

Condorology with Jonathan C. Hall

Ologies Podcast

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Oh heeey, it's that tiny dog that the passenger next to you brought on the plane, and you follow them on Instagram but don't know how to bring it up casually, Alie Ward, back with another episode of *Ologies*. But not just any episode, we're *creeeeeeaking* the door open, and stepping a foot into the chill of *SpOoOoktoberrrr*. That's right, kiddos! Last year we had wall-to-wall creepy, Halloween-y episodes in October, like Osteology about bones, and Spidroinology all about spiderwebs, and Cucurbitology all about pumpkins! And it was so creepy then! Then cut to us, standing wide eyed, holding 2020's beer. So, think of Spooktober this year as a respite from the inferno of chaos that is an election-year pandemic. Let's chill out by talking about flesh-eating birds.

But first, we thank. Thank you to every single Patron at [Patreon.com/Ologies](https://patreon.com/Ologies). I love you. You make the show possible. Thank you to everyone for buying *Ologies* shirts, or a winter hat, or fall blanket, or face masks – which we now have at OlogiesMerch.com. Thanks to everyone who's rating the podcast, and making sure you're subscribed, and telling friends, and family... enemies. And of course for those writing a review. I have been known to read every single one. I read them sometimes in a Deep South Hampton Inn, just to keep me going on tough nights. Such as this one this week, by jloo98, who says:

Beware! Do you want to become an avid birdwatcher? A taxidermist? An astronaut? If you said no to any of those things, you're wrong. If you said yes, beware. You will want to pursue a college degree in everything after listening to this podcast.

Jloo98, thank you so much. It's true. Okay, Condorology: it *is* a word, and Google confirmed it for me. Just ask the 2004 paper titled "Migratory Connectivity in Bicknell's Thrush: Locating Missing Populations with Hydrogen Isotopes." The word condor, by the way, it means 'bird of prey' and comes from an Incan word, *cuntur*. So, now you know that. But umm... there's no relation to that other word.

So, this Condorologist, I'm a fan of his on Twitter. He got his Bachelor's in Biology and his PhD in Ecology and is now an Assistant Professor in the Department of Geology and Geography at West Virginia University. He has been a researcher on projects involving the decline of vultures in India, and how the landscape affects the recovery of the famed, almost once extinct, California condors. So, let's dip our smooth, skin-covered skulls into the festering slop of carrion talk as we learn about vultures, and gut-eating, and ecology, and wing-spans, and live cams, and a comeback from the brink of peril, and we summon up all kinds of respect for one of the gothest birds in the game, with Condorologist Dr. Jonathan C. Hall.

Alie: [*excitedly*] ... like a condor scientist! I never even thought I'd ever get to talk to one. I'm so excited! [*whispers*] People are stoked.

Jonathan: Awesome!

Alie: You study geography, but also how geography impacts different species?

Jonathan: Right, so, I'm actually not a geographer by training. My PhD is in Ecology. I got a degree in Evolution, Ecology, and Organismal Biology. But my work is very spatial and oftentimes I think it's difficult for people to wrap their brains around what geography is. You say geography and people think, "Oh, maps and capitals!" But geography is so much

more. I recently heard a brilliant and famous geographer, Dr. Ruth Wilson Gilmore, explain geography as *[drumroll]* “why things happen, where they do.”

Aside: Once again: Geographers study why things happen, where they do.

Alie: Oooh, that’s beautiful. I’ve never heard that before. This is great because ‘geography’ not being an -ology is a hard one to sneak in. So, you’re helping me sneak in some geography as well. *[both laugh]* Covering two bases. Tell me a little bit about where you grew up, what kind of kid were you?

Jonathan: Yes. I was the nerdy Black kid, forever and always, since day one. I grew up in Columbia, Maryland, which I think at one point was voted *the* number one small city in the country. I grew up very privileged economically. My folks both worked in DC and in Prince George’s County. My dad’s in public health and my mother is a high school guidance counselor. Before that she was a high school biology teacher. I grew up as an only child, so I’m very well adjusted. *[clip from Friday the 13th: creepy music in the background, Betsy Palmer, “My only child.”]* *[both laugh]*

It was a very good environment because the neighborhood I was in... I had everything that I needed. I wasn’t worried about where food was going to come from, or whether or not there was issues in the home, or anything like that. I had a lot of time to just, kind of like, sit, and think, and wonder about things. And my mother being a high school biology teacher for most of her career, her work would kind of spill over into the home. She’d bring home extra specimens that she was working on for dissections. My dad grew up fishing and so he would take me fishing all the time. So, from a very early age I was just really curious about the natural world, curious about the creatures that were there.

One of my earliest memories growing up was sitting down every Sunday night and turning on PBS and watching *Nature*, and just being fascinated by all of the interesting animals that were out there. Growing up I wanted to always be associated with cool critters.

Aside: This next question is in regard to regurgitated fur and rodent bones. Starting off strong here. Charm school with DadWard. Owl barf.

Alie: Did your mom ever bring home any extra owl pellets?

Jonathan: Yes! *[“Jackpot!”]*

Alie: They’re the best! *[both laugh]*

Jonathan: Yes. They’re so amazing. Yeah. My mother was a running a summer science camp, or helping out with the summer science camp, and I got to go. It was really boring for a while because she was lecturing and I was like, I don’t know, eight. Then when the owl pellets came out and I was like, “Oh my goodness!” It was awesome.

Alie: I swear, it’s like a Kinder Surprise egg. It’s just something that’s like, “Who knows what it’s going to be until you put it together!?” *[both laugh]* Were you ever a bird nerd?

Jonathan: No. And it’s funny because I don’t yet consider myself a bird nerd. There’s a graduate student in my lab, Darren Gross, who actually works for the Ventana Wildlife Society. Actually, I have two graduate students who’ve worked in my lab who worked for the Ventana Wildlife Society. Darren *is* a bird nerd and I tease him all the time about being a bird nerd and identifying things. I’ve always liked the predatory animals. Raptors have always been something that’s really interesting to me.

Alie: Well, I think when it comes to condors too... *not* hard to identify.

Jonathan: Nope! [*both laugh*]

Alie: They are giant and numbered. That would be a condor. This is so exciting. Especially being in California, I don't know if I've ever seen a condor in the wild. I have friends who have, and they say it's like... like, time stops and this huge wingspan just *zwoosh*.

Aside: Okay, quick aside: how giant are these wingspans? We'll find out in a minute but it's about 1.75 Alie Wards. 20 pounds of inky mystery bird pummeling the air above you to take flight.

Alie: So, I've never seen one in the wild, but what was the first time you ever saw a California condor? And are they even called that?

Jonathan: Yes, they are. Most people just call them condors. If you're in South America, then there's a different condor there. It's bigger than the one we have here in North America. That's a good question. What was the first time I saw a condor? I'm trying to think.

It was at Bitter Creek, one of the wildlife refuges, a bit of a ways north of LA. We were driving up to the flight pen that the US Fish and Wildlife Service runs as part of their condor management program. I think the first condor I saw was one of the older birds that was sitting on top of the flight pen. What you described as time stopping, I was just like, "Whooooaa." As we pulled up, I think it took off, and that was another "Whaaat?" moment, when it spread its wings and took off.

I think it took me a little bit of time to get adjusted because I had been reading about them, and obviously when I was younger, reading about them. I had that *National Geographic Kids* and had an article on what the captive breeding program was all about, and a little puppet feeding the baby condors. It was like my childhood catching up with me in real life, which was really amazing.

