

Ken Griffith Transcript

Jessica Spott:

Hi everyone. Good afternoon, thank you for joining us today for our STEMinar. Today we have Dr. Ken Griffith who is joining us for our STEMinar today. His topic is going to be “conveying science to general audience”. Dr. Griffith is the Director of the STEP Program here on campus that's housed out of the TLPDC, so I encourage you to, and I hope, Ken, you'll talk about your program a little bit, and seek him out and get some more information on that. We'd also love to have you join our membership for those of you who are not currently members, so feel free to check us out on our website, which is just stem.ttu.edu. We'd love to have you join us there, and at that I will go ahead and turn it over to Dr Griffith. Go ahead.

Ken Griffith:

Awesome. Thank you DR. Spott and STEM CORE for sponsoring this little talk. I do want to go ahead and introduce the STEP Program very briefly to kind of give you some ideas to what it is. So, STEP is actually the STEM Teaching Engagement and Pedagogy Program, here over in the Teaching, Learning & Professional Development Center. We love our acronyms, in fact, STEP is an acronym within an acronym because you get stem in the “S” so it's very meta. But anyway, so what we do in the STEP Program is kind of two things. One, we're a faculty development program where we work with stem faculty across campus where we talk about evidence-based instructional practices in an attempt to improve the success and retention for students. And then we also have a learning assistance program who my colleague here, Matt Saldana is the coordinator for all of our learning assistance where we will embed undergraduate students in your courses. Of course, they've had the course and, that's a lot of courses, of course they've had the course and have done well in that course and would like to come back and help other students do well in that course. And so, it's a research-based pedagogy. In fact, we didn't invent it. I would love to be able to take credit for it, but we didn't come up with the idea, it was actually CU Boulder who came up with the idea and now it's kind of blasted all over the nation and it's showing quite a bit of success and that success is actually kind of been tracking here at Texas Tech as well. We started in 2019 with learning assistance, and we have grown by over 230% just since then. So anyway, if you'd like more information about the STEP Program for the Faculty development side, please reach out to me, or if you're interested in learning about learning assistance reach out to me or my colleague Matt Saldana who's on the call here.

So enough about STEP, I'm very excited to be here. I'm also a fellow in STEM CORE and if you have not reached out to become a fellow or the various membership levels within STEM CORE, I would encourage you to do so, it puts you on mailing list and get you involved and engaged and lots of stem-based stuff going on around campus and community-wide, but I'll go ahead and get started here. I am watching the chat box and I asked Jessica, if you wouldn't mind kind of keeping an eye on it for me as well. But you're always welcome to just jump in because in the TLPDC, one thing we don't encourage too much of his death by PowerPoint and what I don't want to do is have a total death by PowerPoint thing, while I'm talking about don't do death by PowerPoint. So, I have left plenty of time at the end of this talk to get engagement, comments, questions so on so forth.

But again, if you want to just jump in and ask a question, please don't hesitate to do so. So, let's go ahead and jump in and get started and hopefully everybody can see my screen and hear me okay? Awesome, thank you Levi for the feedback.

So, who is your audience? That's kind of our first question here. Well, is it biologists, is it clinicians, how about interdisciplinary researchers or intradisciplinary researchers, for that matter? How about graduate students? And then specifically are they master students or the Ph.D. students? Are they mixture of those different levels and are they from across different disciplines, possibly? What about undergraduate students, majors, non-majors? Are they in a class or at a meeting just to you know get a science credit or extra credit or something like that? What about community leaders, that adds a new wrinkle? What if you're given a talk at a PTA meeting or at a Chamber of Commerce meeting or, you know, anywhere, at the donut shop, who knows. I mean maybe you've been invited to come down and talk about. Something that is near and dear to your heart or your research or your specialty and you need to figure out a way to reach folks that don't necessarily know all the jargon and terms that you know. Odds are you probably have a mixed audience and in a town like this the mixed audience can probably include all of those groups, literally.

