Books and Ideas Podcast, #16: Interview with Dr. Steven Novella from The Skeptics' Guide to the Universe

This is Episode 16 of Books and Ideas and I'm your host, Dr. Ginger Campbell.

Today's episode is an interview with Dr. Steven Novella of the popular podcast The Skeptics' Guide to the Universe. I want to welcome any new listeners to my podcast and I want to give a special welcome to those of you from The Skeptics' Guide.

To learn more about the Books and Ideas Podcast, please go to the website at booksandideas.com. You can also send an email at docartemis@gmail.com. After the interview, I will be back for a closing segment. In that segment, I'll take a look back at the first year of the Books and Ideas Podcast and tell you what to expect in the coming year. Let's get on in to Dr. Novella's interview.

My guest today is Dr. Steven Novella who many of you have asked me to have on the show. So, Steve thanks for coming on today.

Steven Novella
My pleasure, Ginger. Thanks for having me.

Ginger Campbell
Before we start, can you tell us a little bit about yourself, especially your personal background and I'm interested in why you chose to go into medicine.

Steven Novella
Well, I am a Clinical Physician, I'm a Neurologist with an N, as I often have to clarify that and I did my medical school training at Georgetown and then my neurology training at Yale and I stayed at Yale after my training, I'm there as a fulltime faculty member. So I'm in what they call the clinical educator track which is an academic track that involves primarily seeing patients and teaching in the context of seeing patients, that's most of what I do. And then I'm about 10% clinical research as well. That's my day job, that's my primary career.

Ginger Campbell
Did you want to be a doctor from the time you were a little boy or…?

Steven Novella
No, I think I entertained various career ideas. When I was growing up I thought about being a lawyer for a while and then by the time I went to college, I knew I wanted to go into a science background and I did premed in undergraduate school. So certainly by then I had decided that that's probably what I wanted to do. So I would probably say in my late teens is when I really decided to go into medicine which I always, looking back, I find it interesting because I honestly had absolutely no idea of what clinical medicine was like at the time that I made that decision but I really fell in love with clinical medicine in medical school which I consider just to be lucky really more than anything else.

Ginger Campbell
Yeah, because I think I hated it in medical school and didn't actually develop any attraction to it until I did an internship at a small hospital where the medicine was more bread and butter.

Steven Novella
Right. I mean the good thing about medicine is that even late in the game there's lots of career paths open to you, even after your residency. After you're basically done with your training, you could decide to

be basically clinical or to do mainly research or to even go into industry or to do public health. When you choose your sub specialty, you could have those patient-oriented and non-patient-oriented sub specialties. So there are a lot of career paths that you could choose and I do find that most people sort themselves into where their strengths are and for me it was clinical medicine, diagnosing patients. That is what captured my attention the most.

Ginger Campbell
Did you decide you wanted to be a neurologist early on?

Steven Novella
Yeah, I did. Again I actually liked pretty much everything in medicine, when we were doing the 3rd year rotations you get a taste of everything. I can't say that there was any rotation I didn't like. I pretty much enjoyed all of clinical medicine. But early on neurology was on the radar and then when I did my first clinical neurology rotation in the 3rd year of medical school, I was absolutely sold. My decision was obvious to me at that point in time and it was far and a way the most interesting fascinating rotation that I had done. The patients, the diseases, just thinking about how the nervous system works again, I fell in love with it. It was an easy decision for me at that point.

Ginger Campbell
You liked the kind of Sherlock Holmes aspect of trying to figure out – because you were, that was before everybody was doing everything with CT scans, you actually had to do some thinking to figure out the diagnosis, right?

Steven Novella
Well, not in my time. I'm don't know how old you think I am.

Ginger Campbell
You are right.

Steven Novella
[4:41] Actually I think that's a bit of a misconception and I was told that in medical school too that back in the day, before all the fancy technological diagnostic equipment, before MRIs and CAT scans, neurologists had to be excellent clinicians and really think about things. But I find that's actually not true that modern neurologists, of course you can be lazy and you could overly rely upon technology and upon diagnostic tests to give you the answer but if you are a thoughtful clinician I think that clinicians today are far better than the clinicians, the pre-technological clinicians. Because if you saw a patient with a deficit 50 years ago you could make your pronouncements as a neurologist about what part of the brain isn't working and what it all means and unless the patient died and had an autopsy sometime soon, you never really found out if you were right or you were wrong. Your word was just the final authority and that was it.

