Aaron Lachant

Mike Seyfer: We're on to our last presentation for the two days, but certainly not the least. And maybe one of the more compelling presentations considering media and I think maybe some misunderstanding of the subject. So, I'm pleased to introduce Aaron Lachant talking about what legalization means for health care and cannabis.

Aaron is an attorney in California at the forefront of crafting California's cannabis policy—medically and beyond. And as a partner at Nelson Hardiman, a Los Angeles based law firm specializing in health care and is also the board chair for MMLG, one of America's most established and experienced cannabis consulting groups for compliance, licensing and investment advice.

And certainly this is for those that follow it, an opportunity for investment growth from probably beginning in Colorado and went to California and now being discussed more widely throughout the whole country. So please welcome to the stage Aaron Lachant.

Aaron Lachant: Hi everyone. I'm really happy to be here. I'm going to start with a quick question. Does anybody know how much $100,000 in cash weighs? If it's all $20 bills? Any guesses? It's 11 pounds and $100,000 in cash was my introduction to California's medical cannabis industry.

I was a baby lawyer about 25 years old. I go to work one day and my boss comes in and drops a bag with $100,000 in it, and he says, I need you to go bail this guy out of jail. He's a cultivator. I have no idea about California's medical marijuana laws. And I was either smart enough to go do it or too stupid to go do it, but I took the money, went to the police station and attempted to bail the kid out.

It didn't work. The police took the money, they thought it was proceeds from drug trafficking, and we ended up in court fighting over who's entitled to this money. Is this grower getting out of prison—or getting out of jail. And it was a moment of clarity for me because I was standing in a courtroom where there's a prosecutor over here—he didn't really know much about medical cannabis—he just knew that cannabis is illegal and we're here to prosecute this guy. We're dealing with a judge who's about 70 years old, again, doesn't know anything about medical cannabis, and I saw it right there, where it was—okay, nobody knows anything about this. And so I'm going to jump in. I'm going to lean in heavy on this, and this is in line with my firm's mission of health care, and so over the last 10 years, I've been working with California's legal medical cannabis industry, and I've seen it change from a quasi-legal gray market industry to the multibillion dollar industry that we have today.

And I'm here to talk to you about how that industry is starting to interact with the health care industry because I think we're at a very similar point where the next 10 years, cannabis and health care are going to continue to interact with each other in a very meaningful way.

Before I get started, I just want to thank everyone for being here. I think that it is incredibly awesome that I'm able to have this conversation in Minnesota of all places. Minnesota is not California, and the fact that the folks here who are involved in health care are open and willing enough to have this conversation, to me, is absolutely tremendous.So thank you for allowing me to be here.

The second thing, I'm not a clinician. I'm going to talk about a little bit on the medical side, you know, certain findings that have been put out there. I think I got everything right. If there are clinicians in the audience and I get something wrong, you know, feel free to follow up by email.

I tried to include citations of any sort of study or journal article I relied on. So, hopefully it provides some clarity. You can see the work that I relied on in putting this together.

And so let's get started. We've got three big ideas I want to take a look at today. The first one is that cannabis and health care historically have been intertwined with each other. But cannabis policy hasn't been driven by science.

Second, cannabis use is more prevalent than it's ever been before. We have this massive industry and it's creating all sorts of new opportunities and new challenges for the health care industry.

And then the third thing I'll look at is, what is the health care industry in the United States—how are they incorporating cannabis into their day to day existence?

And, this is a cannabis plant—an anatomical drawing. It's really no different than any other plant, it has fibrous stocks. It's got its famous seven point fan leaves, and up on the top is the flowering buds, which is everyone's favorite part of the plant, or least favorite part of the plant depending on who you talk to. It has over a hundred cannabinoids. THC—tetrahydrocannabinol is the most prevalent cannabinoid within the plant. It is also the component that's responsible for the psychoactive effects. CBD cannabidiol is the second most prevalent component. It's actually having its moment in the sun lately, if you've read any sort of health and wellness magazine, you probably know that CBD is the new kale and you can find it incorporated into anything.

