Andrew Saintsing: Hi, you're tuned into 90.7 FM KALX Berkeley. I'm Andrew Saintsing, and this is The Graduates, the interview talk show where we speak to UC Berkeley graduate students about their work here on campus and around the world. Today I'm joined by Jameson Karns of the Department of History. Welcome to the show, Jameson.

Jameson Karns: Thank you so much for having me, Andrew.

Saintsing: It's great to have you here. We're having a little bit of technical difficulties but we're finally on air.

Karns: We'll make it work.

Saintsing: All right, so, Jameson, you study fires and fire management, correct?

Karns: Absolutely.

Saintsing: So, why don't you tell us a little bit more about the research you actually do. You're in the Department of History, so you're studying historically how people have approached fires and fire management?

Karns: Yeah, so I try to always keep a dual lens when I'm doing my research and writing: that is, one the history of the people, society and also the history that the landscape, various ecosystems and whatnot are telling me, and I tried to combine the two and I came to this subject largely through my background and prior career before academia.

Saintsing: What was your background and prior career?

Karns: So, I was actually a firefighter primarily in Southern California for quite some time.

Saintsing: What's quite some time?

Karns: So, a little under 10 years. I started at a fairly young age. I come from one of those families where it seems everybody is involved in the fire service one way or another, and so, I think before I was born it was kind of written in the stars that I would be in the fire service and be a fire fighter for some time.

Saintsing: So, how long – how young did you get involved in firefighting?

Karns: I started fairly young. I started at the age of 15.

Saintsing: And, uh, how does a 15-year-old get involved in firefighting?

Karns: Well, there's various volunteer programs that you can enroll with and start at a very young age.

Saintsing: Okay.

Karns: Kind of a bit similar to what you see with ROTC programs, things like that. You're operating in very much a volunteer capacity, and, and that's very much the norm even to this day. Most fire departments are volunteer-based.

Saintsing: But, I mean, at 15 they're not going to send you to actually fight a raging fire, right? I mean, what kind of things do people younger than 18 do to fight fires?

Karns: Well, you can enroll in various academies where you kind of get your credentials, things like that, and then slowly you can start taking volunteer shifts. Generally, they're about 24 hours. In some cases, they're 48 hours, and you – you kind of approach it sort of like an apprenticeship, if you will. We're kind of learning the ropes, and, you know, once you turn 18 that's generally when many fire departments will allow a "professional fire fighter" to start and join their ranks.

Saintsing: Okay, so you were in high school, and you were volunteering, and then did you go straight to college, or did you start as a professional firefighter once you graduated high school?

Karns: That's a great question. I started working in wildland firefighting. That's the term we use to apply to those folks that go out and fight forest fires, brush fires, things like that. I started in that field. I then went and did some medical training where I went out and got my paramedic license, and then I became a "professional firefighter," and then I wound up here at UC Berkeley getting my undergraduate in history, and I just kind of stuck around and here I am getting my graduate degree in the same place.

Saintsing: Okay, so there was a gap between high school and college, or?

Karns: There was not.

Saintsing: Okay, so you – during the summer, I guess, you got some training, and then, I guess, all throughout college you were working in a firefighting capacity?

Karns: My first few years of undergraduate I did volunteer a bit. However, once I got to graduate school that came to a quick and abrupt stop.

Saintsing: I see. Okay, so going back to how you study this, you said you look not only at historical documents but also the history of landscapes. So, does that mean you're kind of like studying geology in some ways? You're studying like core samples or things like that?

