

What is Astrobiology?

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Clip transcript:

Karen Olsson-Francis:

I suppose Astrobiology is driven by the desire to understand if we're all alone in the universe, I think we kind of understand that, but defining the field itself is very difficult. As a microbiologist, as a biologist, I think of it about life – life in extremes, what are the limits of life?

Vic Pearson:

So my interests came from wanting to know if we could find the evidence of life, and that didn't have to be the microbes, that could be the remains of the life, the organic side, or even as we've been doing more recently, the inorganic biosignatures of life.

Suzanne Schwenger:

Well, you first have to figure out, could you even need to have to look at this point because, as an Earth Scientist my first question would be: what are the conditions there? So to me Astrobiology is always first the question about what are the conditions, what elements are in this environment, what is the temperature? And could anything live there? And then I go to Karen and she asks the question about her extremes.

Karen Olsson-Francis:

I think the uniqueness of our group, and why we've kind of done so well is the fact that we're really doing that exciting science at the boundary between these natural disciplines. That's what Astrobiology is though, isn't it – it's a multitude of disciplines, all working together.

Suzanne Schwenger:

Then you also have to ask the question: if we want to investigate other planets for life, how do we make sure that our investigation today doesn't hamper future investigations – in other words planetary protection, that belongs to that discipline as well.

Vic Pearson:

But there's also the – what if we do find this? You know, those really difficult questions: what do we do in those circumstances? And I suppose as scientists we might say "well, perhaps that's not what we need to think about", but that's juicy – that's the kind of thing that we really do want to start to think about. And then how do we communicate that with the public if we find evidence? And we have to do it sensibly, and with appropriate caution.

Suzanne Schwenger:

Yes. Right now, the question "Are we alone?", the answer is "Likely, yes". But the moment you were to find something elsewhere, and the answer becomes "No, for definite", that changes everything.