Now, my question here is do you modify your presentation or your content or even the delivery of that content, based upon your audience? So, if you know you're going to go teach to interdisciplinary researchers, or you know you're going to go talk to cell biologists, do you change your presentation or your delivery of that content based upon that audience? Likewise, if you're going to go talk to undergraduates who have never had a single science class in their entire lives, well hopefully they graduated high school, but if you're going to go talk to them, what are you going to have the same conversation? Well, here's an example to kind of give you an idea of what I mean. All right, boom. That, that's quite a slide, isn't it? Right? Kind of makes your head hurt a little bit. Now, I probably wouldn't take this slide to the PTA meeting, right? Odds are or the donut shop, now unless it's a donut shop where I'm talking with cell biologists, virologists, and immunologists and that sort of thing, but this slide is going to mean nothing to most people and the purpose of a slide, the purpose of a figure like this is to actually communicate information and communicate data. And if I show this, am I really just trying to show off that I have you know I know what all this fancy stuff means or am I actually trying to communicate. I think that's the real trick that we have to think about when we're presenting to non-specialized audiences. And in case you're interested, the way I would explain what is going on in this slide, which is actually based upon a paper from the proceedings National Academy of Sciences back in 2013, but I would just basically describe what's going on in this slide where the papers talking about how natural killer cells neutralize their targets. Now that's intriguing. I think that sends a message "Oh well, this stuff looks complicated, and I don't even understand it, and all the red and the green and the bars and all that stuff what I don't even know what any of that is". But if I say, "This is demonstrating how natural killer cells neutralize their targets", now that I hope piques your interest. So, in other words, that image is great for a cell biology journal club, but probably not for a general audience. So here's a question for you, and this is

an actual question not rhetorical, I hope that I see some answers in the chat box or actually if you want to unmute your mics, but what makes a presentation or a talk engaging? Relevance, Xi Xiouwan, thank you. Yep, hey good, it's like you're cheating off of each other relevance, relevance, testable content, thank you. Good and clear visuals, excellent. Needs to connect to the audience somehow, thank you all. Great comments. Now you'll notice, and this is a little, I'll mix in a little to TDPLC trickery while we're talking about this. You'll notice I included a lot of wait time and my comment or in my question, because students, which in this case, maybe y'all need time to hear the question, to process it, to generate some sort of response, to actually make those responses, decide whether they want to raise their hand or contributing in any way, shape or form. So, you want to give your audience time to respond if you ask a question. So, thank you all for contributing there and you're all right. Every single one of you is, is it relevant? Is the content, accessible, is it good, clear visuals so on so forth? Some of you may be familiar with the three-minute thesis. Now I know that Texas Tech actually has a three-minute thesis competition, but this is, if you're not aware of the three-minute thesis, basically what it is, it's where researchers and it's usually graduate students and I think in some cases postdocs will actually compete by explaining their research in three minutes with one slide. They get one slide, you know as opposed to, you know, a data dump like we're used to seeing when we go to those sorts of conversations. They get one slide, and they get three minutes to explain what they've been doing for the last three or four years. Right, seems a little crazy. Well, we're going to actually watch one of these, because they are three minutes, we've got the time to do it. So, this particular one is from a 2016 University of Waterloo competition up in Canada, and what I'd like for you to do is not just passively listen, I want you to actively watch these three minutes. Hopefully we can we can keep you locked in for three minutes and really that's kind of the point, right? It's three minutes, and actively answer this question; while you're watching, what makes this a winning presentation? And if you want to type in the chat when you see something that that you think contributes to making it a winning presentation, I encourage you to do that. If you just want to keep track on a notepad or you know, whatever, do that as well. So I'm going to go ahead and click this link.

Can you all hear that advertisement? Okay, good deal so we'll go ahead and play through that. Ooh that's a sprinter, that's cool. Alright, let's go ahead and run through it here. Hopefully I'll be able to skip any moment. There we go, there's the skip.

Jessica Spott:

Ken, I think our sound went away I'm not sure.

Ken Griffith:

Thank you, I will go ahead and unmute my mic and I will run it back a few seconds. And, just in case it's not coming through the system, I'll let my mic pick it up. So we'll go ahead get started again.

Video plays.