Karns: Yeah, that's a great question. You know, one of the whole reasons I went down this path was actually kind of out of frustration. I found the fire service, my vocation, to actually be kind of ahistorical. I found that firefighters weren't that great at conveying what had

happened in the past. They used one term and really only one term only to convey the past and memory, and that is “fire season.” You'll hear lots of firefighters talking about like, “Oh hey, you remember that fire season in, you know, 2010?” And, that - that’s how they kind of talk about the past. And, when you want to dig a little bit deeper, it's really tough to do. I remember asking questions like, “Well, you know, why are we using Blackhawk helicopters? Why are we positioning fire engines in this way?” And, often the response I got was: “Well, you know, this is the way it's always been done.” And, I wasn't an academic at the time, but I knew a bit about history, and you didn't have to go back that far to know that, you know, say the Spaniards weren't driving around fire engines around California, so this really wasn't the way things had always been done.

Saintsing: Right.

Karns: And so, out of that frustration, when I came here to UC Berkeley, I found this to be a great, great campus to investigate this kind of unusual historical subject. Not only do we have a great history department, but we also have a great forestry department as well as a fire ecology lab. So, to get back to your question, one of the things I like to do is not only understand the agencies and the people involved in fire management, but I also like to analyze forestry surveys, land surveys, and, even as you're mentioning, more contemporary surveys, you know, where people study tree cores, things like that, to understand what existed in the past through kind of, if you will, natural historical analysis.

Saintsing: Oh, cool. So, you're looking at documents? You're not doing the core sampling yourself, right?

Karns: Yes, exactly.

Saintsing: Okay, so you work closely with scientists in your historical work, or you just collect their documents that they produce, or…?

Karns: Absolutely. I often find myself as kind of a diplomat in between these two communities because amongst foresters and fire ecologists, they want a record of kind of what existed on the land, what the landscape looked like, and often to get a depiction of that you need to reach out to historical archives, and that tends to be a place where scientists can function, but, you know, it's not where they have the most comfort.

Saintsing: Right.

Karns: And so, I find myself kind of acting as intermediary in between those, those two arenas, but it also, to be fair, it's, it's difficult to decipher a lot of California's various fire chapters, if you will. You know that they're so, so wide-ranging. Myself, I tend to think of it in terms of three different chapters when these chapters are largely predicated on the governing people at that time. So, the first I usually consider that belonging to the indigenous people, the first nations, the various tribes that were here first.

Saintsing: Right.

Karns: And, they used fire in many, many different ways. I do believe they were practicing a science in their own right. They used burning techniques for a variety of agrarian methods. It was common for many tribes to burn large swaths of land and then distribute the seeds of a wanted crop in that area and grow it from those ashes of the burnt area. Other tribes used fire as kind of a supplemental hunting technique, you know? If you have like a bold valley or something like that, you could light it a flame, and it would flush out a lot of the game and you could have various hunters around the perimeter that could then take out the game fairly easily. And, that chapter pretty much went until the sixteenth century, and of course, that's when we have the arrival of the Spaniards here in California, which, of course, was followed by the Mexicans. When you look at the Spanish, they're really developing their own kind of industry. It was called the hide and tallow industry where they managed lots and lots of cattle, and they really kind of came to a conundrum. When you read a lot of their memoirs and diaries, it's really, really interesting how they describe California. It, it doesn't really resemble our current surroundings. Many of them, when they were on horseback they would frequently complain that the skies around California were raining ash because there were fires occurring all over the place, most of them being created by the native peoples. Like I mentioned, they were always frustrated that they could taste ash on their tongue because, you know, fire and ash and soot was always in the air.

Saintsing: So, the, the fire was always in the air, but that was a man-made situation.

Karns: Absolutely, absolutely.

Saintsing: But, I mean, these landscapes are generally thought to have evolved to adapt to fire, right?

Karns: Absolutely. You know, here in California we have a really unique situation. We have many, many ecosystems, but within that we also have some of the most flammable, and because of that, we have a number of plants that not only can cope with fire but are actually dependent on fire, and they've grown and they've evolved to have this dependency. It's a way that they can reproduce, for some of them. It's a way that they can cleanse themselves of disease and pests. It's a way they can help eliminate competition and you know that has been in place for a long, long time.

