Welcome to W&L After Class, the lifelong learning podcast. I'm your host, Ruth Candler. In every episode we'll have engaging conversations with W&L's expert faculty, bringing you again to the Colonnade even if you're hundreds of miles away, just like the conversations that happen every day after class here at W&L. You'll hear from your favorite faculty on fascinating topics and meet professors who can introduce you to new worlds and continue your journey of lifelong learning.

Today's guest embodies the many advantages of a liberal arts education. Sybil Prince Nelson, who graduated from W&L in 2001, returned to campus this fall as an assistant professor of mathematics. Prior to her return to Lexington, Sybil taught at The Citadel following nine years of service as a high school math teacher. As a professional mathematician, Sybil's research interests include random forests, methodological issues in logic regression and classification, and statistical genetics. But her other interests reflect W&L's emphasis on a liberal arts education. Not only is Sybil a professor of mathematics, she is also a successful novelist and an accomplished musician. Sybil, thanks so much for joining us today.

Thanks for having me.

Sybil, you've mentioned that one of your least favorite phrases in the English language is "I am not a math person," and that people casually toss this phrase out when you share that you have a degree in math. I really like your explanation of why this phrase is so upsetting to you. And quite honestly, it has changed the way I view math. Would you share this explanation with us?

Oh, gladly. So people have no qualms about saying "I'm so bad at math," or "My mother was bad at math, so I'm bad at math as well." And they're actually proud of it, or they think it's funny. But imagine if you were at a party and someone comes up to you and says, "Oh, I hate reading all those letters. I just don't understand it. I don't get it." Well, I mean, you'd be concerned for the person. And you might even suggest they take an adult learning class if you learn that they are illiterate. But people find it completely acceptable to be math illiterate. And I feel that that is unacceptable as well.

Everyone needs to be math literate. That goes beyond just knowing how to calculate the tip after your meal or knowing which size laundry detergent is a better deal. While those skills are important, it's also very important to be able to assess a situation, to follow a logical process, to be able to know what the problem is and be able to solve the problem. That's problem-solving. That's exactly what math teaches. I often tell my students that if you're an athlete, your coach may say, "Do a hundred sit-ups." But that doesn't mean during a basketball game, for example, in the middle of the game you're going to stop and do a hundred sit-ups. No. The hundred sit-ups were there to build your core strength so that during the game you can perform better. Mathematics gives you the tools and exercises your brain so that you can be able to perform better in life. You're better equipped for life.

You're a biostatistician, which isn't a term I've heard before. What is a biostatistician?
I jokingly say that a biostatistician does the math that doctors can't do. So let's say, for example, you have a clinician, and they want to determine whether one drug is better than another drug for their patients. So they may be able to design a study where they have one group taking one drug and another group doing another drug. Well, it needs to be a double-blind study, meaning that the doctor, the nurses giving the drug don't know who's getting the drug, and the patients don't know as well. That way you're not introducing bias. Someone says, "Oh, I know I'm getting the drug and I feel better." You're eliminating that placebo effect.

Well the person that does have to know who gets the drug, who doesn't get the drug is a biostatistician. And it's a safety issue. And it's because we can analyze what's actually happening in the results. Let's say, for example, that the biostatistician notices that people in Group A are having severe side effects, as opposed to people in Group B, or even that they're dying at a higher rate. Well, then the biostatistician can come in and say, "Hey, we need to stop this study." But it works in the other direction as well. If we're seeing that people in Group A are having overwhelmingly good effects, then the biostatistician will come in and say, "Hey, we need to put everybody on this drug."

It seems that the public is bombarded with different products claiming benefits that are false, even though they may have been proven effective by one study or another. What makes a study successful in proving that a product is beneficial to the public?

That's a great question. And part of being math literate is being able to read these results and make a determination as to whether what it's saying is actually true and applicable to the population as a whole. So one of the main things that I think is important is having a representative sample. Let's say you're trying to find information about women in the United States. Well, if your sample only includes 20-year-olds from Kentucky, well, that's not going to be able to tell you anything about women all around the United States. It only tells you about 20-year-olds in Kentucky. So we have to have a representative sample.

Another thing that I think is very important is replication. Replication in the study itself, meaning that you get the same results not just once, not just twice, but a couple of times to know that it wasn't a fluke sample, but also replication in the way that other scientists can come and replicate your results. So you have what's called a protocol, which is almost like a recipe for what you're doing in your experiment. And someone else should be able to come behind you and follow that recipe and get something similar to what you got. And having this replication is so important. We have a very important example in what happened with Andrew Wakefield. Have you heard of Andrew Wakefield?

I have not.
Well, Andrew Wakefield, he's the one about 20 years ago that published a paper in The Lancet, and that claimed that there was a connection between vaccines and autism.

