

Your Mac Life Interview Topic: Ask a Biologist - Guest: C.J. Kazilek

Dr. Biology Talks -

The July 22, 2008, interview on Your Mac Life with host Shawn King. Dr. Biology a.k.a. C.J. Kazilek talks about the new Ask-a-Biologist podcast program and the Ask a Biologist web site. This transcript is made available with the permission of Your Mac Life and Shawn King.

Transcript

[intro music]

[dialing phone]

[phone ringing]

Dr. Biology: Hello?

Sean: Hey Charles, this is Sean from Your Mac Life. How are you?

Dr. Biology: I'm OK.

Sean: My apologies. We had a little bit of a technical glitch but we are on the air now. So we are going to go ahead with this crazy evening as we speak. How are you?

Dr. Biology: I am doing fine. I am actually going to go up into my office.

Sean: OK. Let's make sure we get you.....All right. Are you there Charles?

Dr. Biology: I am here.

Sean: All right. Folks, this is Charles.....How do you say your last name properly Charles?

Dr. Biology: It's Kazilek.

Sean: Kazilek. Charles Kazilek from Arizona State University. Charles, explain to the folks in the audience what you do at Arizona State University.

Dr. Biology: Well, I am in the School of Life Sciences, which is a rather large school in a very large university. One of the things I do is look into the world of outreach, which is K-12, and life long learners. We do that through our website called Ask A Biologist.

Sean: Ask A Biologist is a feature of the Arizona State University. But you guys have expanded out into the iTunes store. Has it always been a pod cast? How did it actually get started? Give folks a little bit of the background on how and why Ask A Biologist got started.

Dr. Biology: Well, we started 12 years ago in 1997, late 1996. We just literally started with a page that was a way for people to send questions in to our scientists and get answers back. And that is how it started.

Now we have about 1,400-1,600 pages of content.

Sean: Wow.

Dr. Biology: Yeah. We have answered over 20,000 questions.

Sean: [laughs]. Where are the questions coming from? Is it just from inside the Arizona State family? Is it just inside Arizona? Give us an idea of where the questions are coming from.

Dr. Biology: They are coming from all over the world.

Sean: Really?

Dr. Biology: As you know, when you are on the Internet the world comes to you and sometimes at a very rapid pace. We have been very successful with the volunteers. I often say that Dr. Biology, this character that was created by accident, is the most brilliant biologist you will ever meet.

Sean: [laughs] And why is that?

Dr. Biology: Because we have over 100 volunteers that participate. So it is that collective mind that makes it so brilliant. So when people come to me and expect me to be Dr. Biology and have all the answers, guess what? I don't have all the answers. I always say, well, that one I don't know, but I know where you can go- Ask A Biologist.

Sean: You know where to find the answer, that's right. Lisa wanted to ask the question: What is Biology? Is that too big a question?

Dr. Biology: Oh, Biology. Actually, that is a question we get often.

Sean: Sure.

Dr. Biology: Literally, the Latin of that, whether it is Greek or Latin, it depends on when it came about, is the study of life. And so when you say what is Biology, it is anything that's living, we are interested in.

Sean: Anything at all?

Dr. Biology: Anything at all. Microbes to monkeys; from microbes that are here on Earth to microbes that some of our researchers send into space to see how they behave when they are out there and have no gravity to contend with.

Sean: I didn't realize Biology was that broad a topic. It has got to be tough being a biologist. I mean, isn't it almost a necessity nowadays that you have to specialize in some aspect of Biology?

Dr. Biology: Well, actually, you would think that. But what we are finding is the answers to a lot of the things we are dealing with require, a term we probably use to often, interdisciplinary. So if you were just a traditional zoologist, which is someone who studies animals, or you were a traditional botanist, who is only working with plants, what you are finding is you are getting a crossover. And there a lot of times that you need to learn some of these other disciplines. Genetics, of course, is a big area.

So we are finding a lot of our biologists are much broader. They will specialize, but they will also have a broader background, and they will also make these collective groups. That is one of the things about the school of life sciences. We have well over 100 faculty here. And one of the things we are really working on is building these collaborative groups that can answer big questions.

Sean: Mosquito in our chat room has a great comment. He says "Any scientists who don't mix with other teams are being short sided." Is that true?

Dr. Biology: Absolutely. Yes. And a matter of fact, when you say biology and biologists are intermingling, we have physicists, we have mathematicians. You know, computational biology is a really big area. Now that we can harness the power of computers, a lot of the things we couldn't answer before are now being able to be investigated in a much better way.

Sean: Arxon [sp] in our chat room says....Sorry, MRP says "What's his take on finding microbes on other planets?"

Dr. Biology: Well, we just had, strange enough, a pod cast up there called "Life and Building E.T." We had Paul Davies, who is a well known physicist who is at ASU and has a new institute called Beyond and Ferran Garcia Pichel, who is one of our microbiologists that studies extremophiles.

So if you are not familiar with extremophiles, these are the things that live in environments where we used to think living things couldn't exist.

Sean: Oh, OK.

Dr. Biology: Extreme temperatures, extreme cold, extreme salt.

