

Very Special Episode: BlackAFinSTEM with various Ologists

Ologies Podcast

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Oh Heeey, it's that coconut cream pie with the pastry crust that's pretty good but would've been better with a graham cracker crust, buy anyway, Alie Ward, back with the MOST special episode of *Ologies*, maybe ever. Literally, maybe my favorite ever. So let's get to it, ASAP. First off, thank you to everyone who has been rating, and subscribing, and who leaves reviews. You know I read them all, and I pick out a fresh one. Thank you 'Lwhgnjshshuu'. I promise you that I'm going to get more sleep - next week.

Okay, if you listened to last week's episode, Pelicanology with Juita Martinez, you likely have pelicans on the brain, saggy sacks and all, and hopefully you celebrated last week's Black Birders Week, the inaugural one. It ran from May 31st through June 5th, and it was launched a reaction to some recent, really distressing events. And zoologist and wildlife enthusiast Corina Newsome is one of the cofounders of Black Birders Week, and she announced it to her ever-growing Twitter audience of over 60,000 people last week. [*clip of Corina Newsome speaking:*]

For far too long, Black people in the United States have been shown that outdoor exploration activities such as birding are not for us - whether it be because of the way the media chooses to present who is the outdoorsy type, or the racism experienced by Black people when we do explore the outdoors, as we saw recently in Central Park. We've decided to change that narrative. A group of Black birders, explorers, and scientists got together to start the first ever Black Birders Week. Help us to show the world, especially the next generation of young, Black birders and nature enthusiasts, that we exist, that they are welcome, and that this space belongs to them too.

This exploded! It resulted in news articles on, like, CNN, and trending hashtags for Black Birders Week, livestreams with thousands of people watching. And we celebrated with Pelicanology for it, and you should definitely follow @BlackAFinStem on Twitter. They gained 25,000 followers from all the press just last week. You can click on linktr.ee in their bio; you'll find all the livestreams and recaps. It's a really wonderful way to catch up after the fact, if you missed it.

Black Birders Week was so transformative, so huge, I did not want it to end. It shouldn't. Elevating Black scientists and listening to, and advocating for people, is not a TikTok trend. This is a lifelong battle to dismantle a system that is oppressing people. So, before Black Birders Week started, I reached out to some internet buddies who formed BlackAFinStem, and I asked them if I could make a compilation episode so we could all walk away having, like, 30 new science heroes. Listen to their weird facts, and passions, and work, and get them in your timelines. You can follow on social media, you can cheer on their successes, listen to their frustrations and experiences. If you're a person of color in STEM who needs icons and community, follow along and see them just owning what they do.

So, please enjoy the following very special episode with the most ologists *Ologies* has ever had! The most ologies in one *Ologies*, as you learn about everything from electric fish noses, to turtle butts, to how to bird, how to be an ally, how to be Black AF in STEM, advice for black scientists, and more. Get ready to root for, follow, and fawn over the assorted ologists who are Black AF in STEM.

Alexi Grousis: Hey, what's up, Alie. This is Alex, or Alexi G. Most people know me as [David AttenBruh](#). That is my Twitter handle online. But in real life out there, I've been working in the zoo field for the better part of six years now. Most of the organisms I'm close with are actually nocturnal mammals, so I spend a lot of time inside of a building that has this really cool reverse light cycle.

But I'm going to pause right there. [*record scratch*] I'm actually going to tell a little bit about my history in the field. Before I was a zookeeper, I was a zoo educator. In that job I would talk to thousands of people every single day. My goal in the job was to share conservation with anyone and everyone. I wanted people to walk away with some sort of positive interaction related to either an animal or a concept, and then I wanted them to be able to take that energy out into the world. Sometimes it worked, sometimes it didn't, but it's all a numbers game.

My personal goal, though, despite the professional one, was to simply be present. I wanted a black face to be on conservation. Maybe I wasn't out there like Bill Nye, but my goal was simply for people to see me and associate my face, my skin tone, with conservation. And maybe young Black kids would see me and know that they could do it too, because there really wasn't that much special about me, especially not at the time. So in the capacity as a zookeeper now, I still maintain that goal. I still want to be out there for those kids.

But, I'm not as much in the public eye as I was in the past, so I tend to hang out in this very dark building with a number of nocturnal mammals. One of my favorite animals in this building is the prehensile-tailed porcupine. This is a salt-and-pepper colored porcupine that lives in the trees and is found primarily in Central and South America. They're salt-and-pepper colored, and they have this really cool tail that acts essentially like a finger. But their most notable feature that people catch when they see them, is their really big, cute, squishy, button nose.

I could go on and tell you about these animals for hours, but I won't do that today. If you guys do want to learn more about them, follow me at [David AttenBruh](#) on Twitter. I hope you have a great night. Thanks for having me on, Alie. Take care.

Aside: Okay, really quick. I looked up this button nose, and it looks like a big, soft, velvet pencil eraser, on its face! I had a literal heart palpitation. It's so cute. I want to kiss it. That is Alexi G. I'm making a Twitter list of all these wonderful folks so you can just zip through and hit follow on all of them. It's going to be right in the show notes. Your timeline will improve by 1 million percent!

Onward to your new favorite math nerd and econ whiz, Anna, who also co-founded a non-profit, the Sadie Collective, which is the first American non-profit organization which aims to increase the representation of Black women in economics and related data fields. She rules!

Anna Gifty Opoku-Agyeman: Hi. My name is Anna Gifty Opoku-Agyeman. I am a graduate of the University of Maryland, Baltimore County, and I majored in mathematics and I minored in economics. I study economics! It's not an ology per se, but it's a really important discipline that makes important decisions about our world in a lot of different spaces. Economists are in government, and industry, and academia, and even in different places in the natural sciences. A lot of people inform budgets around scientific funding and that sort of thing.

In terms of where to follow me, I'm on Twitter [@ItsAfronomics](#) and Instagram [@AnnaGiftyO](#). Thanks!

Aside: Anna just finished a research fellowship at Harvard - no big deal - and an appointment at the Nation Bureau of Economic Research, AND came up with the idea of Black Birders Week.

I... am wearing clean pants today. That's about it.

Anna moderated a Black Birders Week Facebook panel, and she brings an energy to her public speaking and moderating that is, like, a true talent. So if you need someone to host something about math, or econ, or STEM, track down Anna.

Now, this next new friend, who you may already know of, is an amazing host, instant follow. You heard her in the intro, and I've been wanting to make it to Atlanta for ages, but I may have to settle on a remote interview once her field season is over. I cannot wait!