**Ruth Candler 06:14**
Yes. Now I have heard of that study.

**Sybil Prince Nelson 06:16**
Yes. So he claimed that there was this connection between vaccines and autism. And it just blew up. And he was testifying in court cases representing parents who were suing vaccination companies, and all of these things. But then scientists were trying to follow his protocol and produce the same results, and that was not happening. No one was able to get the same things that he got. And it came out that he falsified all of his data. Everything was false.

But this wouldn't have been discovered if other scientists didn't come behind him and try to replicate his results. They were taking his recipe for cookies and getting squash soup instead. And it just didn't work. And finally, it came out that he falsified everything. He lost his license. But the damage had already been done. It's 20 years later, billions of dollars in other experiments trying to prove or disprove this, and still people believe that there's a connection between vaccinations and autism, when everything was false. We spend about two days on Andrew Wakefield alone in ethics class.

**Ruth Candler 07:18**
Yeah, well, and, I mean, that... Would there be an anti-vaxxers now, you know, that movement? So what benefit does he have in falsifying data if the science community is going to come behind him and double-check? So why would he do that?

**Sybil Prince Nelson 07:36**
Perhaps money, ambition. Because like I said, he became the expert in this connection between vaccines and autism. He made millions of dollars based on him being an expert in discovering this supposed connection between autism and vaccines that wasn't even there.

**Ruth Candler 07:55**
What damage he has done. I have heard that one way you make statistics more accessible to your students is with a stat of the day. Would you give us a recent example and share why it makes statistics more real and powerful for students?

**Sybil Prince Nelson 08:11**
I love my stat of the day, and it really opens up discussions. It allows us to talk about numbers and how they relate to us. And we've been in such great conversations, conversations that I've missed from English classes, because sometimes people feel "Oh, math is just numbers and find the answer and you're done," where in English classes, you get to have these wonderful philosophical discussions about social activities and things like that. We can do that in statistics with my stat of the day.

So I'll give the stat of the day, we'll talk about where that number came from, how they could have come about it, what was a different way we could have come up with that number, and how that number affects our view of the world. So a recent example would be I gave a multiple-choice question.
said, "How many times does the average drunk driver drive drunk before he or she is caught for the first time?"

_Ruth Candler_ 08:57
That's a scary statistic.

_Sybil Prince Nelson_ 08:59
But do you have a guess?

_Ruth Candler_ 09:02
Before they're caught?

_Sybil Prince Nelson_ 09:04
Before they're caught the first time, how many times have they driven drunk?

_Ruth Candler_ 09:08
Five?

_Sybil Prince Nelson_ 09:09
The actual answer is 80.

_Ruth Candler_ 09:12
Eight, zero. 80.

_Sybil Prince Nelson_ 09:13
Eight, zero. So the statistics said that the average drunk driver drives drunk 80 times before they are caught the first time.

_Ruth Candler_ 09:21
Oh, that is so scary.

_Sybil Prince Nelson_ 09:23
It is very frightening. So I discuss with the students, "Well, where did that stat come from? How can someone calculate that? What are different methods?" And most of them agree that, well, maybe some sort of survey. Well, then what's the problem with a survey? If you give a survey to people, some people may lie out of being embarrassed, or some people may overexaggerate or underexaggerate. We talked about other methods to come up with this answer. One would be to take a random sample of people and equip their cars with a breathalyzer and have them blow into the breathalyzer and drive, but then you have ethics problems with that because if they...

_Ruth Candler_ 09:58
You're allowing people to drunk drive.

_Sybil Prince Nelson_ 09:59
Exactly. So numbers like that and statistics like that, we’re able to get into these conversations and talk about how these numbers reflect what we see in society.

Ruth Candler 10:08
So how do you, or how did they in this statistic of 80 drives before being caught... How was that number obtained?

Sybil Prince Nelson 10:20
Yeah, I'm sure I knew when I taught it. But yeah, but when... and then when you read things like that, you have to sit back and think, like, "Well where did that number come from?" Like, "How do you even calculate it? Is it accurate? Is it... do we trust it?" But that's another way that statistics is helpful, because there's always a measure of variability. In any number that you read, there's going to be some sort of variability as to it could be higher, it could be lower, and you can calculate what that variability is. You could have a 95% confidence or a 99% confidence based on the effect measure you're looking for and based on your sample size.

Ruth Candler 10:57
When we first met, you described yourself as a statistical improbability, and I was fascinated by this description. Would you mind if I asked you to share with our listeners what you mean by that?