But, keep it in context. You know, this is just the surface of the plant and these are really the only two components that we've paid attention to so far. There's much more to be discovered. It's wide open.

Why is it important? Because I have it. You have it. We all have it. We all have an endocannabinoid system. It was discovered in the late nineties. There's preliminary research going on to understand it better. It's primarily responsible for maintaining your body's homeostasis. It affects things like memory, mood, pain, emotional well-being. And certain scientists believe that once we are able to understand this system, and once we can modulate it, control it, make changes to it, we will be able to impact a variety of diseases that could potentially impact every disease that's out there.

So from a therapeutic standpoint, for researchers, it's very exciting. And, cannabis use as a therapeutic dates back to 2727 BC in China. I'm really gonna try to breeze through a hundred years of cannabis policy. But the long story short is, you know, in the 1800s it was a pharmaceutical in the United States. Eli Lilly—other pharmaceutical companies who are still around today—they were making cannabis extracts.

It really changed in the 1930s. The prohibition of cannabis is rooted in racism. Harry Anslinger—he was the head of the Federal Bureau of Narcotics, he championed prohibition as a tool to go after minority populations. When the marijuana tax act of 1937 was introduced, the American Medical Association took a stance against it. They could see the future of what road we were going down. Their position was that if we're burdening cannabis, whatever therapeutic potential this plant might have, we're going to completely stifle its research and we're never going to figure it out. And, they opposed it. But at the end of the day, politics won out and this tax stamp act passed. It didn't outlaw cannabis yet, but it put on a burdensome tax that made it nearly impossible for physicians to work with it.

In the '60s you know, attitudes were shifting towards cannabis and it was part of the '60s counterculture. Despite the shift in attitudes, the federal government was doubling down on prohibiting cannabis. In 1970, the Controlled Substances Act was passed. This is really important because this is the framework that we deal with going forward. The federal government declared, and they continue to declare that cannabis is a Schedule 1 drug, meaning that it has a very high risk for addiction, and there isn't a recognized medical therapeutic use to it. This law and similar state laws have been used to prosecute millions of people in this country, and it's been enforced disproportionately against Black and Latino communities, especially. It's a real tragedy.

Cannabis policy is driven by politics, not science. Politicians are making these decisions. We start seeing a turn towards a medical resurgence of cannabis in the '80s.

And really it's the AIDS crisis that sparked it. When the AIDS crisis began, folks in San Francisco started up cannabis cooperatives, where folks could give away or sell for low amounts of money, really high grade cannabis to AIDS patients who were dealing with wasting syndrome.

Physicians wanted to research cannabis. They thought this might be a tool in responding to the AIDS epidemic. But the federal government said, “No, you can't do it. Why would you want to study a plant that has no medical use whatsoever?”

And, we just have this circular logic with the federal government. In response to it, Californians pushed back and it was a voter initiative where they said, “We want cannabis for medical purposes.” Again—no science behind it—there wasn't a team of doctors who said, “These are the conditions you should do it for.” It was the people of California saying, “Any person who has a condition that can benefit from cannabis and their doctor's willing to recommend it, they should have access to it.”

The second really big push in the resurgence of medical cannabis is a little girl named Haley Cox, she suffered from epileptic seizures. She was featured on a Sanjay Gupta, CNN special looking at cannabis, in which they told her story about how high CBD cannabis extract was being used to control her seizures. And as a result of the exposure from her story, a number of states started passing medical cannabis laws. And even very conservative states, they would pass these medical cannabis laws that would allow very, very low THC, no psychoactive component, high CBD.

So really, from the beginning, medicine and cannabis have gone together. It's really the politics and the politicians that have gotten in the way.

So here's where we're at today, 33 states and D.C. have full blown medical cannabis. Eleven states have legal nonmedical cannabis for adult use to use recreationally or medically—it just doesn't require a recommendation. Sixteen states have the Haley's Hope, type laws. And despite all of this, widespread use of cannabis in some form, it's still prohibited at the federal level as a Schedule 1. And for the longest time, health care providers have stayed away from cannabis because of its prohibited status.