Sean: Sort of like the worms at the bottom of the ocean that are living in the volcanic vents.

Dr. Biology: Exactly. So it is a really wonderful show to listen to because we talk about this idea of what we say is life, what the definition of life is. And we have to be much more flexible about what we are thinking is life than what we used to say.

And that is what we got started with on the show. And so one of the things when you talk about microbes on other planets; could be. We even talked about the fact could we be the descendants or evolution of microbes that came to Earth from, say, Mars.

Sean: How do you guys handle religious questions on Ask A Biologist? Obviously this is something that comes up more and more frequently and has been in the media the last while. Do you get those kinds of questions or do you just pass those off? Or do you guys even try to answer the religious aspects of biology questions?

Dr. Biology: Well, yes. You are correct. We do get those questions. And part of what I have been trying to do is decouple this conflict between sciences, particularly Biology, and religion. Science, we definitely are biologists. And the idea of evolution, for us, the jury is in. But that doesn't mean that there isn't a God, right? It doesn't mean that religion shouldn't exist. It's not in conflict.

So we are very honest with our answers, but we are never out there to create more of a cavern between science and religion. I think they can co-exist.

Sean: Sure. I agree. Getting back to that Arxon question, has there ever been any questions that you can't answer or, to a certain degree, won't answer? Or does that make good research questions?

Dr. Biology: Absolutely. I say there are about a half dozen questions that have come in to us that we don't have really any answer to. If you are going to ask me which ones they are, off the top of my head, I can't think of which ones they are.

But it's also true that we often get questions that the scientists, when they respond, say well, this is a very good question. There are three camps, three different thoughts, three different theories. And they will present them and they will say "I believe I am in number two. I believe this and this is why."

And this is part of the scientific method; the scientific process. So it is really good to explain that and let students know it, because often they think there is a book on the shelf with all the answers. And there isn't a book with all the answers. And even if the book was there, guess what? We keep changing what we know, or what we think is the answer, based on what we learn.

Sean: Tell folks who Ask A Biologist is for. There is a particular group of people that you try to answer the most amount of questions from, correct?

Dr. Biology: Yes. Well, what we found is that our audience is about 60% students. That makes sense. 20% are teachers, K-12. And another 20% are the adults. And they could either be parents that are facilitating questions for their sons and daughters, or they could be life long learners.

So that is where we fit. We try to really focus more on the K-12 audience, but we don't necessarily say don't send us questions just because you are over 24 and you are out of school and you still have a question. If you are really curious about something, you have observed something, and you really need some help after going out on the World Wide Web, come talk to us.

Sean: But you are not going to help folks with a research project. Are you asking sort of like big picture biology questions or do you get down....

Dr. Biology: Right. We always say we don't do homework. And I get a lot of people asking "Well how do you know if it is homework questions?" And my answer is, well, when you get a question that says "Compare and contrast the Alaskan brown bear with the brown bears found in California, 500 words or less.", that is a pretty good giveaway.

Sean: [laughs]

Dr. Biology: The other one is when they literally write out "Question one, two, three, four, five, six through 10.", and submit them.

Sean: [laughs]. Yeah, it is kind of obvious. At least be clever if you are trying to get Dr. Biology to write your homework assignment. At least be clever on your end, OK?

Dr. Biology: And that is true. We give you points for that. If you actually write it in your own words and you figure out what the question is, that is part of the learning process. So yeah. Go ahead. If you can do that, that is OK.

Sean: Yeah, no kidding.

Dr. Biology: We also say choose your questions with care, because we can't answer multiple questions from one person. We just get too overwhelmed. So we always say make sure these are the questions you really want to know about.

Sean: Is there a FAQ website with every question that has ever been asked that folks can go and do their own research?

Dr. Biology: That is a really good question.

[laughter]

Dr. Biology: I do not have that.

Sean: Really?

Dr. Biology: I have toyed with it, and there is a reason for it. Actually, multiple reasons. One of them is, I just didn't want to have this rather dehumanizing database that someone has to find something through. First of all, people aren't good at searching often.

The other thing, you are not going to answer a third grader the same way you answer a tenth grader.

Sean: Good point. Yeah.

Dr. Biology: You hope you are not, right? And the other one is just what you said earlier. Are there questions that we couldn't answer? Or maybe there are questions that come in now that we answer differently than we used to. And we have those because we have learned things in the 10 plus years that we have been doing this.

Sean: Yeah. So the answers are not only aged based, but they are also.....you may have new information or the answer you gave 10 years ago may be wrong now, correct?

Dr. Biology: Correct. Absolutely. That is exactly right. That is why we haven't put out a database so someone can go search it. A lot of people don't even know the right kind of words to use. And so this is one of the reasons why we are here. We really wanted to make a connection with teachers and with students.

Sean: Do you ever just answer a question with 42?

[laughter]

Sean: I am so glad you got that!

Dr. Biology: Ooooh. Showing a little bit of your age there.

Sean: I am so glad you got that joke!

[laughter]

Dr. Biology: Yes, yes. The meaning of life. Yeah. That's a very good.....Are you going to tell your audience what you are talking about?

Sean: No. They better figure it out themselves!