Saintsing: Oh, and so fire is something that naturally would thought to be occurring in this habitat before people even came here?

Karns: Absolutely. When it comes to California, fire is as natural as rain.

Saintsing: Right, but so I guess would Native Americans using fire as part of their daily life kind of suppress natural fire. It's almost like today, now that we have our ideas of controlled burns. Is that kind of like a contribution Native Americans were having to the landscape?

Karns: That's a great question. You know, we don't have many records of Native people actively suppressing fire. We have many records of them igniting fire, starting fire. However, suppression, as we'd find out in the later years, it's extremely labor-intensive, and, actually in their case, it could have been very counterintuitive to what they were trying to do with the landscape and food production.

Saintsing: Right, so uh, is a typical – I mean, do you have – are there historical records of what, kind of, Native Americans were doing? Would they just start a fire and let it go? Say, "All right, everybody, clear out. We got a fire going."

Karns: Yeah, you know, it's really tough because, you know, we, we don't have many written records. The Native people, they relied completely on oral tradition from oral sciences, if you will, so a lot of the records we have either come from anthropologists or they come from the records of the Spanish. So, it is a bit tough to decipher, but generally, what would take place is, it would be a seasonal action in a designated area where they would go ahead and ignite a fire and various tribespeople, generally women, would go and distribute seeds of the crop that they wanted to grow, and they would allow them to take root in the soil that is now fertilized by tons and tons of ash, which is a wonderful thing for many species, and later on, as the rains would come and these plants would develop they would come back and harvest them.

Saintsing: So, the Spanish got here, and they said, "We don't like this at all."

Karns: Yeah-yeah-yeah-yeah. Going back to that point, you know, they, they developed what's called the hide and tallow industry. Basically, they're managing tons and tons of cows and California at that time it really looked like a paradise for it, you know? We had tons of meadows, lots of grassy fields, and, for them, it was ideal for that industry, but as you can imagine, fire and cows, they don't mix too well.

Saintsing: Right.

Karns: I mean, they can, I think if you cook them well. Like in terms of the hide and tallow industry not too well. And so, it's actually from our Spanish governor's here in California that we have the first laws against burning, and these laws that were on the books and were considered extremely justifiable at the time allow Spanish citizens to punish Native peoples as they as they saw fit if and when they saw them using fire in any method whatsoever way.

Saintsing: Like how punitive, and how – I'm just, you know – if a Native American just had a campfire was that a thing they're getting a Spaniard's punishment for?

Karns: Yeah, it's, it's, it's tough to find out how this law worked on the ground, but there doesn't seem to be too much mercy in these laws. I mean, you know much of Spanish

governance in relation to the native people isn't really known for its, its mercy, if you will.

Saintsing: Right, yeah.

Karns: And, you see this system expanded a bit when the government is then passed on to the Mexican government, and later when California becomes a federal area and then a state in the 1850s, then, it's then you see another drastic shift, and that's what I consider the third chapter, which we're probably in right now. And as you could imagine after California received statehood, with it comes Western institutions, and amongst these Western institutions is a science called forestry, something that really developed in Germany and France and then was imported to the east and slowly made its way to California. In forestry at that time, to boil it down in, in relation to fire, it's best to think of the forest like a crop.

Saintsing: Right.

Karns: You would like to maximize the amount of trees on your land so that you could maximize profit, and also, within that, you want to eliminate any externalities, any threats to your crop, and obviously fire is a threat to your crop of trees. So then, we see the first inklings of fire management and I, I think as you know or anybody who's watched a wildfire on the news, fighting wildfires, forest fires is extremely labor-intensive, so for many years after the state founded a CDF, or what was then called the California Department of Forestry and Fire Protection, they allowed fire wardens to actually conscript people if and when a fire took place. So, if you and I happen to be out by a forest and a fire took off and we happen to run into a warden, he could actually conscript us in there to fight the fire, or we could face jail time if we said no. And so, it was,

Saintsing: I guess, nobody was liable if you got hurt.