This is the cannabis industry today that I know of. You can get anything in cannabis. Everything is pre-packaged. Branded. There's branded pre-rolls, branded flower,

branded edibles, branded gummies, suppositories, tinctures, lozenges. Cannabis products are coming in every shape, size and form. We're also being introduced to cannabis consumption lounges in California. The top photo is a picture from a cannabis cafe that just opened up in Los Angeles where folks can come in and consume cannabis in a safe and inclusive environment.

More people are using cannabis now than ever before. This is from a Yahoo Maris survey in 2017, basically 55 million people use cannabis each year. 35 million people use it monthly. So, you know, one in seven people is using cannabis. It's not this dirty little secret that nobody wants to talk about it. It's moved very much into the mainstream. You know, just looking around the room, one in seven or maybe more than one in seven of the folks in this room are actively using cannabis.

What does cannabis look like as far as an industry? Cannabis right now—legal and recreational cannabis—is an $8–10 billion industry. So to put it in comparison to other industries—Taco Bell does $10 million of revenue each year. Cannabis is as big as Taco Bell. Major League Baseball does $10 million of revenue each year. It's projected to surpass NFL football in revenue in two years. It's this industry that's completely prohibited at the federal level and is growing at an enormous pace. And if you look at the second line, it shows that $50 billion is what the estimated market is that isn’t being captured into the regulated market. It's an absolutely huge economy that's out there. It's happening. And because it's so big, we see it interacting in health care in a lot of ways. And I'm calling it, for lack of a better word, I'm just calling them data points to show that health care and cannabis keep intersecting with each other.

This, to me, is huge. In January, 2017 the National Academies of Science, Engineering, and Medicine declared for the first time that cannabis does have medical value. There's conclusive evidence that it helps with nausea and vomiting. There's conclusive evidence that it helps with pain and there's conclusive evidence that it's an antispasmodic agent. There was additional evidence that it's helpful with treatment of sleep disorders, and it may be helpful with Tourette's and PTSD. But this is important because it was a review of every piece of cannabis medical literature that was out there, and this is the consensus on, you know, what does the data at this point show? Cannabis is good for it. It lists a number of other conditions where it says, there's some evidence, more research is needed, but we can't come out and conclusively say what it is. But at least for these five things, there's now scientific consensus that cannabis is helpful and it represents a huge shift in thinking about what cannabis can do.

The pharmaceutical industry—the FDA has approved two synthetic cannabis pharmaceuticals, Marinol and Cesanex. There's a third cannabis pharmaceutical

Sativex. It's based on THC and CBD in a one-to-one ratio. It's approved in Europe and it's approved in Canada. But it's not, here in the United States. Most recently, they approved a drug called Epidiolex. It's used to treat seizures in children. It's basically just pure CBD. It's interesting because it's the first plant derived cannabis medication. Previously with Marinol and Cesanex, they were synthetic cannabinoids, but now we're moving into a territory where pharmaceutical companies are actually making medications that are derived from the cannabis plant. And, currently there are 120 federal clinical trials involving cannabinoids that are from the pharmaceutical industry. So, what that's telling me is that in the future there may be a wave in the coming years of cannabinoid based pharmaceuticals coming into hospitals, coming into doctor's offices, representing new treatment modalities that are out there.

One study found that in states where folks have access to medical cannabis, fewer prescriptions are issued. What they did was they looked at Medicare Part D spending and what drugs they were paying for. They compared the prescription rate in states that had medical cannabis laws, in states that didn't have medical cannabis laws, and they found that for issues like pain, anxiety, psychosis, nausea, seizures, sleep disorders, and depression, fewer prescriptions are being issued for medical cannabis [sic?]. It doesn't mean that cannabis is a better treatment modality for these patients, but they're using it as a data point that when folks are having access to cannabis, they're choosing to do this over FDA approved pharmaceuticals. And an interesting question is why and what's the benefit? Are they getting better outcomes doing it? But they've shown at least that patients are putting a preference out there. To use cannabis. They took a look at four drugs that are related to conditions that aren't impacted by cannabis, and with those four drugs, there was no difference in the rate of prescription between the medical states and the nonmedical cannabis states.

