

ZK: Good Evening. You are listening to the portion of our show that we like to call Inspiration Dissemination. I am Zhian Kamvar.

JH: And I'm Joey Hulbert. Well done with the bed music, it came in really well.

ZK: Every week at 7 o'clock on Sunday nights, we interview a different graduate or undergraduate student here at Oregon State University, and try and figure out what they do here—and why they do what they do.

JH: Yes: The purpose of Inspiration Dissemination is to inspire you, the listener, to pursue a career in science and research.

ZK: Indeed.

JH: Every week we bring in a guest to tell us about their research project, and why Oregon State University is incredible. And tonight ... well, we'll introduce our guest in a second, but before we begin, we'd like to state that any opinions expressed during this program are those of the hosts and the guests—not necessarily those of Oregon State University or this station.

ZK: And, as always, we are continually looking for new guests to feature on this show. While we have a line-up for most of the summer, schedules might change and we're always looking for people. If you want to be a guest on this program you can email us at [inspirationdissemination@gmail.com](mailto:inspirationdissemination@gmail.com).

JH: Please do, we'd love to have you. We plan on doing this for as long as we can, so the more guests we can have, the better!

ZK: Until they pull us away! *Laughs* Without much further ado, I think we should introduce our guest now.

JH: Tonight, Braden Elliott has joined us. Why don't you say hello, Braden?

BE: Hi there, everybody!

JH: Hi there, Braden!

ZK: Braden is a Master's student in the department of Applied Anthropology, is that correct?

BE: That is.

ZK: Why don't you tell us a little bit about his your advisor is, and what you do?

BE: Sure! My advisor is Bryan Tilt, and he does work primarily with people that are relocated from hydroelectric projects or the effects of industrialization, especially in China. There are some other people in the department that I could talk a little bit about, partially because a lot of grad school is the relationship with your mentor. So, for instance, there are some labs housed within the department, like the Pacific Slope Archaeology lab. Loren Davis is a really big guy in that, and they are looking primarily at the peopling of the Americas: How did humans get to North America and South America, and when, and how can we defend those dates?

ZK: But don't we know how? We know they crossed the bridge, and that was 12,000 years ago, right?  
*Laughs*

BE: There are no more details we have to worry about. *Laughs* We also have a biocultural lab. If you're interested in looking at birth, Missy Cheney is a good person to work with. We've got some other people that work in food: Joan Gross, Nancy Rosenberger, Lisa Price. Ten Rivers Food Network, a lot of food issues, especially sustainability and access to food. Other people who work with archaeometry, or children, or immigration, or social network analysis, environmental issues, historical archaeology, it's all there.

JH: Cool. There's a lot going on at Oregon State University regarding anthropology, sounds like.

ZK: If you're a student looking to do anthropology, Oregon State University might be a place to look.

JH: Check it out. Alright, Braden. You're an MA, you're a Master's student here in Applied Anthropology. Why don't you tell us what your thesis is?

BE: My thesis is, generally, looking at patterns in the distribution of genes in native food plants, and

how those patterns relate to either human influences or natural influences—whether we can see evidence of what humans have done in the past in the way plants are distributed across landscapes today.

ZK: Oh, wow! We'll get into that a little later in the program. But, as is customary, we will delve into Braden's psyche and try to figure out why he's here.

JH: We want to hear your story.

ZK: Let's go back in the past, Braden. Where did you attend undergraduate school?

BE: I got my Bachelor's from Missouri State University, working under the department of Anthropology there, eventually—but started out in music for quite a while. Changed majors a couple times, went through Horticulture, dropped out for a year and a half, came back in Anthropology eventually.

ZK: That's quite a mess!

BE: It was!

JH: You found your way, though, and now you're at Oregon State University. What brought you here?