Corina Newsome: Hi! My name is Corina Newsome and I am a graduate biology student at Georgia Southern University, and I study avian ecology. I focus specifically on a species called the seaside sparrow. Now, one weird fact about the seaside sparrow is that they are really well-adapted to life in a salt marsh. They are so well adapted, in fact, that they can drink saltwater without ever getting sick.

One reason why I love what I do is because I get to look very, very closely at the natural world, more than I ever have in my life, and I get to share it with whoever will listen. It brings me such joy to share my fascination with the natural world with as many people as possible.

If you're interested in following me, you can find me on Twitter [@Hood_Naturalist](#), or Instagram [@Hood_Naturalist](#).

For those of you listening, one way that you can be an ally to Black people in STEM is by not silencing or asking us to censor our lived experiences, brushing it off as getting too political, because it's our reality, and it's one that intersects very deeply with our lived experiences as students and professionals in STEM.

Aside: So listen to experiences. Use what privilege you have to stand up to racism when you see it. Corina, aka Hood Naturalist, is amazing. Let's hear more about birdies.

Monique Pipkin: Hi, Alie and ologists. My name is Monique Pipkin, and I am a first year PhD student at Cornell University, and I study stress. [*"I'm listening!"*] Stressology. There's not a real word for that yet, and I'm not quite sure why.

I like to spend my time thinking about why some animals are better able to do well in stressful environments and others not able to do so, and also within the same species. So, if we're looking at two tree swallows and they're in a noisy environment, why is one able to do better in that environment than others? Is there some type of behavioral difference? Can one change how they're singing and be heard in the noise better than the other and avoid that negative side effect? Or maybe one bird is better able to calm itself down and doesn't have any of those other physiological or body responses to being stressed? Or maybe there's a personality difference and one type can just cope better than the other.

Aside: I feel seen, and embarrassed.

Monique: It's very exciting because I can look at a single animal at a point in time and ask all these questions about: Why is this thing happening to this individual right now? And are others able to do it? And how rare or common is that in a population?

It's super exciting because, basically, I get to see the resiliency of nature. All those animals are able to do this thing and persist despite it being really stressful and really hard. I see it as hopeful and inspiring.

Instead of a fun fact I'm going to share a quick, fun story. Back when I still studying how noisy environments would stress birds, and how birds would change the behavior in them, I was auditioning for a choir. And I would just tell people I studied bird songs to make it simple. But after I told all the judges that, they then all sang different bird songs at me and asked me to help them try to identify the birds they always hear in their life and have no idea what they are. And I did it. It was really fun. I also made the choir, which was an added bonus. Very exciting.

Anyway, if you're interested in following me, you can follow me [@MoniquePipkin](#) on Twitter. Thanks. Bye, guys.

Aside: If you ever run into Monique, ask her a favorite bird song and thank her for unraveling why some of us crumble under stress while others just keep whistling along in life. Okay, let's hear more about birds.

Amelia Demery: Hello. My name is Amelia Demery, and I am a PhD candidate at Cornell University. I study ornithology. Specifically, I look at the genetics of beak color plasticity in birds. One weird, fun fact about my work is that whereas most ornithologists are perceived as having these, like, romantic treks through nature and looking at birds, I am that weird, mad scientist student that actually doesn't get a lot of exposure to sunlight and does experiments on the birds.

But I love what I do because I'm discovering new things every day, I'm finding unique challenges, and most importantly, I get to share it with people who may not always understand why what I do is so interesting and why it can connect different aspects of our community.

People can follow me on Twitter [@ACDemery](#). A way that listeners can be allies to Black people in STEM is pretty straightforward; it's all about educating yourself and being self-aware about how we all have been part of the problem but we also can be part of the solution. And using the resources that are available, that extend beyond just 'your black friend' to look at all the different ways that the Black community has strived to educate our society on how to be effective allies, how to give back, how to show support in a very healthy way. I love this initiative. I am proud to be Black AF in Stem. Thank you.

Aside: So this means don't just pepper your Black friends, or acquaintances, or coworkers with texts and DMs, tossing white guilt on them. That doesn't help. There are a lot of really heavy emotions and a lot of trauma to process, and our Black friends do not need the extra labor of dabbing away our white tears. Rather, fellow white people, here's some recommended reading:

Ibram X. Kendi, in 2019, published the book [How to Be an Antiracist](#). That is next on my reading list.

Also, another great resource is an [article from the Smithsonian National Museum of African American History and Culture](#). Links to those will be up at [AlieWard.com/Ologies/BlackAFinStem](#).

Now, onward to another Ward!

Jeffrey Ward: Hello everyone. My name is Jeffrey Ward and I'm a birder studying ornithology. Birding is so therapeutic. All you really need is a pair of binoculars and, preferably, a green space. Birds are everywhere. It's really an easy way to get out into the fresh air, and be in touch with nature, and learn. I've learned so much about the other aspects of nature through birding, like what trees certain birds prefer, or what insects certain birds like to eat. All in all, birds are truly amazing. Everything from the colors, to the songs, it's just so easy to get lost in nature while out studying birds.

Let me not keep you guys here for too long. For more bird content, follow me on Twitter [@JeffreyMWard](#), or on Instagram [@JeffreyMWard](#).

Kassandra Ford: Hi everyone, my name is Kassandra Ford, and I'm a PhD candidate at the University of Louisiana at Lafayette. I study fish, which is a study called ichthyology. But more specifically, I look at electric fish. Something crazy interesting about these fish is their incredible diversity of head shape. There are fish with snouts that even look like elephant trunks. I love studying fish because there are so many questions that haven't been asked, much less answered. There is always something new to look at.

I'm on [Twitter](#) and [Instagram](#) [@KasstheFish](#). And I'd also like to add to our listeners that fantastic allies to people of color work hard to amplify those voices instead of only listening to their own. Thanks for having me.

Aside: Kassi, you get extra points for being the first person to email me your sound file. Just, Boom. Your promptness is an inspiration to me, personally. So, let's keep this fish school a'swimmin' along.

Alexus Roberts: Hey everyone. My name is Alexis Roberts. I'm a fourth-year PhD candidate at the University of California in Davis. I study macroevolution and functional morphology in fishes. And those are a lot of big words, but basically what that means is that I relate shape and form of a fish's body or parts of a fish's body to its functions, such as locomotion, or its movement, and also its feeding patterns.