Alie: What exactly is a condor? What separates them from maybe turkey vultures that we see...

Aside: How could I put this?

Alie: Why are they SO cool?! Biologically speaking.

Jonathan: Condors are this class of very large obligate scavengers, birds that only feed on carrion – dead things. There actually used to be more species of condors, or birds that would be classified as condors. In this part of the world when you're talking about a condor, you're talking about a bird that only feeds on dead animals, and essentially a big-ass bird; much, much larger than turkey vultures or other raptors. The California condor's wingspan can be up to 9 or 9.5 feet wide.

Alie: [*mind-blown*] Whaaat?! That's *crazyyyy*. Nine and a half feet?! What?!

Jonathan: Yeah. That's kind of the maximum, like seven, eight, nine is about where they're at, but yeah, there's some big ones. The Andean condors, 10-foot wingspan. Which is just bonkers. There were some species of condors that are now extinct that were even larger than that.

Aside: Okay, quick establishing scene here: Condors are super social birdies, and considered 'New World vultures', whose bodies are mostly black with large white triangles on the undersides of their wings, and they have this ruddy, orange-ish bald

head that's ensconced in a spikey black feather boa that *Schitt's Creek's* Moira Rose might envy. [*clip from Schitt's Creek: Moira, "Now I'm flattered beyond all reason..."*]

Anyway, condors. They're huge, like a baby dragon, or if Maleficent low-key ate rotting flesh and they're bigger than turkey vultures. Turkey vultures only have about 6-foot wingspans, but condors are smaller than the giant wandering albatross, who can have up to 12-foot wingspans. What about giant birds of the past? About a decade ago, scientists discovered fossil remains of an extinct seabird with a 17-foot wingspan, which is about as long as the average minivan. That will become more important later, but for now:

Alie: Why do you think they're so big? Is there something also geographically about the hills of California, and the updrafts, and the coast? Why are they so huge?

Jonathan: Condors evolved in spaces where there were very, very large mammals to feed on. So, in thinking about post-Pleistocene North America, in this part of the world, there were just a lot of big mammals, you know; sloth bears, and marsupial lions, and all these giant mammals that are no longer around. So, you have these giant mammals that are living and dying on the landscape, and the niche of cleaning up those carcasses gets filled by birds that can eat a lot, can grow really big, and the landscape allows them to cover a lot of distance.

If you're a larger bird, you can cover a longer distance. Also, if you're a larger bird, on the ground you can kind of fight off smaller scavenging birds. So, there's like a pecking order of those sorts of things. [*"Please leave."*] The environment that these birds evolved in was really conducive to them being really big. It gave them an advantage over turkey vultures and other scavenging birds.

Alie: Are there big enough animals still to support them?

Jonathan: Yes. A lot of that support comes from what the settler ecologies have introduced to this landscape through cattle farming. Cows or cattle are really big animals. So, condors feed a lot on cattle. But there's still animals like elk and mule deer in that part of the country. And then the birds that are on the coast feed on marine mammals.

Alie: Ohhh, god, I never even thought about condor or eating a whale carcass! [*mind-blown*] *Whaaat?!* Oh my gosh. Oh my gosh. Oh my gosh. I can't. Oh, the smells. I mean, okay...

Wait, wait, hold on one second. [*Jarrett in background "Does she need to go out?" Alie: "No, she went." Jarret: "She pooped?" Alie "Yes." Jarrett inaudible. Alie laughs*]

Alie: Thank god we edit because I just had to have a conversation about whether or not my tiny poodle pooped.

Jonathan: I think we should keep that in. I mean, I think that's relevant... [*both laughing*]

Aside: I mean, parenting during covid, am I right? JK. I have it so easy. I *do not* know how parents are doing it. I don't even have to teach her to read.

Alie: She keeps pushing the door open with her snoot. But, okay... So, condors are feeding on marine mammals. Seals, I guess, too?

Jonathan: Yup. Yup. Seals are a big part of the diet of coastal condors that occupy the coastal area. Yeah.

Alie: Oh my god. Okay. I have seen videos...

Aside: I had watched a video put out by West Virginia University, documenting Dr. Hall's travel to California for his field research in Maricopa California at the Bitter Creek National Wildlife Refuge, and it's set among these golden hills with oak trees and populated by giant frickin' birds. I had questions.

Alie: I've seen videos with you. I have seen videos of the refuge that you do some research at. Their beaks. What are we even talking about with these beaks?

Jonathan: A whole lot of pain.

Alie: Oh, have they ever nipped you?

Jonathan: Uh, I have not been nipped in a way that was ornery. I've been nipped in a playful way by a captive condor named Dolly who lives at the Los Angeles Zoo. I think as a chick she fell out of the nest and, like, really messed up her wing. It was broken beyond the repair that she would be able to fly. She's kind of an instructional condor, and very tame, has a good relationship with one of the keepers at the Los Angeles Zoo, Mike Wallace.

I just wanted to make sure they're recognizing the folks who work with condors on a daily basis and a weekly basis, because I've learned so much from them. And like, they are such badassess. I mean, these are the folks who are repelling down sheer cliff faces into a condor nest to, like, check on the chick, and having the parents land on their head and, like, bite their chest, and all this stuff. So a big shout out to Mike Wallace, Joseph Brandt, Molly, Steve Kirkland, Joseph Burnett, Darren Gross, Evan McWreath... oh my goodness. I know I'm leaving people out.

Aside: Dr. Hall has so much gratitude for his colleagues, so feel free during this episode to take a large glug of whatever is a nearby beverage, or do a tiny imperceptible butt dance each time. He's so kind and that should be celebrated.

Alie: I love it. It's like an Oscar speech, like, "All the people out there making the work possible..."

Jonathan: Exactly, they're all really interesting, awesome, caring, loving, wonderful, brilliant people. They are what makes my work possible. They're what makes these birds so interesting. They're the ones setting up condor cams and all this stuff. I've got to make sure that I thank them because they're just awesome humans.

Alie: Can you look at condor cams? Is that just for researchers? Is that just for condorologists, or can that general populace?

Jonathan: The general populace can look up condor cams. I'll definitely send you a link.

Aside: That you can and that I did, and when I opened the window on Ventana Wildlife Society's page at VentanaWS.org to see a pair of giant bald-headed, hunched birds, bearing these red, numbered wing tags, tending to one fuzzy, tiny, little grey chick, I made a squawk of joy. I freaked out, and then I just started texting the link to people.

Jonathan: Every year, you know, condors are making babies in the wild, and some of these nests have cameras set up in them, so you can watch a condor develop over time. It's really cute. *[laughs]*

Alie: And how many now are in existence? *[clip from David Attenborough show: "Condors. Condors on the verge of extinction."]* How threatened did they get?

Jonathan: They're still critically endangered. There are about 520 condors in existence, which is a big improvement from the, you know, less than 30 that were around in the mid-'80s.

Alie: Wow. Oof.

Jonathan: Yeah, so it's a big conservation success story. And so just over half of those just over 500 birds are living outside of human captivity, so they're out there in the world and there's a couple of different population centers for the birds. There's two populations in central California. The Big Sur population, which is on the coast, and then a little bit more inland is the Pinnacles National Park population. And then there's the southern California population, which is the one that I've been working with, about a hundred birds. And then there's another a hundred or so, I think, out in the Grand Canyon, Arizona-Utah area, and there is a population of about 40 in Baja, Mexico.