Karns: Yeah, no. It was pretty much on you. Yeah, it was on you. There's actually some great narratives out there: fire wardens teaming up with police buggies and what they would do is they would sweep these areas and they would ask you, you know, "Would you like to, say, go fight this fire out here in Sacramento?" And, you would say, yes, you'd go out with the fire warden. If you said no, you would take a ride in the police buggy and in the paddy wagon and go down to the jail.

Saintsing: Sounds uh, sounds illegal.

Karns: Yes, um and, and that pretty much existed until we got to World War II. So, when we get to World War II that actually ends up being a real big game changer for fire management, and there's a couple major shifts that happen. The first is there's a drastic shift in the men and equipment, the first being you have many, many GIs are returning. They're highly trained. They have the ability to bring paramilitary tactics to fire suppression, and the second component being the equipment itself. You have many

decommissioned jeeps, planes, helicopters, radios. All those things get immediately applied to fire management, and they drastically change the vocation. I mean you could imagine responding to a fire on horseback or on foot versus, you know, a jeep with aerial assistance using radio communication, so it drastically changes: one, how aggressive you can be in terms of fighting fire, and two, how quickly it can be done. But also, on the inverse of that, you have a group of radical foresters that are questioning some of these basic notions of forestry, the first being that fire is bad.

Saintsing: Right.

Karns: And, one of them actually came from this university, is a very famous forester. His name was Harold Biswell, and Biswell and others went out, and they began to listen to a variety of communities around California, primarily sheepherders, cattlemen, those that were often frequently hit by wildfires and affected by wildfires but also were around to see the aftermath. And, there was a consensus coming up that, you know, these fires may not be all that bad, you know? The landscape after a fire, it grows back fairly quickly, it tends to be more diverse, and these foresters really started investigating these claims, and they started to understand fire in a variety of ecosystems, and that's why we now refer to them as fire ecologists.

Saintsing: Yeah, I feel like now… Well, you know, I'm studying biology, so I guess, I'm used to thinking of fire as being important to ecosystems, and I guess… So, how long ago was it that people were kind of coming to these conclusions that maybe fire isn't an enemy but it should be part of life?

Karns: Well, it's, it's very difficult because I'm sure as you can appreciate as a scientist, there's the understanding in the scientific community, and then there's the understanding in the public, and it can be two very different things. So, when we get to the 1960s, 70s, particularly 80s, there tends to be a wider understanding amongst foresters, forest ecologist that fire in certain ecosystems is necessary and that helps with the recognition of fire dependent species, things of that nature. And, that's also when you see more and more experimentation with what we now call prescribed burning, a gang out there intentionally setting fires with, with the hope that there will be beneficial effects. However, you know, this understanding isn't as well known in the general at large, you know? California, here, we're in a very, very unique place because it seems every fire season we get a ton of media coverage in our fires wherever they happen to be in the state. Around the world, if California is burning, you will know about it, and we've been great at conveying this message that we need to go out there and aggressively fight these fires, some of them rightly so, some of them maybe not, you know? What one of the difficulties about this state is we really don't have any limitation on where we can set up homes, where we can set up communities, and though you'd find these limitations in other countries, we really don't have them here.

Saintsing: Well, there's, you mean, there's no like legal limitations…

Karns: Well, in terms of zoning, where you can build homes, and all that. So, for instance, let's, let's take that ever popular community of Malibu. You know Malibu. It's in Southern California, extremely popular and extremely affluent community, but when you look at the ecosystem it's built in, it's built in a coastal chaparral ecosystem, and that happens to be one of the most flammable, if not the most flammable, ecosystems in the world. You know, if things were to occur "naturally," if you will, there would be a fire generally in the ballpark of once every five to 15 years in Malibu. However, within that same community we've also developed huge mansions, large homes, like I said very affluent communities really without much regard to what would occur along those hillsides to keep that ecosystem healthy.

