

Speaker 1: (singing).

Ashley Smiley: You're tuned into 90.7 FM KALX Berkeley. My name is Ashley Smiley, and you are listening to The Graduates, the interview talk show where we interact with graduate students here at UC Berkeley and around the world. Today, I am joined by Ursula Quan Brown, a PhD candidate in the Department of Music. Ursula is a multimedia artist and composer and is currently splitting her time between New York City and Berkeley, California. Ursula, welcome to the graduates. We are happy to have you here today.

Ursula: Thanks so much for having me.

Ashley Smiley: I want to start out with asking you a question about your background. So I understand you have a bachelor's in music and biology from Columbia University, a master's in music composition from Berkeley, and now you're finishing up your PhD in music composition with a designated emphasis in new media. How did you transition from studying both science and music to progressing towards the current career path?

Ursula: So my whole life, I've done music. It was never ... I never questioned whether I'd do music, it's just also whether I could squeeze science in as well. I really enjoyed my research at Columbia. I worked in Professor Darcy Kelly's laboratory and she permitted me to do my own independent research into the vocalizations of African Clawed frogs *Xenopus laevis*. And I heard musical intervals in the frog song and I got to spend like two years researching how they produce those intervals, if they perceived them, and it was incredibly fun, but it was also incredibly energy consuming and I did not have time to write music.

Ashley Smiley: Okay.

Ursula: I just didn't have enough time for my music and that's why I went to just music.

Ashley Smiley: So why do you think you chose the African Clawed frog? What about them piqued your interest? You said it was the music. Did you know anything about them before you started this project?

Ursula: It was really just like a happy coincidence in that Darcy Kelly taught the neuroscience, intro to neuroscience class I was taking at a time, and I loved her so much that I went and switched my summer lab research to her lab and it just happened to be that I was listening to frog song in the, you know, in the lab tea room and I was like, uh, that's a perfect fourth. Like I know what that is. Yeah, it just happened.

Ashley Smiley: Okay. Yeah. That's so cool. I actually read a publication that you are an author on that was just released in 2015, pretty recently in the journal of Comparative Physiology. I remember reading about how some species within this Genus *Xenopus* can actually glean information about reproductive state, species identity, and sex based on hearing these vocalizations that come from their larynx, which is this organ that produces sound pulses.

Ursula: Yeah, that's accurate. So you know, these frogs call underwater in murky water at night. They don't have much vision. They use sound to find their mates and they have to differentiate their calls both temporally with different inter click into like tick, tick, tick or tick, tick, tick, tick, tick. And then also spectrally. So in terms of pitch, some frogs have dun dun, to pitches that are like a perfect fourth apart, and then some of them have like dah duh. But what's really cool is they actually produce those sounds harmonically. So they produce them at the same time, which I can't sing for you because I can't sing two pitches at the same time. But without those calls, I think that you would have more species trying to have sex with one another when they're not compatible. You know?

Ashley Smiley: Yeah. So it's like a ... It's a reproductive barrier.

Ursula: Or identifier. Yeah.

Ashley Smiley: Yeah. It's interesting that you say they can produce sounds at the same time or two different sounds at the same time. So, they must have musculature that can control that to like open and close parts of the larynx or do you think they have an additional structure sound producing organ like in ... For instance in birds, birds have a syrinx. Are frogs the same way, do you think?

Ursula: So, frogs are totally, totally different. We've actually talked with some birdsong people trying to figure out how they ... How the frogs make these two pitches and it's not at all clear. We're actually just submitted a paper about this in which we worked with a really wonderful researcher named Coen Elemans in Denmark with some high speed video in an isolated prep of the larynx in a dish to look at the sound excitation. But basically, it's not an air driven mechanism. It's more like percussion. It's more like striking a metal bowl that rings at a pitch, but it's two pitches.

Ashley Smiley: That is insane. So, I came across this ad in BAMPFA or you know, somewhere in campus and I was reading about your sound installation art and, if that's what I may call it.

Ursula: Sure, yeah.