Alie: I didn't even realize that we had them in southern California.

Jonathan: Oh yeah. I think one of the awesome things about being the scientist being a researcher is getting to travel, and meeting new people, and more importantly, eating all the foods of the area. [*Alie laughs*] So, every time I come out to LA, I'm just like, "Okay, where are we going?"

Aside: On the topic of research, let's back up a little bit and get some of Jonathan's history, which I derailed earlier by asking about owl vomit.

Jonathan: Let's see... I started out from PBS at home to wanting to be a veterinarian, went to Morehouse College. Some say it's the best historically Black college in the world. I tend to agree, but you know, you might have others who might disagree. They're wrong, that's cool.

Alie: [*laughs*]

Jonathan: Shout out to Morehouse. [*clip of Morehouse College fight song*] So, I went to Morehouse as a biology major, and by that time I was not satisfied with wanting to be a veterinarian. I wanted to work with animals that were less conventional than dogs and cats. And then also not realizing that veterinarians work with all sorts of, you know, unconventional pets and things like that, so I had a lot of learning to do about what animals a veterinarian works with. But at the time I was like, "Oh yeah, I don't want to work with just dogs and cats." And so I wanted to become a snake venom biologist.

Alie: Oh!

Jonathan: I'd heard about this snake venom curator who, over the course of decades, injected himself with a diluted cocktail of snake venom to build up an immunity.

Aside: I think he's talking about Bill Haast, a Florida venom milker who headed up Miami's Serpentarium Laboratories [*clip from an old video "The Miami Serpentarium, founded 1948"*] and nearly died 20 times from venomous bites. Yet, he lived to the ripe age of 100, probably without much of health insurance or life insurance policy.

Jonathan: And I was like, "Oh, that's the coolest thing!" So this man, you know, after a period of time of taking a cocktail of snake venom was immune to snake venom. He'd been bitten by all of the venomous snakes that he kept and not gone to the hospital, just kinda like rode it out. And I was like, "Oh, I want to do that because that's superpower."

Alie: Oh yeah. [*laugh*]

Jonathan: So, you know, I thought that, "Okay, I'll get an ND PhD, run a snake venom research lab, and have all of these venomous snakes, and be a superhero," but also be a source of

antivenom, particularly for communities of Black and Brown people who are disproportionately subject to death by venomous snakes.

Oftentimes, people in rural communities, in the global South, they're alongside things like Russell's Vipers, and bushmasters, and cobras, mambas, and all sorts of things that will kill you dead. And they just don't have access, if they are bitten by one of these animals, to antivenom because it's really expensive to make and produce. And so, I wanted to do that, but I kept being drawn to the idea of being out in the field. I'd spent some time working in a lab during a summer research program and that really wasn't my cup of tea, so I wanted to be out in the field.

Aside: Jonathan spent some time working with parasitoid ants, performed termite necropsies, worked in fisheries, and began to really enjoy research on ecology. Settler ecology, he says, is much different than Indigenous ecologies, which are not destructive to plants and wildlife populations like settler ecology is.

He went on to study grasshopper agriculture in Oaxaca, and then had an opportunity through an advisor to look at the vultures in India who are actually an example of convergent evolution. They're not closely related to vultures that we might see in the Americas, but they evolved to have similar traits for eating corpses. And Jonathan has gotten to spend time in India studying the effects of La Niña weather on Indian vultures, as well as the positive effects that local Bishnoi people have had on forest conservation.

In the 1730s, he told me, 363 Bishnoi people sacrificed their lives in a massacre to save a species of tree. So, next time you're like, "Should I bring a canvas tote to the grocery store? Should I recycle this box?" Yes. Do it for the trees. Anyway, he ended up in the thick of condorology.

Jonathan: Shout out to Anil Chhangani, who is another mentor colleague who worked with me on my dissertation; a dear, dear, dear friend, miss him tremendously. The last time I was in India was in 2013, and I just want to shout him out because, again, you know, without him I wouldn't be where I am today.

Alie: And did you find that your career in ecology has kind of been, like, a relay race between these different mentors and different labs you've gotten to work with? And they each kind of influenced your path?

Jonathan: Definitely. Definitely.

Alie: The work that scientists do is never really just about one species. It's how it impacts the environment as a whole.

Jonathan: Yes.

Alie: Especially with Condors who are known to be so critically endangered, and to be this kind of comeback story, this champion. I imagined that there must be so many people who are excited to meet someone who's on Team Condor, like, "Thanks for helping the condors!"

Aside: Not only is it thrilling to meet a condorologist, but it's also a joy to, kind of, meet the birds themselves. Should you ever spot one, take note if you can of the color and the number on their wing tags. You can go to CondorSpotter.com, and you click on the color the tag, and then the number, and you get a link to a bio about the specific bird! And this gossip is juicy!

For example, one bird named Redwood Queen used to be called Slope Slug because she was such a homebody and she just didn't stray far from the place she was released. Slope Slug, though? Rude. And scientists misgendered her for years, thinking she was a boy until she did a mating dance and they were like, "Oh, sorry." Also rude. Now, I'm going to read the rest of her official bio verbatim because it's just too good:

As far as condor status goes, Redwood Queen was at the bottom of the dominance hierarchy when she was first released. She was mercilessly harassed by the rest of the flock and forced to wait until everyone else had fed before approaching a carcass. Many years later, she paired with #167, the most dominant male in the Big Sur flock at the time. Since then, she has reveled in her increased status as Redwood Queen. She laid her first egg with #167 in the cavity of a redwood tree: the first-ever documented case for a California Condor.

Dang! This is more enthralling than anything in *Game of Thrones* or *US Weekly*.

Alie: Okay, I have a question about condors as well. You know the tags they have on their wings? This is *so stupid* but... how exactly are those fastened?

Jonathan: They're fastened with a piercing in the wing. It's sort of the equivalent of getting your ear pierced.

Alie: Oh okay!

Jonathan: Yeah. So, what folks like Joseph, and Molly, and Joseph, and folks have to be careful of when they're feeling around for the wing of the condor is to not, you know, puncture, like, a vessel or a nerve that's running through the wing. They get really good at kind of feeling around, and then they kind of punch a hole through, and yeah, that's how they attach the wing tag. There's like a little screw on one end of it.

One of the things that happens when the birds are captured and we're monitoring their condition is to... sometimes, depending on how long the tag has been in there, they check the size of the hole because it widens over time. So maybe they'll change it, because if it gets too big, you know, the tag flops around in the wind and that causes more damage and widens the hole even more.

Alie: I always wondered about that. Okay, so obviously with carrion feeders, they have that bald head so that they just don't get [*vocalizes grossed-out "gwlsh"*] – we'll just use something onomatopoeitic, "*gluglsh*" – on their face, right?

Jonathan: Right.

Alie: So what other adaptations do they have for [*spookily*] eating dead flesh?

Jonathan: There's some really interesting work that had been done relatively recently looking at carrion eaters' microbiome, and it's some of the most intense microbiome environment. One thing is that their stomach acid is a next-level acidic, because they're eating all sorts of noxious stuff, but animals' microbiomes kind of extend from their gut to their skin. So their skin is really resistant to nasty microbes. They're just, like, biologically armored against a lot of the noxious stuff that they're encountering.