I'm specifically interested in the anatomy of fish feeding structures, or fish mouths, and other morphological traits that they use to feed on different prey items. Specifically, I am interested in how those structures and those traits have evolved in some major ways over really large time periods. One trait that I'm particularly interested in is the pharyngeal jaw structure, and this is a second set of jaws that most fishes have and that they use to process pretty, similar to how we process food with our teeth. So, fish have an oral jaw system that they use to capture prey items, and then they use their pharyngeal jaws to process those prey items for further digestion. It is super, super cool, and I just love studying it.

One of the reasons that I love what I do is because there's always, always something new to discover or observe when you're studying the natural world. There are nearly 35,000 fish species living in really different habitats all over the Earth, so you can only imagine how much diversity there is in form and function in the fishes of the world.

To keep hearing more about my research and some nerdy fish facts, you can follow me on Twitter [@Alexuss Symone](#). Hope to see you there.

Aside: Two sets of jaws! Two sets! One to bite and one to chew! Who knew that? Alexis! That's who!

This next ologist, one Mr. Troutman, he's gotta study fish, right? C'mon!

Alex Troutman: Hey, y'all! I'm Alex Troutman. Yes, my name is Trout like the fish, and Man. I'm a wildlife worker. Currently, I am a grad student studying wetland ecology. When I'm not in school I'm a seasonal wildlife worker for several federal agencies. During my offseason, for my federal job, I am an Endangered Species Observer, or ESO, on dredging ships.

A dredging ship is a ship that goes out after hurricanes, and digs up sand, and throws it back on the beach, a term called 'beach nourishment'. Or they also can go out and deepen and widen shipping channels. My role as an ESO on those ships are to make sure, one, we're not coming into close proximity or contact with marine mammals like whales and manatees, and also I make sure that we're not digging up any sea turtles and sturgeon. I do that by checking the TEDs, or Turtle Exclusion Device, to make sure that the chains are all in order to exclude any turtles or sturgeons from being dug up with the sand.

Aside: We heard a little bit about this in Pelicanology with Juita, essentially putting land back and renewing habitat lost by climate change, and in this case, hurricanes. So when they're dredging up all that sand, there's Al Troutman, making sure that sturgeon, and sea turtles, and other endangered species are safe. What a dude! I wanna hang out, Troutman!

Alex: When I'm not working, I love being in the outdoors. I love fishing, hiking, camping, wildlife photography, and birding. Also, during my downtime I enjoy eating food, especially baking and making pizza. You can follow me [@N8ture_Al](#) on [Instagram](#) and [Twitter](#).

Aside: Get it? *NEighttture* Al?! Follow him on Instagram and Twitter if you want your feed to have more gorgeous wildlife photos and videos of baby surtles, aka sea turtles. And he also has an absolutely infectious smile. I love his posts so much. And his name is Troutman! Come on! The best.

Let's stay in Turtleville a minute, shall we?

Armand Cann: Hi. My name is Armand Cann. I'm a wildlife biologist, more specifically a herpetologist. That means I study mostly amphibians and reptiles. I recently graduated Loyola University Chicago, and recently defended my master's thesis this past April. That thesis was on Blanding's turtles, which is an endangered species internationally as well as at state level for many different states in the US. What I was looking at was a conservation program for the species called headstarting, where they would take these individuals, or at least the eggs, raise them indoors in captivity for one to two years of age, and then release them into the wild.

My graduate work focuses on the aftereffects. I was looking at blood physiology as well as spatial ecology because I wanted to see if those being raised in captivity have an effect, such a habituation effect, on how much space they're using or the responses to their physiology according to environmental differences.

A weird fact about my work... I can't really think of a weird fact about my work, but there is a weird fact about one of the species I've encountered, which is the painted turtle. This is another semi-aquatic turtle species. It lives in the United States and Canada. This species, when it gets to winter, a lot of times there's permanent ice, essentially, on top of the water where they're overwintering. [*"A little chilly out here."*]

The ice doesn't melt and they don't have any access to air to breathe through their mouth and nostrils. So, they actually have this unique adaptation of cloacal respiration. [*"Pardon??"*] Which is, essentially, them breathing through their butts; the cloaca being one opening for both your digestive system and reproductive system. I think that's pretty funny, cool, and interesting. I remember telling my class about that, and they definitely did not find it as humorous as most ecologists would, I think.

Aside: You know me. I loved it.

Armand: Why I love what I do: I love the fact that I get to learn about so many different taxa locally and globally. I love learning about the interconnectedness between all those things, including humans. A lot of times, ecology, I would equate to building a puzzle. With each study, no matter where it is, we're on a global ecosystem. It's all interconnected, and we just keep building and building upon that as our understanding increases. And I think being involved with that is really cool.

If you're interested in following me, you can give me a follow on my [Instagram](#) or [Twitter](#) @Devonian_One. Thank you all. I hope you all have a good day.

Aside: Turtles! Let's keep it up!

Sidney Woodruff: Howdy everyone! My name is Sidney Woodruff and I am a Black genderqueer PhD student at the University of California at Davis. I personally study herpetology and conservation ecology. For my research, that means native reptile and amphibian conservation, and researching ways to sustain those species in changing environments. My work is primarily done in Yosemite National Park with the National Park Service, and through that I hope to really bridge the gap between theoretical and applied science and management so that we can make the best decisions going forward.

My own work focuses on a California native turtle species called the western pond turtle. That is state protected and has been petitioned to be federally protected under the Endangered Species Act. Something pretty cool about the species but is also seen in some other turtles in the same family is that when the male turtles want to impress a female turtle for mating, the males will actually swim in front of the female and, kind of, like, twitter their front claws right onto her face, kind of like, "Look at my beautiful, healthy nails. Are you impressed?" If you're fortunate enough to see it in person, it's really cute. It always makes me think, like, we have these lame human gender norms that don't exist in the turtle world, which is exciting.

First and foremost, I want to say that I love what I do in science because it allows me to work in these "wild spaces." But I do have to remember that, you know, I'm not always welcome in these places because of the color of my skin. Many people, even in academics, will say that, "We don't need to talk about gender, and race, and politics in science or outdoor recreation." But as we saw with Christian Cooper in Central Park, that is not the case at all. So, I personally want to continue addressing and dismantling those barriers to

science so that everyone has the opportunity to do what I do and feel welcomed in whatever space they want to occupy.

Secondly, I also want to take the opportunity to bring wildlife knowledge to collective spaces and communicate with the public about the work that we're doing as managers on our shared public lands. We have to remember that we all own these public lands in the US, and your voice matters and can directly affect the decisions being made. So if you're not fortunate enough to grow up with family-owned land and safe places to recreate, our national parks and other public lands should be there for you to explore.