Saintsing: Right, so you're saying that it was, I mean I guess in my mind, when you brought that point up, I was thinking about how there's all of this protected land that we couldn't build on, but it's that the places we've already started building weren't planned out well?

Karns: Absolutely, and so, it, it can be a bit tough if you build structures within deep forest and within chaparral ecosystems to then expect fire agencies, the state to come in and protect these structures in these highly, highly flammable surroundings, and that's something that the state of California has continually grappled with and will continually grapple with.

Saintsing: So, what do you think a place like Malibu, I mean you know it's such an iconic place kind of, right? Like, there's no way you're going to get people to just abandon it, right?

Karns: You know, I would never recommend doing that, but, you know like I mentioned earlier, we do have proactive and prescriptive means either through thinning, either through prescribed burning, to go out there and minimize this threat to these communities as well as have a beneficial ecological impact as well. However, these moves tend to be a bit difficult: one, gaining support for them – you know, nobody really likes to look in their backyard and see kind of a charred moonscape, it will never, ever be a popular – and, two, developing the license for these prescribed burnings, thing can sometimes be difficult as certain agencies have found that they run into a number of bureaucratic hurdles in, in doing so.

Saintsing: Right, I see. Going a little bit back, when you talked about starting the new chapter from Spanish – I guess, American…?

Karns: Yes.

Saintsing: Jurisdiction, and you're talking about forestry kind of being established in Germany and France. I've never been to Europe, but I have heard, right, that forests, they're kind of like these really manicured places, especially in comparison to the US. And so, I guess, would it even be possible to apply the same logic to European forests as to North American forests?

Karns: Well, I, I think we tried, you know? If, if we think of the science kind of flowing from Europe over here to the west, you know, one of the things that now obviously stands out to us is the ecosystems are vastly different, and, you know, what stands out and becomes most apparent, those forests over there in Europe they're just wetter. It's harder to start a fire, they don't occur as frequently, but one of the things that's really interesting is, with global warming across the globe, we see fires sprouting up with a greater occurrence and frequency in areas where historically they wouldn't occur at that rate. And so, in many ways we're seeing the flow of techniques coming from the states back to other regions of the world, where now they're kind of looking at our specialty in firefighting.

Saintsing: Well, we're about out of time. Are there any thoughts you'd like to leave the audience with?

Karns: Yeah, the last thing I would say, you know, I, I'm a historian, so I'm definitely not going to say what will or will not happen in the future, but I do think California and the United States as a whole is at a really interesting point, you know? As I mentioned, many say that we're in the age of mechanized fire suppression, and we do have the option of continuing that, you know? Some agencies right now are currently playing with using predator drones to assist them in fire management, so many think that we will continue along that path, but the other option there is also to look back at some of the prior chapters and really consider some of the prescriptive and proactive forms of management that exist out there, and it's something that we will have to confront sooner or later, you know? Climate change is making this a really interesting and demanding topic. So, this is a situation that's going to force us to commit to one of these paths

Saintsing: You think we might expect to see in the future California looking more like the way the Spanish saw it when they first got here, more consistently seeing the effects of fire in our day-to-day lives? Ash in the sky, maybe scorched landscapes?

Karns: Well, I think it would be nice to see more forms of localized proactive fire management, people getting out there and interacting with these ecosystems and developing situations where they could not only benefit the environment but keep their communities safe as well.

Saintsing: Well, thank you so much for being on the show, Jameson. It's been a great pleasure talking to you.

Karns: You know, I'd like to thank the Scott Stephens fire lab here at UC Berkeley, and, if anybody's interested in monitoring fire here in California or anywhere around the world, they could check out the Global Fire Monitoring Center at GFMC.online. Thank you for having me. It's been a pleasure.

Saintsing: Tune in in two weeks for the next episode of The Graduates.