Sybil Prince Nelson 11:09
Absolutely. I come from a very poor background, single-parent family. When I lived in Florida, we were in a poor neighborhood. And then midway through my junior year, we moved to Maryland right outside of D.C., and we moved to an even poorer neighborhood. College was just not an option. I knew more people that had gone to jail than had gone to college. I was always academically curious, though, and I was really good in school. I was a straight-A student, in fact. I played several instruments. I danced ballet, my mother made that a focus. I think what... So in her mindset, because of the neighborhood we grew up in, she wanted to make sure that my sister, my brother, myself, that we were so busy we couldn't get into trouble. So she kept us busy with things like ballet lessons. Even my brother took ballet lessons.

So she kept us busy with things like ballet lessons and music lessons, and it paid off because I grew up, I was a straight-A student, played several instruments and I danced ballet. But even with all of these qualifications, no one ever came up to me and said, "Where are you going to college? What are we doing for college?" It just wasn't an option for me. It wasn't even in my head until my junior year. And my guidance counselor said to me casually, "So where... What's your top pick for college? Where do you think you're going to college?" And I'm like, "I'm not going to college." And she looked appalled, almost offended, and she looked at me and said, "You're going to college."

So after that day, I spent almost every afternoon in her office looking for any scholarship that remotely applied to me, because there was no way I was going to be able to afford college. It was the days before Google so we couldn't just, you know, Google "scholarship." We had to go through a file cabinet and look for scholarships, and I applied for everything and it paid off. I received many different scholarships. Then it came the time to visit college campuses, and I remember that Washington and Lee was the first school that I visited. I didn't really... I didn't visit any school after that. When I stepped
on campus, I looked around and it looked and felt — it even smelled like what I had envisioned college in my mind. It was the epitome of knowledge and learning and creativity. And I just fell in love with Washington and Lee. Didn't go to any other school. Washington and Lee was it for me.

Ruth Candler 13:22
So you didn't visit any other schools.

Sybil Prince Nelson 13:23
I didn't visit any other school.

Ruth Candler 13:25
Wow. Thanks for helping us better understand what a biostatistician is. You've worked on statistical studies for the Department of Defense, a private company that offers insurance for collegiate championships and on particular diseases. It's a fascinating and quite a diverse combination of assignments.

While living in Charleston, you researched lupus within the Gullah community. And for those of you who aren't familiar with Gullah people, they're the direct descendants of African American slaves who worked on the rice plantations in South Carolina and Georgia. They still live in rural communities in the coastal regions of those two states and retain many features of African language and culture. Sybil, what was it like to work within this distinctive community?

Sybil Prince Nelson 14:13
It was very fascinating. And I learned so much. So not only were the slaves brought from Africa, but they were specifically brought from Sierra Leone because they were able to grow rice. They knew how to grow rice in the same type of climate, this marshy, swampy area. So they're brought from Sierra Leone, they come to Georgia, South Carolina region and they're dumped in the Sea Islands to grow rice and they're basically left alone because nobody wants to live in those conditions. It's a swamp. So they're there alone, and because of their separation, they continue to propagate generation after generation, and they're very homogeneous.

So even today, the Gullah population only has about 4% European admixture, where your typical African American in the United States has between 14% to 18% European admixture. So they're very genetically similar to, specifically, Sierra Leone. Even some of their language patterns and words, and the patterns in the sweetgrass baskets that they weave, are similar to those of Sierra Leone. It's completely fascinating. And from a statistical standpoint, I was looking at systemic lupus erythematosus, which we call lupus, which has a higher prevalence, incidence and severity in African Americans, but it's nearly nonexistent in Sierra Leone. So there has to be some sort of genetic component, because Black people get it more than white people. But it has to be an environmental component as well, because people in Sierra Leone are not getting it. Whereas people in the United States are getting it as well.

As... when I left the Medical University, they were still establishing their ties in Sierra Leone, and to the date that I had left, they still hadn't found any cases of systemic lupus erythematosus in Sierra Leone. None. Zero. Not sure if they found any after I'd left, but to the point where I left they hadn't found any,
which is just fascinating. But beyond the math question, I learned so much about culture and how culture affects medical practice.

The Gullah population and the African American population as a whole, in general, they have a very tenuous relationship with the medical field in the United States. One famous reason for that would be the Tuskegee Experiment, where they were a group of African American men that were there for a syphilis study, and even when a cure for syphilis was found, they weren't given that cure, because they wanted to study the effects of lifelong syphilis. There are many, many other examples of specific studies like that that happened in the history of the United States. And because of that, stories have passed down from generation to generation, and African Americans as a whole just do not trust the medical system. So with my interaction with the Gullah community, and on this project, I did more research. I read a book called "Medical Apartheid," excellent book, and another book called "The Immortal Life of Henrietta Lacks." I believe there was a movie made about that recently. And it talks about the historical relationship between the African American population and the American medical system.

And because of that relationship, the Medical University did an excellent job of establishing lifelong ties with this community, so that they can gain their trust and that they will even participate in a study. So there was a whole separate group dedicated to just working with the population, so that they can build the system of trust with them.