Ken Griffith:

Alright, so let me get back over here to the PowerPoint. So, let's take a look this and I saw that there is some stuff coming in through the chat and I apologize, that the audio didn't happen the way I'd hoped that it would, but we got it sorted out. So, what makes this a winning presentation? We've got humor we've got background, introducing the background, and introducing the problem to be solved, ooh Catherine, good storytelling. Other thoughts? No jargon, yep, thanks Matt. Good point.

So yeah, these are all and please feel free to continue to jump in there with the comments those will be saved, and we can look at those later and answer additional questions here in a little bit as well. So, yeah exactly all the things that you pointed out. Now was it oversimplified? Absolutely, it was oversimplified. The guy has probably spent four years messing with this and he's explaining it in three minutes. And so now he's maybe a doctoral student, master student, MD perhaps who knows. But odds are he's been doing this for years, and so it's 100% simplified, no perhaps about it. But who is the audience that he's trying to reach? Who is in that crowd? Everybody identified earlier; you've got professors, you've got undergraduates, you've got graduate students, you might have some community folks, parents, all kinds of people that are in that audience. So, he's got to figure out a way to reach every one of those people. And so, to Matt's point, did he have any jargon in there? No. Did he spent a bunch of time talking about theory? No, there is no theory in there. Did he outline a desired outcome? That he did, in fact, I think it was Jay that that talked about that in the chat. Oh, I like that, Joe. Yeah, it was appropriately simplified, very good. So, was there an outcome? Absolutely there was. Was he enthusiastic? I think he really was; I enjoyed his presentation style and I also like how he clapped for himself at the end. But most importantly did he give you a reason to care about his topic? Did he tell a story? So, stories typically will have a beginning, a middle, and an end, right? Well, his had a beginning, middle, and end for sure. So he had the beginning, which was fuzzy newspaper article and the end was crystal clear newspaper article and then everything in the middle, was the story about how he's going to resolve the common problem was presbyopia through his research.

Now would I recommend that you do something like this, for your classroom, perhaps in your teaching or maybe your dissertation defense or maybe even your tenure talk. Sounds crazy right? It's not crazy. I absolutely recommend that you tell a story in these different types of settings because the reason you can do that is because this is a framework for engaging any audience. You can always add complexity, right? But the key to reaching your audience regardless of content complexity is did you give them a reason to care? That's when we get to the course that I helped to develop, *The Math and Science of COVID-19*. So let me give you a little idea about, well, about the idea in some context here at Texas Tech and then kind of the timing surrounding all this. And the idea, major props to Levi Johnson on the call here, he was digging around and found that the University of Connecticut, and I'm going to go ahead and click on this link here and you'll be able to see the screen, they actually created a course really at the height of the pandemic, in fact, right after the big pivot of 2020, so to speak. Remember, we went to spring break and we didn't come back. They basically set up this course in less than a month leveraging talent across their campus, and they set up a one-hour credit course and

had a ton of students enrolling it. But, at the time when they did this, it was still very early in the pandemic right, so March of 2020.

Let me pivot back to my PowerPoint here. Now, the context that we had was specific to a supplemental grant that is PI'd by Dr. Jacqueline Canas-Carell, which is the Plains Bridges to the Baccalaureate: Diversifying West Texas Scientists Project and that supplemental funding needed to benefit those students, right? And so, we, by the time we got the idea or by the time Levi got the idea and brought it back to the grant writing group and we wrote the supplement we sent it in we waited for the review the review came back, and we got funding included other things than just this particular course. But by the time we heard back and then developed a course and figured out a way to deploy the course and actually do it, it was you know a little bit later than April of 2020. That brings me to the timing. So again, UConn, April 2020, Texas Tech, we are going to deploy this for a one credit course starting in January 2021, so spring 2021 semester. Now there is the, let me go back for a second to give you some context. So, keep in mind that these are our primary target were students, as part of the Plains Bridges to the Baccalaureate Program which are mostly non-Texas Tech students. So, creating a course that is Texas Tech-specific might be a little tricky to get them involved, because you know the whole registrar thing, and you know applying to the institution and how that might look, that might introduce a level of bureaucracy that would impede their access to that course. Also, we wanted to think about general population. So, the delivery of the course, no not that kind of delivery. The original delivery of the course was supposed to be flipped for non-life science majors in spring 2020, right? And the reason I say non-life science major specifically is because, if we had announced this to be a COVID course and left it open for anybody to register that course would have been slammed full of biology majors within 20 seconds and that would completely flipped the focus and the scope really of that course and move it more into a cell biology course and not a general conversation on the math and science of COVID, which was our charge as part of the supplemental grant. So, we need to be very specific and try to tailor a little bit of our audience.

