Ask A Biologist Vol 094 (Guest Joe Palca)

Who Do You Trust?

The evening news, your local paper, online websites, blogs, twitter, Facebook, and yes podcasts all are communicating the latest science news. In this mix of messages are often conflicting stories about what is good and bad for you. It also seems that every other day there is a cure for cancer or some other disease. With all this messaging, who do you trust? Dr. Biology has a chance to talk with longtime science correspondent, **Joe Palca**, about who we should trust and science communication.

Transcript

Dr. Biology: This is Ask A Biologist, a program about the living world, and I'm Dr. Biology. Let's start off with some science news headlines. You're likely to have heard that chocolate is good for you, and that was followed by stories of, well, it's bad for you and if not that story. How about the headline that coffee's good for you and well then again, it's back to bad for you. These are just a few of what looked like flip-flop claims that were in the new. So it's no wonder some people are questioning science, but is it science that's misleading us or the way we communicate scientific findings to the public? There's no question that people are getting more messaging than ever before between twitter, Facebook, Instagram, and other social media. We're bombarded with messaging and these channels don't even include the growing number of websites, blogs, and video channels we consume.

With all that information, how do you know who and what to trust? My guest today is science correspondent, Joel Palca. He's been communicating stories about science since the early eighties. You might've heard some of his reports on NPR and on his special series called Joe's big Idea. Today we get to talk about his storytelling process and how he's helping scientists tell their own stories and maybe we'll get to that question of trust.

Welcome to the show, Joe Palca.

Joe Palca: Great to be here.

Dr. Biology: Every time I get a guest on the show, I have the fun rabbit-hole experience. Interesting thing with you of course, you've been doing this for quite some time, but you started out not uncommon for some science correspondence as a scientist and you have your PhD in psychology and I actually wanted to talk to you about humans sleep because that's a topic that I think of all of this could use a little more of.

Joe Palca: Yeah. That's how I got started. It makes you very popular at parties to say that you were once a sleep researcher and I do my best to convince people that they don't want to talk to me after a few minutes because when they asked me why do we sleep, I say, well, I don't know, and what's a good amount of sleep? I don't know. Why do we dream? I don't know. And the answer to those questions is pretty much universal. So I got a little frustrated with sleep research. I mean, there's a lot of things that scientists have learned about sleep, but I think the fundamental questions are still out there and frustratingly have defied good answers. That's what got me out of the field, uh, 35 years ago.

Dr. Biology: Well, that was actually what I was going to ask about. You didn't follow the typical academic or research path. You took this other career. So what was the motivation to go into science communication?

Joe Palca: In one sense it was desperation. I was coming to the end of my fourth year in graduate school and thinking, okay, now what? I had collected all the data that I needed for dissertation. I didn't want to go into clinical sleep disorders because that seems to be where the money was, but I wasn't particularly interested because I didn't think that the treatments were particularly effective and I also didn't want to have to take orders from an MD even though it would be something I would know more about and I was sitting in my office in the basement of Kerr Hall on the Santa Cruz campus looking through my copy of Science magazine and I saw a picture of, you know, these people, they always take these pictures in front of marble monuments of everybody smiling and says "AAAS American Association for the Advancement of Science Mass Media Science and Engineering Fellows Program".

Joe Palca: Really flies off the tongue and it's said, you know, scientists, graduate students, undergrads who are in the sciences get to try 10 weeks in a real media organization. The idea is that the media people will learn, oh, this is what scientists do and how they do it, and the scientists would learn what the media is all about. We'll tell you the truth. I don't think the media really learned very much from the experience, but I learned a lot. I applied for the program and I got in, and you know, after being at the bottom of the totem pole in the science world, as a graduate student, when you walk into the NIH, let's say, the National Institutes of Health with a camera crew, you know, they're holding the doors open for you, they're waiting for you. They want you to be there.