Ashley Smiley: So my understanding is that you were participating in this collaboration where you took metal sheets and then connected transducers to them and kind of propagated some type of input into those so that it could transform the sound of instruments to reverberate through these metal sheets. I guess I can't quite wrap my mind around that and what that actually means. Could you clarify how that works?

Ursula: Yeah, so just imagine that the sheet, the metal sheet, or in some cases wooden sheet, is the speaker, right? So, A transducer is just a device that is converting variations in an electrical signal into physical pressure, right? So like sound waves. So your speaker does that very well, right? It just pretty accurately, for the most part, reproduces that. But if you take a metal sheet, there's all these resonant frequencies in the sheet that will come out more strongly. So, if you play Beethoven's seventh through a metal sheet, you will hear Beethoven seventh but you'll also hear the humming resonant frequencies of the sheet or the word or whatever you want. And in this project, I was working with a painter and cellist named Amy King in New York City. And we really wanted the sounds to emanate directly from her artwork. So, we wanted you to go up to the art and feel the vibrations, the music coming from her painting.

So she painted metal sheets and then I attached transducers to the back of them.

Ashley Smiley: So that's where the painting came in. That's something that I completely forgot about. Those were color coded, right?

Ursula: So this was a project that Amy King had already been doing that I had found just so beautiful. She took the Bach Cello suites, very famous, and she took each note and would assign them a different color. So like C would be blue and G would be green. I mean I'm just, or something like this. And she would paint the entire prelude, for instance, in rows of single brushstrokes. And because music does have a structure, you know, you would see these recurring blue notes that were the C's and you'd see them occurring green brushstrokes, which were the G's and it had this sort of gorgeous structure inherent in it. She was inspired actually by a treatise that Sir Isaac Newton and written about optics and light and the continuum between the light and the sound spectrum.

Ashley Smiley: Yeah. I see aspects of science and engineering and physics that are combined into your work.

Ursula: Yeah, I guess I hadn't even thought of that.

Ashley Smiley: Yeah, it's a strong theme. I really appreciate it. So, are you from Berkeley or are you from New York or where did you grow up?

Ursula: So I'm originally from New York. I lived there for most of my life. I also lived in Boston for high school, but I moved back to New York for college, except for a year in London when I studied at the Royal College of Music for one year. I've been in New York and then five or six years ago now I moved to Berkeley. But now the last year I've been back in New York because my fiance is there and I'm getting ready to graduate and move back to New York for good. Although I really will miss Berkeley.

Ashley Smiley: Yeah, I imagine you've done so much great stuff here. I would love to get into talking more about what is your dissertation about?

Ursula: So my dissertation, which I recently finished, is a work for soprano and orchestra that's going to be performed either next fall or the following spring by the UC Berkeley Orchestra, which is very, very good. Conducted by David Milnes with Anne Moss, the singer soloist. You might be surprised to know that in music, you can have a dissertation without any words. It's just music, you know? It's a musical score. That's my dissertation. I am so excited to hear it.

Ashley Smiley: So you said that your PhD has an emphasis in new media?

Ursula: Well, my thesis piece is it doesn't actually have new media in it. It's just for soprano and orchestra. An orchestra is like a hundred person unit, which you don't want to waste rehearsal time. And so, working with electronics can actually be quite tricky with orchestra.

So what I decided to do is do a separate piece that integrated new media with piano. So I'm a pianist and I'm actually performing a piece for prepared piano. So I'm putting magnets in the piano and prerecorded sounds. And so that's my new media piece.

Ashley Smiley: What do you mean you're putting magnets in a piano? What does that do?

Ursula: I mean, I'm putting little magnets on the strings and they stick to the strings, right? Because the strings are metal. And they create these cool bell-like sound.

Ashley Smiley: Whoa. That's really cool. So, okay. My question is what is a composer?

Ursula: Wow. What is a composer?

Ashley Smiley: What are the roles of a composer?

Ursula: So I guess I consider a composer to be someone who organizes sounds in space. I think you can compose electronic music on your computer by rearranging prerecorded sounds. You can also be a composer by writing things down on paper, but your, you know, structuring time with sound and there's a performance element, right?

You're not just doing it for yourself, you're doing it for an audience. Yeah.