Ruth Candler 17:41
You've explained that your research examines disease outcomes based on continuous and binary variables and their interactions. Would you help us understand what those terms mean?

Sybil Prince Nelson 17:53
A continuous variable is one that can take on any value. For example, age — people can be any age from zero to maybe 100. But there's many different variables. Let's do another example. Let's say the level of mercury in the soil. That could take on any value — 3.2, 8.9. That's a continuous variable. A binary variable is one that could only take on two values: zero or one. That's typically genetic data. So you either have this gene allele or you don't, and you would code that as a zero if you don't have it or one if you do have it.

In most traditional statistical models, if you're looking for different factors that lead to, let's say, increased risk of disease, you have to have the main effect in your model if you want to include the interaction. So let's use the example of... let's say we're looking at lupus. And one variable is the level of mercury in the soil. And the other variable is a gene allele. In traditional statistical models... Let's say we have the level of mercury, the gene allele and the interaction between the gene allele and the level of mercury in your model to predict disease outcome. If, for example, it is only that interaction that leads to increased risk, and not the main effect of having the gene or having an increased level of mercury, there isn't a traditional statistical model that can do that. You have to have the main effects and the interaction in the model. You can't have the interaction without the main effects. So my research was in developing methods to be able to include interactions without main effects.

Ruth Candler 19:22
You're also developing a study for the Department of Defense that analyzes the fitness of Army recruits. I would think that Army recruits are a pretty fit bunch. How do you evaluate their fitness? And what does your research show?

**Sybil Prince Nelson** 19:35
You would think that Army recruits are a very fit bunch. And they usually are because you have to meet certain fitness requirements in order to be accepted into the training program. Actually, that's what... They're finding a lot of difficulty in that. The pool of people that are fit enough to even join the Army is shrinking. So in the first paper that the group that I'm working with worked on, they measured fitness by the time it takes to run two miles, I believe. So that was their level of fitness.

And they found that people... that recruits from states in the Southern regions were less fit overall. This lack of fitness then results in increased injuries. So in this current paper that I'm working on, we're looking at the cost of these injuries to the Department of Defense. If you have a recruit that gets injured, well, you have to pay for their recovery. And then they're taken out of the training for a while, they have to get put back into the training, which adds to their length of training, and that adds to costs. And once again, we find that the money spent on injuries is significantly higher for recruits in the South.

**Ruth Candler** 20:43
How is the Department of Defense using this data?

**Sybil Prince Nelson** 20:46
Our goal for this paper is to enact some policy change. Like I said, the reason why Army recruits are less fit is because as a country, as a whole, we are less fit as a population. So we believe that more emphasis needs to be put earlier, maybe in high schools, even in middle schools, for health and exercise around the country. Investing in physical fitness early results in reduced money spent on injuries later when they’re in basic training. That also adds to the safety of the country. You have to have people to defend the country. If you’re not finding an adequate population to pull from, then that reduces the level of safety for the country.

**Ruth Candler** 21:29
As a biostatistician, you have worked on a lot of fascinating studies. Do you have a favorite?

**Sybil Prince Nelson** 21:34
As a biostatistician, you kind of become a chameleon. You have to learn about so many topics. And when I'm given a study, I dive into that topic and I learn... I become a detective. I learn everything I can about it, to understand it in order to interpret the numbers and know what I'm doing. So every study, when I'm doing it, becomes my favorite.

But I would say... So I'm going to answer that question a little bit differently. I... There was a study where I felt was the most challenging, and the most interesting, basically, because I had to do... I did everything almost from like, from cradle to death of the study. When I was a Ph.D. student, as part of my program I had to work in a lab of a basic scientist just to, you know, understand things. Like I said, as a biostatistician, you have to become a chameleon. So I worked in this lab, and we were studying
cytokines in lungs, and I had to dissect a mouse, and extract the lung tissue, and measure the cytokines, and then gather the data and then report on the data. So I had to do everything for the study.

Now currently I'm a vegan, so I don't think I would be able to do that anymore. But just the immensity of going from the bench to the paper I felt was just so challenging and enlightening in being able to see every side of it, because usually it's separated. Usually you have one group that gets the concept of what you want to do, then you have to design the study — hopefully you design the study with the statistician, so you know how many mice you need for replication and things like that — and then someone else does the actual surgery and records the data, and then someone else gives the data to the statistician. But I did everything for this project, so it was very exciting. It was very challenging, and I learned a lot. So I think that might be my favorite.

Ruth Candler 23:19
Did you celebrate when you were all done?

Sybil Prince Nelson 23:21
I did.