But today I see a patient, I say I think this is where the lesion is and this why I think it's there. Then we get an MRI scan and I find out within hours if I was right or no. And that process makes you very good at thinking about the brain and thinking about lesions and localizing, and I always tell my residents, you got to play this game; you got to localize a lesion before you look at the imaging. You can't retrodict; you got to predict where the lesion is going to be. That way you will get very good, very quickly at understanding how different brain lesions – damage in different parts of the brain, result in the clinical picture that you see – the exam and the symptoms that you see.

Ginger Campbell
That's a good point. I had never thought of it from that point of view. So how long have been you practicing neurology?

Steven Novella
After my training this is the 11th year at Yale, practicing neurology.

Ginger Campbell

Okay. So you really did come along when the scanning was already. I've graduated from medical school in 1984, so CT scans were just new.

Steven Novella
Yes.

Ginger Campbell
And if someone came in with a stroke and you wanted to do a scan, we actually had to call the – radiologist and which of course, you know radiologists never like to come in. It was a really big deal. It was back in one of the many incarnations of whether or not to give Heparin to people the strokes. Now that I am an ER doctor I can't keep track of how often they changed their mind about what they think about that.

Steven Novella
Yes, that's an enduring controversy – you know using Heparin and other anticoagulants for strokes because as you know it's the benefit versus the risk is really close to the line. So there just isn't a definitive answer.

Ginger Campbell
That's even more true for TPA?

Steven Novella
Yeah TPA – at least there is some hard and fast criteria now for TPA. For Heparin, we never even got to the point where we could say here is the protocol. If you stay on this protocol, you are more likely to help than to hurt. It's still just – it's right on the line and therefore it's pretty much up to opinion which is overly affected by authority, how you were taught, and also just by your quirky personal experience.

Ginger Campbell
Yeah. That's very true that doctors are affected by their – we are probably more affected by our personal experience with patients than people like to admit.

Steven Novella
Even than we like to admit.

Ginger Campbell
Well that's – especially we probably. So during your career what do you think is the most important discovery or change that you have seen?

Steven Novella
[8:10] You know, I don't think there is any one huge thing. I think all of the fundamental big discoveries were laid down before I started. Because I graduated in 1991. So a little bit less than a decade after you. I think that science progresses by baby steps these days and we take every little incremental improvement is a big deal. But there is no like a huge discoveries that change our very approach to things. I would say that when I started doing medicine in the early '90s MRI – CT scans were well established and the MRI scans were really just coming on the scene. And the MRI technology, magnetic resonance imaging, has really improved incredibly over the last 10 years and all kinds of new types of MRI scans. They can process that information in many, many different ways. So that has been the most consistently advancing and changing aspect I think of neurological practice.

Ginger Campbell
And you are not really involved very much in the basic research of neurology, since you are a clinician?

Steven Novella
Yeah, I don't do basic research. I do clinical research. So I do clinical trials, usually one arm of a multi-center trial, do some investigative or initiative research with some colleagues of mine in my department in my sub-specialty of neuromuscular disease. So we've done some diabetic neuropathy research, and I am

collaborating with my chairman and some others on a rare disease called erythromalalgia, which is a very fascinating disease that causes terrible burning and neuropathic pain which has no cure and really no very effective treatment right now. So it's good that – it's good in that it's an interesting disease. We are learning a lot about it and it's also very rare which means there isn't a lot of other people around the world who are dealing with that. So, it's good to have something about which you could know more than everybody else. So that's – my research always has that clinical angle to it though.

Ginger Campbell
I have been doing the Brain Science Podcast, I am not a neurologist or a neuroscience per se – I mean, I did graduate school in biomedical engineering and worked with some people doing neuroscience research. But that was a long time ago. I am doing this podcast because I have a personal interest in the subject, and I'm just trying to put it out in plain English to other non-specialists. And in the last year the thing that has been the most interesting to me that I have been reading a lot about is neuroplasticity, have you noticed any impact of the implications of neuroplasticity in your work yet?

