

Alex

Good morning, my name is Alexandra Magold and today is tempting Tuesday, it is a great pleasure to be talking to Dr. Raghavan. She heads the GenScape laboratory and is a professor at the University of Chicago. Her team investigates the history of our species. They are part of a brand-new field that uses high tech tools called ancient DNA. Please, Dr. Raghavan tell us more.

Dr. Raghavan

So my research deals with reconstructing population histories of different species, including our own - humans, as well as our domesticates and our pathogens. And we do this using a cool tool called ancient DNA. So we use genetics and we sequence and we use DNA data from people, from organisms who live today. But in addition to that, we're also able to get DNA from fossils and from ancient materials from the same species. So it's a really neat way of really piecing together the evolution of these different species that we study in our lab by directly using data from the past, instead of just looking at data from today and inferring things about the past.

So some of the really cool findings personally for me that I've been able to work on. So one of the ones I would like to highlight is the fact that my PhD, one of the projects included inferring using ancient DNA data from a Siberian child who lived about twenty three thousand years ago. We used his DNA and when we compared his DNA to other populations who live across the world today, we found that his population in the past had contributed their DNA to modern and dodginess people to the Americas.

And so for the first time, we were able to really propose this dual model of Native American origins where Native Americans living today have ancestry both from East Asia as well as those lineage of this little Siberian boy. And so, again, that was only possible because we had data from this ancient individual that we could plug into a model and be able to then explain the origins of Native Americans.

Alex

This is amazing work. You are literally challenging who we think that we were. How do you navigate those challenging waters?

Dr. Raghavan

Particularly when we are dealing with understanding the origins, the ancestry, the past of our species of humans can be a very intriguing topic to try and find out things about our species past. At the same time, of course, somewhat controversial because some of what genetics can tell us could fly in the face of what communities, various populations or even individuals have traditionally thought to be their origins from, let's say, from society for cultural information, from information passed down over generations to them.

And so you have to be quite sensitive when you approach people, when you publish such data to make sure that you take these sensitivities into account and are not sort of trying to show that genetics is the end all. Be all. I think it's part of the story. I think it contributes to building these models about our species past. But there's a lot of the culture, especially archeological information, for instance, or cultural information from linguistics, can also tell us a lot about different aspects of evolution, maybe not specifically biological, but the societal evolution.

And I think the power of what we do in our field of ancient DNA is to actually to piece together these different fields. And so we work at the intersection really of multiple fields, which includes archaeology, anthropology, genetics and computational biology and so on and so forth. And really, that's the power of piecing together the story of our species, is to come at it from different angles.

Alex

Thank you so much for your time.