Alie: That makes a lot of sense that they would need some sort of first line of defense against, just... the nastiest amount of worms, and maggots, and funguses, and... [*makes a grossed-out, horrified noise*] What about their feet? What are their feet like?

Jonathan: I get this question a lot, especially when people see pictures of condors, and they're like, "My goodness! Those feet are intense!" And they are! I mean, they look intimidating. They look like a dinosaur's foot, long bones, long digits, and they end in claws. But their feet are not really designed the same way that a predatory raptor's feet are, which are essentially like killing fingers. Those things, the crushing and gripping power that, let's say, a golden eagle has, is very, very scary.

But a condor foot is very mild in comparison, and really what they need them for is balance, and standing, and things like that. They don't really need to grip their prey, because their prey is dead. It's not moving so they just need to be able to stand. And so the claws on their feet are not all that sharp because they don't need to be, and their feet don't really grip the same way that an eagle's foot would. Which I'm very thankful for, because I've been scratched by condor feet. They kind of kick around a little bit. It's not anything serious, it doesn't break the skin, but it is intimidating the first time you get scratched by a condor foot.

Alie: Yeah, because just think of how gross that wound would be! Is there enough Neosporin to kill whatever is in a vulture's toenail??

Jonathan: *[laughs]* It's not what you want. I actually have a colleague - shout out to Todd Katzner and the Katzner Lab, who is the person who actually got me connected with condors. He and I had done research at different times in the same part of India, in Rajasthan, India, on vultures and their ecology in that part of the world. So Todd Katzner and his partner Erin band birds, and do all sorts of research, and work with raptors. They were rehabilitating a turkey vulture and Todd took a bite from a turkey vulture. ["Ow, ow, ow, ow, ow."] It was one of the most disgusting things *[laughs]* I have ever seen in my life.

Alie: *[totally grossed out and verbally wincing]* Oooh god! What did it look like?

Jonathan: It was like curry mayonnaise *[squishy splat]* just kind of oozing out, like... *[both are thoroughly grossed out at this point, Jonathan is chuckling and Alie is almost retching]* So, you definitely want to make sure that whenever... if you ever take a bite from a carrion-eating organism that you wash that immediately. I think that Todd had to get antibiotics because it's just nasty stuff.

Alie: Like a hand transplant. Just like, "Sew my head on a different body. I'm out!"

Jonathan: Yep. "Just cut it off. I'm done." *[laughs]*

Alie: What other kinds of bites or scratches have you heard about?

Jonathan: I did hear, and this is just hearsay, maybe this is just something that people told me when I first got there, like a condor myth, of somebody who had been partially degloved by a condor. We don't normally wear gloves when we're holding condors. People often seen photos and are like, "Are you insane?"

Alie: Same question, yes.

Jonathan: The thing is that a glove that would be thick enough to protect you from a condor bite doesn't give you the sort of dexterity and the ability to feel and control the condor as well as you could with your bare hand, because when you're muzzling the bird you kind of have to make a circle with your thumb and either ring finger or middle finger to keep the beak closed, but depending on the size of your hand you could be pressing in on the condor's eye, so you need to hold the bird delicately but firmly, and not press on their eyes or their nares, (their nostrils). All of that sensitive equipment on the bird is very

close to its main ripping instrument, so putting a glove on would hamper your ability to keep that bird safe even though *you'd* be much safer.

So partially degloved without wearing gloves means that your skin comes partially off. I have not verified this story, and I kind of don't want to, because it's really good when you tell graduate students and undergraduate students who come out with you to *really be careful*. [*says it ominously*] *Degloved*.

Alie: That's all you need to know. What kind of eyes actually do they have? Do they need good eyesight to see a big dead whale?

Jonathan: They do. It's really awesome to look at the different life strategies that birds have and specializations that carrion-eating birds have. So if you look at a picture of a turkey vulture they have these huge nares, these huge nasal openings. When you compare that to a condor or a black vulture whose nares and nasal openings are much smaller, it turns out that turkey vultures primarily use olfaction to locate carrion. They have good eyesight, but their specialty is sniffing out the dead thing, whereas black vultures and turkey vultures do have very good senses of smells but their eyesight is what they're using to primarily locate things.

Their eyes are kind of scary because they're red and they're piercing. They look at you with intent. They look at you with intelligence, and they're very, very smart birds. They're intimidating, but they're really beautiful eyes.

Aside: How are the condors doing? Let's check in. Are they doing okay? Are they staying hydrated? Are they doomscrolling? Am I projecting?

Jonathan: The recovery and the captive breeding program has been an incredible success. [*"Yusssssssss!"*] It's kind of like the next stage of condor conversation; can these magnificent birds exist in an anthropogenic landscape? A landscape whose ecologies, as I have mentioned before, have been completely transformed. The modes of being and the ways that condors have evolved to be on the landscape are not as congruous to highways, and plastic, and chemicals, and far, far, fewer species than they're used to seeing, and cities, and all of these things.

The next stage and what my work is focused on now is trying to understand the ways in which condors are moving across the landscape. Particularly for the work that we're doing in my lab is what condors are doing, where they're doing it on the ground, where they are feeding, because the primary threat to California condors' persistence in the landscape is lead poisoning.

This is where things might get a little interesting in terms of folks who might have an opinion on this. They're picking up lead from spent ammunition. [*child saying, "Bang! Bang!"*] So we're talking about guns in America, which is [*sarcastically*] always a really welcoming conversation. And I say this as somebody who is learning to hunt, but I use non-lead ammunition. California recently enacted legislation where now you cannot purchase lead ammunition for hunting in the state.

Part of the reason why is because of the research that was done on condors and found that these birds, when they're feeding on a gut pile of an animal that has been shot by a hunter... condors eat very fast when they're on the ground. They're big birds, it's difficult for them to take off, and they're awkward on the ground, much more awkward on the ground than on the air. So they have to gobble down their food really quickly before some other predator might come around and make a meal out of them or just kill

them to get them off the carcass, so they eat really quickly. They're just gulping down hunks of meat and in the meat that's left are lead fragments. These birds have a pretty high blood-lead concentration in terms of their load on the landscape. A lot of mortality on condors has been from lead poisoning.

Aside: So Jonathan says that one of reasons lead is used as ammunition is because it's cheap, it's heavy, and it fragments on impact. It leaves a bit of a snowstorm, he says, of lead in flesh, especially in the guts of an animal, which are usually discarded in the field by hunters. I did a little more reading on this and it takes only a few fragments the size of a couple of grains of sand to potentially kill a condor, which, as a person who has absent-mindedly eaten the stickers on more fruit than I care to admit, is pretty easy to do.

Alie: Will they come and start to gobble down an animal that's just been hunted before the hunter can get to it?

Jonathan: No. Well, it depends on how long it takes the hunter to get to it and where the animal is. If you're out hunting and you shoot a mule deer or something like that, the condors usually won't get there... like, if you had to walk like two hours to get to your quarry, you wouldn't be getting there when the condors are already starting to feed. One of the interesting things about condors is that they're very cautious, so oftentimes they will find a carcass, and if they can, they'll roost nearby and just watch, sometimes for hours, maybe even for days, just to make sure that nothing else is coming by, because they don't want to become a snack. If you're a hunter, you're not in danger of losing any meat to a condor.

Alie: Will a hunter shoot something and then, kind of, lose the animal if it runs? You can tell I've never been hunting. "Do they... run away and die?" Just, no idea.