And so instead of being, you know, go away, you bother me. It was, oh, and can you come and tell this story and that story and this other story. And so it was nice to be on the other end of the totem pole as it were. And I thought, oh, this is lots more fun. And I liked the way they get treated much better. And so I, um, I decided to switch careers.

I mean, I always wonder, well, should I finish my PhD? Was that worth it? Yes, it was something I started. I'm glad I finished it. I wanted my mother to be proud of her son, the doctor. But um, once I came back from that summer, my course was plotted. And one of the things that I think is one of my messages today is, you know, people come out of a graduate education and they think, oh, okay, I have all this experience and knowledge. What's it good for?

Well, I had a lot of very specific knowledge about thermoregulation during human sleep and it's not helping me at all in my professional career, but what has helped is all the other stuff I got from being in graduate school, which was how to solve a problem, how to attack something, how to get answers, how to fix things, how to work around bureaucracies, how to deal with colleagues, how to do all these things. Those are life lessons. And when I decided I wanted to be a journalist they all came in handy, because there was no open door. It's not like apply here and you're a journalist. It's just as hard in some ways harder to break into journalism as it is to break into science. And so I just put on the full court press and I have dozens if not hundreds of rejection letters because I was relentless and I think there's two parts to success and a lot of things.

Joe Palca: One, you need a modicum of talent, but two, you need to be relentless. It has to be, I mean. Or three lucky I guess is the other thing. So if you've got all three, you're golden. But when I walked out of graduate school, I knew how to frame a problem and how to get to a solution. My problem is how do I get into being a journalist? My very first job I used to go to these meetings of something called the media alliance, which was a group of. They were sort of media wannabes and San Francisco, alternative media who like to fuss about not being in the major media. And um, I

went to one of these events that I met a producer from KGO, ABC station in San Francisco. And I was telling her that I was trying to break in to writing. And I had found out that the entry level job in television. My fellowship I should say, was at a TV station.

Joe Palca: So my first experience in journalism was doing TV and I thought, okay, TV is what I want to do. So, I learned that the entry job in television in the San Francisco market was writer, producer, and so I didn't have any experience as a writer, producer because in my fellowship it was a union shop and I wasn't allowed to write for broadcast or be in the broadcast or anything. So I didn't really know how to do it. So I would put a tape recorder next to the TV and I'd record the evening news and then I transcribe it and I'd look at the format to see, okay, what are they doing, how do they do it? And I tried to emulate it. I would take articles from the San Francisco Chronicle and I would rewrite them in the format of the news programs. And I said to this woman, I'm trying to break in as a writer, but they won't give me the writing test.

Which was a time when basically they take some wire copy, which we don't have any more but was, you know, the Associated Press, or the United Press International would have some story and you would read it and then you would rewrite it for the news format. And so, okay, so what did I been doing all summer? I said, I said they won't let me take the test because I don't have any experience. "Oh they'll let anybody take the test." She called somebody and that somebody called me and said you can come in and take the test on Thursday. And I came in and take the test and did exactly what I had been doing all summer which was practicing and the next day they called me back and said, you did great. Can you come in Monday and do the 5:00 news? And so suddenly with no experience at all, I'm writing the 5:00 news for the number one station in the fifth largest market in the country.

Joe Palca: And at that point you don't say, oh, I don't really know what I'm doing. Which was the truth. You just say, sure, I'll do that. So that's what I did and that's how it started.

Dr. Biology: I remember the phrase, what is it? Chance favors the prepared and so when you say you didn't have any experience but you'd spent the whole summer really doing it on your own, which is amazing.

What I was really interested in talking about and with you, there's a distrust about science. Thinking through this, obviously, we don't blame science. I think it's often the way we communicate science. Are you seeing this and how are we going to get better at communicating both as the scientist and the communicator so that we can help get the stories out there in a way that doesn't make people have some mistrust.

Joe Palca: Well, I think I'm going to take issue with your premise because the Pew Foundation or Pew Charitable Trusts have been doing reports annually where they rate who the public believes and doesn't believe, and scientists are routinely right at the top, right behind the military in terms of favorable attitudes and credibility. I would say that journalists tend to be toward the bottom. That may be part of the problem that you're referring to.