So that was the original plan, but then like I said, because of the process of registering and you know who's going to get credit for the course and you know the kind of the bureaucracy that surrounds courses like these, we decided to make it a free resource. It's actually available and I'm going to show you where you can find it here in a moment, but make it free resource for Plains Bridges students, as well as the general public. So where are these videos? Now, we'll get there in a bit. Now, I promise to deliver on that, but, but first I have a question for you. Why do we like Ted Talks? Because they have one idea, right? Sorry, that was a rhetorical question. Because there is one idea in a Ted Talk. For instance, here is a group of Ted Talks that, well, first of all, every single one of them I'd want to watch because they're really cool, but they tell you what the one idea is right off the bat. But think about your last conference presentation or your last proposal or maybe even your last class meeting, did you build that talk around one idea? Now, let's take a look at some of the titles of the COVID-19 videos. My hope is that you'll see that there is one idea associated with them. So, as promised, here is the Plains Bridges to the Baccalaureate page on the STEM CORE website, right? And, as you can see here there is, so the TTU Virtual Methods Repository, that was part of the supplemental grant as well. But we're not

going to talk about that today. We're going to focus on here at the top. Now, I'm not going to walk through a syllabus with you, and if we have time at the end, which we will have time, if you want to walk through a syllabus, we can happily do that and we can do whatever you want to do, but I do want to show you the kind of the course modules. And notice the titles of these. Now of course, course introduction, discussion, that's kind of self-explanatory right? But they're designed to be kind of simple, one idea, right? A year, you know you're used to hearing "a year in review", well when we put these together, it was at that time it was a year and a half in review. So you know a little tongue in cheek there, but The Central Dogma Biology, that is intended to be provocative, right? Woo, "dogma", that's a serious word. But then look at the rest of them, "Basic Immunology", "Viruses", "Variants", "Vaccines", lots of alliteration, I love alliteration, "Aerosol Physics", oh and quick props and appreciation to Dr. Karin Ardon-Dryer and Dr. Kendra Phelps. I did interviews with them where we talked a little bit about their research specific to the COVID-19 or SARS-Cov-2 transmission. Dr. Karin Ardon-Dryer has done some really cool stuff and she's actually in atmospheric sciences and I should point out that Dr. Kendra Phelps, if any of you saw Virus Hunters on NatGeo, she's actually a friend of mine, and she was featured on Virus Hunters. And so, I said, "Hey Kendra, can I maybe do a little interview with you?", and she was very open to doing that. So those are recorded on there as well. But switching back over to the PowerPoint here, what's a second reason that we respond to Ted Talks. Just like what we talked about before, they give us a reason to care, just like the three-minute thesis talk early. And your audience might care because your idea could impact them like COVID-19, right? Sadly.

For example, let's take a look at one of the videos that I that I created. Now, it is about 12 minutes long. We probably won't watch the whole thing. We'll watch the beginning, and we might skip to the end because there's something at the end that I want you to see. But please, just as you actively watched the three-minute thesis conversation, I want you to watch this one actively as well and point out some things that that maybe worked about this. And the reason I want to show it to us because you know I kind of promised that you would get to see some of this, and so I thought I would go ahead and take advantage of the opportunity to show you some of these. At least, I can get one click on this video, right? I have got to give credit to the granter.

Video plays...

So, what we'll go ahead and do now, I think y'all have the general idea, I will skip to the very end here just to show you how I wrap this video up because I think that that is really a key component that I want you to see. Alright.