Ruth Candler 23:25
Sybil, one of the many things that I love about producing this podcast series is the in-depth discussions I have with professors prior to recording. In one of our meetings you described math as beautiful. And I can honestly say that I hadn't heard math described as beautiful before. And it's something that has lingered in my mind since you first made this statement. Would you mind if I asked you to share with our listeners just how you see math as beautiful?

Sybil Prince Nelson 23:53
Absolutely. Personally, I just feel there is an inherent beauty in numbers, just like there's a beauty in words. If you think about it, no one reads Shakespeare or Phyllis Wheatley to survive. They do it because they enjoy the beauty of the words. But they wouldn't be able to do that unless they had a foundation of literacy.

And there's also beauty in mathematics, but you can't enjoy that beauty until you have a foundation in mathematics, until you are math literate. And think about the way that everything in the world is interconnected. Everything in the world has some sort of mathematical foundation, and it's just remarkable. Even things that we consider beautiful in art, or music, well, they're beautiful because they follow some sort of mathematical formula. Seeing how everything in the world is connected and how everything fits, it's just amazing.

So a quick example. Okay, so my master's thesis was called "Dynamics of Nearly Circular Vortex Filaments." Usually when I say that, people... People's eyes just glaze over and they're like, "Huh?" But I'll give you a quick description of it. So a vortex filament, think of a tornado spinning. And if the speed of that tornado, if the angular velocity gets so fast, that funnel of the tornado becomes a straight line. So that's your filament. Then you take your filament, pretend like you're wrapping it around in a circle. And this circular filament can then also move through space. So you're looking at a horizontal velocity,
you're looking at it spinning on itself, and you're looking at it moving through space. So I wrote models that replicated that movement.

But that pattern, that movement, actually is the same pattern of those bubble rings that dolphins blow. So if you look at the bubble ring of a dolphin, inside that little air bubble, the air is spinning as a vortex filament, and then it's moving through the water the same way as the mathematical models that I created. So just a dolphin playing in the water blowing bubbles, that has a mathematical formula. And it's amazing. I always say that God is the greatest mathematician.

Ruth Candler 24:54
That's a mouthful. I love that imagery of the dolphin.

Sybil Prince Nelson 26:06
Also, I have one more thing to add. I also recently — not recently, maybe about 10 years ago — discovered that I have this condition called synesthesia. And synesthesia is when you have two or more senses that cross. For me, I see numbers and days of the week as colors. I also see music as colors. It's not as strongly as my numbers, but I do see music in color. So I have a special relationship with numbers. I feel like my synesthesia is my superpower.

And most of the time, it is an advantage. It helps me memorize certain numbers better. But there's... At times when it's a disadvantage, there's just certain things that I can't remember no matter how hard I try, because the numbers and the colors don't match up. So for example, I'm fluent in Portuguese, but the days of the week in Portuguese are numbers. And the numbers of those days don't match with the numbers of my colors. It's odd, but even after speaking Portuguese — I've been fluent in Portuguese for 11 or 12 years — I still don't know the days of the week. And if I want to say a day of the week in Portuguese, I have to count it on my hands.

Ruth Candler 27:11
Let's go back in time and talk about when you first arrived on the W&L campus your freshman year. Your original intent was to major in English. How did you begin as an English major and end up double majoring in math and music?

Sybil Prince Nelson 27:28
I think that change says a lot about the faculty at Washington and Lee. The Math Department and the Music Department specifically, those were the departments where I felt I belonged. I felt I fit in there. For example, in the Music Department, there were monthly math major dinners, where each month we would go to the home of another professor and we would have dinner. And it felt like a family. The Math Department made me feel like I was smart. And they also made me feel like I belonged, like I was in the right place.

As a poor Black student in a prestigious university, I had a major case of what we call the imposter syndrome, where you feel like you're faking it, you're not supposed to be there, and any moment, someone is going to discover you're an idiot and send you back. And you just feel that constantly. But when I was in the Math Department, almost from the first day they recognized my talent. I had a class... My first math class was with Professor Bourdon, and he was just amazing. He was also an alum of
Washington and Lee. He made the subject so fun and so interesting, and he told these corny, horrible math jokes, and I was like, I want to be like him. But he recognized my talent and he suggested other math classes I should take. He was like, "Why don't you try Foundations of Math? Why don't you try this course?" And so I did. And then along the way other professors — some that are still here, like Professor McCrae and Professor Dresden, who we used to call Dr. Dre, by the way, it was very funny — they also gave me confidence in my abilities, and they made me feel like I was in the right place and I was smart. And so that was a major force of me changing to math and music.

Ruth Candler 29:06
All right, so now flash forward 19 years, and you've written more than a dozen novels, both for young adults and adult audiences. You pursued your love of the written word after all. What does writing fiction mean to you?