Ashley Smiley: So then, do you play some of the instruments in these composed works or you write it and then so then it's out of your hands?

Ursula: I do both. I mean in this case, this piano and electronics piece, I'm playing it myself, but I have to say it's really nice to be in the audience. It's definitely easier to hear the sound balance, especially if you have four channel sound with complex samples. Like the samples for this piece it's called I Should Have Taken the Train, and it uses text written by a brilliant writer friend of mine, Hannah Howard back from Columbia, who recently published a memoir. And I am triggering these sound samples while I'm playing and so I have to have someone very good in the audience to sit and tell me the levels are correct, you know?

So that's when it's really nice to have someone else play something so that you can sit in the audience and set the level.

Ashley Smiley: Yeah. That makes sense. I noticed that you have various titles for your different pieces. I was kind of curious where these titles come from and, I mean, my guess is that you're writing these from your own life. I wanted to talk a little bit more about where those inspirations come from, if you're comfortable with that.

Ursula: Of course. I mean, they each ... I would say every piece of mine has its own story, its own. So I have a range of titles. Recent pieces would be like Unwinding, very string quartet. I actually did an Unwinding Two as well. Those were inspired by I had a severe bike accident about five years ago and afterwards I was having a lot of memory problems and severe headaches and I saw a craniosacral therapist who helped.

They call it unwinding. It's this process in which they sort of released the pressure on the various nerves in your head that are creating so much pain by shifting very subtly the plates of your head. It's this amazing feeling of relief and release. And so, I have a couple of pieces written about that process. What's another one? Sometimes they're just pulled directly from the text, like if I'm working with a writer. So this piece, Where the Eye Comes From. That's my thesis piece that's going to be performed, and it uses texts by the poet Josh Bell who teaches at Harvard and he wrote this just lovely poem, which I guess I'll just

read a couple of lines from. Doesn't really do it justice. The whole poem's amazing, but here it is. Josh Bell, Where the Eye Comes From.

"Our days often ended and began with the sound of voices raised in song, even after we murdered our friends and neighbors. Even after we brought the attention of our knives to the neighbors of our neighbors. Until at last, the neighborhoods fell silent and the city's quiet in the city's city, and the country then annexed the country until finally the moon, as if its own reflection looked upon an earth that we had emptied nearly back to Eden."

So it's a really dark and depressing and wonderful poem that I felt accurately reflected how I felt after the 2016 presidential elections. I just had a piece performed called Black and Blue, which is totally different. It's a piece for electric guitar and 15 instruments and dancers that was just performed at the Berkeley Art Museum and Black and Blue is actually a title from a visual artist. Her name, she's a Korean artist that was originally based in Berkeley, Theresa Hucking Cha, who sadly passed away when she was young. She has amazing archive at Berkeley Art Museum, and so I took this piece of hers called Black and Blue and made my own piece out of that.

Ashley Smiley: That's incredible. I love how some of your works seem like they're filtering other pieces of art. Reflections on Rothko, I'm guessing is you writing music in response to the painter's abstract expressionists art.

Ursula: Yeah, so that's a piece that I really have enjoyed performing with this violist, Ellen Ruth Rose, she teaches here at Berkeley. She's an amazing violist and in that piece, I have a live camera feed on Ellen and her image is chroma keyed and projected against Rothko paintings. So there's like seven paintings in the piece. Then, so the piece is structured around those seven paintings. It starts sort of bluish in the middle. It's like yellow and red and then ends bluish again. I'm not exactly synesthetic but I do have really strong color associations with musical motifs. So for me, that's a yellow idea and that's very definitely yellow, because I mean, he has ... Rothko, these amazing, you know, vibrant sheets, squares of color and I find them very inspiring musically.

Ashley Smiley: What do you want your audience to take away from the stuff that you share?