Jonathan: Definitely, yeah. *[laughs]* Shooting and making contact with an animal is definitely no guarantee that you're actually going to have meat in the freezer. You lose them, or sometimes you might shoot ones and it falls and gets into a spot that you just can't get to.

Alie: I never even thought about that. I mean, just imagine going to get a burrito, and then the burrito takes off and you just can't get to it.

Jonathan: *[laughs]* "I just paid for this burrito but it's running away!"

Alie: Welp, a condor's gonna eat it.

Aside: There's a movement in ecologically-conscious hunters and wildlife conservationists to use copper bullets instead, and they don't fragment like lead does, and they're more expensive. As you can imagine, there's some resistance, shall we say, to this. But Jonathan himself, who's new to hunting, says he doesn't shoot with lead for ecological reasons. Apart from that issue, there are other environmental factors affecting our favorite dead flesh-feeders.

These birds that are feeding on marine mammals that hang around these runoff areas of cities and all this chemical downwash that is happening. Then you get the biological amplification of chemicals as you move through the food web. You've got a large population of smaller organisms and they get more and more concentrated as you move through the food web into these top predators, right? So you can have a low contaminate load for an anchovy but by the time a sea lion is eating another fish that's

fed on the anchovy, those toxins become concentrated. And so condors are picking up all sorts of nasty stuff from the marine animals that they eat that are living in these environments where human beings are dumping chemicals into the watershed.

Aside: So these are a few reasons why the condor population was so low it was nearly extinct. But, it's steadily rebuilding.

We're going to hear more about that in a second, but first a quick break for some sponsors of this show who make it possible for us to toss some cash at a cause of Jonathan's choosing, which is BlackInAppalachia.org, which is:

... working to highlight the history of African-Americans in the development of our region and its culture. Through research, local narratives, public engagement and exhibition, this project aims to raise the visibility and contributions of the Black communities of the Mountain South.

So you can visit BlackInAppalachia.org to donate or to find out more, and you can also listen to their podcast which appropriately is titled *Black in Appalachia*. That donation was made possible this week by the following sponsors who you may now hear about:

[Ad Break]

Okay, your condor queries.

Alie: Can I ask you lightning round Patreon questions?

Jonathan: Yes!

Alie: Oh, people are excited! Okay. I thought this was a great question, Ethan Bottone – I think it's Italian. I'm not sure – first-time question-asker says: I've heard that vultures will projectile vomit as a form of defense. Do condors do this as well?

Jonathan: [disappointed] No. I mean, they will, but there are other birds like turkey vultures who are big fans of that defense strategy. [Alie shudders] Yeah, it's awful. But the worst birds... people who know me, especially my family, know that I have, like, a vendetta against cormorants.

Alie: [laughs] So specific!

Jonathan: So, when I was a graduate student, I worked at an outdoor classroom. Shout out to Michael Hoggarth, the mussel man. He works with freshwater mussels.

Aside: Maybe I've lived in Southern California too long, but when he said the 'mussel man' I definitely pictured a guy in a tank top drinking a whey protein shake. Anyway, Bivalve Guy:

Jonathan: One of his first field trips in the field zoology course is out on Ohio State's outdoor classroom Stone Lab on Lake Erie is to go to Green Island, which is an island in the Western part of Lake Erie, close to the Bass Islands. It's uninhabited by humans and has been so for a couple of years. It is a heron and cormorant rookery.

Alie: Oh, okay. So, your Hell world.

Jonathan: Yes. Yes. The ninth circle of Hell is being stranded on that island. Because the birds are nesting in the trees... We go to that island for second field trip. The first field trip is to a pond where there are leeches. The second field trip is "Barf Island." There are biting flies, and you have to row to the island, and as the TA I had to shuttle people back and forth. So, I was on the island getting torn up by black flies, and then you get onto this

island and there are nests above you. These birds are just vomiting fish on you for, like, three hours.

Alie: *[groans and laughs]* No!

Jonathan: I've never been hit, but a couple of students had been hit by rotting, half-digested fish. I hate it. I hate it. *["I haayyyte eeet!"]*

Alie: Oh, god. I understand now. I understand. *[grossed-out shudder]*

Jonathan: Yeah. Condors are okay as long as you keep their head controlled. You do that by pinning their head against their body because most of their power is in ripping, right? So, if you've already got their head kind of cocked back on their body, then they can't really do much more damage if you were to get your finger in that area. So, once you have them controlled and you're hugging them, they chill out. I did have a student whose first condor was a juvenile who had just fledged, and it peed on her the entire time she was holding it, for like 40 minutes. *[laughs]*

Alie: *[laughs]* It's just drinking a Mountain Dew as it's peeing, just rehydrating.

Jonathan: It was like a steady trickle, you know? *[laughs]* Yeah. So, condors are pretty chill when it comes to vultures and everything.

Alie: Oh, my god. Another great question, Jeffrey Bradshaw wants to know: Who eats condors when *they* die?

Jonathan: *[laughs]* That's a good question! I don't know of macrofauna that regularly feast on condors, aside from canids or maybe bears that might be able to snag one. Since the birds have been really closely monitored, they don't really run into trouble. They don't really run into predation that much. Like, who would scavenge a condor? I don't know of any examples of other condors going, "Oh, Jerry died. Let's go eat him."

Alie: That's the same thing as crying into ice cream as you're eating it. You know, "He was a great guy, man, so good." *[laughs]*

Jonathan: "Oh, Jerry. We loved you." *[laughs]* So yeah, I think the only thing that would want to eat a condor, given the fact that its microbiome is holding at bay a lot of nasty stuff, and once it dies, that microbiome is out of commission. I think that other scavengers that would be able to handle digesting a dead condor, it's probably not worth the effort to try to pick through all the feathers and everything like that. So, I think the microbes and the macroenvironments are the ones that end up doing most of the work.

Alie: Ah, so it's the little ones that just break free. Grace Lauren had two great questions. Grace says: Hi Dr. Hall. I understand that in California, condors used to have a much wider range prior to their population dwindling down. Do we think they'll ever reach a point where they can return to their past range? Also, what's with the tiny patch of fuzz-fuzz on their noggin?

Jonathan: *[laughs]* Yeah. So, the tiny patch of fuzz-fuzz on their noggin... I'll answer that question first. I imagine Grace is talking about the little fuzz that shows up in their nostrils, their nares. Oftentimes, you'll see that with younger birds. As their down is shedding and they're getting their adult feathers, it just gets caught in that area.

Aside: PS: These big-ass birds can live up to 60-70 years or maybe more, but another reason for the condors' vulnerability is that they raise small clutches of 1-2 eggs. Those babes can take 6-7 years to reach sexual maturity, and during that prolonged awkward

pubescence, their heads change from a dark mottled grey color to a sherbet orange or red color depending on if they're horny. And that's all you need to know about their heads! There's no more information.

Jonathan: Sometimes I've been asked... Sorry, I'm going to ask my own question and answer, but what does a condor head feel like? It feels like a ball sack. It feels like a scrotum. [*Alie bursts into exuberant laughter*] That's exactly what it feels like. For listeners who have felt a scrotum, you know exactly what that feels like, and you can immediately call that up. For those of you who have not felt a scrotum, then maybe...

Alie: Pet a condor.

Jonathan: Yeah! I mean, you know, if you touch a condor head, that's what a scrotum feels like. [*laughs*] You touch a scrotum, that's what a condor head feels like.