Video plays...

Alright, so let me get back over here. So hopefully I gave you all a reason to care. We heard, well, let me give you kind of the breakdown of how we created this this video and other videos. So, I used scaffolding. And so scaffolding is actually an educational theory but I won't go into that. But basically, the idea behind scaffolding is that you're introducing new knowledge, piece

by piece. You know, you're kind of building a building in using you know structure to do that. You'll see that I referenced media and social media quite a lot right because you know, we have heard the terms "variant" and "isolate" and "strain" batted around a lot right, so I was trying to key into that that component. I started off by promising to define those terms, but I didn't do it immediately because I didn't want to deliver on that promise until I gave them a little bit of background. So I had to give them a little bit of science, because, again, this is a course, I'm not really doing this as a you know just a general talk to the general public and it still isn't based on a scientific course, but I told him I was going to give some term definitions and I did that. Now, I also used concepts and some terminology, based upon concepts that are already familiar to my audience. Now you all were watching number 6 out of 14 videos so to be fair, you would have to have watched the first 5 to get an idea. This generally, each one of these videos can generally stand on their own pretty well, but because it's considered part of a course, they do build on one another to some degree.

I used plain language. I didn't go through, and you know, when I talked about mutation, I use the word "mistake" quite a lot. I didn't I didn't use the word "point mutation" or "frame shift mutation". I didn't go into that deep of information. I see that Levi just jumped in here, he's got to head to another meeting, but yeah thanks Levi. I'll read that here in a little bit, that's a lot of words. My intonation, you'll notice I tried to vary the pitch of my voice, I tried to you know not make it monotone and very Ferris Bueller...Bueller, right? The appearance of the videos, I wanted to be interesting, stimulating a lot of movement was the idea.

I didn't use slides like what I'm using right now. Students are really kind of programmed to just kind of turn their minds off when they're watching slide, so I wanted that movement. The pace, again, consider your audience. If you're going to quickly, I did 12 minutes, so this course basically wanted, I was supposed to present virology, immunology, epidemiology, basic cell biology, in like one hour credit course over eight weeks, right? That's not going to happen. They're going to get all of that. So, I had to create it in a scope for my audience and so, but I also have had to realize that, even though I was covering all those topics and even though I was just you know kind of diluting that content, a little bit, I still wanted to make sure I was going slow enough that students could absorb it. Because we know that attention span varies. There's been a lot of research, looking at attention span and it's old research and every researcher that talks about attention span wants to be able to lock it down to a certain amount of time and unfortunately, the answer is it just varies, right? There are some to say three to five seconds or someone say five to seven, there's some the hedge their bets and go three to ten. You know, the idea is that you just need to know your audience, you need to know the level of your audience, the amount of rigor that you're delivering, the rigor of the course itself and so those are things that you need to keep in mind when you're delivering to a to a non-specialized audience. And again, I already talked about movement and images and what my plan was there.

I also referenced other video titles by name. You know I referenced the *Central Dogma* video and the *Virus* video and others to remind them that, "Hey there's more information, like this delivered like this in another video and all you have to do is go back and click on it". And then I

left them with that season ending cliffhanger, right? That was the whole point where, you know, as they do on Netflix or any other show when you're watching, you know, before they go to commercial break they make, you know, I want to hear the rest of it, so I have to watch these dumb ads to be able to come back to watch the show, right?

So that was the idea is that I want you to watch the next video, so I'm going to leave you with a cliffhanger question that my hope is you're going to want to come back to. Each of these components can be flexible depending upon who my audience is. Again, general audience, novice audience or graduate students in a 5000-7000 level seminar course. So, what is the Ted Talk slogan again? Well, it's "Ideas worth sharing", right? My objective after I after each of these videos or whenever I create a presentation, or I give a class, is that my audience will be compelled to share what I talked about and that's the entire point of creating a series of easy to understand, fundamental videos about the math and science of COVID-19. We want them to share this information, because it is important to us as a society. So, I'm showing that we have about seven minutes left. Let's go ahead and use that time to address questions or comments or do whatever you want to do with it, so I will hush and let y'all jump in.