If you'd like to hear more about that or hear other random turtle mating facts, follow me on Twitter [@WoodruffSidney](#), or on Instagram [@SidneyWoodruff](#). Take care, everyone. And thank you, Alie, for providing this platform and making the space for us.

Aside: From turtles to other fascinating reptiles:

Karl Guyton II: Hi, my name is Karl Guyton II. I am a third-year master's student at Howard University. I study herpetology, ethology, and ecology. I primarily work with crocodilians but I'm doing my master's research on lizard behavior.

I have loved crocodilians since I was a little kid. When I was about five or six years old I got a book called *Amazing Animals of the World*, and it had a chapter on crocodilians and dinosaurs, and it was my favorite chapter. I used to read that chapter pretty much every night and I've loved crocodilians ever since. When I took a herpetology class in undergrad, I knew that was what I wanted to do for the rest of my life.

You can follow me on social media [@AfroSuchia](#) on [Twitter](#) and [Instagram](#). I post a lot about my research and my travel, mostly doing croc stuff, but also doing all kinds of other herp stuff and outreaches from when I worked at an aquarium, and all kinds of other stuff.

Aside: You like crocs? You're going to love Karl!

Karl: I think one of the best ways that people can be allies to Black people in STEM is creating a safe space for us in the field. Generally speaking, Black people in STEM are the only ones there or one of only a few people there. So, just making the space feel like they belong there is a great way to be an ally for Black people in STEM.

Thank you very much.

Aside: Lizards; let's keep at it with this next amazing herper!

Chelsea Connor: Hi, my name is Chelsea Connor. I am a herpetologist and artist, and I'm from the Commonwealth of Dominica in the Caribbean. I study anoles. I'm not sure there's an analogy for that. Maybe analogy? I don't know. We can find out.

Aside: I looked this up and all I found was analogies about lizards, but I think we can make 'analogy' a thing.

Chelsea: Right now I'm studying the dietary niche overlap in the native and invasive species of anole on my island. One really fun, weird, fact about my work is the part where you have to sometimes use the fecal sample out of the lizard. This does not harm them at all, they're fine, except maybe their pride and dignity when you squeeze the poop right out of 'em.

I love studying anoles because there's so much diversity and variation within species. They're beautiful lizards. There's such a wide color and pattern range, and there's so much to learn. If you think you know everything, there's still more questions that are unanswered. I love learning and I love sharing knowledge. The sharing knowledge part is why I started [#DidYouAnole](#). Every week I pic an anole. Sometimes I have someone who's studying that anole help me with the fact that I share with people, so more people are aware of these lizards.

You can follow me on Twitter and check out that hashtag [@ChelseaHerps](#), and you can also catch me on Instagram [@OuttoChelsea](#).

Just an addition here: If you'd like to be an ally to Black people in STEM, it is very, very important that you listen. Sometimes what's happening, what's wrong, is not always a glaring, obvious thing, a glaring statement. There are microaggressions, and if you look that up you'll get lots of examples, and those are just as harmful as straight-up racist statements. Listen, and remember to create spaces for the people who would not normally have the same opportunity that you do. That is also really vital.

Thank you so much.

Aside: So follow Chelsea, and enjoy [#DidYouAnole](#).

In case you haven't heard, by the way, of a microaggression, it is not something that your esthetician performs on your face. These are little comments sometimes disguised, or even well meaning, as compliments that, according to psychologists, communicate derogatory, or negative, or even hostile messages or assumptions about race to the receiver. And people of color deal with them all the time. If you hear something like this, Dr. Derald Wing Sue, a psychologist who studies racism, suggests a micro intervention. Essentially, if you hear someone doing this to someone else, let them know: Not Cool.

Also, if you'd like a better look at what Black academics face and a lot of examples of what a microaggression can look like, you can check out [#BlackInTheIvory](#), like being Black in the ivory tower. Or follow [@BlackInTheIvory](#), and it is a place for academics to share what they've gone through, and for non-Black folks to really learn about microaggressions, or sometimes mega-aggressions.

If you want to be an ally and you hear microaggressions, help stop them. If you have said things that you later realize, or are told, are microaggressions, understand how comments land, and pledge to do better. It really matters.

Let's move on from the indignities of pooping lizards to... kissing?

Kaylee Arnold: Hello. My name is Kaylee Arnold. I am a PhD student at the University of Georgia, and I am a disease ecologist. Disease ecology is, broadly, the study of how the environment influences the spread of diseases.

For my PhD work I study the gut bacteria, or microbiome, of kissing bugs that spread Chagas disease, to better understand how they transmit this disease. Chagas disease affects millions of people throughout the Americas, especially in Latin America, and I conduct my research in Panama.

One interesting fact is that, unlike mosquitos, kissing bugs spread the Chagas disease parasite through their feces. So, you first have to be pooped on by this little insect, and then their feces has to get into your bloodstream for you to contract Chagas. Another quick fact is that they get the name 'kissing bug' because they tend to bite humans and animals near their mouths and eyes.

Aside: Sorry, that was a really misdirect there. Kaylee continues:

Kaylee: In addition to disease ecology, I have led my department's K-12 science outreach program for the last several years. As one of the few Black scientists in my field, it's important for me to bring environmental science education to local Black families and other marginalized communities in my area.

In terms of what true allies can do to help out the Black STEM community, the easiest thing to do is to just listen to us. Ask us what we need, how you can help, put money down, don't just tweet, and most importantly, protect your Black colleagues, students, friends, strangers, etc., on all fronts. Just because you feel safe in a certain situation or area does not mean we do too.

You can find me on Twitter [@Black_Ecologist](#) and you can follow my outreach group, [@EcoReachUGA](#) on both [Twitter](#) and [Instagram](#).

Aside: Ooh, you know I love bug facts:

Fhallon Ware-Gilmore: Hi, my name is Fhallon Ware-Gilmore. I'm a PhD candidate in entomology at Penn State University, and my ology is medical entomology.

Medical entomology is the study of insects and arthropods that have public health importance, so that includes our ticks, our kissing bugs, our bedbugs, and most known, our mosquitos, which I study. Did you know that mosquito is Spanish for 'little fly'? The word reportedly originated in the early 16th century. In Africa, New Zealand, and Australia, mosquitos are often called 'mozzies'. On that note, you can follow me on Twitter [@MozzieFhal](#).