So the book on how to communicate to the public - I never saw it. I haven't written it. I don't know what it is. I have no idea of whether I'm doing it right. I don't know who's doing it right. So if you're looking for an answer from me about how to ameliorate a situation. And again, I'm not sure that that situation that you base this on is fair. I'm not the right person to ask. I can tell you that I think there is a problem in the way science is communicated in the media which is that it's over promised and I think that in a way, and this is very contrarian of me, but in a way the explosion of science sections in the mid-eighties, fueled by the rise of the computer with lots of display ads and lots of money for science pages in a perverse way contributed to public lack of confidence in science communication.

Joe Palca: And here's how I play this out. And again, I have no evidence for this. So this is all just speculation and me thinking about it. With more and more and more and more science communication, which there was, there was more need to do more stories. Well, as anybody who's been in science for more than 15 minutes knows science proceeds incrementally, and I'm sure you and I could both count the number of "breakthroughs" if you want to use that horrible word that we've heard about in our lives, let alone in our professional careers on one or two hands maybe, maybe. But the way the news is covered is every week, every Tuesday there's a bunch of stories about this exciting discovery here and this exciting discovery there. It's exciting discovery there. They're all exciting and they're all newsworthy because they're in the newspaper. We wouldn't be in the newspaper if they weren't newsworthy, but in fact they're not newsworthy in the traditional sense of, you know, who's going to be the next Supreme Court justice that's newsworthy. Volcano erupting on the Hawaiian Islands, that's newsworthy. But this particular discovery, who knows how newsworthy it is, but it's always in the paper.

So I think, you know, this is where this idea of one day, this is a story about something that's good for you and then the next day it's bad for you and then the next day it's good for you and they're all valid, but it's confusing because they're all newsworthy. So which one is right? I mean, I can't tell you how many times we've cured cancer in my career except we still have cancer.
So my perverse answer is the explosion of science coverage has led to a heightened expectation of what science can do for people or can inform people about. I don't think that's a hundred percent true. If I were an academic, I might be more wedded to my idea. I'm not and I don't have any data so I can just say I'm an anecdotal person, but I do think that's a contributing factor. And then I think that something about polarization in the country, as a whole and the willingness to listen to things that seem at odds with the social group that you belong to has made communication more difficult. Somebody just forward me an article about the information deficit model as the reason people don't understand GMOs, as they they just don't know enough about it or the reason people are opposed to embryonic stem cell research is they just don't know enough about it.

Well, that's not always the case. There may be other reasons, but I don't think that it's not that people don't know enough about it. I think it's the people have other reasons not to like it or believe it. But you were asking my take on how to improve communication is to stop handing down edicts from on high about what we've learned and start talking about science as a process. So instead of saying this is the result we've just obtained, you still have to say that the story is how did you get there? Who's doing the science? How did they get there? Why did they do it? Why is it important? Why are they willing to spend their life watching ants go down a tunnel and come back out again with a little piece of food or something or some sand? What's interesting, what's in it for then? I never wanted to do that, but. But I talked to people who [are] fascinated by that and I think when you share that part of science, which is the discovery and process without saying, and this is going to change your life or this is going to cure cancer or this is going to get us to the moon, or whatever it is, you're having a more interesting discussion and you're not over promising. That's just my solution it may not be the right one.

Dr. Biology: Well, it gets back to your series on NPR Joe's Big Idea. I spent what the last two evenings listening to many of the clips, which I found really enjoyable and was introduced to as well on the video side.

Joe Palca: Maddie Sofia.

Dr. Biology: Yes. Yes. Very good. So I think we get back to why the reasons why we even started asking biologist was to capture the enthusiasm and the spirit …

Joe Palca: Yup.

Dr. Biology: … of the quest.

Joe Palca: Yup.

Dr. Biology: How did you come up with Joe's Big Idea?

