

Eric: [00:00:00] This week we have Savva Kerdelmelidis on the show from Crowdfunded Cures. Last week we touched on regenerative finance and carbon offsets with Will Foulkes this week we're discussing DeSci. My focus on these areas now is not coincidental, irrespective of the crypto turmoil. Fundamentally, we are here for the enabling aspects of encryption technology and blockchain.

If there's a value proposition for the leveraging aspects of this technology, ultimately, it's not gonna be affected by this turmoil, but with it, I did wanna put a little bit more focus on the positive public goods use cases for blockchain tech and regenerative finance, as well as DeSci in efforts to reduce patient care costs.

There's so much to this episode. You can't come away from it and not realize that innovative incentives for off patented drugs is desperately needed and could substantially reduce healthcare costs. But why don't we do it? It's not so much that the current system doesn't work because clinical trials cost a lot of money to build [00:01:00] new drugs.

But on the flip side, we are not taking sufficient action and the system doesn't really facilitate seeking to reduce these high costs of healthcare that could be achieved in cheaper ways. There's a lot of complexity to getting this model to work as well as getting buy-in from the insurance system.

It's not that it's failed. But it's become inefficient and as a result, healthcare costs have been driven up, and it's created perverse incentives in the market. Again, there's a lot to cover here, and it's a very different take from my other episodes, but I think it was important to cover now, and I think you're gonna enjoy it.

And if you did, of course, please share it. And with that, I bring you Savva from Crowdfunded Cures.

Welcome to The Encrypted Economy, a weekly podcast featuring discussions exploring the business laws, regulations, security, and technologies relating to digital assets and data. I am Eric Hess, founder of Hess Legal Counsel.

I have spent decades representing regulated [00:02:00] exchanges, broker-dealers, investment advisors, and all matter of FinTech companies for all things touching electronic trading with a focus on new and developing technologies.

So today, really excited to have Savva Kerdelmelidis on the podcast. Woo, I got through that one.

He is the CEO of Crowdfunded Cures and the founder. Savva, welcome.

Savva: Hi. Yeah. Happy to be here. Thanks for inviting me. Great.

Eric: I'm excited to have you today we're gonna talk about DeSci and what you're doing with Crowdfunded Cures, and I think it's a great time to do it because, right now we're witnessing some carnage in the crypto markets.

It's Friday on November the 11th when we're taping this. And needless to say, it's been a very stressful week for those in a digital asset space. But we had planned this in advance and it's exciting to actually talk about something that, that touches on public good, particularly at a time where maybe some people would say this week wasn't really so much about public.

Good. Before we get into it maybe a little bit of [00:03:00] background on yourself and what drew you to DeSci

Savva: Yeah, so my background is I did I did science actually when at university post-grad. But I realized and I did law as well and ended up going to law. I wasn't really that much of a good lawyer to be honest but got there in the end.

Just out of sort of brute force. Yeah, but I did enjoy science, but I wanted a way to bring those two things together. And actually, and then I had the opportunity to do a master's in 2012. Bringing those two things together, particularly, it was brought on by my fiancé at the time got sick.

And basically, going online when you have a sort of family member or a loved one that's sick, you see a lot of therapies out there being promoted as being effective. But then when you go and look into them, a lot of them don't have a lot [00:04:00] of evidence behind them. And typically, these things are like things like diets and supplements and off patent drugs, particularly off patent repurpose.

So, you're out there on your own, scrambling around trying to find what you can do, what you can take. And I realized that a lot of this was to do with the systemic problem with how science is funded and particularly what are called unmonopolizer therapies. So, therapies that where you can't enforce a monopoly price.

So, repurposing off patent drugs supplements, diets, lifestyle interventions, these things can be medically very effective. Essentially treatment protocols that your doctor might apply, but there's no market to produce those treatment protocols because you can't basically enforce a monopoly price over an off-patent drug or a supplement or a diet or a lifestyle intervention.

So that's what led me into Crowdfunded Cures. I set it up as a charity, and one of the ideas is instead of patents, basically use like a. Like incentive and patents versus prizes has been talked about [00:05:00] academically for dozens of years. First prizes actually were hundreds of years ago, the longevity prize for determining, sorry, longitude prize rather for determining longitude.

And then other ones and then X Prize more recently but not a lot around that space. And enduring actually my thesis, there was also this kind of talk about. Pay for Success contracts, what they call social impact bonds. So basically, a way for funding public goods, getting private entities to fund public goods, whereby if you deliver some public service, you'll get an outcome payment.

So, one of the areas was prisoner recidivism. So that was in 2012. Basically, what happens is usually when people get out of prison, they go back to prison within a year. So that's very expensive for a society. And what the UK government did was say, hey, if you can keep a prisoner outta prison for a year, because they found if you can keep him outta prison for a year, then at least much more, less likely [00:06:00] to go back we will give you \$10,000 or 10,000 pounds.

And then similarly, they did a similar thing for homelessness. If you can get a homeless person off the street for a year will give you \$10,000. So, this whole. Pay for success and essentially almost creating a new kind of IP. So yeah, on the legal side, my background, I'm a commercial lawyer, admitted in New Zealand and Australia work mainly with technology companies but also paid an attorney and but yeah, essentially what I'm interested in is trying to fix gaps and intellectual property incentives.