Aside: Follow [@MozzieFal](#) for more awesome and very mind-boggling medical ento facts. And hey, people of planet Earth's Northern Hemisphere, it's tick season, so you might want to go back and listen to the Disease Ecology and Acarology episodes from last spring. And – bonus! – both are with amazing women of color, now that I think about it. So, yes, check those crevices.

Okay, more bugs:

Tyler O. Jones: Hi, my name is Tyler, I'm a budding science communicator and honeybee nutritional ecologist. Did you know that when bees forage for pollen but don't actually pollinate it's called 'consumptive emasculation'?

You can follow me on Twitter [@Melliferocity](#). Bye!

Dakota Lane: Hi. My name is Dakota Lane, and I'm an environmental science major at Loyola University, Chicago. I'm interested in invertebrate ecology and marine ecology.

I don't have any current projects, but some of my past research has looked at the escape mechanics in crayfish, and the difference in neuron firing patterns. So, when crayfish –

which are essentially a small lobster, they're about 3 inches long – when they meet a potential predator, they'll flip their tails backwards and propel themselves backwards. [*"I'm outtie!"*] And I really wanted to see the difference in neuron firing patterns when they meet a predator and are trying to get away from something, that escape mechanic, versus when they are just swimming and not stimulated by anything.

I also looked at the potential of natural compounds influencing neuron firing. So, curare, which is a well-known neurotoxin interrupts the communication between nerve cells and muscle cells, and I was really interested in, not that communication, but how the actual neuron fired and the neuron-firing patterns when that neurotoxin was introduced.

I think what's most fulfilling about what I do, and what I enjoy most, is simply, learning. Whenever you're on any research project, you're always learning something new. And I love being able to share that with other people, especially kids because they get excited about everything, even the smallest details. It's that my discoveries can possibly help further life-saving research studies, or my studies can themselves be lifechanging, and that's what I do love about science, that science has the power to change lives. The simplest of curiosities, of really looking at the world in a different light and saying, "Huh? I wonder how that works," you can potentially save and change lives.

You can follow me on Twitter [@Delaneij](#). Thank you so much.

Aside: Science changes lives. All of ours, and yours too when it's your passion and you follow it.

Now, in asking for these sound clips, I wanted to give an immediate platform to all these people that I admire, and I told them that if anyone wanted to include something that they think allies should know or do, a lot of listeners would be really grateful for that. But, they definitely did not have to address that or do that labor.

Now, in editing, I realized, what I didn't do is ask what messages they would have for other folks who are Black in STEM. Now, that is me, with the best of intentions, still working from my place of privilege and asking them for their time and insight to inform white people how to act, not asking them for lessons to fellow Black scientists. So, let that be a lesson to all of us that being antiracist, and being an ally, no matter how well-intentioned, you're probably going to fall short sometimes.

Just in editing this yesterday, I smacked myself, literally, on the forehead. We all like science, and science often involves some humbling failures, and being antiracist is a process of learning and understanding, and we will *never* move forward if you don't take a risk by using your voice and your privilege. It's kind of like cooking. You've got one pan going, and then you realize that you burned another pan. But guess what? The more you cook, the better you're going to get at it. No reason to throw in the towel.

But, I really want to add that advice from people who are Black AF in STEM to others, and so BlackAFinSTEM did some really great Q&As over the last week, and I want to read you a few from their Twitter sessions.

Someone asked: Any advice on how to connect new birders with mentors?

Brianna Amingwa, who is a horse lover and a naturalist who goes by [@Ranger_Bri](#) on [Twitter](#) an [Instagram](#), said:

Depending on the age, with kids, expose them to people who bird already. Build community, teach them local birds, tap online to #BlackAFinSTEM community, tap into local networks.

Again, that was from @Ranger_Bri. And another question they got was: What advice do you have for younger Black students as they enter predominately white spaces?

J. Drew Lanham, a birder and wildlife ecologist whose handle is [@1BlackBirder](#) said:

Sometimes you're going to be the first. Don't shy away from that. You have to be comfortable in your own skin. You may face barriers from people who don't look like you, and some who do. Someone may try to take your Black card because you're doing something they don't think you should.

Finding a mentor is also something that's greatly encouraged, and being a mentor is too. Some other resources to hear more Black voices in STEM are podcasts, of course! [PhDivas](#), [DopeLabs](#), [Sip & Sci](#) all have black hosts. Thermophysiology guest [Dr. Shane Campbell-Staton's](#) podcast, [The Biology of Superheroes](#) is incredible!

There's also [On Word for Wildlife](#), which is hosted by another great Black Birders Week organizer Tykee James. Tyke is the Government Affairs Coordinator at the National Audubon Society. Nice! His podcast, [On Word for Wildlife](#) features political interviews and discussions on wildlife conservation. You can find [On Word for Wildlife](#) on Twitter [@OnWord4Wildlife](#), and Tykee is on Twitter [@Tykee_James](#).

Stay tuned. In a minute or so we will jump back into more stories from amazing scientists! But first, a few words from the sponsors of the show who make it possible each week for us to make a donation to the charity of the ologist's choosing. Usually we do a portion of the proceeds, but this week we're digging deeper! We're sending a flat \$5,000 from [Ologies](#) to BlackAFinSTEM as an honorarium for educating us all with this episode and as a thank you for the incredible work that they do year-round.

I'm looking forward to continuing to contribute as the year goes on to some more grant projects I'm working on hatching with some previous [Ologies](#) guests too, so stay tuned for that. This \$5,000 donation was also made possible by all the supporters at [Patreon.com/Ologies](#), who let me have a little wiggle room with budgets. And of course, that donation was also made possible by sponsors of the show who you may hear about now.

[Ad Break]

Okay, let's meet some more scientists who are Black AF in STEM.

Jasmine Childress: Hello, everyone. Thank you, Alie for allowing me to be a part of your amazing podcast. My name is Jasmine Childress. I am a PhD student in the Department of Ecology, Evolution, and Marine Biology at the University of California, Santa Barbara. It's a mouthful!

My work falls into the fields of parasitology, which is the study of parasites, ecology, and conservation biology. My dissertation has taken me to the Channel Islands National Park, which is located just off the coast of the Southern California bight. Currently, I am working with the once-endangered San Miguel island fox, and a newly found parasite that has negatively impacted the survival and reproduction of the fox population recently.

These parasites are known as acanthocephalins and are commonly referred to as thorny-headed worms. I think a cool fact about how they got their name is because individuals have an attachment organ that's completely covered in hooks, which is used to anchor into host tissue. [*“Uh, no thanks.”*]

The foxes, while they're no longer endangered, are still very vulnerable to extinction due to parasitic infections. So, I work in partnership with the USGS and biologists at the Channel Islands National Park to determine how infections are spread between foxes, and ultimately, to develop a new management plan where we can, hopefully, prevent the threat of extinction to these foxes once more.