Same results were shown in Massachusetts. They did a similar study where registered medical cannabis patients were asked to disclose their pharmaceutical use after starting medical cannabis, and in at least in this self-reported study, patients showed tremendous drops in using pharmaceuticals for pain, anxiety and sleep. Again, limitation with the study is that it's self reported. We don't necessarily know if it's leading to better outcomes, how valid it is on the patient's reporting, but it's more data that whatever is happening with cannabis patients are preferring it.

The number one area, I think where cannabis is being entered into the conversation is opioids. And, it really started with this 2014 JAMA study. They looked at the rate of opioid deaths in states with medical cannabis, and they found that between '99 and

2010, states that had medical cannabis laws, had fewer opioid deaths, and it was a huge media talking point. It was, cannabis was, being looked at as the big solution for the opioid crisis. Let's replace opioids with cannabis and we'll solve this problem. A follow-up study in the Journal of Health Economics looked at a similar issue and they found it's not just having the law that matters. It's having dispensary access. The more dispensaries that are out there, the greater the effect is going to be. And, folks who have more access to dispensaries are going to be using opioids less. All of that was kind of turned on its head this year. There was a study that came out of Stanford that re-created the JAMA study from 2014. And it kind of turned it on its head. It found the exact same drop in opioid deaths with the passage of the laws, but then in the ensuing eight years, they actually found that opioid overdoses increased in those medical cannabis states. And their conclusion from it was, is that, look, it's great that this happened. But the link between cannabis and opioids isn't as strong as we think it is. It's probably, there isn't a link whatsoever, and it doesn't mean we shouldn't be researching cannabis as an alternative or substitute for opioids. It just means that cannabis isn't this silver bullet that we think it is.

One interesting study that's going on right now is with the University of Colorado, they're actually doing the first clinical trial where they're studying replacing oxycodone with vaporized cannabis, and then measuring the pain effects and whether or not cannabis is providing superior relief to patients. That study is supposed to wrap up in a year and folks are really excited about it.

And cannabis hasn't always been leading to good outcomes. We're currently in the middle of what we call the vap-ocalypse with all of these respiratory illnesses caused by e-cigarettes and vaping. You know, I'm pointing it out just because I think it demonstrates two things. Number one, it reinforces the size of the cannabis market, that there's now these counterfeit products out there that folks are buying on the street rather than going and buying these products in regulated states. It's showing the problems with prohibition as a policy and the failures it's causing. But number two, it also shows how dangerous this can be when it's not in a regulated system.

The health care community has a very big challenge trying to get to the bottom of it. When you have these products that are being introduced into the marketplace and there's no information or accountability on the supply side, where are they coming from? What's the chain of custody where it has traveled? And so while cannabis is related to this, the vaping crisis shows that not everything with cannabis is going to be good if it's used incorrectly.

With the crisscrossing of cannabis and health care, I've seen a dramatic shift in how the health care community is interacting with cannabis. I think the first one that I've seen, how it's being incorporated in a day-to-day is that people are getting more education and it's going to lead to better outcomes and working with patients and cannabis. If you look at the research on it residents and fellows aren't getting medical cannabis education in school. Only 10 percent of med schools have cannabis as part of their curriculum. Practicing physicians—this was a study done at a Minnesota Health System—50 percent of the primary care physicians who worked there had indicated they weren't ready or they didn't want to talk about patients and their use of medical cannabis.

I think it's really important because with so many people using cannabis, health care providers can't be taking this position. Cannabis is something that we give to AIDS patients. Cannabis is something that we give to cancer patients. It's really getting to a point where physicians need to be able to counsel patients if they're using it, and we're seeing systemic change to make that happen. The University of Maryland School of Pharmacy, they've created the first medical cannabis, like, master's degree program in the country. Several universities are now offering courses in medical cannabis, which are available to students at the graduate level, which are available to health care providers as continuing education. And UCLA, which is in our backyard, they host grand rounds on cannabis all the time and they open it up to the local health care community to come in and listen and see what's happening.