Jessica Spott:

I'll go ahead and start us off by asking Levi's question, he said he could, he was going to be jumping on and only have audio, so he wanted to put his comment and before he had to change devices. But he basically was asking, are undergraduate courses or open seminars effective science communication tools, or should we be looking elsewhere to get important information outside the Academy?

Ken Griffith:

That's a really good question, I think a lot of that depends on whether the presenters in those seminar classes are considering their audience. I know that there are some seminar courses where it's the department seminar, where there are guest presenters or, in some cases defenses happening and they're highly specialized conversations and undergraduates are invited to come in to sit and watch and maybe write a one page or half-page report on what they saw and presented in a one-hour seminar course. The problem with that is that's a specialized setting with a partially unspecialized audience. So, if the presenter is aware of that audience and they effectively deliver it to a broad audience, I think that they I think it could be effective, but if they go in there and do a data dump and show a bunch of slides like what I showed, what that was is that was data from spinning disk laser confocal microscopy and that's not something that most people know anything about, but that's what you would see in a department seminar and a cell biology course so.

Oh, there is a question here from Joseph Romano. How did you produce the cartoon animation instead of slides? So, it's a program called "Doodly". There are portions of it that are free, if you wanted to use that. I did not use a free component of it, I paid for a lot of it to be able to get additional images and color and things like that, but yeah. So yeah, Xu Xiuwang had the same question yeah, so it's called "Doodly" and let me put it in the chat here so that you can all see it.

You can actually check out, go to YouTube and type Doodly and you'll see lots of information about it.

What additional questions do you have?

How much time did it take to produce? So again, that's a very good question it. I can say it depends. What I did took quite a while, and now I do, and I want to make sure that I acknowledge the mathematics side of this as well, so Dr. Jerry Dwyer produced all the content for the mathematic side of things, because I am not a mathematician. And where he talked about basic math so that you can move towards modeling and epidemiology and things of that nature, and so, because this was fairly early in our new zoom world, we had varying degrees of expertise in terms of using zoom and microphones and so on so forth, so production quality was going to vary. So that's why I went with that doodle video style so that would be consistent across the board, no matter who was presenting. Now if I showed you one of the mathematics one you would hear Dr. Dwyer's voice with the animations that's going along with it. So, yeah it does take a fair amount to produce it at that level, but it doesn't have to and, you know, literally it's a lot of drag and drop. You can drag and drop things in there, type things in there, copy and paste things in there, and it can take as long as you want to take or as little time, it can take.

Thanks Joe, good to see you. So, any final questions as we wrap up here or Jessica, I'll let you, you know moderate that.

Joseph Romano:

Can I just speak up here?

Ken Griffith:

Please, please.

Joseph Romano:

Thank you yeah so what's your thoughts about synchronous versus asynchronous as far as communicating ideas, right? I mean, because if you do things asynchronously you don't get that instantaneous feedback. So, as far as communication is concerned, what do you feel about these two different modes?

Ken Griffith:

Yeah, that's a really good point Joseph, thank you for bringing that up. So, this was designed to be a flipped style course. So basically, students were expected to, the original idea behind the course, students are expected to watch the videos ahead of time and then attend a physical, well not physical, a virtual synchronous course. So, they would watch the asynchronous videos and participate in a synchronous virtual course. So, we were kind of mixing methods there a little bit and the reason for that is because we know from data that students are going to do better in a synchronous model. You know, we see that, if we look at face to face courses, hybrid courses, now not high FLEX courses, and, if you want to unpack that we can, but face-to-face,

high hybrid, and then distance courses, we see that student outcomes actually track along those lines students do better and face to face they do a little bit worse in distance, I'm sorry in a little bit hybrid, and they do a little bit worse than that in distance, which is why anytime you're deploying a fully distance course and it's asynchronous you have to have some sort of interactive component to it, whether it's a synchronous chat or a discussion board or something like that, because basically, the coordinating board requires us to have some form of active engagement. But yeah, it's a real critical piece and that's one concern I had with this once we decided to make it more of a, you know, just kind of live on a server type thing is that it's going to be purely asynchronous, and they can't ask questions. So in my videos, I always urge them to reach out to me directly, I give my email address, I give them other links, I try to point them in the direction of different options for obtaining more information, but even in the syllabus that I created for this, which you can find on the STEM CORE website, I included my name and my contact information, because I think it's important that students know that they can reach out to me, no matter when it is. So anyways, this synchronous bit is really important, so yeah did I did I answer your question there, Joseph?