Alie: Oh my god, now we know. An answer where I never knew to ask the question. So what is with the tiny patch of fuzz-fuzz? Maybe that's condor-'scaping? Oh my god. [*laughs*] [*"Wrinkly! Gross!"*]

Jonathan: It's important for the listeners to know. So, it's very delicate, very stretchy, very warm, and kind of smelly. A lot of parallels.

Alie: Checks all the boxes. [*laughs*]

Jonathan: Yeah.

Alie: Oh my god. And then what about their range? What are we thinking?

Jonathan: I think this is a really good question. It gets to the crux of my work and trying to understand if it is even possible for condors to extend their range into Northern California, up the West Coast, into Alaska, down into Mexico, and even populations in Texas and the eastern part of the United States.

The short answer is I think that we're a long way off from that. And that has everything to do with the way that settler ecologies have to be reworked or dismantled for those birds to return because human beings living in this particular way have such a humongous footprint. They take up a lot of space and they do a lot of damage. That has to change in order for condors to return to their normal range. I think that goes for a lot of charismatic macrofauna that used to be ubiquitous in the landscape. Human beings, particularly ones that are practicing this particular type of ecology, need to change for sure.

Aside: And sidenote, because Dr. Hall is amazing, he went back to Patreon and answered so many questions, including describing the really strong acid in the condor's gastric systems as, "Like pissed off Wonder Woman fighting Nazis strong. Their bacteria gang is just stronger." This microbiome of the condors can break down even small amounts of lead so well that researchers estimate that up to 60% of the condor fatalities in the wild can be attributed to lead poisoning.

But things that contributed to their extinction in the wild: Around 1987 – before the captive breeding programs – were things like the use of DDT, which has been known to cause really fragile shells that break in the nesting process. These effects of DDT were still happening decades after it was banned in 1972 because it was stored in the blubber of sea mammals that the condors ate years later. Another risk? Not to bum you out, but unlike a turkey vulture, a condor's sense of smell isn't so great and sometimes they

mistake trash for rotting flesh, which would not be trash to them. So, helping out with a beach cleanup could be saving these fuzzy little flesh rippers. Oh, and speaking of diet...

Alie: In Kate Coldren's words: As California condors have a taste for carrion, do they have a preference for how long their nourishment has been dead? And if it's been dead too long, will they turn their beak up at it?

Jonathan: Ooh, that is a good question that I do not know the answer to. It would be really interesting to, like, lay out a relatively fresh carcass and then one that's a couple of weeks old. But I would imagine that carrion gets maybe even a little too funky for a condor. Like, "Hmmm, I don't know." *[laughs]*

Alie: Yeah. I wonder if it just becomes jerky. If they're like, "Oooh, it's kind of dried up." *["No, thank you!"]* Dr. Kaeli Swift, who is a corvid thanatologist...

Jonathan: I know her!

Alie: Yeah, she's amazing! She works with crow funerals.

Jonathan: Oh, that episode was amazing.

Alie: So, this is her. She says: I have so many questions, so I'm going to post all of them and let you pick. Do you consider gut piles left by hunters essential to the sustainment of condors? Or would there be enough prey without them?

Jonathan: That is another really good question that I don't think we have a clear answer to. I think the supply of food that comes from human activity has to be sustained to a certain level. What humans make available through hunting versus what other predators and 'dying of natural causes' is made available to condors. That's a good question about where they are feeding, and what exactly they're feeding on.

I would be worried if hunting activity didn't make some of the larger ungulates available on the landscape. That's because there's just not a lot of predators, particularly in California, that are going to feed on an elk, or a big horn sheep, or a mule deer. So, I think humans are an important part of condor ecology. How much food they're getting from ranchers? That's a good question.

Alie: Yeah. She has another question. She says: are you familiar with, or do you support, Pleistocene rewilding? Do you think that would significantly advance the conservation of condors? And she also says: Thanks for all you do to conserve these epic dinos.

Jonathan: Well, thanks to you, Doc. Oh boy, so how much time do you have? *[laughs]* Because this issue of rewilding, I have a lot of thoughts about this and Pleistocene rewilding and all this stuff.

Aside: Just a heads up: if Pleistocene rewilding sounds like a new beauty routine you don't know about or a synth-folk band you've never heard, I gotcha. The Pleistocene Era started over 2 million years ago and ended about 11,000 years ago and rewilding means reintroducing species that flourished before, essentially, colonization. For more on this, see the Bisonology episode about buffalo. Anyway, Jonathan has thoughts! Great ones.

Jonathan: European settlers are almost entirely responsible for the conservation crises that we are witnessing in what's now called North America, and in large part, of the world. The European expansion and colonization, you get this massive transformation of human life that exists amongst Indigenous people, but you also get this massive transformation of

these ecologies We never - we meaning researchers who are involved in this conversation - almost never acknowledge or talk about the restoration of keystone human cultures.

So, there's a PhD student in my lab who is researching buffalo restoration. Shout out to Meg Davenport. She's studying... Like, we're talking about buffalo restoration, but there are dozens of peoples who are intimately tied, ecologically, spiritually, and all of these ways in which humans interact, to a particular species. So, we talk about bringing the buffalo back, but it gets contentious because then you have to start talking about 'why are you bringing the buffalo back and the buffalo back for whom'? When you talk about buffalo restoration, you have to talk about restoration of Indigenous lands, restoration of Indigenous people. You have to talk about the really uncomfortable stuff that settler ecologies are really good at avoiding talking about.

So, I think rewilding has to contend with those two issues, right? Who's responsible, and are we talking about bringing back human cultures? Who is the 'we' and how is that being done? Otherwise, it's just another way of settlers controlling the landscape, tramping on Indigenous sovereignty, and not really taking an ecological approach to the situation. Because then you're talking about having to control more land and having to keep certain people out of the land to bring these species back. You're talking about needing authorities to maintain boundaries. That's really not something that's congruent with trying to restore these ecologies in which human created boundaries.

Alie: That's a good point. It's interesting that a lot of times we don't think about how broad and how wide the story of a condor is. It's not about just the birds, it's about our entire system of the way that we take land and use land, you know?

Jonathan: Exactly. Yeah. Some colleagues of mine are working on publishing a paper and looking at the daily travel distance of condors. Other folks had done this research too, but we've got some really awesome technology, which essentially amounts to strapping a GPS cell phone onto a bird onto a condor, and being able to get their location, their speed, and their altitude in real time. You can get data points every second, or every 10 seconds, or every hour, or half-hour, or 15 minutes. So, looking at the daily travel distances of condors... And these birds covering incredible distance, we trapped one bird that essentially traveled the equivalent length of the state of California, north to south, in three days.

Alie: That's faster than I can do it in a car!

Jonathan: Exactly. Exactly. They're just stupendously fast. When you talk about restoring these birds to the landscape, you're talking about a bird that has the capability of flying across the state border. Or, you know, it gets really interesting, and really complex, and really uncomfortable when we start talking about condor restoration on Indigenous land. The Yurok and the Karuk people have a reservation; they're currently based in northern California and working with the US Fish and Wildlife Service and the condor biologists to help manage a northern California population.

The Nez Perce tribe in what's now Idaho and that region are beginning that process of bringing condors back because these birds are really important culturally for them, but it gets to a contentious point. It was interesting, at one of the condor meetings, I asked a question in, sort of, the coffee hour to one of the folks who was organizing it. This question: "Who owns condors?"