The second area where I think cannabis is running into a lot of trouble is, is the use in the hospital. There was a viral video that came out earlier this year of a stage four pancreatic patient in Missouri. And he was within weeks of dying. Someone in the hospital had called law enforcement because they suspected that he was using cannabis and it's a whole 10 minute YouTube video of the local law enforcement searching this room. Not treating this individual with dignity while he's in the final weeks of his life. And at the end of the day, they didn't find anything. But we're seeing a shift in the way hospitals are treating this. You know, I was really surprised, again, Mayo Clinic is leading the way, I think they have one of the best cannabis policies in the country.They allow patients to bring cannabis in. The hospital verifies that they are a qualified medical patient. The hospital verifies that the product came from the state license system and then it's up to the doctor to decide whether or not to continue or discontinue use within the hospital. The hospital doesn't store it. The hospital doesn't administer it, but they're at least providing a place for the patient to use it and it makes sense because if a patient's using a therapeutic on an outpatient basis, it seems completely ethical and normal that they should be able to use it on an inpatient basis. I understand the hospital's position, Medicare and the federal government is the

number one payor of health care in this country. You can't survive without Medicare, but it's really putting them in a difficult position with doing what's right for patients and maintaining your conditions of compliance.

Great hospitals like Johns Hopkins, who's leading the way in cannabis research, they have a total ban. They have no interest in allowing patients to use cannabis in their facilities, but more and more hospitals are developing cannabis policy templates and they're putting them out there online for free, as a starting point for discussions internally and how health care facilities should allow patients to use their cannabis while in an inpatient setting.

More research is being done on cannabis than ever before, and it's still not enough. The ultimate question is why research cannabis? It's important to research cannabis because so many people are using it. A lot of sick people are using it, and it's important to find out what's working and what's not working. Cannabis isn't being turned into just this niche issue that nobody wants to touch. There's very prestigious and mainstream health care providers who are getting in on cannabis research. And, it's not just here, it's happening all over the world. Israel's been researching cannabis since the '90s, there's over a hundred pharmaceutical startups in Israel that are putting together cannabis based medications. It's federally legalized in Canada. Canada is very deep in researching cannabis. And even a country like Thailand—in Thailand they legalized medical cannabis for the first time. The only place you can get it is within the hospital, and it's their universities that are growing it, that are making the cannabis based pharmaceuticals and it's only for distribution to patients within the hospital. And we're in a weird position because the rest of the world is moving ahead of the United States in a very meaningful way when it comes to cannabis research.

We're doing a lot of important clinical trials. I like this one. It just made me laugh when I read it. Laboratory Smoking of Marijuana Blunts. I just pictured a bunch of scientists in the labs smoking blunts, but it's a real study where they're seeing whether or not flavored blunts impact, you know, the user's preference, which I'm sure is part of some bigger public health initiative, but I just love the title Laboratory Smoking of Marijuana Blunts. The federal government is dedicating more research dollars to cannabis than ever before—and especially for therapeutic research. If you look over the last three years, the budgets increased to about $38 or $37 million per year. It's a drop in the bucket of what's actually needed. I sincerely believe that if cannabis didn't have its complicated history, if it was a brand new plant that was discovered in the middle of the rainforest, every single health care institution in the country would be all over researching it for its therapeutic benefits.

Nevertheless, even though folks are researching it, there are still substantial challenges to doing research. You still need to go through the FDA and get special approvals from the DEA to handle cannabis. It is next to impossible to get public money to do it. All funding comes from the National Institute of Drug Abuse. It has it in its name right there. It's drug abuse. Your study has to have an abuse angle to it in order to get funded. So if you're looking to research solely on therapeutic use of cannabis, it's going to be very, very difficult to find money. The only federally approved supplier is the University of Mississippi. And the cannabis that they produce is very hard to get ahold of because they grow a small amount and it's of inferior quality. The THC percentages in the University of Mississippi cannabis is between three and seven percent. What's being sold on the marketplace is between 15 and 35 percent. So in a lot of ways it's apples and oranges, and you also can't get your hands on any of the cannabis derived products. They don't do cannabis extracts or vape pens or edibles or oils. So they're very limited in what they can offer for the use of cannabis research. But, positive results are still being made.

