too. It's probably driven by a couple of different things. The main one is predator aversion, right? Safety in numbers. But, it might also serve as an information exchange center. There isn't good evidence of that in crows, but there's *really* good evidence of that in ravens, actually, where they go to roost to tell other ravens about where food is. Which is, we can get into that, but it's not an altruistic thing. It's just an I need buddies in order to get this food. Maybe it's where they meet, socialize and meet potential mates, or whatever. The rivers of crows or the big numbers at certain times of years, is basically is during the non-breeding season crows all get together at night to sleep. Mostly for safety in numbers, but probably for other reasons, too.

Alie: Is it wrong to find that cute?

Kaeli: No, it's like a big sleepover!

Alie: I know! I think it's cute!!

Kaeli: I know! And it's powerful! One of the things I always like to tell people is, for folks living in urban areas, we watch things like *Planet Earth* and we see these amazing animal migrations, caribou and wildebeest or the monarch butterflies. And you're like, "Oh my gosh, that's so cool! I wanna see something like that in my life!" And you can! Because this is a totally natural behavior that crows do, where they group in these big numbers, and if you live in a place like Seattle, or many other metropolitan areas across the country, you can watch crows gather in the tens to hundreds of thousands depending on where you are. You can have that experience of this mass collection of wildlife. I just think that one of my favorite parts about crows is this opportunity that they present for people living in areas where they maybe otherwise don't feel a huge connection to the natural world or to natural spaces, to really engage with this animal that is native to that area and participates in so many cool behaviors, whether it's this mass roosting or just how smart they are, and this attentiveness that have to us. For the urbanite, they are just such an incredible opportunity for natural history and for wildlife viewing.

Alie: So, you can have an Attenborough moment in the middle of downtown. Just peep up some crows.

Kaeli: Yeah, it's awesome.

Alie: That's really inspiring because that is one of the birds we take for granted so much! So much. I'm gonna start staring at them.

Kaeli: They just belong in our urban spaces. They got their naturally, and shit they just do so many cool things. I mean they play.

Alie: Do they play?

Kaeli: Yes, they do! I have two great playing stories. So, all over Seattle we have these ornamental trees called sweet gum trees. They're the ones that make the sidewalks really sticky, and they have these circular, ping pong ball sized cones. They're really spiky, but if you get your foot on top of them and kind of roll your foot around you can smooch down all the spikes, and then they literally turn into a ping pong ball. I was out at Green Lake and I saw this crow and it had one. It would fly up into the air, it would drop it, then it would fly down and catch it right before it landed on the ground. And it did it five times, until I took my phone out to video tape it, then it was like, "Oh no, I'm done." *[laughs]*

Kaeli: I don't share these stories to create this hierarchy of these things we should appreciate, but these behaviors you're not going to see in chickadees. You're going to see other cool things in chickadees, but there's just something really special about crows. I encourage people who think of them as these icky, trash birds to watch them and appreciate that there's this really soft side. They mate for life and they can live to be 17 years old. They spend a lot of time reinforcing that bond and it's adorable.

Alie: Like how?!

Kaeli: Allopreening is the main way that birds do that, which means mutual grooming. You'll see one bird kind of tilt its head down and the other one will use its beak and it will groom the feathers on the neck and around the face, the area where the individual can't reach. You'll see that really typically. And they're watching you back!

Alie: That's so weird!

Kaeli: Again, chickadees are cool and do a lot of things....

Alie: That is nuts to think that a crow is like, "Oh, they're getting the mail again." Or they're like, "Oh, who's this guy coming over?" Isn't that nuts?!

Kaeli: It is!

Aside: Okay. Prepare for the sweetest story that you may not be able to handle. Okay, here we go.

Kaeli: On my blog, I used to talk a lot more about GO, which was one of my first data points. It was a bird that was one of my subjects for my first field experiment. And then after that experiment ended, because part of that experiment was feeding the birds, it had gotten used to me coming every day and putting food on the ground. I was never the scary person, so they sort of continued to like me after the study ends. It was a campus bird. It was right by my bus stop, actually. So after the experiment ended GO, who's name is derived from her bands which was Green over Orange, would always fly over to me and be like, "Hey whats up? Am I gonna get that peanut?" And it was amazing. My favorite part about it was when I was walking I could hear her bands jingle, so I could hear when she was following me around. It was just like, you feel like Snow White. It's just amazing to have this wild animal that's like, "I know you. Can I have some food?"

Alie: That is weird because you just think that they would be so indifferent to you, but it's like, "Oh, it's that lady."

Kaeli: Yeah, that's the difference between crows and a lot of birds, because you can train a lot of birds, like chickadees. I don't know why I picked them.

Alie: Chickadees are like, "What, what? Who me?"