BE: Originally, I found the school because Joan Gross was working with endangered languages. At the time, I was very interested in working with endangered languages, and something we call linguistic ecology. What is the ecology—just in a linguistic sense—of an endangered language? How does that language respond to the languages around it, the ones that are more widely spoken or legitimate in more domains, like the courtroom or the radio, for instance. I realized at one point that my passion for that was fed much by my advisor's passion for that—it was not from myself. Oregon State stayed on my short list of graduate schools, after I realized that environmental and ecological anthropology was more my passion, mostly because of Bryan Tilt.

ZK: Interesting!

JH: You applied to Oregon State University, apparently you were accepted...

BE: Yup, they told me I was accepted, and so I came. *Laughs* And here I am, a year later.

JH: You mentioned that you came out here and visited beforehand?

BE: I did. I came out a couple weeks before I put in my application: To get know some people, talk to some professors. That was really helpful in putting together, for instance, my personal statement. It's kind of a mock research proposal—you're pitching your draft thesis. It was nice to talk to the people that I'd actually be working with.

ZK: Is that what the requirement is for Anthropology?

BE: Most anthropology programs I've looked at, as part of the application portfolio there's a personal statement and a purpose or mission statement, or something along those lines. It's essentially a research proposal that helps key you to a particular advisor who would be qualified to work on that—and interested—but you're not married to it once you get in.

ZK: That's true for your proposal, isn't it?

BE: It did change! *Laughs* I originally applied to do something that we call ethnohydrology...and when I say “we,” I mean “about a dozen people in the world that really 'do' ethnohydrology.”

ZK: So when you have an ethnohydrology meeting, you could literally meet in your apartment.

BE: Yes! *Laughs* If you had money to get everyone in one place, because they don't live together.

JH: So, you were accepted to Oregon State University, and you basically came out here because you had similar interests with a few of the faculty, although your passion, or interests, within anthropology changed after coming out here. Now you're a year into your Master's, is that correct?

BE: That is. Hopefully halfway, if I can write a thesis.

ZK: *Laughs*

JH: Well, best of luck!

BE: Thank you!

JH: I'm sure you'll do fine.

ZK: Let's get into your Master's work in paleoethnobotany, then, but before we get into to that, I'd like

to remind the listeners that you're listening to KBVR. This is the program Inspiration Dissemination, and we are currently interviewing Braden Elliott on his work in paleoethnobotany—is that right?

BE: That's absolutely right.

ZK: I think I gave away a clue! *Laughs*

BE: Before we get too far into paleoethnobotany, I just wanted to mention that another thing that attracted me to OSU was not only Corvallis and Oregon and the general culture of the area—which is very different from Missouri, as the two other people in the room who have spent a lot of time in the Midwest will agree—but also, there's a great organization which is the Coalition of Graduate Employees, on campus. I appreciate the work that organization has done to improve the quality of life for graduate students at OSU.

JH: Another thing we should mention is that something else interesting about Braden is that he is involved in the CGE, as you just mentioned, the Coalition of Graduate Employees. If there are any graduate students listening, we encourage you to listen to what Braden has to say and appreciate it as much as he does. What's going on in the CGE currently?

BE: Currently, the CGE is going through a process it goes through every two years with the university, where some representatives of the organization bargain the contract for all graduate employees with the university. It's going really well! This year is going extremely well. We've reached some temporary agreements on some really excellent things. We're looking at, potentially, a lot less in fees for graduate students and a lot better coverage of healthcare for dependents and partners of graduate employees.

ZK: Excellent—so being a graduate employee at Oregon State University has some benefits because you've got CGE behind you.

BE: It's true—and OSU, working with CGE.

JH: So hopefully, starting soon, we won't have to pay as much for student fees?

BE: Hopefully. That's the way it looks. If you want to get continuing updates on how CGE is doing, they've actually got some happy hours through the summer, every other Wednesday from 4 to 6. The next one is this coming Wednesday, July 11, at the Brew Station outside.

JH: Cool!

ZK: And, all those happy hours are also family-friendly!

BE: It's true. Grad students have kids, pretty often, and partners with those kids.

JH: Is it true that you'll be unable to attend, yourself, because you'll be in the field?