Ursula: I think each piece, again, has its own genesis and its own emotional story. For the 2016 election, I probably won't share that with the audience. It's enough that they can read the poetry that spoke to me so much. The poetry is about mutual destruction and sort of held that desire for destruction is inherent in all of us and I think the poem speaks for itself. I don't need to talk about the elections, especially since that's such a polarizing topic. I'd prefer not to. But in a different piece, this more recent one for piano and electronics. I Should've Taken

the Train. That one I definitely want the audience to connect with the message behind it. It's about a friend of mine who was assaulted and it's about her self-recrimination afterwards. You know, instead of blaming the man who assaulted her, she says repeatedly like, I should have taken the train. Like it was all my fault, essentially. I should have taken the train. And I think it's important for audiences to understand the mentality of young women. And I think that art is a place that you can put people emotionally in the space that someone else has occupied.

I definitely want my works to be emotionally moving for other people. I suppose it's in part because when I was composing, when I was young, it always felt like writing diary entries. Literally I'd be like 13 angry at my mom and I just write really angry woodwind quintet, you know? And what's nice about music is that then my mom would hear it and be like, that's an amazing woodwind quintet. Like she ... You know, music often doesn't share the source, right? It's just, you know, it's angry, it's full of energy, but you don't know what it's about. And sometimes that's really nice not having to have the specificity of text.

Ashley Smiley: When did you start playing and composing?

Ursula: Probably when I was around seven when I started taking piano lessons. I had a really wonderful piano teacher in New York City. Her name was Kathy Eddy and she had all of her students write music. I think it's such a good idea. I recently taught piano to a little six year old and he's so creative. Kids when you're like "Write music." They're like, "Okay." It's like coloring. There's no mental barriers, you know?

Ashley Smiley: Yeah.

Ursula: It's only later that you're like, I couldn't write music. Like what's ... You know, kid's, they're like, "Fine, I'll play around on the piano and here's my song."

Ashley Smiley: I mean, and it also makes me think about like the question of access because you said that when people paint or when you assign colors to music, there are clear patterns that come out. And so, if, you know, a child can paint, you know, perhaps they can also be creative with music, but who has access to a piano when they're young or who has access to like something more affordable, like a box of crayons, you know?

Ursula: Yeah. I mean, it's one of the tragedies of classical music right now that there's really not much diversity anywhere in the world of classical music. And I do think that that goes back to childhood. to be a orchestra violinist, most people started when they were five. I started composing when I was seven. I played a million instruments when I was young and those have all helped me. And those are all

privileges. They're all advantages that most people don't have. And so when you're trying to diversify, college is too late, you know? We have to start a system to help kids, young kids, become more involved and give them instruments, give them lessons, give them materials.

Ashley Smiley: If you're just now tuning in, you're listening to 90.7 FM KALX Berkeley. And you're listening to The Graduates, the interview talk show where we interact with graduate students here at UC Berkeley. And today we are joined by Ursula Kwong Brown from the Department of Music. So you've performed not just here in the United States in the bay area, in New York, and Chicago, but also in Europe, like Germany, London. What's the biggest difference from traveling and performing your work in other countries versus here in the United States? What's it like traveling for work?

Ursula: Well, it's wonderful traveling to these foreign countries and immediately having this small group of friends with common interests. New music world is actually quite small. I was in Darmstadt Germany in 2014 in some tiny town and oh, I ran into a friend that I met three years ago in France. And I mean, that's just what happens. And then I ran into someone I knew from California and then, I mean, these gatherings just pull people from all over the world. So I think you feel at home wherever you are. In terms of differences between Europe and the United States, public funding is a huge one. When I was in London at the Royal College of music in London, I remember that people weren't nervous about going into music the same way my friends at Julliard were. There had recently been an article in the New York Times about Julliard students selling their instruments to pay their rent, and it's actually not uncommon for Julliard musicians to leave music because they can't afford to stay. Whereas in London, healthcare is guaranteed, so you have to pay rent. You can always cash someone's couch, right? It's not the same fear of losing healthcare that drives people towards other jobs.

Ashley Smiley: That's so interesting to hear coming from STEM. Music versus integrative biology where where I'm at. There's a lot of similar anxieties in terms of funding and access to resources that you may need and also just early science education makes a huge difference in getting a more representative population in science. There are issues with diversity and inclusion and they're systemic and, I mean, I see that in science.