Steven Novella
Not yet. I think that – so neuroplasticity is the notion that the brain can rewire itself and generate new neurons in response to injury or in response to need. And what we've discovered in the last 5 to 10 years that there is much more plasticity in the adult brain then we had previously thought. In fact, we have discovered that there are neurological stem cells in the brain that will actually make new connections and grow new neurons in response to new demands being put upon the brain. That's all been extremely interesting, it hasn't filtered yet through from our basic science understanding of plasticity necessarily to changing the way we practice medicine. Because we've always – at least in modern times we've known that there is some degree of plasticity and we've always tried to get the most out of it. So we've already – we are treating patients on the assumption that they had some ability to improve after damage, doing rehab and et cetera. So our knowledge of plasticity hasn't translated into changing how we actually treat patients. It's just really expanded our understanding of it. I think that it may potentially lead to that and I think that in fact, a lot of the stem cell research is now heading in that direction trying to actually regenerate damaged parts of the brain after an injury rather than just making the most of what's there. So I think that probably the benefit of that line of research we have yet to see and that would probably be coming in over the next 10 or 20 years.

Ginger Campbell
[12:15] When I use the term neuroplasticity, I am not referring to just growing new neurons. I'm also referring to the discoveries that there are some connections that are probably – I don't know if I should use the word latent, but one's that don't get used because competitively other connections are being used. For example, the discovery that the visual cortex can do other things when there is no visual input. So in that line for example I mentioned in the notes I sent to you, constraint-induced movement therapy which is really not based on the idea that any new neurons are going to grow. It's based on the idea that there are connections that can be unmasked and strengthened.

Steven Novella
Yes, there is definitely unused neurons. I don't want to inadvertently feed into the myth that we only use 10% of our brain.

Ginger Campbell
Yeah, let's definitely say that's false – that's false.

Steven Novella
Yeah, we use all of our brain. But there are neurons that our either underutilized or waiting to be utilized even in the adult brain and in fact, once we get past around 50 there is process called pruning by which neurons that are not actively being used start to die-off and the brain will atrophy, and that doesn't necessarily result in any decreased cognitive ability, but it does result in a decreased adaptability. So, which makes sense – there is fewer neurons waiting around to be recruited to new tasks. I also found interesting that the research in like the last decade or so has shown that by introducing novelty, continuing to learn new types of cognitive skills especially after the age of 50, really delays that whole

process and keeps those neurons around longer. In essence maintains our neuroplasticity as we age. So perhaps one of the healthiest things that we could do for ourselves neurologically is just to remain really mentally active especially as we get older and not to fall into the trap of doing the same old routine or continuing the hobbies that you've always done. You should make it a point to learn something that's completely different than what you've done before in your life and that will – that's very, very healthy for the brain.

Ginger Campbell
That's one of the themes that's really come out of almost everyone that I've talked to about this. It seems like –

Steven Novella
One example – if I may, is actually video games, which I found to be very funny since – actually I am a big video game aficionado. Just because I started playing when I was a young kid and I've always had a fascination with them. And all of the research on video games shows that it's incredibly a positive effect to many people but a lot of people have negative assumptions that if you are sitting in front of a computer screen playing a game that your mind is wasting away. In fact, the evidence shows that it makes people more intelligent and not just in the ways that you would think, for example, eye-hand co-ordination, actually it improves cognitive ability beyond that. And that dovetails with the neuroplasticity research that I was just talking about, in that, the thing that makes video games interesting is that they are introducing novel cognitive tasks and the difficulty of them – they are usually designed so that the difficulty is always one step out of reach from where you are. And then when you master that level, you progress to the next level where things are a little bit harder still and that's the – that actually turns out to be the optimal way to stimulate the brain to be healthy and to maintain it's plasticity.

Ginger Campbell
Well, I guess then I can be – take a positive attitude to the fact that since my husband's retired he has beat Halo III three times and he is working on the fourth time. He is on Heroic now. And I still haven't had time to play it once.

Steven Novella
Yeah, everything in moderation. But it is actually – it's actually overall a positive thing to do.

Ginger Campbell
[16:12] My video gaming has been the thing that disappeared when I took up podcasting.

Steven Novella
Yes. It definitely eats into pretty much all other aspects of my life including video gaming.