It was a tough question. I meant it to be a tough question because I don't know the answer. What happens when condors that are managed by the US Fish and Wildlife Service or who are managed by the Peregrine Fund or condors from Mexico start crossing the border, as we hope they expand their range. Well, then we have to have all these difficult conversations about who has jurisdiction, who is responsible, who is going to look after these birds if they get into trouble? What kind of conditions... If you cross the border anywhere outside of California, you don't have lead ammunition legislation. A condor that flies from Los Angeles into Utah, or Arizona, or Nevada, or wherever gets into trouble, ingests some lead, and then comes back and is sick, who pays for that, for the bird that needs treatment? It's a lot.

Alie: Yeah. It's an issue even bigger than their wingspans.

Jonathan: *[laughs]* If you can imagine that!

Aside: So, Dr. Swift, great questions. If you would like to hear more about inky birds with great brains and Halloween vibes, definitely check out the Corvid Thanatology episode with Dr. Kaeli Swift, which is about crow funerals – crows have funerals! – and it aired around Halloween 2018, so definitely go back and listen if you haven't heard it. Oh! Oh, on the topic of their giant wings...

Jonathan: I know a number of folks who have condor wing tattoos, and they are really awesome.

Alie: Is it a full back tattoo? You need some real estate for that.

Jonathan: Yeah, you do. It's not to scale, otherwise you'd have to have like one wing from the bottom of your neck to like the back of your calf. *[laughs]* But yeah, shout-out to Nik Heynen, geographer at University of Georgia, and then shout-out to Joseph Brandt, who's worked with condors in southern California for most of his career. They both have condor wing tattoos, and so they're kind of smaller, on their arms. They're just, like, really awesome.

Alie: Aaah, I want to see a picture of it!

Aside: Of course, I will be finding these Instagrams and reposting the pictures if I find them. I mean, come on.

Alie: What is something about condors or your work that sucks? What suuuuuckss?

Jonathan: Oooh. Yeah. I've been thinking about this before, listening to your show, and I was... What sucks? Well, I will tell you the scariest I've ever been researching condors, which had nothing directly to do with condors. A couple of years ago, and that was a day when it was really cold and rainy, and we were not prepared for the weather, but what had happened a couple of days before was a *giant* mountain lion had wandered into the trap.

Alie: Oh, no! *[repeated slowed-down "Ohhhh noooo!"]*

Jonathan: You bait the birds, and you have a cow carcass that's there, usually like a stillborn calf.

Aside: Dr. Hall had taken a few students with him: Evan and Vince. It was Vince's first time doing fieldwork, and it was cold and rainy, and a day or two before, the condor bait had lured a mountain lion to the trap. Dr. Hall saw a photo and...

Jonathan: It was, like, the most muscley mountain lion I had ever seen in my life. Ugh. It was really bad. So, this is before the flight pen had their big... what I call their 'Jurassic Park fence' around it to keep the predators out. We show up a couple of days later, and this

mountain lion is like... We don't know... It's no longer directly in the vicinity, but a mountain lion could be, like, just over the next hill. There's elk, there's plenty to eat in that area.

So, we're in the barn, and the field house is about 300 yards away. Vincent didn't have – all he brought was short sleeves and short pants. It's 58 degrees, 56 degrees and raining sideways. Even in the barn, Vincent was really cold, and he was like, "Dr. Hall, I'm really cold, can I go back to the field house and get a jacket?" I was like, [*trepidatious*] "Yes...." But nobody could go with him because we were all busy. I hesitated, and he's like, shivering. So it's like, "Oh no, Vince is going to get hypothermia!" But I don't want anybody walking around here by themselves with a giant mountain lion! That was the *longest* 30 minutes of my life, waiting for Vince to come back. He was tired, and I think he went to the bathroom and maybe just sort of hung out, because this was his first time in the field and maybe he's like, "I don't want to do this."

Alie: He's googling other jobs.

Jonathan: [*laughs*] Vincent took half an hour to come back, and I'm like, "Oh my god, I bring out this undergrad student..." – I think he was a sophomore at the time – "...and he gets eaten by a mountain lion." And Vincent's Black, okay, and so, we're the only two Black people out there. So of course I'm like, "Okay, this is like a horror movie and of course one of us is going to get eaten first, right?"

Alie: Nooooo!

Jonathan: You know, how would it look? [*laughing*] But he eventually makes his way back in one of the field jackets, and I was just really glad to see Vince. Shout out to Vincent if you're out there. Hopefully you haven't been eaten by a mountain lion.

Alie: Seriously! Oh my god. And hopefully he's got a jacket, or a light windbreaker if necessary.

What about your favorite thing about your work?

Jonathan: I would say my favorite thing about my work is working with students. Working with young folks, and trying to do the same thing that the mentors that I mentioned, the Tom Waites, the Dwayne Jacksons [*phonetic*], the Anil Chhanganis, the Todd Katzners have done for me, and just given us an opportunity to explore the world, explore our interests, build skills, and gain confidence. It's the best part of my job.

Particularly when I get to work with students of color, which is not often, and something that I really need to do a lot better job of connecting with other, particularly Black folks, in this realm, which is why I'm just so impressed and so thankful and so in awe of people like Corina Newsome and Dr. Esther, who is somebody you should definitely talk to. She does incredible work in creating space. And so many other people. One of the things I was thinking as I was listening to the Black in STEM episode, and I wanted to say to everybody who was on that: If you are looking for post-docs, holla atcha boy!

But also, I just look forward to connecting with folks because obviously there's a lot of work to do in the realm of racial diversity within these fields, and working with students of backgrounds that are not represented is just so enriching. We have a lot to contribute and there's a lot about our experience as Black people and as other people of color that we bring to bear. These fields are incredibly white. There's nothing sort of inherently wrong with white people doing this work, but looking at the lack of racial diversity,

there's a lack of perspectives and ways of approaching problems and questions that we definitely need to have in order to make things like re-wilding not problematic, and not replicate the same sorts of marginalized environments that exist. Shout out to all of the people of color, Black folks especially, in these fields and doing what you do, you're an inspiration, and the reason why I continue to do what I do.

Alie: Do you have any words to people who are Black in STEM who are just coming up, that you wish you knew? Any advice to them?

Jonathan: Oooh. Ummm... Goodness. That's a whole other episode. I think... One of the things that I've struggled with throughout my career is wondering whether or not I was crazy. Or wondering whether or not I was insane. For the interests that I had, for the ways that I approached questions, for the approaches that I was taking, the things that I was interested in, and like once I got into the fields, right?

As I've progressed in my career, I've had to kind of create a space, sort of an epistemology or an approach to questions that is not really there. I think that I would say to folks, particularly Black folks in this field, is that the way that you are passionate about approaching problems, and the way that you are thinking about ways to solve problems, don't let anybody take that perspective away from you, or try to dampen that perspective.

It can happen actively, but it can also just happen by the fact that there's a tremendous pressure within these fields to value knowledge in a particular way, and it's problematic because of its lack of diversity of perspectives.

I would also say to white folks in this field, and just sort of white folks in general, that it's really important that those who are seeking to be accomplices... I like the term 'accomplices' better than 'allies' because allies can be kind of like cheerleading from the sidelines but they're not actually in the thick of it. You can advocate from the sidelines but not actually risk anything, and there's a certain safety in that. I think what folks need is accomplices, people who are willing to put themselves at risk, in equal measure as they can, being in their privileged identities, that people who are marginalized do.