Dr. Biology: Oh, OK.

Sean: They may have to send you an email to Ask A Biologist and say "What the hell is Sean talking about?"

Dr. Biology: OK. [laughs]

Sean: Now the podcast is different from the question thing. I just want folks to be clear about this. If you go to askabiologist.asu.edu, you will get to the website where you can submit a question yourself.

But then on the Apple iTunes store, you can do a search for Ask A Biologist and this podcast pops up. Give the audience a description of the podcast and what they can expect to see and hear there.

Dr. Biology: Right. We started these late in 2006. We actually have two shows. I want to make sure and let everybody know. We have Ask A Biologist, which is geared towards middle school or K-12 students and teachers. And then we have another one called Science Studio, which is hosted by Peggy Coulombe, which is a great one if you are an adult that has a little bit more knowledge in science and you want to listen to that.

But both of them, the key to it is that we are interviewing biologists and scientists that are interested in biological questions. And what was nice about it is we were able to get their voice, their enthusiasm, out there so that people could hear it. And that was really the key

point for us.

Because we have a lot of articles. We write a lot about scientists. We write in ways we think that students will appreciate. But you can replace that voice. And so that is what we started with. We are young at this. We can't say we are experts by any means. But we have been having a lot of fun. And we have had a lot of wonderful guests.

Sean: Are the guests all brought in from Arizona State University or do you just scour the globe looking for anybody who can answer the question?

Dr. Biology: Well, there are some people that would say that I am tenacious; I will go on vacations and somehow I will figure out a way to do a podcast while I am out on the road. The majority are scientists at ASU. You got to realize, we are a very large university; really growing and rather impressive with the kinds of scientists that we have here.

So that is a really great luxury for us. We don't really have to go far if we want scientists. But we also will combine them. We will link them. We have a lot of scientists that come through and give lectures or special talks. So it is very nice for us to be able to sit down with them and have a conversation and talk about the science that they are doing and share that with other people.

Sean: Also, on the Ask A Biologist podcasts you have transcripts available. Are those searchable transcripts that teachers or students can look for certain keywords or phrases?

Dr. Biology: They are certainly searchable in the sense that Google has gobbled them up. You can find a lot through the transcripts. We also have something that I have put on the Ask A Biologist website. In addition to the iTunes site, we have all our MP3 files and the transcripts.

But we also have what is called a content log or a time log. And I put those up there so that teachers don't even have to listen to our show to find out if there is something in there that would be useful in the classroom. So you can very quickly scan this. One page shows you what the topic is, where it happens; you know, three minutes and 20 seconds in the show they talk about life or they talk about what's the difference between a plant cell and an animal cell. Whatever you might be interested in.

So at least you know "Yeah, that might be something I would like to use." And it lets you know if you are in the classroom and you can't use a 30 minute show in the classroom, but you might want to play that five minute clip.

Sean: Tell us about the mysterious world of Dr. Biology and why you need students help.

Dr. Biology: Why do I.....Oh, yes, yes. The comic book adventure activity.

[laughter]

Dr. Biology: Yes, well this is another area that we felt very strong about that students are very creative on their own. And comic books are certainly a very popular medium. And it's a great teaching tool.

What actually happened is a mysterious disc, CD, came one evening to the laboratory of Dr. Biology. No return address. You open it up, no label on the disc. Unfortunately it is corrupted. So all they are able to do is pull out these scenes. The sound files are corrupted so there is no audio track.

And so what we have done is we have released all the scenes that we found, and we are hoping that the students will reconstruct what is happening in the mysterious world of Dr. Biology. And when they do that, they can actually send in a declassification form. And the ones that are creative or might have the real answer, we are going to publish on the website.

Sean: Very cool. Folks, you can go to askbiologist.asu.edu to find out more about the mysterious world of Dr. Biology. Also about how to submit a question to Ask A Biologist, and also, there is a link to the pod cast there.

Dr. Biology, thank you very much for joining me tonight. I really appreciate you being here.

Dr. Biology: My pleasure.

Sean: You have a good night. Bye. Bye.

I'm sorry you didn't get a chance to ask a question to the biologist.

Woman 1: That's all right.

Sean: This microphone; I can hear this microphone. Can you hear this microphone?

Woman 1: Yes, but I am not on.

Sean: Yes you are. I can hear you...

Woman 1: I don't hear me in my headphones.

Sean: You don't hear you in your headphones.

Woman 1: No. I hear nothing in the headphones.

Sean: Because I unplugged your headphones.

Woman 1: [laughs]. Wow.

Sean: [screams] What a fuster cluck!

Woman 1: [laughs]. There. I hear me. Yeah, I wanted to ask some questions to the biologist. But I asked a few through you so that was OK.

Sean: I'm sorry.

Woman 1: That's OK.

Sean: Folks, later on..... This is your turn.

Woman 1: Oh. Later on in the show we are going to have our RC babe Sly with her birthday, shout outs, announcements, website of the week. We will have our graphics tip of the week which is going to be how to add a digital matte to your prints. And we are also going to have, I guess up next now, Matt Detherage [sp] with Macjournal.com. This is Your Mac Life.

[music]