



Encyclopedia of Life
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Bees Podcast and Scientist Interview

Apis mellifera

Have you heard the buzz about bee colonies collapsing? In this podcast, Ari Daniel Shapiro ventures into a cloud of honey bees to learn about the unique way one bee scientist is managing to help bees and fund his research at the same time.

Transcript

Ari: From the Encyclopedia of Life, this is One Species at a Time. I'm Ari Daniel. You're listening to the sound of *Apis mellifera*. Honeybees.

Wilson-Rich: I'm going to walk deeper into the cloud of bees.

Ari: Noah Wilson-Rich – an entomologist – walks across a small asphalt lot in Boston's South End. Two parking spaces are filled with a couple dozen bee boxes. Wilson-Rich reaches into one and pulls out a single frame of honeycomb.

Wilson-Rich: Right now I'm holding this frame that is being cleaned out by all sorts of bees. Sometimes bees will tumble after they land from a flight, and do some somersaults.

Ari: This is extraordinary – I mean, there are so many of them.

Wilson-Rich: There are tens of thousands of bees around us right now.

Ari: How am I doing?

Wilson-Rich: You're doing great, even as some land on our heads!

Ari: We don't have any protective gear on. Wilson-Rich is only wearing shorts and a t-shirt with the words "Best Bees" printed across the front. That's the name of the honeybee research company he founded a few years ago. We head inside, and Wilson-Rich shows me the company's modest lab space.

Wilson-Rich: So the research is really focused on ways that we can make bees healthier.

Ari: You probably know that bees aren't faring so well these days. Some call it colony collapse disorder. Populations are at an all-time low – due to disease, pesticides, and habitat loss. Wilson-Rich began his work to make bees healthier back in graduate school.

Wilson-Rich: I spent many a sleepless night poking bees with syringes...

Ari: How do you do that – you gotta hold the bee down?

Wilson-Rich: Yes, really one bee at a time, you can anesthetize a bee. And I would do surgery or implants on bees to test their immune function.

Ari: That sounds really laborious.

Wilson-Rich: This is graduate school – everyone has their experiences like this.

Ari: Then Wilson-Rich tried a different approach ... delivering vaccines and pro-biotics to bees orally.

Wilson-Rich: We can give the entire hive of tens of thousands of bees a treatment all at once. It's a lot more efficient.

Ari: These treatments are still in development. And they require money. Which, says Wilson-Rich, has become harder and harder to come by in academia.

Wilson-Rich: I was finishing up my Ph.D., and the economy wasn't looking so good. And my experience with writing grants was not as successful as I had hoped.

Ari: And so Wilson-Rich developed a new funding model, which is at the core of Best Bees.

Wilson-Rich: We fully manage honeybee hives for residents and businesses throughout eastern Massachusetts. 100% of the profits goes to fund our in-house research. And it's working.

Ari: That's why all those honeybee hives are in the parking lot. It's a staging area before they're delivered – to homes, companies, even hotels.

Walsh: Sixth floor.

Ari: Sixth floor?

Walsh: And then to the penthouse.

Ari: David Walsh – the facilities manager at Boston’s Fairmont Battery Wharf hotel – escorts a few of us up onto the sunny hotel roof ... including Alia Marinone, who’s in charge of operations at Best Bees. She puts on her beekeeping suit, makes her way over to the three bee boxes, and begins her inspection.

Marinone: I’m trying to make sure that a queen is laying eggs.

Ari: So now, is this part of the service that Best Bees provides?

Marinone: Yes, all of this is just making sure that your hive is healthy and functioning properly.

Ari: Best Bees replaces diseased honeycomb frames. They add a new queen to hives without one. And they harvest the honey, something that Arvi Odense – the executive chef here – is excited about using in the hotel kitchen.

Odense: Cheese and honey is fantastic. Also, we have great mixologists downstairs in our bar, and they keep on asking me, “Chef, when’s the honey ready?” ‘cause they really want to start making some drinks.

Ari: David Walsh sampled the rooftop honey a few weeks ago, and loved it.

Walsh: That honey had essence of lemon. And talk about fresh – I mean, it was right out of the hives.

Ari: And it was at that moment that one of the thousands of bees flying around the rooftop found its way onto the chef’s head.

Odense: Ah!

Ari: Uh oh. Chef just got a bee in his hair.

Walsh: And he’s allergic, so –

Ari: Oh, he’s allergic!

Walsh: He is.

Ari: Not to worry, though. Chef Odense headed for the hospital, and despite a bee sting to the temple, he ended up being just fine. I reached him by phone a couple days later.

Odense: No swelling at all – just a little bit of a bump, and that’s about it.

Ari: Odense doesn’t mind – and it hasn’t changed his view of those rooftop honeybees.

Odense: I love bees and honey so much that it's very challenging for me to stay away from them.

Ari: Noah Wilson-Rich – the founder of Best Bees – feels the same way. He loves bees. And in the interest of full disclosure, I should say that while he and I were standing inside that bee cloud in the parking lot, we both got stung.

Ari: Ow, oo, oo – I think I just got stung. Ow!

Ari: Me on my left arm. Wilson-Rich on his fingertip.

Wilson-Rich: I can get you some ice.

Ari: Maybe...

Ari: But he's used to getting stung. It's kind of an occupational hazard.

Wilson-Rich: I've had hundreds of stings in one day. That's like a tough day at the office.

Ari: But for Wilson-Rich – a tough day at this office, surrounded by honeybees and all the research underway to make them healthier – is sweeter than any alternative.

Check out eol.org for some photos of urban beekeeping, and a set of honeybee observer cards.

Our series, One Species at a Time, is produced by Atlantic Public Media in Woods Hole, Massachusetts. I'm Ari Daniel.

Meet the Scientist

Meet Noah Wilson-Rich, the scientist featured in our Bee podcast:



Where do you work?

My affiliation is Founder & Chief Scientific Officer of The Best Bees Company's Urban Beekeeping Laboratory & Bee Sanctuary.

What do you study?

At The Best Bees Company, we delivery, install, and manage honey bee hives for residents and businesses throughout eastern Massachusetts, with our proceeds funding our research to improve honey bee health (e.g., vaccines and probiotics).

What are three titles you would give yourself?

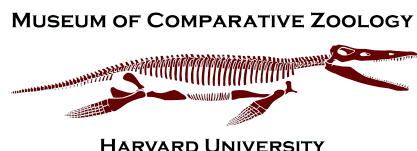
Ecological immunologist, Urban farmer, Sustainability entrepreneur.

What do you like to do when you are not working?

When I am not in my lab, I like to find cheap airfare to far away places, and dance to hip hop and R&B music.

What do you like most about science?

There are so many things that I love about my science! I love working at the interface between basic and applied research. We apply to both academics and also to lay persons. Our study system, the honey bee (*Apis mellifera*) is universally important to anyone who eats food, which provides unique opportunities. Furthermore, the parking lot in front of our lab has 20 beehives neatly tucked into two parking spaces, creating this incredible opportunity for everyone in my research group to collect bees for lab or work with bees in the field, only steps away, and all within the City of Boston!



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