One last issue is trying to fund studies privately. It's a huge challenge. Folks who are participating in the health care community, they can't rely on the cannabis community for funding because of the risk involved with taking money that under federal laws is the proceeds from drug trafficking. So, you're entirely dependent on the private market, on state governments. In California, they made a decision in the early 2000s to fund cannabis research, and so they put a little bit of money, a few million dollars each year into cannabis research. The University of San Diego recently got a private grant for $3 million to research CBD and autism. So more research would be done if more money was available, but funding is one of the biggest challenges out there.

At the end of the day, the big question here is—how is the health care community going to get involved in rescheduling cannabis? If you look at any study relating to cannabis, it says at the very end, more research is needed. More research is needed, more research is needed. And up to this point, the very folks who do the research really haven't been part of the conversation. The cannabis conversation is dominated by cannabis inc. It's dominated by the pharmaceutical industry and it's dominated by the penal industry. I think it's time for the health care community to come to the table in a meaningful way. I think the health care community could learn from the historical activist community that brought cannabis to us, to work together. You know, if you look back to the 1980s, it was the activists who were fighting for access to cannabis like their lives depended on it, because their lives did depend on it. And cannabis has the power to heal. It has the power to bring communities together, and it's really, in my opinion,

all eyes are on the health care community as to what they're going to do to unleash this healing power and healing potential.

And another thing that comes along with it is, with rescheduling or even descheduling—if we can end the criminalization and mass incarceration, there's still over 500,000 people who are arrested for cannabis possession every year. If we can think about what impact keeping those folks out of the penal system would have on their overall health care and health outcomes later in life. I think it would be absolutely tremendous because the penal system, it's a ticket to nowhere.

So the cannabis story, it's long and complicated. It's still being written, but I really think the next chapter is for you guys in the health care industry, and it's going to be up to you to write it. And, I'm really excited to see what the next 10 years is going to bring because if it's anything like the commercial cannabis industry, it'll be absolutely spectacular.

Thank you for having me here, guys.

Mike Seyfer: Thanks, Aaron. Interesting that Goldfish crackers was at almost a billion dollars. Cannabis and goldfish. On an unrelated note, we're going to have Doritos and Pop Tarts as part of lunch. On a real serious note, so how do you spend your day—what's like your biggest focus as an attorney for the industry? What is your firm trying to do? What's your biggest priority?

Aaron Lachant: You know, what my biggest priority historically has really been helping folks get into a regulated market, because regulated market leads to increase public safety, transparency and accountability. But I spend a lot of my time thinking about what does a healthy cannabis ecosystem look like, because there is tremendous demand for folks who want to get into cannabis. And there's not a lot of opportunity unless you have lots and lots of money. And so I think about, what does a system look like where there's small businesses for folks who want to try and change their lives by starting one. There's opportunity for larger businesses who are backed by private equity or publicly traded dollars and there's room—where do health care providers fit in all of this? Is it just the pharmaceutical companies who get involved? What role do hospitals play in this? Because there's tremendous potential to be unlocked and I really want to see a cannabis ecosystem that flourishes for everyone.

Mike Seyfer: Very cool. We'll start with questions.

Audience member: Thanks Aaron. Very, very compelling. It was interesting how it rolled out in Minnesota. You know, we have medical marijuana is legalized in Minnesota, but it was fascinating as the legislature worked through it, the police officers were 100% against it. The whole, all of law enforcement. Health care was in favor of it, but people were in favor of it because of what was happening to their loved ones. And the thing that finally brought the governor on board, because he was going to veto the bill, and what brought him onboard was a group of moms who went to the governor's mansion with their children with epilepsy.

Aaron Lachant: And it was very powerful.

Audience member: Yeah. But what's happened, and I thought it was interesting as I've sort of watched it, is that not much of it is prescribed yet. And I wonder if you've seen that in other states. Or if the physicians here, like Tasia or whatever, want to speak to that, but it is really interesting.