Joe Palca: Well, the name was an accident. I can tell you about that, but actually this whole business about talking about process of science is something that I've had kicking around in my head for a long time. Going all the way back to 1999. I was on a fellowship from the Kaiser Family Foundation just working on covering medical science and uh, I just had this idea that there would be another way to tell science stories that didn't have this punchline of "this will cure cancer", or something like that. And um, it got floated to a foundation who was interested for a while and then it didn't happen and it kind of got mothballed for a while again. And then I guess about more than a decade later, NPR was again looking around for new projects that it could sell to potential foundations that might be interested in funding something.

And they dusted off this thing that I had proposed and we rejiggered it somewhat to make it more modern. And it was just this idea of covering. I came up with a tagline for it because it seemed helpful, but we were going to cover the "minds and motivations of scientists and inventors" and a way that kind of doesn't leave much out. But um, this foundation I don't mind sharing because they've been very generous with us. The Lemelson Foundation, which is very interested in inventors and inventing saw what I was doing as a way of intriguing people in the process. Getting them interested. Why would anybody do this? Well, it might lead to something in inventing and something important even if it doesn't end the world's water crisis or whatever, but we're going to get there by people who are determined and, and are trying stuff. Anyway, so the project kind of got off the ground.

Joe Palca: Again in a variety of good luck, things lined up and they were engaged and we had to come up with a name for it and it became Joe's Big Idea. And then about three years later we talked to them, the foundation. They said, we love what you're doing, but we'd like you to do more in terms of engaging a younger. And I'm thinking, okay, well I'm not going to go into high schools, or kindergarten because I don't have any particular skill set that's going to allow me to do that. But I do feel like I kin da get the graduate school world and graduate students who are interested in communication. I thought I'll use them and then they could go to the high schools. And so it really was me trying to say, all right, let's get people on board. And again, I was naive about what existed, but my idea was, oh, well I'll create a Facebook page and then we'll put stuff up.

And it turned out not to be, have as much interest as offering sort of opportunities to learn about what I could teach about communication skills and what I had to offer about writing and what I had to offer about speaking and engaging ways. And so we wound up with this thing called Friends or Joe's Big Idea, which again I'm not looking for science writers. I'm looking for scientists, graduate students primarily. But you know, undergrads, anybody who says I'm a scientist, and I think it's important that scientists do a better job of communicating with the public, and I'd like to know more about what's out there, and how I can pitch in, and how I can be helpful, and what maybe I can come up with something. And Ask A Biologist or Skype a scientists, there's just a zillion - you know, the barrier to getting into communication now is zero.

When I got in you had to have a printing press or a broadcast tower, but now all you need is a cell phone on a laptop and you don't even really need the laptop and you can do a credible, reasonable sounding - I mean even radio you had to buy a thousand dollars' worth of equipment when I started, never mind the fact that you didn't have a radio station. Now it just doesn't cost anything and everybody's got the tools. And so what's important is to figure out how do you build an audience?

And people ask me that and I say, I don't know, I was handed an audience, you know, I haven't driven them away from NPR. So I guess in that sense I, I'm good, but I haven't built an audience except tha t I'm part of a team that does science coverage, but I think that you build an audience by getting your parents to listen, getting their friends to listen, getting your Baker to listen. And here's the example I'll use. So if I have a million people listening to me on morning edition, that's the same number of people as if they're a thousand scientists doing podcasts and each one has a thousand listens or thousand subscribers that the same people. And so if you want to reach a million people, there's a lot of different ways to do it. And I don't think that my path is so easy anymore. I think the major media are struggling to figure out where they fit into this democratization of science communication, which isn't always good because anybody can say anything and claim they're an expert in anything and that's bad.

Dr. Biology: Right? Well, it's actually my theme here is who do you trust?

Joe Palca: Who do you trust?

Dr. Biology: Right.