I'm interested in figuring out a way to address these issues and make them more transparent and also more available to the public to consider.

Ursula: Yeah, I mean I wish I had the answer there. I do feel like, you know, taxing the rich slightly more and giving more money to the arts and also to, you know, STEM education and all these things would be a really wonderful first step. I



guess I would encourage people to compose, and especially encourage parents to have their kids compose music. I feel like in our society, there's this like mental barrier everyone has like, "Oh I can't write music.". Everybody can write music. Seriously. Listen to some-

Ashley Smiley: I don't know about that. I mean ...

Ursula: No, but listen to contemporary music. It often sounds like scribbling. You can do that. Like you don't have to write Beethoven music. You can write whatever sounds you want. It's just organizing sounds in space. So if it's something that interests you at all, do it. And I guess I say that in part because I just wish there were more women composers. I feel like there aren't enough.

Ashley Smiley: Yeah, I completely agree with that. And what I meant earlier about being skeptical about writing music, where do you get the tools that you need to know how to write music? You know what I mean?

Ursula: Yeah, I mean, one way that I've seen done in some public school outreach programs is using color maps, energy maps. You know, you ask a group of kids "How do you show something's loud?" And generally someone shouts out red and [inaudible], you know, if it's a jagged sound, do you want it to be a circle or triangle? Triangle, you know?

Ashley Smiley: Yeah.

Ursula: So you can just start assigning colors and shapes to different texture.

Ashley Smiley: That's really cool. Never thought about that before.

Ursula: I mean harmonically, it is a little more complex and I think that's where taking lessons when you're young is really helpful.

Ashley Smiley: Yeah. Okay. Yeah. You mentioned earlier you have a upcoming performance either sometime this fall or next spring, and that one is Where the Eye Comes From.

Ursula: Yes.

Ashley Smiley: And that's for soprano and orchestra with text by Josh Bell. So that one was going to be performed by the UC Berkeley symphony within Moss. So, listeners can stay tuned for the final date and time, and that one's going to be your ...

Ursula: That's my thesis piece. Yeah, that's my dissertation.

Ashley Smiley: So exciting. I wanted to ask the final question and I wanted to ask if you feel there are any issues that the general public should be thinking about? This is what we call the soapbox section.

Ursula: I feel like the bay area could really benefit from more racial diversity in the art scene, particularly the classical music scene. And even within that, the new music classical scene is just some of the least diverse concerts I've ever been to in my life. It makes me uncomfortable, you know? And I'm not sure why, because the people are all very nice. It's never a personal question. I feel like it's something structural that has to change. We have to make some tickets cheaper, free, and subsidize that with raising more money from donors, right? Or we just have to program slightly different music, like mix new music with some music that would be attracting a new audience, essentially.

Ashley Smiley: Yeah. I think that, you know, you're not alone in this mentality and you're not solely responsible for offering solutions to these issues. And I feel this sentiment coming not just from you and the music department, you know, across the board at Cal Berkeley and in the bay area, and part of this show is starting the conversation on how to have these discussions and introduce these topics of concern to the public. So, I appreciate you sharing that.

Ursula: And I guess even apart from the public performances, the university, we could do a much better job of pulling in diverse students into our ensembles. I mentioned we have a wonderful orchestra. It's not very diverse. We have a wonderful choir. It's also not diverse. There are ways to go out and find students that we want to be in those ensembles. Instead, we're just waiting for people to come to us and if people feel like they're not welcome in an environment because nobody looks like them there, they're never going to come. I think it's on us to go find diversity and bring it in.

Ashley Smiley: Yeah, I completely agree with you. On that note, it looks like we are out of time, unfortunately, but as a reminder to the listeners, be sure to look out for Ursula's upcoming performances in the bay area and the final performance composed by Ursula in the bay area. Well, I don't think it's going to be the final performance, but-

Ursula: Where the Eye Comes From.

Ashley Smiley: Where the Eye Comes From. So, be sure to look that up and it will be performed by the UC Berkeley symphony. Thank you so much for coming on the show, Ursula, and sharing both your stories and your work with the listeners.

Ursula: Thank you.

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Speaker 1: (singing)