Kaeli: In Stanley Park in Vancouver, for example, there used to be a place where there was a guy, and he would hand you a little bird seed, and you put it in your palm and chickadees would flock to you because they learn that it's okay to feed from people. But they're not discriminating among those people. Versus crows are like, "YOU. You feed me and I'm cool with you, and I will get close to YOU, but not to these other people." It's just incredible. The reason I said I used to talk a lot more about GO is she died last year.

Alie: Oh no! How do you know?!

Kaeli: Because she was banded, when somebody found her body, they reported her.

Alie: What happened?

Kaeli: We don't know. It was the middle of summer so her body had already decomposed beyond our ability to detect. But she was at least 16.

Alie: Whoa! She had a good life! So, she maybe died of old age?

Kaeli: Yeah, who knows.

Alie: I hope they gave her a good send off.

Kaeli: I hope so too! And, I collected her body.

Alie: You did?!

Kaeli: I did. So, I actually have her bands.

Alie: You do?! What did you do with them?

Kaeli: I have her bones and her bands in a little box. My husband, for a graduation present, actually commissioned a portrait of her. So, I think I'm gonna create like a shadow box with the picture. Madison Mayfield did the illustration. She's an amazing natural history illustrator based out of Australia. So, I'm going to have a little shadow box with her portrait and her bands because I loved this bird so much.

Alie: I have goosebumps!

Kaeli: She was this... I don't know how to describe it. It's just incredible.

Alie: Did you mourn when you found out?

Kaeli: Oh, I cried. Yeah, I have a whole blog post about saying goodbye to her, because I did this research because I love these birds. And because she was really close to my office, like I said, once the experiment was over and I could start to engage with her in a more casual way and an uncontrolled way. I would often go to her territory when I was just bent out of shape and stressed and she would fly over to me. And I would look at her and give her a peanut or whatever, and it would reinspire me to keep doing the work I was doing because I was like, "I love these birds! Everyone needs to love these birds!"

Alie: I wonder if this is gonna make anyone make a new crow friend at the bus stop.

Kaeli: You totally should! Don't overdo it with the food because you can sort of exceed the carrying capacity of your neighborhood and it can be consequential. But, I always have a couple of peanuts in my pocket. Then I see crow and I toss it a nut.

Alie: You're like, "Hey. Whats up?" Do you really always have peanuts in your pocket?

Kaeli: Yeah.

Alie: That's the best!

Kaeli: Yeah. It makes doing laundry kind of annoying for my husband sometimes. *[laughter]*

Alie: Oh my god. What is the shittiest thing about your job? I mean, imagine the passing of a beloved specimen, but what sucks about what you do?

Kaeli: The hardest thing about what I was doing was working in an environment where I really regularly had to deal with people.

Alie: *[laughs]*

Kaeli: That was often also the best part because that's where my science communication took off, was just having to explain constantly what I was doing. But, I'm at work when I'm there. It would be like people constantly coming up to you in whatever job your doing being like, "Hey what're you doing? Can you explain it to me?" And then the best would be like, "Oh, I'm with the University of Washington. I'm doing this field study on crows, but you know what, my birds, they're here, I gotta take data. I'll be done in 30 minutes and I'm happy to come back if you want to point out your house and I'll tell you more." And they'd be like, "Oh no, I totally get it, that's cool. So, the other day, I wanna ask..." And I'd just be like, "I feel like you're not listening to me." *[laughs]*

So, sometimes it would be a little bit frustrating. The day-to-day of making a field experiment work when you are combatting people walking their dogs, or people using leaf blowers. I HATE leaf blowers. They're the worst! They'd be like, "Oh, there's a dead crow here! Let me blow it away with my leaf blower!" I'm just like, "Nooo, god! I've been here for hours and you just ruined everything!!"

Alie: *[deep low Alie voice]* Ohhhh noooo!!!!

Kaeli: After years of this kind of urban field work, it just grates on you. Especially when I was working in downtown Seattle, just a number of times where I just genuinely felt unsafe. I'm a woman, there's lots of people around and yet sometimes you get that dude. And he's just staring, and he's too close. And you're like, "I just wanna be in the woods!"

Alie: I just wanna go in the safety of the woods where there's just wolves, badgers, and bears.

Kaeli: Exactly! Which is why I'm going to Denali next! I'm ready to have to worry about different kinds of predators. *[laughs]*

Alie: Now, I don't even know how you're going to answer this, but what is the best thing about you do? What do you love the most about crows, or about your work, or about the work that you did you get your PhD?