Sybil Prince Nelson 29:22
It means a lot. Partly... When I first started writing, it was mainly because I love to read. I have an affinity for British literature for some reason. I have no idea why, but I'm absolutely obsessed with Jane Austen and with Thomas Hardy. I love British literature. I have many different interests as well.

But in the books that I like to read, I always noticed that there weren't any characters that looked like me. And so in my head as I was reading these books, I would insert myself into the story or I would insert a Black character into the story, say "If I lived in this time or this character lived in this time, this is what they would do." And so I would always have these stories in my head. Then as I was teaching, or working on my master's, or working on my Ph.D., any time that I got stressed out, writing would be my stress relief. For example, when I was working on my thesis, if a proof wasn't working out, or I got stuck, I would take a break, and I would write a book. And then when I got writer's block with the book, I would go back to my Ph.D. work, and it really helped me keep my sanity.

And they worked so well, so hand in hand, because your brain just keeps working on a problem, even when you're not focused on it. Once you know what the problem is, even if you are working on something else that seems to be totally different, your brain is a glorious thing, and it keeps working on that problem in the background, kind of like a subprocessor. And you will come up with a solution without even knowing, and you can go back and work on it again with a fresh mind. So during my Ph.D., I was very stressed out. I think during my Ph.D. alone, I wrote about nine or 10 books.

Ruth Candler 31:03
Wow. Well, so I'm curious — do you see an overlap between writing and math or statistics?

Sybil Prince Nelson 31:10
The straightforward connection with my writing and my math and statistics is that I often have characters that are good at math. And they're usually the Black female characters that are good at math in my books. So there's always a little bit of me in my books.

I also sometimes get storylines from math. For example, I was sitting in a math conference one day listening to a lecture on optical Airy bullets, and I basically outlined the entire plot for book five of my Priscilla the Great series, which is called "The Time-Traveling Bullet." I also feel that the rigor of my
math training makes me a better writer. I like to get the first draft of a book that I'm working on done in about 30 days, just get it out there, because the hardest part of writing is finishing what you're writing. I mean, just ask my husband — he's been working on a book since we were dating, like 20 years, all he's got is a prologue done.

So the hardest part is just getting it done. It doesn't have to be good, because you can always go back and edit and fix it. But you can't edit a blank page. And I also think writing a book is like writing a good proof. It has to flow, it has to be logical. And it has to take you on a journey to something you didn't know before.

Ruth Candler 32:22
You've shared with me that your mother bartered or worked additional jobs so that you could take piano lessons, and also her emphasis on keeping you busy, an example that a mother's love knows no bounds. When you think back on this time, did musical composition and math equations flow together?

Sybil Prince Nelson 32:41
At the time, I didn't see a connection. Looking back, I can. Because what's odd is when I was younger, I didn't really love math. I just did it because I was good at it. I was... I would always get put on the school math team and things like that. And I'd do it, because I could, but I didn't love it. I didn't love it until I got to Washington and Lee. I remember even falling asleep — every day I would fall asleep in my eighth grade algebra class. The teacher always made me stand up in the back of the class. It was embarrassing.

On the other hand, I did always love piano. No one ever had to ask me to practice. No one ever had to ask me to practice any of my instruments. I just would do it on my own. I loved music. And I do remember there always being the connection for me personally between music and colors, and another connection between numbers and colors. But for some reason, as a kid, I never put that together. And I kind of was embarrassed by the idea that I saw numbers as colors. I remember telling my sister one time — my sister who was five years older than me — and I told my sister about the connection between the numbers and colors. And she looked at me like I was crazy, like she had an alien for a sister. And I never brought it up after that.

So for several years, I just, you know, ignored it. I didn't pretend it wasn't there, like I still used it, but I never brought it up because I thought it was weird. But I also thought it was weird that she didn't understand what I was saying. I was like, "What do you mean? Doesn't everyone know that three is red?" Like, it was very confusing. It was very confusing. I think because of the confusion, like, I never talked about it. Never brought it up. And it wasn't until, like I said, a few years ago — probably... maybe 10 or 11 years ago — I was talking to my husband because we always argued over it. We always argued. He was like, "No, you're the only one that sees numbers as colors." And I was like, "No! This is not true. Everyone sees numbers as colors." And finally I discovered that, no, it's not everyone. It's just me, and I have synesthesia.

Ruth Candler 34:38
So have you met anybody else that has synesthesia?
Sybil Prince Nelson  34:43
I haven't met anyone personally. I've met people who say they know someone that has it. But I don't think I've actually met someone personally, because it'd be fascinating to have a conversation with them. Because everyone's synesthesia is slightly different. Like for me, four is blue and three is red. But for another person, it could be completely different colors. There's also people who have... They associate a smell with certain things. Any two senses can cross. For me, it just happens to be numbers and colors. But yeah, I'd love to, you know, talk with someone else who has this.