I love doing what I do because I can take part in research with tangible end goals, like developing a species management plan, while enjoying outdoor fieldwork and indoor lab work. I also love introducing undergraduates and young people to the ecology of parasites. I find it very enjoyable to engage others about my parasite ecology projects because we all inherently have a, sort of, visceral initial reaction when we think about parasites.

Aside: Now, doctors call this very reaction to parasites the 'creepy crawly heck-nos'.

I frequently post on social media about my research, as well as the experiences of other Black people in nature and STEM fields. I think this is an awesome chance that I have to enhance this ability for those who look like me and shed light on some pretty awesome research at the same time.

If you're interested in following me for parasite photos, fieldwork fails, or learning more about people of color in STEM, you can reach me on [Twitter](#) and [Instagram](#) @JChildress.

And for those who are looking for ways to foster allyship, using your platforms to share photos, posts, and research of Black people in STEM is very helpful. Alie, I want to thank you today for sharing your platform with me. I'm very grateful for this space to geek out a little bit about my work and also shed light on mine and others' experiences in STEM. Thank you.

Aside: Thank *you*. There's nothing that I love more.

Speaking of communicating science, here's Ashley, aka The Wildlife Host.

Ashley Gary: Hey, I'm Ashley Gary and I'm a science communicator. I studied environmental science in grad school, and after taking a course in environmental communications, oh my gosh, I was hooked. Science communication is, basically, the art of taking the confusion out of science and making it accessible to others, which is essentially what Alie does with this podcast.

I believe that science belongs to everyone, so I try to make it open and welcoming for folks, especially people who are less familiar with it. The weirdest part about being a science communicator is, really, that I created this opportunity out of thin air. I just decided that I wanted to talk with people about wildlife, and I just started one day. I love sharing the wide range of diversity of life. People get so excited to see all the different species, and I love that energy. It's just amazing.

If you're interested, you can follow me on [Instagram](#) and [Twitter](#) @TheWildlifeHost. I share really amazing wildlife photos and facts from all around the world. Thank you, Alie, for

using your platform to amplify Black voices. And listeners, you can be an ally by supporting Black-led initiatives and supporting Black businesses. Thank you so much, everyone.

Joseph Saunders: Greetings. My name is Joseph Saunders. I am a professional wildlife photographer. I focus on the areas of herpetology and entomology. I have loved reptiles all my life. My love of insects and other invertebrates came quite a bit later. I'm especially obsessed with jumping spiders.

Not a weird fact, but I think an important fact about me is that I have been permanently disabled since birth. I'm a paraplegic and I use a wheelchair full time. I have yet to meet more than, maybe, two or three other people with an injury like mine who are also naturalists. This is a really good opportunity for BBC, Nat Geo, if you're listening: y'all don't have any representation for disabled people amongst your photographers.

You can find my content on Twitter. You can reach me [@JDMonroe210](#). I'm also on Instagram [@ReelsonWheels](#).

I think an important aspect for people who wish to be allies of Black, Indigenous, and POC in STEM is to be intolerant of discrimination entirely. Institute within your organizations a zero-tolerance policy. This would have to include, academics, your hobbyist groups that support the academics, and professional environments as well.

Aside: Joseph Saunders's photography is bananas! I gasped when I saw it. [*hard gasp of amazement*] So many gorgeous macro photos of jumping spiders, and bugs, and lizards, and frogs. It just takes your breath away.

As I record this, Joseph has 892 followers on Instagram. He *should* have, like, at least 100,000. If you are listening and on Instagram, follow [@ReelsonWheels](#). I will also link on my website. Again, Joseph Saunders. If he does not have 20,000 followers on Instagram by Monday, I'm striking and I'm never putting up another *Ologies* episode! So don't make me take a vacation out of spite, folks! [Instagram.com/ReelsonWheels](#). Do not piss off DadWard here, kiddos! I will turn this car around!

Deja Perkins: Hi. My name is [Deja Perkins](#), and I'm a graduate student at North Carolina State University studying fisheries and wildlife conservation biology. My ology is urban ecology. I consider myself an urban ecologist because I focus on urban birds and how they are influence by human culture.

My research takes a look at the methods behind two popular citizen science-informed data sets: eBird checklists and systematic point counts. eBird is a popular app used by birders to record bird observations all over the world. Systematic point counts, on the other hand, are a more structured way of collecting data. They consist of five-to-ten-minute surveys at specific geotagged locations across a gridded area and are submitted by a coordinated team of technicians or volunteers. These data sets are commonly used to inform research, policy, and management decisions.

My research aims to determine if these two methods are able to equally detect the human influences that shape cities, and as a result, influence the spaces that birds occupy within cities.

Aside: Where are those birds, though? Not equally distributed, as it turns out.

Deja: I use GIS, or Geographic Information Systems, to look at where birds are reported spatially within urban areas to determine if there are any blind spots in where birds are reported, and then they reflect patterns of social inequity.

Social inequity in cities can be displayed through lasting legacies such as tree cover, which are reflection of historical patterns of inequity resulting in systematic forces, such as segregation and racism, which have shown to have lasting effects on how cities function economically and ecologically. These legacies influence the distribution of bird diversity and abundance of native species within cities.

I love studying urban birds because it emphasizes that urban areas are used by more than just people, and more importantly, that we're all connected. You don't have to live in rural areas to experience nature, and I want to ensure that cities are properly managed for both people and wildlife with equitable spaces that benefit us all.

Aside: So think about that the next time you're in a city. The more privilege you have, the better neighborhood you might live in, the more trees out your window, and the more birds you get to see. It's not fair. Let's change that.

How wonderful that people are studying these things. Urban ecology: It's a thing. I'm into it.

Jazmyn Winzer: Hi. My name is Jazmyn Winzer and I'm a student at the University of Arizona studying biology and Africana studies. Officially, my work focuses on plant and insect interactions, as well as a bit of urban ecology. My recent projects have focused on agriculture and riparian habitats, but recently I've started studying citizen science. Using iNaturalist, eButterfly, a bit of art, and a lot of coffee-flavored ice cream, I'm working to see if zoos and botanical gardens operate as productive green spaces. And I also do a bit of science communication on the side.