Ginger Campbell
I still make time for playing tennis though. [Music] I wanted to ask you about your experience since I know you probably get a lot of e-mails and stuff. With magazines like Scientific American Mind becoming popular, do you think your patients getting any more aware of how their brains work?

Steven Novella
Well, I definitely notice that my patients have more information I don't necessarily think that that information is better, I think it's very hit or miss. So patients are coming to me with more misinformation in addition to more information and they often in fact will come to me with a ream of paper that they've printed off of the internet and then we will go through it together. Sometimes – if it's off of a reputable site, sometimes it's all very useful information, but oftentimes it's chockfull of nonsense and then we – I have to spend time deconstructing it further and showing them – explaining to them why all of this is not accepted scientific information. So it's a bit of a double-edged sword and I think it informs my clinical philosophy in that I spend a lot of time educating patients about their brain and their disease and I think that that's a necessity these days. It certainly correlates with more compliance. The patients are much more likely to do what you would think that they should do if they understand why you think they should do that. You can also successfully steer them away from misinformation by educating them about how we

know what's real, what isn't real, and how we make our recommendations. Sometimes in fact, being at an academic center I get referrals from other neurologists or patients will come to me for a second opinion and oftentimes I completely agree with the opinion of the first neurologist. They just didn't spend 10 minutes with the patient explaining to them their opinion. That's – often that's the only thing that I add to the patient care is that I spend 10 minutes teaching the patient about why what the first guy said actually was correct.

Ginger Campbell
Yeah, ironically now so many doctors don't really have or they don't make enough time, sometimes it's hard tell the difference – enough time with their patients. I work in a small emergency room and sometimes I tell my patients this ironic truth that one reason I'm in the emergency room instead of private practice is that to – I can spend more time with patients in the emergency room than I would be able to if I was in an office.

Steven Novella
Right.

Ginger Campbell
And the patients will say well that's the first time anyone's ever explained that to me.

Steven Novella
Right, exactly. Yeah, I often get that response as well. Yeah, I think that the reality of managed care is that insurance companies are only paying for 10 minutes or 15 minutes and in order for physicians in private practice to survive that's all they could really spend with the patient in a return visit. So I think if we want that to change we have to change the system a little bit.

Ginger Campbell
As a primary care physician, I found it very frustrating that the insurance companies pay over $1,000 for an MRI but wouldn't pay for the doctor to spend more than 10 minutes with the patient figuring out that they have actually had headaches for 50 years and don't need an MRI.

Steven Novella
Right, exactly. Yeah, I agree. I don't think that it's actually even made the system more efficient. It's always penny wise and a dollar foolish. They cut cost where they can easily, logistically – but you just say all right we are going to pay you less for seeing patients, forcing doctors to see more patients and therefore spend less time with them and not realizing that that results in probably more unnecessary studies, maybe more delayed definitive diagnosis. Patient seeking second opinions when they didn't really need the second opinion. So I don't think it has actually increased the efficiency of the healthcare at all. It's just sucked a lot of resources out of it.

Ginger Campbell
[20:06] So let's sort of change gears now and one last neurological thing I wanted to talk to you about was your main area is neuromuscular diseases.

Steven Novella
That's correct. So neuromuscular diseases which includes diseases of the nerves, the muscles, the neuromuscular junction, the connection between the two and the motor neurons which would be in the brain and spinal cord.

Ginger Campbell
Do you see many patients that have diseases that are related to aging?

Steven Novella
Yes, there is a neuropathy of aging. So we do see nerve damage that is either just a course of aging or is exacerbated by that and most of the other neuromuscular diseases that I see are genetic or they are just neurodegenerative. They have increased risk with age but they are not necessarily a disease of age.

Ginger Campbell
The question I wanted to ask you is and this kind of relates to the kind of information people get off the internet because a lot of it I think is put out there by people trying to sell things, like the pharmacological companies trying to convince people that drugs, for instance like the ones for Alzheimer's disease are really helpful when it seems like there is not evidence that they do very much, if anything. And I just kind of have this gut feeling that a lot of people are putting too much hope into drug solutions, what do you think?