Joe Palca: And my argument is, once upon a time, I used this example earlier today. Once upon a time you were an interested person, that you wanted to judge whether Darwin was right or wrong. You could pick up a copy of On the Origin of Species, read it and decide if it makes sense to you because everything in there is understandable to a layperson and Darwin fundamentally changed biology with a book that everybody could read and understand. That isn't the case today. We need surrogates who can explain things to us. And the question is, which surrogate do you trust?

Dr. Biology: Absolutely. One of the early things with the teachers was they wanted to get students to go and be able to read primary research articles. Well when we started this 20 years ago and I said there were two problems then I said, one is you don't have access to them. And the second one is even if I get you access to them, you wouldn't understand them. So one of the things we have done on Ask A Biologist, we added PLOSables. Anything's possible with a PLOSable. And those are primers that are written by the scientists that link to their primary research articles. It gets back to your point, and I'm a hundred percent behind this is who's better at telling the story than the scientist. If the scientist is trained to tell the story.

Joe Palca: Yeah, I completely agree with you, but I will add the caveat that some scientists are going to be good at this and some not so good and that's okay, but it's not a trivial process to become a good communicator. And it bothers me when scientists say, well, I went to a workshop or I did a thing and now I can do it. I'm saying it took me 10 or 15 years to be what I thought was good at it. Again, we can argue whether, I'm good at or not. That's another issue, but it's hard to take advice from somebody who doesn't have your knowledge set, trying to tell you you're not communicating clearly when you are such a professional.

Dr. Biology: Yeah. You're the expert –

Joe Palca: And, and nobody feels bad when you know, they don't know the science and they have to fumble around, but somehow scientists feel bad when they don't know the communication skills and they have to fumble around.

Dr. Biology: So let's talk a little bit about communication skills and one of the things I liked about how you're expanding the, the audience of writers. You have office hours.

Joe Palca: Oh yeah.

Dr. Biology: Let's talk a little bit about office hours because I know there are scientists out there and graduate students in particular probably take you up on it.

Joe Palca: Oh, they have. Ok ay. So what is office hours? You mentioned Maddie Sofia. Maddie is a, a person we hired two years ago. She was a graduate student in immunology at the University of Rochester and she finished and she, like me, had decided he was ready to do something different. Her idea was, hey, office hours, we invite you scientists graduate students to pitch a popular article. It could be about your work. It could be about something you're interested in, could be a personal experience. Actually, one of my favorite headlines is "I Divorced Science and Now We're Talking Again". And it was about a woman who was really feeling fed up with the lab she was working in and she just couldn't stand it., and she didn't have time for children and she just walked out and then took a few months and then came back into science and realized that she really liked science, but she didn't like it in the way that the kind of devotion working all day and night that some scientists want to give to their professional lives. And she said, you can be a scientist and still go home at 6:00 and see your kids. You can have that life. Stories like that were pitched to us. We had a professional editor who used to work at NPR named Rae Ellen Bichell would edit them for style, content, and clarity.

And then they would be put out in front of all the other FJOBIs and they would get to comment. So at the end, a lot of people have seen as an. It comes to me and I look at it and I give it to my thumbs up or thumbs down, but mostly your thumbs up at this point. And then I, with the connections of having done this for a long time, call somebody and say, hey, would you take a look at this? Now, admittedly that's, that's the cheat a little bit because just handing something in over the transom is a little hard. You don't get into scientific American blogs that way, but if Joe Palca says, hey, take a look at this, they take a look at it and we have now had people published in The Conversation, Scientific American blog. We just had something accepted in Popular Science. We have something in Vox. To me, it's just so gratifying and they're so thrilled and it's such a rush and maybe they'll want to do it again after they do it this first time and maybe we'll build a cadre of people who are really expert and getting good at communicating what they're expert at.

Dr. Biology: So how do they get to office hours?

Joe Palca: Well, they join me. Um, and that's easy friends with Joe's Big Idea. I mean, you Google Friends of Joe's Big Idea and it'll take you to the NPR page where it has my email and a jPalca at npr.org, or msofia at npr.org, send us a note and say, Hey, I want to join up, but it doesn't cost anything. And honestly, you know, we don't do that many officers. There's two of us it and we both have day jobs in a sense, you know?