I would say that being an accomplice, or being an ally, there's a tremendous learning that has to happen. Don't ignore, and don't push aside the fact that there's just so much about the way in which race functions in our everyday lives that we have to learn before we can be good actors in dismantling it. Being a good advocate, being a good accomplice, really starts with that learning, and it's intense. But it's necessary.

Alie: That's all such great advice. I think that so many people who maybe don't have mentors like you, that's a really amazing statement. You're almost acting as a mentor to a lot of people that you'll never meet, which is really great.

Jonathan: Ugh! My eyes are starting to sweat, Alie! *[laughs]*

Alie: It's true! Just the more voices... The more voices that people hear, the more you can see yourself doing something. Yeah, we're definitely not going to dismantle a system that was built by white colonizers by just having people who are descended from white colonizers... That's really eye-opening, and really wonderful.

Jonathan: Yeah. And thank you for creating this space. This is really important. I think that what you have done and what you are doing is just an incredible hub for people to understand these sorts of things.

Aside: Jonathan also said that one thing he wished he would have learned earlier that would have saved a lot of energy, would have been to not debate and engage with people who think racial injustice or privilege doesn't exist.

Jonathan: It would be a lot easier to deal with if I got paid for the labor of racial justice that I'm doing... That's one thing for administrators who are firm in this idea of legitimacy: it's time to get creative to compensate people of color for doing this work. We're talking like straight cash, homie. Like, for real. That would go a long way. And so deans, and presidents, and department chairs, and all these folks, we're talking real, meaningful compensation in direct correlation to the ways in which a lot of people say, "Oh we value your input, and this is so amazing, this is so helpful, oh thank you, thank you, thank you." There's an epic freestyle by Black Thought from *The Roots*. I don't know if you've seen it.

Alie: No, no.

Jonathan: It is seriously one of the most amazing literary feats I've ever seen a human being do. He freestyles for 10 minutes. It's bonkers. He's by far one of my favorite hip-hop artists, so Black Thought, if you're listening, it'd be awesome to connect. But if not, just know I'm a huge fan. He's a brilliant human being. In it, one of the lines is:

[clip from Black Thought's freestyle]

I'ma say 300K ain't even in the ballpark

I charge more just for awkward small talk

I'm not saying 300K for awkward small talk, but people in positions of power who value our work as Black people, who recognize what we're doing and how we are making change in ways that other people who are there cannot do: Just pay us what we're worth, you know?

Aside: And just a side note, I love that he raised this point because I've seen a lot of folks online mention that this work is understandably exhausting, especially on top of all the grief, and the fear, and the anger, in the midst of a pandemic, and trying to handle workloads on top of being asked to explain how to dismantle systemic racism of which they are the victim.

Just a heads up, for the last six months or so, *Ologies* has been paying honorariums to guests who take on this work and educate us, and I want to thank Patreon for helping make that possible. If you're out there, no matter who you are, and you're asked to do free labor to educate others based on your lived experience of systemic oppression, ask for honorariums certainly. Say, "I'd love to consider it, depending upon my availability, what's the honorarium for this?" And then decide after you think about it. Just saying. Ol' Dad Ward and Dr. Jonathan Hall know you're worth it.

Alie: Thank you so much for letting me ask you so many stupid questions of all kinds.

Jonathan: Yeah! This has been amazing. This has been really awesome.

So, ask the smart people the goofy and sometimes not-so-goofy questions, and thank them for learnin' ya something new. I hope you are enjoying the crisp autumn mornings, and the leaves rustling, and the smell of a distant fireplace, and the knowledge that a condor would absolutely find you delicious. Cut bangs, text your crush, we're all gonna die.

You can follow Dr. Jonathan Hall, who I am sure you're already a very big fan of, on Twitter and Instagram. His handles are [@OutThereJCH](#) on [both](#) and there will be links to that in the show notes alongside a link to [his website](#) and more.

We are @Ologies on [Twitter](#) and [Instagram](#). I'm [@AlieWard](#) on [both](#), so do say hello there. More links for this entire episode will be up at [AlieWard.com/Ologies/Condorology](#).

If you would like t-shirts, or mugs, or warm hats, or blankets, or any of these things, you can go to [OlogiesMerch.com](#). Tons of stuff is up there. Thank you, Shannon Feltus and Boni Dutch; they host the podcast *You Are That*, which is hilarious, so do find that.

Thank you, Erin Talbert; she admin's the Ologies Podcast [Facebook group](#). Thank you to Emily White and her team of transcribers, who are awesome and are getting transcripts up available to our deaf and hard-of-hearing Ologites, and anyone who would like a free transcript. Those are up at [AlieWard.com/Ologies-Extras](#).

Thank you all the folks at [Patreon.com/Ologies](#) for making all these perks possible. Thank you to Gremmie, who is walking through the room and who will not be edited out. [*Gremmie scratching around*] Nothing's perfect. She's digging around the bed. Thank you to Caleb Patton, who bleeps those episodes, making them kid friendly, those are up at [AlieWard.com/Ologies-Extras](#).

Thank you to Noel Dilworth, who schedules the ologists and helps me stay on top of my own schedule. Thank you to editors Jarrett Sleeper and of course Steven Ray Morris, who are some of the biggest, baddest birds in the biz. I usually have notes and a list of who I thank at the end of this, and I don't today, and I'm just loosey-goosey. Nick Thorburn wrote the music and performed it.

And if you listen to the very, very end of the episode, you know I tell you a secret. This week's secret is I did one of those foot peels, where you put your foot in an acid bath and then, like, four days later your skin's supposed to fall off, and it's been day four and so far nothing's happening. I'm worried that my feet are so calloused and nasty that it's just no match for it. I might have to use some condor stomach juices next.

Anyway, remember to vote, because honestly, November 3rd is the scariest thing about October.

But either way, we'll be back next week with another Spooook-tober episode. Oh, it's so good!

Okay. Berbye.

Transcribed by:

Emily Hillard

Yawei Cheng

Victoria Desjardins – observing Indigenous Peoples' Day on the traditional territories of the Blackfoot Confederacy, the Tsuut'ina, Îyâxe Nakoda Nations, the Métis Nation (Region 3), and all those who make their homes in the Treaty 7 region of Southern Alberta.

Isabel Burns

Lauren Fenton

Some links you may enjoy:

[Dr. Jonathan C. Hall's website](#)

Follow him at [Twitter.com/outtherejch](#) and [Instagram.com/outtherejch](#)

A donation went to: [www.blackinappalachia.org](#)

First use of the word "Condorology": [Migratory Connectivity In Bicknell's Thrush: Locating Missing Populations With Hydrogen Isotopes](#)

What if you see a condor with a tag? Look it up on [CondorSpotter.com](#)

Condor Cams! [On YouTube](#)

Condor Cam on [Ventana Wildlife Society site](#)

[Giant extinct seabirds! Minivan wingspan!](#)

[How to spot a condor!](#)

[Big bird wingspans!](#)

[LA Zoo Condor Program](#)

[DDT and condors](#)

[Bald headed vultures](#)

GOSSIP: [Condor 190 .. the Redwood Queen](#)

[Old World Vultures](#)

[Bill Haast, Snake Handler](#)

[Video of Dr. Hall in the field!](#)

Moira moments from "[Schitt's Creek](#)"

[More on the Bishnoi people: Sacrificing themselves for the trees](#)

For comments and inquiries on this or other transcripts, please contact OlogiteEmily@gmail.com