BE: That's true. Almost every one of these happy hours is when I'm out in the field with the archaeology firm that I work for.

ZK: They planned it that way. *Laughs*

JH: So, thanks to Braden, graduate students might be in better shape as far as funding, and grading...

BE: Oh, it's not just me—lot of brothers and sisters out there, too.

JH: Braden and co-graduate-employee union workers. What would you call yourself, your group?

BE: I like brothers and sisters. It's kind of a big family. Solidarity forever!

JH: Wonderful. So next Wednesday...is it next Wednesday, or the following Wednesday, the CGE graduate employee happy hour?

BE: The first one coming up is this coming Wednesday, July 11, at Brew Station.

JH: There you go! There's a good chance that Zhian and I will be there. Unfortunately, Braden cannot make it. I guess we could talk about your funding situation a little bit. This summer, you're working for...?

BE: It's a company called Willamette Cultural Resource Associates, Limited, or we just call it Willamette CRA or Willamette. That's a CRM archaeology firm. CRM stands for Cultural Resource Management, and generally we just do contracts for developers in some sense. If you want to build an apartment complex, if they want to lay a pipeline, build a road, put in a transmission line, anything that's going to disturb the earth, archaeologists are part of the environmental impact statements. We look at what cultural resources are there—that's the term that we use.

JH: That's what Braden's up to this summer. During the year you're teaching, you're assisting in teaching, you're a teaching assistant?

BE: That's true—I'm a graduate teaching assistant in Anthropology. Just in the past year I've worked on an introduction to medical anthropology, an introduction to biological anthropology, and spent some time in front of the room teaching a class about musics of opposition and resistance. Next year I'll be TAing a class called Cultures in Conflict, and then waters unknown after that.

JH: Wow—those sound like cool classes.

ZK: Good variety.

JH: I do want to emphasize to any of our listeners that you don't have to pay for your graduate school.

BE: ...if you have an assistantship. The tuition waiver is part of the contract.

JH: You can TA classes and make your way. It might be a little harder work.

ZK: It might be a lot of extra work, but it's worth it. So, one of your other jobs is actually doing research.

BE: You could call it a job, sure. *Laughs*

JH: Yeah, what are you doing at Oregon State University, right? You're not just teaching.

BE: No, I'm not just teaching. I'm also seeing if we can use the patterns in the distribution of plants—and the genes in those plants—across large landscapes, like region-level landscapes, to talk about how groups of people in the past—like in deep time, for the past ten thousand, fifteen thousand, maybe twenty thousand years—have interacted with those plants. How they've cultivated them, and how they've traded them, and how those actions are visible in pattern of the genes of those plants today across the landscape.

JH: Right, okay.

ZK: These plants, they're not just any old plants, right?

BE: They could be any old plants, but it's hard to write a research proposal where you look at every single plant in the world. *Laughs* I narrowed it down to plants in the genus *Camassia*. They're generally called camas. There are a few different species and subspecies, and the Pacific Northwest is home to all of the edible varieties that people have eaten. Camas: You could think of it as a lily. It's got a bulb underground with roots coming out of it, and then out of the top of that bulb there's a big stem or stalk sometimes a foot—sometimes a few feet—and lot of usually blue to purple flowers on top, and some long, pointy, straplike leaves coming out at the ground. The bulb is the edible part. The bulb, along with salmon, are two of the main staple native foods in the Northwest.

JH: I'm just going to remind the listeners really quickly. If you just tuned in, you're listening to KBVR, 88.7 FM. I'm Joey Hulbert, alongside...

ZK: Zhian Kamvar

JH: ...and we are having a discussion with Braden Elliott, a Master's student here in Anthropology at Oregon State University. He is just telling us about this genus of edible native plants here in the Northwest, a historic staple food crop for indigenous populations in the Pacific Northwest.

BE: It's one of the most important native foods in the area.

JH: Isn't there some camas that's poisonous? If that true?