I got my start in science pulling ladybugs out of my grandfather's yard, and now I introduce people to insects in their own backyard. I know most people think insects are gross, and creepy, and mean, but that's what I love about the work that I do. Once you find yourself squatting on a trail, watching a beetle cross in front of you, most people will come and ask you what you're doing. Or, they'll walk away in fear. But, on the rare occasion that they become interested, you started a conversation, you found a new scientist, you've made someone brave.

And I love seeing that develop in people, especially adults who will never touch a bug in their lives, where kids will touch just about anything, especially when it comes to butterflies. Butterflies are a great way to spoon-feed the loveliness that is arthropods to people. Insects can be fun, and friendly, and taste with their feet.

So, if you're at all interested in learning about insects or urban ecology come find me. I'm [@Spicy_Chiken](#). See you soon.

Aside: Let's continue on this city critters track. There's a new world alert: anthropogenic – resulting from humans.

Lauren Pharr: Hello, my name is Lauren Pharr, and I'm a graduate student pursuing my master's at North Carolina State University in Fisheries, Wildlife, and Conservation Biology. I am a wildlife biologist who specializes in ornithology, the study of birds. I'm currently researching how urbanization affects avian morphology.

With the growing number of people in urban areas every day, anthropogenic – or human – factors affect all kinds of inhabiting wildlife. Urbanization has been a key thing linked to changes in avian behavior and physiology, and I am looking more into how it has affected things such as bird body mass and other body features.

Did you know that urbanization can also affect arthropods, or bugs, which in turn can have an effect on a bird's overall development? Since most chicks rely on an arthropod diet, with a limited amount of arthropods in urban areas, this can lead to affect the chick's growth rate, nutrition, and overall health.

I absolutely love to do what I do because I absolutely just love birds. I get to be hands-on with these awesome creatures, and what better way to learn than to be hands on? What can I say? I'm just your average bird nerd.

Thought this was interesting? You can learn more about me and my research by following me on [Twitter](#) and [Instagram](#) @LDPharr, or visit my website [LPharr.com](#).

One way that listeners can be allies to Black people in STEM is awareness. Valeria Khudiakova, author of the article, "How to Best Be an Ally in STEM," states:

Constantly learning and educating yourself is also crucial for developing a fuller understanding of the experiences of marginalized groups and hence, being a better ally.

Aside: Thank you, Lauren. You are great. I will link that article on my site.

This next one is birds, and bats, and cities. Huzzah!

Ela-Sita Carpenter: Hi, my name is Ela-Sita Carpenter, and I'm an urban ecologist and naturalist educator. I completed my PhD last year studying the urban bat community in Baltimore, Maryland, where I wanted to determine if and why bats might use vacant lots. Vacant lots are small patches of vegetation that form after a house has been removed from a lot.

Currently I'm analyzing about 15 years' worth of bird surveys, also done here in Baltimore, to see how the city's bird community has changed over time, and if there are certain natural and human-based reasons for those changes. Over the past seven years of doing research here, my colleagues and I have documented at least 100 bird species in Baltimore and about six species of bats, which is half of the bat species present in the state of Maryland.

I've lived in Baltimore more of my life and never expected to stay here and study wildlife. I always wanted to be somewhere out in the wilderness. But what I really love about urban ecology is that it's full of surprises. Despite all the people living in urban areas, there have been many cool discoveries made about how wildlife are using and navigating the city, and our backyards, and neighborhoods. Because it's urban ecology, we have to include human measures in our studies as well. Things like our upbringing and culture, our neighborhood structure, the income we and our neighbors make, and even events from the past like Apartheid or redlining can play a role in what plants and animals exist around us today.

My Twitter account is [@Cherokeesita](#) and my Instagram account is [@Elasita](#).

Aside: And now from bats to medicine, from Stephanie, who I had the pleasure of meeting at last year's SciComm camp. She doles out some stats.

Stephanie Renee: Hi, I'm Stephanie Renee, an undergraduate neuroscience major, breast cancer researcher, and dog mom.

Statistics show that in 2015, of all the women who were granted a bachelor's degree in neuroscience, only 5% were Black. Even fewer were granted to those at master's or PhD levels, and that's something that I want to change, because we do deserve to take up space.

There's a lot that goes into barriers to education for underrepresented populations, but it's the small things, like *Ologies* giving us a platform to share our stories, that makes Black in STEM voices heard and not just an afterthought. So, thanks for that, Alie.

You can find me on the interwebs on [Twitter](#) and [Instagram](#) @OsmosisReads. Yeah, bye!

Aside: Follow her as well. I love learning from her. Another great sci-commer is Ashely, [phonetic] 'Doc McSippins'.

Doc McSippins: Hey Alie! My name is Ashley, I'm a biophysicist, a podcaster, and I study, basically, how proteins get inside the mitochondria and what else are happening with those proteins that regulate how proteins can get inside.

One weird fact about my work is that 90% of the mitochondrial proteins are actually not even made in the mitochondria, even though they have their own DNA as well as their own protein-making machinery.

I love what I do because I think it's always fascinating to visualize really tiny things. I think about proteins all the time, but the fact that I have the ability to actually figure out what proteins look like and how they work is something that I find fascinating, and always have. You can follow me on all social media [@SipNSciPod](#).

One way that people can really be allies to Black people in STEM is remembering that we're not just scientists, and we still have to move and operate with the weight of the world around us, as we're constantly, constantly getting messages that we're not good enough and we don't belong. So, go out of your way and make someone feel a little bit more comfortable and at home. I think that's one of the biggest ways you can be an ally. Thanks again, Alie.

Aside: This next voice belongs to a wonderful wildlife biologist whose Twitter name is Richard Cissel. And I was like, "Huh?" Turns out, that is an ornithology joke that I did not comprehend until seeing someone tweet about a bird called a dickcissel. I already love this person.

Danielle Belleny: Hi. I'm Danielle Belleny, a passionate birder, naturalist, and wildlife biologist. I love, love, love studying ecology. I'm getting paid to be curious, take a look at how and why natural systems function, and help heal the planet. I am so glad to have other Black scientists in this space with me, and honestly, I'm living my best life.

A fun fact about my most recent work: I had to learn how to herd and care for 170 goats. The goats were helping us restore native grasslands by grazing the encroaching shrubs. And, well, 170 goats, they cause a lot of mischief. Plenty of stories there.

You can follow me on [Instagram](#) and [Twitter](#) @BellzisBirding.

One way for listeners, especially white listeners, to be allies to Black people in STEM is to pass on the opportunities to collaborate with well-known organizations, or big grants, or

well-known people by referring Black people and people of color who do similar work to them.

Thanks. Oh, and also, just chill out when you're talking to us at a conference!