Dr. Biology: Well Joe, I have to make sure that we get to three questions. I ask every one of my guests. When did you first know you wanted to be a scientist and later a science communicator and I know you gave us a bit of a nice discussion at the beginning. But was there really an Aha moment? Something that really sticks in your head that was like, okay, I know what I'm going to be doing.

Joe Palca: You know, it's funny as you asked the question, at least in terms of becoming a science journalists, it really was, when someone held the door open for me at the National Institutes of Health. We went up there with a film crew and I was just part of the team and I had - you know I was the guy that opened the door when I was a graduate student and here's some scientist opening the door for me. And I thought, yes, I'm really interested in what they're doing and they're appreciative of my interest and we're going to tell these stories. So that was the image that comes to my mind. My first science teacher in fifth grade who got me excited about science. I don't think that I would say I was ready to become a scientist at that point, but I got excited about science was a guy named Ralph Vrana V R A N A, and after he left the school I was at, he moved to Tempe and

was a faculty member here at ASU. He was my inspiration to love science. I don't think it really made me think, oh, I want to be a scientist, but it got me really excited about science. So that's answer number one.

Dr. Biology: So the next question, this is where I'm going to take it all away an d since you have a rather broad background, you've been a scientist, you're a science communicator. I'm going to take that away from you. This is your chance to, if you could have any kind of magical wand allow you to do anything you always wanted to do, what would it be?

Joe Palca: Um, two things really. I am ashamed, I guess is one way of putting it that I don't speak another language and I have thought that I would really like to take the time to go someplace and really become fluent in another language.
Dr. Biology: That's one you said you had two.

Joe Palca: Well, the other one is, uh, I'm, I like riding my bicycle and I feel like it's a great way to get exercise and a great way to meet people. I have a colleague at NPR, Tom Gleton, who just road across the country, but he did it for his 70th birthday and he did it with an organized group and they do it in 50 days.

Dr. Biology: 50 days.

Joe Palca: 50 days, and I don't know if I want to do that. I might, but I feel like I want to do an epic journey of some sort. I know it doesn't really contribute to the world or anything. It's just something I've thought of.

Dr. Biology: And the last question, and you've done a nice job of talking a bit about this, but for those young scientists or scientists to be or a science communicator, what would you give them for advice?

Joe Palca: I'm, I'm sure I'll run into copyright issues here, but I would say just do it. I can't tell you how many people say I'm really interested in science communication. I'm really interested. I'm really interested. Oh, well, what have you written? Well, I haven't written anything yet, but I'm really interested in it. What are you waiting for? The only way you can get better, even the people who are good at it, the only way you get better is by doing it. You find out what your voice is, you find out what your specialist skills are, you find out who you are, who you want to be as a communicator. My style of science writing is different from other people's that doesn't make mine better, just makes mine, mine. And um, when you find your style, that makes you a better communicator to some people, I'm sure some people think, "Oh God, it' s Joe Palca". I've gotta turn off the radio, but some people like it. And that's the best you can do.

Dr. Biology: Joel Palca, thank you very much visiting with me today.

Joe Palca: Sure

Dr. Biology: You've been listening to Ask A Biologist and my guest has been Joe Palca, science correspondent and reporter for NPR. If you'd like to listen to some of Joe's work, you can pop over to his special series on NPR called Joe's Big Idea. The easiest way to get there is by Googling those three words. The Ask A Biologist podcast is produced on the campus of Arizona State University and is recorded in the Grassroots Studio, housed in the School of Life Sciences, which is an academic unit of the College of Liberal Arts and Sciences.

And remember, even though our program is not broadcast live, you can still send us your questions about biology using our companion website. The address is askabiologist.asu.edu, or you can just

Google the words, Ask A Biologist.
I'm Dr. Biology.