Steven Novella
Well, yeah, I think that pharmacotherapy is overall a very successful approach but you have to do what we call rational pharmacotherapy. We definitely need to be as skeptical as anything of claims being made by the proponents of whatever products they are selling, certainly the pharmaceutical industry always tries to put their best foot forward and tries to spin the evidence. Sometimes I absolutely reject their spin. I mean they are trying to really either split hairs or even misinterpret the research or try to somehow massage the data so that they get a statistical significance when there really isn't any clinically significant advantage to their drug. Or they will are focus on some distinction which doesn't really matter that much in the big picture clinically.

And the same is true of the supplement industry, I think a lot of times people – because big pharma's like the big bad guys on the block, the supplement industry gets a free pass and I think that's a mistake. In fact, also the pharmaceutical industry and the supplement industry are very much merging, there's a tremendous amount of overlap. I think, if anything, the problem is a lot worse in the supplement industry because it's essentially de-regulated. So manufacturers can make pretty much whatever claims that they want as long as they are little bit careful in the wording not to mention specific diseases then they could make in essence almost any healthcare claims. So I think the public needs to be extremely cautious and extremely skeptical about all of that.

And I think again the same approach needs to be applied to claims that are not pharmacologically based. So if you are saying that physical therapy helps with a problem, that's just as much of a healthcare claim as saying that a medication helps with a problem. I believe in science-based, evidence-based medicine and I think that that should apply to any claim regardless of what the basis is.

Ginger Campbell
But it seems like the average person doesn't really understand concepts of statistical significance. So it's real easy for a benefit that's really not significant to be sold to them.

Steven Novella
Yeah, there is lot of complexity in interpreting the scientific data. Pretty much every kind of mistake that you could make the public is encouraged to make by clever advertising. For example, I often will see basic science research, used to support clinical claims, and as we know you can't do that. You can't take the effect of something, whatever it is, on cells in a Petri dish or on animals or whatever and apply that to a net clinical outcome in a person. That's one big mistake I often see. And especially in the supplement industry again because they are not required to do human research, and often they will just pull some paper that says whatever this substance or herb or vitamin or mineral or whatever has this effect on cells, then they will base a marketing campaign around that claiming that it, for example, will boost the immune system and therefore people are taking it for their cancer. I mean, really there is no limit to how – where they will extrapolate from that. I think that's probably the single biggest problem. There are more subtle things like these – in terms of like interpreting statistics, for example, people often don't understand the difference between absolute risk and relative risk. So, for example, if there is a one in a million chance of getting a disease and you reduce that to a half per million or one per two million, that's a 50% reduction in the relative risk, and that could make it seem like a huge deal. In fact the absolute risk is insignificant.

Ginger Campbell
[24:56] That's how I felt about the whole decision making with Vioxx. I mean it was like – okay, you have a one in a million risk of getting heart disease and now you are going to have a two in a million risk, which

doubles the risk. So this is a big deal. We must take it off the market. I mean as a person who has – I have an artificial hip and I have taken a lot of antiinflammatories over the years.

Steven Novella
Right.

Ginger Campbell
I resented the idea that I wasn't going to be able to make that decision with my doctor rather than have some lawyers or worrying about being sued basically driving the decision.

Steven Novella
And interestingly the situation with Celebrex which is related to Vioxx is almost the same thing in terms of the data. It's not quite as bad as the Vioxx data and that's what they did do. They said, all right, there is this concern, but you could make this a risk versus benefit assessment between the doctor and the patient. And I agree that maybe that would have been the better approach to Vioxx. You know, Merck voluntarily pulled that off the market. They weren't required to and I think they did it because of the fear of liability and litigation, probably because when they looked at, they said, you know, gee, you know what we have been sitting on this data for a few years. It really looks bad. We'd better just like now really be proactive and pull it off the market. That's what I suspect happened. But you are right, it's not like people were dropping dead like flies because they were taking Vioxx. I think the risk was hugely overblown.

Ginger Campbell
In fact, if I had known it was about to come off the market, I would have bought up a bunch of it.

Steven Novella
Yes.

Ginger Campbell
Before we close, I know that many of my listeners are already fans of your podcast, The Skeptics' Guide to the Universe, but for those of them who haven't heard it, do you want to talk a little bit about your podcast?