Joseph Romano:

Yes, you did. Thank you.

Ken Griffith:

Perfect Thank you.

Jessica Spott:

Ken, I just want to comment, I think this is great. One thing that I see from faculty which I spend a good portion of my job doing is helping them relate what they're doing in their research to, for example, a K-12 audience. And so we see oftentimes faculty are working on, you know molecular biology, for example, which, if you think about it has a has a drastic impact on students everyday lives, but might be difficult to have K-12, you know, elementary school students understand why it's important, right? And so, I think some of the strategies that you mentioned, you know, using humor, adding it to their lives, you know, making it very personal for them is something that I think all of those tricks are really helpful. And we see that play out, often in different research proposals when we're doing broader impacts and those sorts of things, right? And so, I just didn't know if you had any additional comments on taking these kind of like large, huge concepts and narrowing it down to something that may or may not be 100% exactly what they're working on, but applying it to their lives, does that make sense?

Ken Griffith:

Yeah, it totally makes sense and I appreciate you asking that question, a lot of times when I, so I also teach human anatomy and physiology and pathophysiology and biological sciences, and what I tell my students is that sometimes a STEM folks like to create these giant complicated words in Greek and Latin, because it makes it sound smarter. And I say don't ever be intimidated by those words, because if you break them apart and translate them into English there the definition in and of itself. And I think that's the message that I would send is, are you are you translating what you're doing into bite sized chunks that can be digested depending

upon your audience. So you know if I were to go into a sixth grade class and explain how proteins are made, I would do it with physical manipulatives, right? I might go in there with blocks, or I might last six grade maybe a little bit little hyper blocks, but you know my point is, is that I would use visual aids. Now I'm going to do that in an undergraduate level course to I just might do it with a marker or an overhead or use my iPad or something like that. It's about using the right technology for the job, right? So, yeah I mean, I think that we have to think about, here's an exercise that I'll challenge you all with that that directly speaks to Jessica's question; the next time that you're in a department seminar, and you're watching a seminar on something that has nothing to do with what you do and you're even that close to not understanding what it is that they're doing think, for a moment about how that individual could have reframed that presentation to make it so that you could have understood it. And then apply that to your own research, if you need to do a talk like that to a different department seminar. That's a really kind of, you know, out of body experience, or a way to apply that idea that Jessica just talked about.

Let's see here. So, Linda, your question about how many students are in the class. We did make a pivot where we no longer offered it as a class because we saw that there was going to be some difficulty of getting Plains Bridges students who are was our true target audience, you know, South Plains College students getting them enrolled in Texas Tech courses, so we ultimately did not actually launch it as a for credit course. But yes, we created a syllabus we created the site for it, we even set up a blackboard shell, for it in the event that we did want to turn this into a course at some point someday. And I would love to have student feedback for this. But yeah, I mean, because you really don't know how anything goes, until you hear from the consumer right, so thank you for that question.

Jessica Spott:

Well, Ken, thank you so much, I think this was a great great seminar. I'm excited that we can take what you talked about today and share it. I think the work that you put into this is immense, but I think it really paid off as far as boiling down some of these really upper-level concepts to be digestible and understandable to the broader audience. So, thank you so much for giving this presentation today. Everyone else, thank you for attending, we appreciate it. I'd love to have you check out the STEM CORE website, we where we host all these videos. There's links there as well as information about joining and becoming a member of STEM CORE so we'd love to have you do that as well. Thank you so much, Ken, and if anyone has any questions feel free to reach out to me or to Ken directly and we're happy to help.

Ken Griffith:

Thank you all so much. Appreciate it, thanks for the invitation.