Ruth Candler  35:17
Someday you'll need to meet Emily King, who works in our office. She also has synesthesia. So that'll be a fascinating conversation. I want to sit in on that conversation to hear you guys. So before we wrap up, and if you're game, we have a few fun questions about your life when you're not on campus. And we like to call this our W&L After Class lightning round.

Sybil Prince Nelson  35:38
Sure.

Ruth Candler  35:39
I've heard through the grapevine that you, your husband and your two daughters are now all vegan. What was that transition like?

Sybil Prince Nelson  35:48
It started with my husband, actually, which is odd. It's usually the woman who enforces the diet changes. But no, it started with him. He wanted to get healthy. He was having a migraine a day, he was a bit overweight, and he decided to change his diet and immediately felt better.

And then he started working in on me and he showed me all these documentaries. Personally, I was an avid carnivore. And I was like, "Yeah..." I was kind of half listening to him. And I was like, "Okay, I'll support you... Maybe in a few months..." and whatever, whatever. I wasn't really into it. In fact, I remember clearly there was a Tuesday that I had gone to the grocery store and I literally bought 30 packs of bacon. So I had 30 packs of bacon in my freezer. The next day, my husband shows me yet another documentary. I can't remember the name of the documentary. But in watching that documentary, they had a part on it about the bacon company of the packages of bacon that I had just bought. And me just seeing that one part, I was like, "Okay, I'm done with bacon. I'm not even going to eat the ones in my freezer." And I ended up giving all of the bacon to my brother-in-law and to another friend. I'm still their favorite person after all that bacon. But I gave it up cold turkey, and I don't regret it.

Ruth Candler  37:06
No pun intended.

Sybil Prince Nelson  37:09
[Laughter] Cold tofu! I gave it up cold tofu. And I don't regret it. I wish I had done it years ago. I feel so much... I feel light, I feel energetic. You know sometimes when you would eat like a big, heavy meal and you just want to take a nap? I never feel that way being vegan. It had really great health outcomes for my daughters as well. My oldest daughter, she had severe allergies, she would break out randomly
for no reason. We took her to the allergist over and over again, never discovered what it was. When we went vegan, no more skin allergies.

**Ruth Candler** 37:44
So why not vegetarian and then vegan?

**Sybil Prince Nelson** 37:48
I feel like I was considering that. Like, before I went cold tofu and became vegan, I was like, "Maybe I'll do vegetarian and then I'll ease into vegan." But for me, it's easier just to cut everything out. And that way, I'm not going to make exceptions. It's kind of like when you're on a diet. And you say, "Well, I was good yesterday. So today I'll have a cupcake." So cutting everything out all together, it was easier for me not to cheat and revert back.

**Ruth Candler** 38:21
You mentioned the health benefits. Was that the best part about going vegan?

**Sybil Prince Nelson** 38:26
The health benefits I like. I also feel like my hair grows faster. I feel like my face looks younger. Like I said, I have more energy. What's another outcome? Oh, I used to exercise a lot, run half-marathons and things like that. After going vegan, like, I barely exercise and I keep the same shape. Yeah, it just makes me overall more healthy.

**Ruth Candler** 38:55
You've given us a lot to think about with that. Do you have any go-to vegan dishes or recipes that you would recommend?

**Sybil Prince Nelson** 39:03
So, like I said, I was an avid carnivore before I became vegan...

**Ruth Candler** 39:07
Yeah, I don't know how I could give up a cheeseburger. That's so tough.

**Sybil Prince Nelson** 39:10
So my goal as a vegan was to replicate any taste, any flavor that I remember and that I missed from before I went vegan. And so I have become, like, this expert cook. Like anything that I used to eat, I can recreate it with vegan ingredients.

Case in point, Popeyes chicken. I was so obsessed with Popeyes chicken. It was my Friday ritual. Every Friday I went to Popeyes and I had a Popeyes meal. After I went vegan cold turkey, cold tofu, I couldn't have it anymore. So I dedicated several dishes in several weeks to replicating Popeyes chicken and mac and cheese, and I achieved it. My vegan Popeyes chicken is so good that my friends convinced me to hold a cooking demonstration for them to teach them how to make it.

**Ruth Candler** 40:00
All right, so would you be willing to share that recipe with us?
Sybil Prince Nelson  40:03
Absolutely. I think it's on my website already. I have my personal sybilnelson.com website and there's a section called Vegan Life, I think, and I believe it's on there and there's, like, pictures from when I did the cooking demonstration.

Ruth Candler  40:16
We may swipe a few of those for our episode notes here as well. You spent four years in Lexington and Rockbridge County as an undergrad. What were you most looking forward to when you thought about returning to this area?