Steven Novella
Yeah, sure. This is a weekly science podcast that usually runs about 70 to 80 minutes in length. It has multiple different segments to it but often we'll do some science news or answer emails. Most of the time we interview guests. We have some fun sections like "Science or Fiction?" where we challenge the audience to pick out the fake science news item from the real science news item. And we deal primarily with controversial topics or topics on the fringe of science, although sometimes we do just straight up really interesting science news stories, whatever captures our interest. But we deal with the paranormal or conspiracy theories, or health fraud, consumer protection type of issues. And our goal is to give our listeners the tools to look at science in the news, science in society and have some way of navigating through all of the claims and all of the hype and basically have the tools to figure things out for themselves more than anything else.

Ginger Campbell
And then how can they find you if they want to learn more?

Steven Novella
We are on iTunes. I am happy to say that we've been – for the last couple of years we've been in the top 20 of all science podcasts on iTunes and we are in the top five or six, usually either one, two, or three in terms of the newest downloaded or the most popular podcast. So, you will see The Skeptics' Guide to the Universe on the science and medicine section of iTunes. You can also go directly to our website and download individual episodes directly from our website or find places to sign up for the RSS. So we do have an RSS feed that you can subscribe to.

Ginger Campbell

Is your address one that's easy for somebody to get?

Steven Novella
Yeah, it is www.theskepticsguide.org.

Ginger Campbell
Okay, I will put a link in the show notes. But some people in fact most people never go to the show notes as I am sure you know.

Steven Novella
Yeah, that's right.

Ginger Campbell
[28:24] So how do you manage to put out a long podcast every week? You have other people working on it with you?

Steven Novella
Yes, I have four co-hosts who do share in the prep work. I try to get everybody to like at least prep one if not two items to talk about during the show and one of the co-hosts also runs the website and so we try to divide the work as much as possible, but I produce the show. So I am ultimately responsible for the content and prepping it and I do all the post production which I know, as you know is a lot of work. So you know, it's a good 20, 30 hours a week that I put into putting out this podcast, it is almost like having a second job. And, you know, it's a labor of love. It's certainly not easy, it's a lot of work every week, but what we found out with these kind of things is that you can't just do it every now and then, because if you really want to build an audience and build a brand and stay popular you have to put out content on a regular basis. So we committed ourselves to putting out a show a week and we have been able to do that for over 100 episodes.

Ginger Campbell
That's great. I think I probably put 20 to 30 hours a week into the Brain Science Podcast but I am only able to get it out every other week, but I work really hard to do that for the exact reasons that you said which is, they have to know your content is going to be there regularly.

Steven Novella
Right. That's right. We have a great audience, we have a very active fan base. We have an active fan website, SGUFans.net, the SGU forums are an extremely active community but by the same token our fans are very demanding. They always want a lot and they want more from us and of course we are happy to deliver that content but that's the nature of the relationship.

Ginger Campbell
So before we close is there anything else that you would like to say or share – usually I'm interviewing book authors and I always like to try to give them a chance to talk about what I forgot to ask them but that may not apply to you.

Steven Novella
Yeah, unfortunately at the moment I don't have any books to plug although I do have a few irons in the fire, as they say, because I am working on a few things. I do have my blog which your listeners may be interested in, NeuroLogica Blog, Monday through Friday. So I pretty much stick to that, occasionally if I am really, really busy on a day I'll miss an entry. So four or five entries per week on topics of science and medicine, neuroscience, logic and philosophy, just skepticism in general. I'll probably be putting some of that content into book format hopefully over the next year. And then The Skeptic's Guide also has a blog attached to that the SGU blog which is The Rogues Gallery and I'm also in the process of starting up a third blog which is going to keep me busy. But this is one that is going to focus on science and medicine and the name of the blog is Science Based Medicine. This should be coming out by the beginning of 2008 is my goal. And for this one I am putting together many, many authors. So this is not going to be one that I am going to be authoring personally. I am going to be contributing to it but I am trying to put together a

dozen or so people who are experienced writers, explaining medicine to the public and confronting health fraud or controversial topics in medicine. This is all based around the concept that medicine should be and is best when it is based upon the best science.

Ginger Campbell
That sounds really good. You are going to have to be sure to let me know when that goes online so I can put a link to it on my websites.