Kaeli: I feel like this whole podcast has been the answer to that question. *[laughter]* The thing I love most about crows is that they are so interesting and they are full of surprises. Which sometimes is the worst thing because sometimes I'd be like, "God dammit! Why can't you just make this work?! I am trying so hard!" The day-to-day of getting to watch an animal that's so interesting and dynamic is amazing. Getting to talk to people about this animal and watch them light up when they're like, "Can I tell you my crow story?" Or just that moment of people saying, "Wow, I had no idea. I guess crows are maybe cooler than I thought." At the end of the day, that shift is how we build empathy with the natural world. All of those things. That's why I do it. That's why I love it.

Alie: Where can people find your work? Because you tweet magnificently.

Kaeli: Thank you. So, CorvidResearch is the short answer to that question. @CorvidResearch on Twitter and on Instagram. CorvidResearch.blog.

Alie: Good job! Continuity of socials is so helpful. You really had good foresight on that. So, people can reach out, share with you cool pictures of birds, maybe ask you questions.

Kaeli: Yeah!

Alie: Thank you so, so much for being here. I'm never gonna look at a crow the same.

Kaeli: Good! That's my job. I did my job.

Alie: I think for Halloween I wanna be someone researching crows.

Kaeli: [*gasps!*] Yesssssss!!!

Alie: Can I do that? That's my costume. Thank you again!

Kaeli: Thank you so much.

So, find smart people, ask them stupid questions. Whether it's your huge science hero or if it's a lady feeding a peanut to a bird at a bus stop. Ha! That was a trick because in this case, they could be the same person!

Once again, find and follow Dr. Kaeli Swift. She's @CorvidResearch on [Instagram](#) and on [Twitter](#). The blog is [CorvidResearch.blog](#). Look up her videos on [Youtube](#), she's Kaeli Swift on there, and keep an eye out for more of her published work.

And the next time you see a crow, look up, maybe give it a little thumbs up because they deserve our respect. They are very complex animals. Also be nice, because they will fucking remember if you are a mean jabroni to them.

You can follow Ologies @Ologies on [Twitter](#) and on [Instagram](#). I'm [AlieWard](#) on [both](#). More links are up at [alieward.com/ologies](#). And [patreon.com/ologies](#) is where you go to become a patron, if you want to submit questions to the Ologists before I record. You can be a patron for as little as a dollar a month. 25 cents an episode! My heart is cheap! [OlogiesMerch.com](#) has cool shirts and hats and pins, so you can find other Ologites in the wild. Thank you Shannon Feltus and Bonnie Dutch for managing that. The [Ologies Facebook group](#) is full of the kind and the curious, and it is moderated by the kind and the curious Hannah Lipow and Erin Talbert. The theme song was written and performed by Nick Thorburn of the band Islands. All the audio stitching together is done by the lovely genius, Steven Ray Morris. Who also hosts *The Purrcast* about cats and *See Jurassic Right*, which is a podcast about dinosaurs.

Also, quickly a few things to mark in blood with a quill on your calendar this Halloween week. On November 2, a Netflix original series called *Brain Child* drops, and your ol' PodDad is in every episode, with a beehive and a space age silver suit explaining science things. It's for kids so there's zero bad words in it. You're welcome. Check that out November 2. Also my science show on CW, also kid friendly, is called *Did I Mention Invention*. That airs every Saturday.

On November 3 in L.A., the International Myeloma Foundation is doing a comedy celebration benefit for Multiple Myeloma research. You can see the Hematology episode where I talk to a researcher, Dr. Brian Durie about that. It happens to be a cancer my dad has. So, I'm quite invested in it. Performers at the comedy celebration include Cristela Alonzo, Jim Jefferies, Nathasha Leggero, Gabriel Iglesias, Sasheer Zamata from SNL. Tickets start at \$50 and [comedy.meyloma.org](#) is where to get them. I'll also be hosting a live stream on Facebook that night from the red carpet. Derp. So, you can watch that from home if you like.

November 6th, my fellow Americans, please vote in the midterms! As you learn next week, in an episode all about the apocalypse, for real, it does matter. Also its my birthday that day, so please don't make me cry on my birthday. Okay.

And at the end of each episode I do tell you a secret for those who stick it out past the credits. This secret just happened, like 10 minutes ago. I'm wearing a hoody I wear all the time. It's very cozy. I just reached in the pocket, and there was a dried, wizened, tiny lemon in the pocket. It's almost ossified. I have no idea how long its been there. I don't know when this got in my pocket. My estimate is at least one month. How has this tiny, dead lemon not fallen out of the pocket before? How have I not realized this? It is the horseplay of a ghost. Okay, that's it. Berbye.

Transcribed by: Lindsey Dreese, Fairbanks, Alaska

Some links which might be of use:

[Mind of the Raven](#) by Bernd Heinrich

[What IS a corvid tho?](#)

[Dr. Swift's video of ...a death orgy?](#)

[Dr. John Marluff's mask work](#)

[Many many berbs on the Bothel campus](#)

[On Go's death](#)

[Plague doctors: very creepy](#)

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