BE: Yes, you could jump genus to go from *Camassia*, where you've got *C. quamash* or *C. leichtlinii* and other kinds of camas, and you could go over to *Zigadenus venenosa*. It's a plant that looks very similar to camas, except it has white flowers. That plant is poisonous to humans, and it's called death camas. If you eat enough, you could, in theory, die.

JH: Ok, so we're talking about the other camas.

BE: Right.

ZK: The edible one, the one where you won't die or get stomachaches. *Laughs*

BE: True, although I have heard stories that death camas was used as a regurgitant—you eat a little bit, and it gets whatever you don't want in your stomach, out of your stomach. Frontier medicine.

JH: So, why are you interested in this genus of food?

BE: I'm interested in this genus of food because it hopefully will be a really good case study of a plant that is only used in a particular area—so I can draw some sort of a limit on the area that I'm studying—but was used intensively. There was a very strong history of a strong relationship between humans and this plant for a long time. Records of trade, records of cultivation. Whenever Lewis and Clark came through the Willamette Valley, they described it as looking like the ocean with all the flowers waving in the wind, there were so many camas plants.

ZK: Oh, wow!

JH: So you're telling us about this species of plant, which you think that today's distributions—wherever you find it today—may have been influenced by trading or use by populations in the past?

BE: It may have been, that's what I want to find out.

ZK: How do you figure out this correlation? Do you just say “oh, there are plants here, there are humans here, hey! Correlation!”? *Laughs*

BE: You could correlate coexistence that way, sure. I'm building it as a layer cake, if you will. Start with the landscape. Imaging just the state of Oregon, and then you populate it with, say, a few hundred—to a few thousand, depending on which dataset you want to look at, that exists already—camas plants. You've got the geographic coordinates for each one.

ZK: So, you sprinkle camas all over the landscape.

BE: Then, on top of that, you'll layer two things. You'll layer some natural associations, and then some cultural associations. You want to see whether the natural associations are a higher or lower correlation—whether they match worse or better—with the camas plants, and why they're where they are, than the human influences do.

ZK: Can you give us an example of what these different correlations would look like? Maybe give us an example of some data that would suggest that where camas is more human influenced, as opposed to natural influence.

JH: ...that would not occur naturally.

BE: Sure. Let's say you've got a bit of a divide, kind of a raised ridge in the earth, or on the earth. There's a different watershed on both sides: Let's say one faces the ocean, and one faces the valley. They've got different ecosystems, they've got a little bit different rock and soil, and so those are naturally different areas—but if that area was inhabited by one group of people on both sides of that ridge, if you find the same camas plant on both sides of that ridge, or the same genes or the same species or the same two species together (which is kind of weird on its own), then that would suggest the human influence was stronger than the natural influence. If you found a different species on the side facing the ocean than on the side facing the valley, then that would not suggest that humans had much hand in why the plants are where they are.

JH: So Braden is telling us about this supposed natural land barrier, where you wouldn't have a species of camas plant naturally occurring on both sides. You know, it's difficult to pass a mountain if you're a little flower.

BE: It's hard to walk over the hill, yeah.

JH: He's suggesting that maybe if you can find it on both sides, then maybe we can conclude or infer that some population had an influence and brought it to the other side.

ZK: And so you have this molecular data, and you also have this morphological data about these camas plants.

BE: Sure. The difference there, just for the listeners—because I didn't know what that meant very long ago, so I wouldn't expect everyone else to—is: Morphological is what you can see, and molecular is what you can't see. For instance, Native Americans would be moving plants around based on what they could see, but the genes would come with those plants. The molecular information would track with the plants as well. I think it's important to look at both.

ZK: Right.

JH: You've got these amazing datasets, and some of it is molecular, where they've actually sequenced

the genes of these specific camas plants you're finding in this region, and then they've also made a map of where each species is. This goes into one of your layers.

BE: That's true. These two datasets, these really excellent datasets—I want to give a shout-out to the major people that have been behind putting those together.

JH: Absolutely.