Steven Novella
Absolutely. We will be announcing it as soon as I pressured my web developers into actually doing all the busy work and getting it online. But it should be very soon.

Ginger Campbell
Great, thanks a lot, Steve. I appreciate you taking the time to talk to me today.

Steven Novella
It was my pleasure, Ginger. Thanks for having me.

[Music]

Ginger Campbell
[32:15] Really appreciate Dr. Novella taking time to be on the Books and Ideas Podcast. If you visit the website www.booksandideas.com you will find the show notes including links to Dr. Novella's blogs. You can leave comments at the website www.booksandideas.com or send me email at docartemis@gmail.com. If you downloaded this episode because you're a fan of The Skeptics' Guide to the Universe, I hope you will check out my other podcast, the Brain Science Podcast. On the Brain Science Podcast, we explore how recent discoveries in neuroscience are unraveling the mysteries of how our brains make us who we are. The website is www.brainsciencepodcast.com. We also have a discussion forum at www.brainscienceforum.com. The forum has a special section for the Books and Ideas Podcast and that's a great place to leave feedback.

Both of my podcasts, Books and Ideas and the Brain Science Podcast are available on iTunes. The easiest way to find them there is to go into the iTunes Music Store and search under Ginger Campbell.

Books and Ideas actually started a week or two before the Brain Science Podcast, back in December of 2006. My original idea was that this podcast was going to be where I put everything that didn't fit into the Brain Science Podcast. It's actually evolved to have a somewhat similar format, in that I usually either have a discussion of a book I've read or I do an interview with a scientist, a writer or somebody else interesting.

Looking back on the first 15 episodes of Books and Ideas, I want to give a special thanks to Matthew Cobb who was my first interview guest back in Episode 7. We talked about his book Generation. He got me over the fear of doing interviews because that was new to me and it's become a very popular part of both of my podcasts. So, Matthew if you're listening, thank you again.

In the first year of Books and Ideas, I had to cut back the frequency of the show because of the time demands of the Brain Science Podcast. My goal for the coming year is to put out at least one episode per month. The next episode that I have planned will be a discussion of David Halberstam's last book, The Coldest Winter, which I just got done listening to on audible.com. If you haven't gotten your free audio book downloaded from Audible yet, you can get that by going to audiblepodcast.com/booksandideas.

After that, I'm hoping to do some more interviews and I have sent invitations to Mur Lafferty and to Tabitha Smith from Buffy Between the Lines. Both Mur and Tabitha are wonderful writers and also podcasters.

Another idea I have in the works is that I have been reading Anthony Kenny's four-volumed History of Philosophy. I haven't figured out yet whether I can turn this into something that would be good for a podcast.

A goal I have for the next year is to get more listeners because the subscribers to Books and Ideas has been fairly stagnant, although I guess I should be grateful that it has not gone down given the relative infrequency of my episodes.

One thing I need to mention and I always forget is to tell you that the website www.booksandideas.com is really a blog and it always contains the show notes for each episode but in between, I do mini book reviews on books that I have read that I don't have time to do full podcasts on. So if you like books, I hope that you will subscribe to the blog.

Recently, on the Brain Science Podcast, I announced a way for listeners to help support my podcast via donations and subscriptions. So I want to take this opportunity to thank those of you who have sent in Paypal donations. Paypal does allow you to use your credit card, although if you make a direct Paypal donation then they don't deduct that credit card fee which means that more of the money actually goes to me.

Now you might wonder, since I keep talking about how little time I have to do the Books and Ideas, why I keep it going. My husband Dennis keeps asking me this, he keeps saying that I should just let Books and Ideas die. But I have several reasons why I want to keep this podcast going even if it only comes out once a month.

First of all, it gives me a chance to talk to a lot of interesting people. But probably more important from my point of view, is the fact that it allows me to keep from getting too focused on neuroscience which is what I talk about on the Brain Science Podcast. I love to talk about the books I've read and this podcast gives me the perfect opportunity for doing that. So even though I can't get Books and Ideas out more often, I am committed to continuing it for the following year.

And in closing, I want to remind you that next week there will be a new episode of the Brain Science Podcast coming out and that it will be an interview of Dr. Maryanne Wolf. We're going to be talking about reading and the brain. Until then, thanks again for listening. I'll talk to you soon.