Sybil Prince Nelson  40:28
What I was most looking forward to is the scenery, the views, the snow, floating down the Maury River when that happens. I grew up in Daytona Beach, Florida. My husband grew up in Charleston, South Carolina. So we were both beach bums, I guess you could say. So this area is just like a beautiful change of scenery for the both of us.

Ruth Candler  40:51
What are you most excited about introducing your children to?

Sybil Prince Nelson  40:54
I can't wait to have them go to performances in the Lenfest Center. Is it still called Lenfest Center?

Ruth Candler  40:59
It is.

Sybil Prince Nelson  41:00
Okay. I can't wait for them to see performances in the Lenfest Center and to see all of the arts and all of the creativity that W&L has and see the performances. I also can't wait to get them back into ballet. They haven't... They are really, really good ballerinas. And my youngest is an excellent tap dancer as well, but they're really good dancers. And so after COVID passes, I can't wait to get them back into that. And they also play violin. Well, my oldest plays violin and viola, and my youngest plays violin, so I can't wait to get them into an orchestra as well and be face-to-face with people.

Ruth Candler  41:35
As an alumna returning to your alma mater, I'm sure that many of your favorite faculty are still here. What is it like being their colleague instead of their student?

Sybil Prince Nelson  41:45
It is so weird. I still have the hardest time calling Dr. McCrae and Dr. Dresden "Alan" and "Greg," because they're in my department and I see them all the time. I have to make a conscious effort to say "Alan" and not "Dr. McCrae."

In the Music Department, well, my piano teacher, Shuko, I always called her Shuko. I don't know why. I was always on a first-name basis with with Dr. Watanabe. I always called her Shuko. She... We just
had a great relationship. She came to my wedding. I got married at Washington and Lee, by the way.
So we had our wedding at Hopkins Green, right around the corner... right across the street from The
Palms. That's where we had our wedding. And we had our reception in Evans Dining Hall. It's not
Evans Dining Hall anymore...

Ruth Candler 42:25
It is Evans Dining Hall.

Sybil Prince Nelson 42:26
Is it still called Evans Dining Hall?

Ruth Candler 42:27
It's still... Yes, yeah.

Sybil Prince Nelson 42:28
But nobody eats in there, do they?

Ruth Candler 42:30
Well, they do now with the pandemic.

Sybil Prince Nelson 42:31
Oh, okay.

Ruth Candler 42:32
So they were eating in Marketplace...

Sybil Prince Nelson 42:35
Okay.

Ruth Candler 42:35
...and now we've come back to Evans for safety
protocols.

Sybil Prince Nelson 42:40
Well, it's a perfect place to have a wedding reception. It's beautiful in there. It has the... you know, the
pillars and the checkerboard floor. So that's where we had our wedding reception, and Shuko came to
my wedding. Dr. Vosbein, I don't know if I'll ever be able to call Dr. Vosbein "Terry." He's always going
to be Dr. Vosbein to me. But that's the toughest part for me.

Ruth Candler 42:58
Yeah. Well, now that you are a W&L faculty member, what do you wish you had known or realized
when you were a student here?

Sybil Prince Nelson 43:09
I wish I had realized that the faculty, all of them want you to succeed. They're not sitting up at night,
trying to figure out ways to trick you or make your life miserable. And in fact, it's the opposite. They're
trying to discover how to help you, how to be a more effective teacher, how to make you think and become a better person and product of the society.

Ruth Candler  43:33
I love that. As we wrap up our conversation today, I'd like to return to your comment about being a statistical improbability. What advice do you have for others who also identify as a statistical improbability?

Sybil Prince Nelson  43:50
The advice I have is that when an opportunity presents itself, never reject it due to your own insecurities. Never feel like you're the imposter. Realize that you do belong. And even if no one presents you with an opportunity, go and find that opportunity. Go and discover what's out there and what can be out there. Find a mentor, and let them guide you through the next goal in your life. I had several of those mentors along the way, starting with that guidance counselor who made sure I went to college, and several people along the way did that for me. So if no one stretches out their hand to you to help you along, grab onto their coat and follow them until you get to where you're going.

Ruth Candler  44:38
That's fabulous advice. Sybil, I have really enjoyed our conversation today. Thank you so much for joining us.

Sybil Prince Nelson  44:45
Thanks for having me. This was great.

Ruth Candler  44:47
It was a lot of fun. And thanks as always to you for listening. We hope you've discovered something new. To read more about today's podcast and check out other ways to continue your lifelong learning with W&L, you can head to our website, wlu.edu/lifelong. You'll also find information on W&L's series on prejudice, discrimination and antiracism; our faculty reading list, "Sheltering in Place with a Few Good Books" and information on how to join our W&L book club. We hope you'll join us back here soon. Thanks again and until then, let's remain together not unmindful of the future.