Aaron Lachant: I think there's two things. Number one is Minnesota has one of the most narrow medical programs in the country. Minnesota articulates a number of conditions that qualify. I don't know them all by heart, but they're all very big, you know, cancer. And that's in contrast to California where when California had its medical program, whatever your doctor says is good enough. So, you know, if you have anxiety, sleep disorder, menstrual cramps, you're having a bad day, you just want to hang out with your friends and have a better day. You know, you could qualify for medical cannabis in California. But overall, we've seen a hesitation from physicians initially to get involved. It's usually the physicians who have historically recommended cannabis in California, were physicians who are in the twilight of their career, they may have been excluded from the Medicare program and need an option to work on a cash basis. But what we're seeing now, is a wave of young physicians who see cannabis as a legitimate therapeutic, and they are building their career around it as a serious physician who wants to incorporate cannabis and have greater involvement in the management of their patients' care by using cannabis. So, it's a cultural change. I think changes over time with the medical community—my father is an oncologist. At the time, he was in New Jersey when their medical program passed and there was only one physician in his practice group that was willing to take it on and touch it.

Audience member: I work with kids and I don't work with populations that I would think would be candidates for this, so I don't know about the practices with my colleagues. And honestly, my education, just like many of my colleagues, I think is pretty low as far as cannabis use in medicine. But my question is, I mean, you think about opioids, right?

Opiates and its history and opium dens. I mean, you've got this, it's not a great, perfect history for sort of where the opiates and morphine and all of these other pain medications that we use are derived from something that was used recreationally. Do you know anything about the history and how it made its way from opium dens to then being used...

Aaron Lachant: It's parallel to what's happening with cannabis?

Audience member: I mean, what's the argument against it, when we have something that we use currently everywhere, that has a similar history?

Aaron Lachant: Yeah. I don't know. I think a lot of people are more keen to cannabis because they see it as—when it comes to substituting opioids—they see it as less harmful, as a harm reduction strategy because there isn't any possibility to have overdosed. The addiction potential is, is much lower. I think folks just see cannabis as a potential alternative that carries less harm for society. But I don't know the whole history of opioids, so it's hard for me to respond.

Audience member: Why is there so much resistance to cannabis?

Aaron Lachant: I think that there is resistance to cannabis because people have been programmed to be resistant to cannabis. Cannabis is prohibition. It is rooted in racism, not medical facts. And you know, if you look at the AMA, and that's why I put the quote at the beginning—the AMA was against any sort of burden on cannabis in 1937 but the AMA has reversed its position, and now the AMA, you know, they toe the government's line where cannabis shouldn't be rescheduled until there's clear and convincing evidence of its medical utility. I think it's just been a 75 year propaganda campaign, you know, fake news that people hear over and over again, and it just gets into your thinking. And folks when they start to see that that's not necessarily true like they did with the AIDS patients in San Francisco, like they did with the kids with epilepsy, it's when they have firsthand experiences seeing the therapeutic benefit with a cancer patient, I think that's when people become more open minded about it, who historically, you know, weren't in favor of it. But at the end of the day, there's also so many money interests involved. Between the penal industry, the pharmaceutical industry. You know, GW pharmaceutical, they're the folks behind Epidiolex. As soon as they got their drug approved, they're now against any sort of federal measure that would liberalize cannabis because they can sell a year's worth of Epidiolex for $32,000 so it's a complicated issue.

Audience member: That kind of dovetails into the question I had. Can you tell us a little bit about what is going on at the federal level towards legalization or at least decriminalization.

Aaron Lachant: I think there's all sorts of bills that get put forward every single year. I think from a population standpoint, there's unquestionable support for medical cannabis in the '90s as far as people who support it. But the process of government just moves so slowly. We had a historic win as an industry this year where they passed, at least the house has passed the safe banking act, which would effectively allow banks to work with cannabis providers. Cannabis has been a cash only business. Banks won't work with them because they're afraid of regulatory enforcement. By helping out federal drug traffickers, we've at least gotten, you know, the federal government to take the first step and say, okay. Banks, you know, we think it might be okay for you to work with them. It seems a lot safer to keep all this cash locked up in a bank than to have it in somebody's safe or in the backyard or wherever people are storing their cash nowadays. I also think with the vape crisis that's going on right now—I really think that makes a compelling public health argument, why it needs to be rescheduled, why it needs to be researched, why there needs to be regulated channels. Because people are dying now and to me, it's simply untenable to just keep this charade going when the vast majority of the country lives in a state where medical cannabis is available.