Aside: I mean, a delight! She is based in Central Texas, and again, is a wildlife biologist professionally. She's worked with all kinds of species, and she happens to be looking for new work right now. She is willing to relocate anywhere in and out of the US, so if you are listening to this and need a wildlife biologist on staff, hire a fellow ologite! Danielle Belleny. @BellzisBirding. She will be in the Twitter list that I will link in the show notes, and I will add a way to contact her to my website, if she so chooses.

Now, if you have a job you need to fill and you want to make sure that it gets in front of a diverse array of scholars, you can also check out the website DiverseScholar.org.

And finally:

Tyus Williams: Hi, my name is Tyus Williams. I am a wildlife ecologist with a specialization carnivore ecology. I am intrigued at the intersection of utilizing spatial analysis to understand movement patterns of predators across the landscape and their crucial role that influences trophic ecologies throughout ecosystems worldwide.

Aside: PS: I had to look it up, but trophic means 'where an animal is on the food chain', essentially.

Tyus: Carnivores are fascinating. The order Carnivora actually translates to 'flesh devourer' or 'meat eater'. These are organisms that have specially modified teeth, which we refer to as carnassial teeth, that can shear, slice, and tear through flesh with ease, giving them the ability to subdue their prey without much effort at all.

An interesting component to carnivores is that there's about 270 species or so, but what's really interesting is you have all these various types of carnivores with very different types of physical features, but they're essentially divided into two categories, which we refer to as suborders under Carnivora: Feliformia and Caniformia. And you can discern between those two as 'cat-like features' and 'dog-like features'. A lot of people think there are certain animals that are more closely related to one another, but sometimes there's misconceptions around them. For example, mongoose, hyena, and the fossa are all in Feliformia. They are all more closely related to felids than they are canids.

Then you have animals like bears, raccoons, and seals that are in Caniformia because they're actually more closely related to dogs. It's really cool because you look at all these animals, and you would never guess, looking at them sometimes, that they could be within those categories. I just think that's a really interesting fact that maybe a lot of people don't think about sometimes.

I love carnivores not only because they are mega-charismatic and they have an alluring, majestic feature that just demands your respect and attention, but they're crucial to the health of landscape and ecosystems. We need carnivores. They influence prey item population control, and their trophic ecology cascades that they initiate and incite is necessarily for the health and stability across all landscapes. If you are interested in following me, you can follow me @SciencewithTyus on [Instagram](https://www.instagram.com/SciencewithTyus) and [Twitter](https://twitter.com/SciencewithTyus).

I know that things have been very turbulent in terms of our recent news, and I just wanted to take a moment to address that. Black people are under siege right now, sadly. We have been for a very long time, historically. I just think that because of media coverage and technological advancements it's been brought to light more than ever in terms of the daunting horrors that we're seeing across the globe, and we need help. We need support. We need solidarity. We need action. And we need mobilization more than anything when it comes to our non-people of color brothers and sisters. We need people to stand up and fight for us, we need people to take action, and vote correctly, and fight for our lives. We can't do this alone. We need help, and I hope that maybe through these efforts and actions maybe we can gather a little bit more peace on this planet. Thank you so much for your time.

Aside: That was Tyus D. Williams, and you can follow him @SciencewithTyus. You can look forward to a future *Ologies* episode with him and several of the people you just heard whose jobs and lives are fascinating.

It has been an honor getting to know you all better and to hear the voices behind the tweets. I just respect and admire you all so much. Thank you for making the world a better place.

Speaking on behalf of myself and the hordes of non-POC allies, we are here for you and we have your back. We will fight for you until there is justice and equity for all. If you're out there hearing this and you don't see anyone in your field or in the room who looks like you, just know that room needs you even more, you belong there even more, and that people who may not look like you are willing to stand up for you. We're getting better at it every day. Thank you for showing us how and for letting us learn.

Ask smart people stupid questions, but lay off our Black friends right now. And you know, ask Google, get a book, read blogs, listen to podcasts. Don't barge into anyone's DMs processing your own emotions. Now is not the time for it.

We will be back next week with a super fascinating conversation about gender and the brain! I can't wait. So good! Meanwhile, follow @BlackAFinSTEM on [Instagram](#) and [Twitter](#). They are amazing. Follow them right now. Head to a link in the show notes where you can follow everyone that we have just heard from, plus a few more awesome Black voices in STEM. All of those links will be up at AlieWard.com/Ologies/BlackAFinStem.

Thank you Shannon Feltus and Boni Dutch for managing OlogiesMerch.com. Happy 10th birthday, little Aiden[ph.]! We love you! Thank you Erin Talbert for managing the [Ologies Podcast Facebook Group](#). Thank you to Emily White and her army of transcribers who turn these episodes around so fast for accessibility. Those, as well as episodes bleeped by Caleb Patton are all up at AlieWard.com/Ologies-Extras. Thank you to Noel Dilworth for helping me stay on top of my schedule. I would be, literally, lost without you. And thank you to Jarrett Sleeper of Mindjam Media, and the mental health podcast *My Good Bad Brain*, who helped edit this big heap of voice files together. And to the lovely Steven Ray Morris, who ushered it safely into your ears with final edits. The theme song was written by Nick Thorburn of the band Islands.

If you listen through the credits, you know I tell you a secret. This week's secret is that I was supposed to have Invisalign for, like, seven months, and it's almost two years, because I just forget a lot. So, hey, we're doing our best! And I'm sorry, Dr. Cohen [ph.]. I'll wear them tonight, I promise!

Okay. Go out. Use your voice. Be good to each other. Thank you for letting me learn so publicly. Berbye.

More links you may enjoy:

Again: follow Joseph Saunders's [gorgeous macro photography on Instagram](#)

Buy a coffee for individual members of BlackAFinSTEM [here](#)

For press inquiries: blackafinstem@gmail.com.

[How to Best be an ally in STEM by Valeria Khudiakova](#)

Excerpt from "[The Racial Healing Handbook: Practical Activities to Help You Challenge Privilege, Confront Systemic Racism, and Engage in Collective Healing](#)" by Anneliese A. Singh, PhD, LPC, published by The National Museum of African American History & Culture

[How to Be an Antiracist](#) by Ibram X. Kendi

[Prehensile porcupine nose](#)

[The Sadie Collective](#)

[DiverseScholar.org](#)

[Dickcissel birds](#)

[How an ally can respond to micro aggressions](#)

[Twitter.com/BlackintheIvory](#)

Podcasts hosted by Black science communicators

[PhDivas](#)

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