BE: The molecular data has come from a couple projects that have all involved a woman named Susan Kephart, who is a biologist working, teaching, and researching at Willamette University in Salem. They've come out in journals in the past six or so years. The morphological data comes from herbaria specimens—different herbariums, or herbaria, from across the Northwest. The person who has really introduced me to those datasets, and the person who is very important to the Oregon State location, the herbarium in Cordley Hall, is Stephen Meyers. I should also thank Bridget Chipman, who was a recent botany graduate here, for connecting me with Stephen Meyers and planting the bulb or the seed of this research last winter.

ZK: Is that a pun?

BE: Yeah, that is a pun. I've been trying trying to hold back on 'em. *Laughs*

JH: If you're listening, Bridget, we appreciate it. So, you have this incredible dataset of where this plant is found, where the genus and the species of this plant are, and then you also have some data about where you think indigenous, pre-colonial Native Americans were. And so, you're layering these, essentially going back to your layer cake analogy, onto one map. Then, you can kind of look over where they overlap.

BE: That's true. I can look at how the patterns match up.

ZK: Have you found any patterns yet?

BE: I haven't found any patterns yet, because I'm not very good at ArcGIS yet. *Laughs*

JH: That's okay.

ZK: To be fair, not many people are. *Laughs*

JH: It takes time, it's pretty tricky. That's clearly a challenge.

BE: That's true. There's a bit of a technological barrier.

ZK: Is that the only barrier?

BE: That's not the only barrier that happens in this kind of research. Another important barrier for some people, I suppose—depending on your background, depending on your training, you could say depending on your standpoint—is how delicately you can handle information about people. Whenever we talk about Native Americans that have been in the Pacific Northwest for a very long time, we're talking about real people, who have had very real children who live in the very real world right now. I think an important part of any research project that deals with the past, and human influences in the past, needs to have a strong relationship—a strong working relationship—with the people who represent those group now: The most likely descendants, the tribes that would represent that heritage on that land.

JH: Cool. Well, be careful, right? *Laughs*

BE: One step I've taken in that direction is that I'm currently an intern with the Confederated Tribes of Grand Ronde, up at Grand Ronde, which is sort of between Salem and the ocean, working up toward the Coast Range.

JH: Cool. If you just tuned in, you're listening to Inspiration Dissemination on KBVR, 88.7 FM, where we are talking with Braden Elliott Braden, a Master's student in Anthropology here at Oregon State University, about his research: Trying to essentially answer the question of whether Native Americans influenced the distribution, the geographic range of where you would find camas species of plants right now. You were just talking about a little internship, one of the parts of your anthropology degree. It requires an internship, is that true?

BE: That's true. At Oregon State, the graduate program is a Master's of Applied Anthropology, as opposed to a Master's of Anthropology. Some anthropologists would say that anthropology, if it's done

well, is applied—that is shouldn't have to be an extra word that you tack onto the beginning of it. If you're doing good anthropology, it will be applied anthropology.

ZK: Right.

BE: But, not all anthropologists necessarily feel that way, or prioritize the applications of their work. Oregon State does prioritize those applications: Involving the people that are impacted by your research—which, if you're an anthropologist, involves people—and helping mitigate representation and the impacts on them.

ZK: And that was one of the things you brought to the table with this study that you're doing right now.

JH: Let's talk about how your research can be applied to another sector of anthropology, let's say, archaeology.

BE: Sure. I identify myself usually, right now, as a paleoethnobotanist or an archaeobotanist, because archaeologists have worked a little bit with DNA in the past—especially with DNA of humans. If you wanted to look just at plant DNA, most archaeologists have looked at what's called aDNA, which stands for ancient DNA. That's the set of sequences of plants that have been found in the archaeological record, so you have a genetic sequence that existed at a particular point in time. You can point to that point in time, talk about domestication, the rise and spread of agriculture. Some researchers in England right now have just put out a paper on that, using living barley, actually.

JH: Okay, then, how about for botany? This is something that Zhian and I are specifically interested in. Or conservationism, as a matter of fact? Here we are, and maybe while we're considering all these plants to be completely native or indigenous to the Willamette Valley have some historic, or anthropogenic influence on how it got here. It's not necessarily that they made it here on their own, right?