Audience member: So, you're outlining a very complex picture towards national legalization. I'm interested in your take and maybe even putting on your futurist hat a little bit. Pharmaceutical industry getting involved in like you said right now, into plant based cannabis. That to me sends up my spidey sense, tingles a little bit. Like they know that there's a market, but it also knows that probably the path that we're taking right now to legalization might go a whole different route if they actively get in the game. What are your thoughts on that?

Aaron Lachant: Well, the pharmaceutical industry is absolutely interested in this, just based on the amount of people who are interested in it. So, they see dollar signs. You know, the thing that's most interesting out there with respect to the pharmaceutical industry, versus the whole plant, is that the people who use it as a therapeutic, they believe that the plant is superior to any cannabinoid based pharmaceutical. And there's a lot of thinking out there about this whole theory called the entourage effect, where, it's the collection of all the different cannabinoids and terpenes within the plant working together that provides greater therapeutic benefit than a single cannabinoid basis therapeutic. We saw it with Marinol. In the Marinol studies, the patients who were

given Marinol, they all preferred smoking cannabis as a preferred means of ingestion. And so while the pharma, I think this opens the door to a whole new world of botanical based medications. And that's historically never been something that's out there because you can't patent the plant. You can't do it the same way you can with a pharmaceutical, but when you have something that's as effective as—as in demand as—cannabis, it opens the door to using a whole plant botanical for therapeutic reasons. And it opens the door for other botanicals to be used for medical reasons.

Audience member: Hi, thank you so much for your presentation. I was really proud to see my alma mater, UC San Diego, up on your list of research institutions, and I actually know …

Aaron Lachant: They're the official research institution of California.

Audience member: Yeah. Well, and I actually know Dr. Qube. It's his lab that's doing that research and they do research on alcohol and cannabis, and they've been doing it for years, including when I was a student there and I participated in one of the alcohol studies. So I have a lot of friends who worked in that lab. My question sort of dovetailing from what this gentleman was saying here—I just want to echo your sentiment that the medical community needs to own this and not the pharmaceutical companies. Because if you see the evil-ness needs to not take this over. And so I'm curious, is that a concern?

Aaron Lachant: I think it's a concern, I know politically, you know, I love Joe Biden, but if Joe Biden's elected, he's made it clear that cannabis becomes a gift to the pharmaceutical industry. He doesn't believe in having a whole plant cannabis industry that's out there. I think it's absolutely a concern, because when the pharmaceutical industry looks at it, they're looking at worldwide markets, which is billions and billions and billions of dollars. If they can, you know, get control of the intellectual property of a cannabinoid based medication. I come from California, people have always used it in plant form and to me the possibility of being able to grow a plant in your home, and get therapeutic use out of it is tremendous. And you don't have to pay $32,000 a year to get the pharmaceutical version of it. But I, but I do think it's a serious concern. If you look up in Canada, all of the major cannabis producers are partially owned by either alcohol companies or pharmaceutical companies. So, they're doing work within the space. They're doing research in countries where there are lower regulatory burdens to conducting the research. And it's definitely, going forward, it's definitely a force that's out there, it's a voice in the room as to how cannabis policy will play out in the future. But at the end of the day, I agree with you. It's incumbent upon the scientific and the

medical community to actually figure out what do we have here and what's the right way to regulate it.

Audience member: I just think we can't let them own it because they have proven themselves to be evil beyond all evil and it can't be them. It has to be the do-gooders.

Mike Seyfer: Great last comment. Well, legitimately, if we're talking about transformation and innovation and the better way of doing things, and you're suggesting that the big money way of doing things is not the best for health care for patients specifically. Really good comment to sort of wrap things up.

Thanks, Aaron.

Aaron Lachant: Thank you.