BE: That's true. There are sort of two parts to that. One is, what can putting together the fields of molecular botany and paleoethnobotany do—what can you synergistically create? Also, what are the implications of this research for conversation: what is conservation, and how does it work? So, to take the first. By putting myself at a crossroads between two strong fields of study that haven't been related to each other much in the past, I'm hoping to create—not to get too self-important—but a very small tool for the toolbox of both people. On the archaeological side, add another level of analysis—another way to create another line of evidence in an excavation or an investigation. In any sort of research, if you can talk about the molecular botany, that's just one more way to build, or break down, of your view on how the world worked.

ZK: Excellent.

BE: And on the botanical side, people have been here in the United States—or what is now the United States—have been in North America for, if you go with the conservative dates, 12,000 years. If you go with projections, some 20,000 years. “Natural” ecosystems have not existed since humans got here. Humans are part of an ecosystem. They interact with it. They're crucial, and they change things. That pushes into the implications for conservation because any conservation project to set aside natural areas, sort of wall them off and try to minimize human influences, in the hope that that will create an ecosystem that existed before. What that ignores, is the fact that that ecosystem, if it were to exist without human influence, would not have existed in the past, say, roughly 15,000 years. And so, it's kind of an experiment in creating a novel ecosystem, on its own.

JH: Well, we could go one about that, because it's kind of controversial...

ZK: ...but we're running a little short on time here, so let's go into what the future holds for you. *Laughs*

BE: Hopefully, the future holds graduation in a year—we'll see how that goes. *Laughs* After that, I might be ending up in California, working with cultural resource management archaeology, looking at graduate programs.

JH: Sounds like a good gig.

BE: If you can get it.

JH: So we're talking with Braden Elliott, he's a Master's student in Anthropology here at Oregon State

Univeristy. He just told us about his research. Do you want to tell us one more time what your thesis is, or just summarize for the listeners, what we just talked about?

BE: Sure. I'll say it a different way every time, because I can't remember how I said it last. *Laughs*

JH: That's perfectly fine!

BE: My research is an investigation of whether there are patterns in the way plants are distributed across the landscape—and whether there are patterns in the way the genes in those plants are distributed across the landscape—and if there is a pattern, does that pattern match better with natural, nonhuman influences on those plants? Or, does it match better with human influences on those plants, in terms of Native American indigenous management: What groups of people were where, at what times?

ZK: So, results forthcoming?

BE: Results should be forthcoming. Stay tuned for my thesis defense next spring. *Laughs*

JH: Here on KBVR. *Laughs* Well, thank you very much, Braden.

BE: Thank you too, Inspiration Dissemination. *Laughs*

ZK: It was great to have you on. As always, on Inspiration Dissemination, we would like to thank our lords and masters: the KBVR staff at Oregon State University. They're ... benevolent overlords. And, as always, we'd like to thank you, the listener. And, as tradition, we play a song that's related to the research—every single show. This show is no different, and were trying to think, what song should we play? What song could we play that's related to Braden's research?

BE: Wracking our brains at Interzone this afternoon. *Laughing*

ZK: Braden found this brilliant, brilliant YouTube video that someone made. It's actually apparently quite popular. If you search YouTube for The Anthropology Song: A Little Bit Anthropologist, you will find this. Actually, I don't even know the person's name. Do you know who the artist is?

BE: I don't know her personally, but she just earned her Master's a couple years ago in Canada, I believe in Vancouver, or at least in British Columbia. According to the comments that she's put into the video, she's now—in the lifetime of this song—has gone from a Master's student at my stage in a program, not really sure where she was going entirely, not quite ready to finish; and now she's teaching a first year course, I believe, for anthropology students at a university in Canada.

ZK: Excellent, excellent! So, this is The Anthropology Song: A Little Bit Anthropologist. On 88.7, KBVR, Corvallis.

JB: Thanks again, Braden.