And then where the crypto thing falls into it is that a lot of crypto essentially is about incentive alignment and creating these kinds of economic experiments. And you've got programmable money and you've got ideas like open-source bounties and funding public goods. And yeah, it did take a bit of a break, but when Covid came out and people were talking about ivermectin, hydroxychloroquine and all the sort of billions of dollars wasted on clinical trials for [00:07:00] that small clinical trials where people are still arguing online essentially about whether these things are effective or not.

I realized like there's a significant market failure and this is an opportunity to really go triangle and really push crowdfunded cures forward. And then also around that time there was a movement called DeSci last year where a lot of scientists also looking at using crypto to solve a lot of these issues that are facing scientists, particularly the problem of poor reproducibility of science.

The idea of publications getting locked up behind paywalls and The main one is actually funding, and that's the one that I'm most interested in with Crowdfund Cures is basically empowering scientists to get their research or get their ideas funded so that they can help patients to get, unlock all of this IP, all of this knowhow that's locked inside universities and in the brains of scientists and researchers or [00:08:00] whoever and get those actually out to market to help particularly to help patients.

So that's where crowdfunded cures happen. And I was like essentially, I was advising one of the biggest one of the first kind of DeSci projects, Peter Dow, and that's how I got into it. And we partnered with them at the moment on this a longevity prize. So, looking at me do, focused on longevity and improving healthy longevity.

And they have this thing called an IP and ft, which is basically they're using it this is a mechanism to essentially fund early-stage research and get liquidity into Research is at an early stage, you basically mint and an eft and then fund that. But yeah, happy to go into that sort of aspect.

Maybe that's a bit much for an intro. Leave it there. Yeah.,

Eric: All good. No, let's touch on pharmaceuticals. Certainly, in the US and I think in Europe too many places of the world have a very [00:09:00] highly regulated pharmaceutical industries. That obviously creates a very different dynamic when it comes to introducing new drug and the pressure to generate patients and revenues.

The whole value chain is really geared toward these bigger drugs. But I'm talking your book now. What are some of the market failures that We'll just put it in the category. Big

Savva: pharma has. So, it's what you say is that there is this problem with the, I guess the entire kind of medical establishment, pharmaceutical biotech establishment is focused on one thing and they see everything through this lens, which I call a kind of patent lens.

Eventually what the whole business model is around getting a molecule, a new molecule, and then enforcing a monopoly price over that new. And typically, those molecules are very hard to come by. You've got sort of 10, 15 years of research before that gets out to [00:10:00] patients. And that can the price that's been, let's just say there's some arguments, but I think it's probably justifiable to say it's around a billion dollars to, to get from an early stage to get a patentable molecule, the one that's not gonna kill you.

One, it's gonna be effective, and then gets to market it's 10 to 15 years and a billion dollars at least. And then on top of it, then you've gotta then make your money back. So, there's this real push to market it as much as possible and to sell as much of it as possible.

So, everyone's chasing what they call this blockbuster drug model. Essentially you have a single blockbuster drug and that could bring in sort of 10 billion worth of revenue over the lifetime of a patent, which might be only 10 years on the market. So that, that's, that, that problem is that yeah, everything is really focused on that side and I guess.

The issue is that when you pay for one of these blockbuster drugs, what you're actually paying for is the clinical trials. Those that research, getting it out to market and proving that it's safe and effective in [00:11:00] humans. And from a patient and a doctor's perspective, all they really should care about is whether this thing resolves the sickness.

And actually, from a patient's perspective, they don't care if they're gonna take a, an off-payment drug or a supplement, or if their doctor tells 'em they've just gotta do these exercises every day. They just want to get better most of the time. And the issue is that the biopharm industry, that kind of whole, that whole complex is fully focused on the only way you can basically get a return on investment.

And most of the time is to actually create a new patentable drug. And if you come to a VC or an investor and say, Hey, I've got this off patent drug, or this supplement, or this idea that can really save billions of dollars or treat, create billions of dollars' worth of value, there's no way of making that money back because of the model which is really very much focused on the ability to enforce a monopoly price [00:12:00] and typically through the ability to enforce a monopoly price with patents which are quite hard to obtain.

So, one of the other issues is that, yeah, if you tell someone your idea, all of a sudden, it's not patentable. So, it's just there's all these kinds of difficulties and they're actually legal difficulties that get in the way of the actual science and what we are trying to do. And I think what DCI is trying to do ultimately is help fix a lot of these market failures and get it, make it more about.

Okay, what's the actual, what they call de linkage, where you're de-linking the rewards that you get from the sale of a monopoly priced drug and linking it more towards, okay, what's the actual health benefit? What's the health outcome that we're that the public is getting? Does that

Eric: filter its way to doctors ultimately as well?

Certainly, fixing the problem with market incentives also requires practitioners to enforce it. But what is the model for getting [00:13:00] practitioners to deliver these alternative drugs? Cause I think that's also part of the problem. It's so entrenched. You go to a doctor these

days you're a hell of a lot more likely to walk away with a prescription for a drug than you are

Savva: like a vitamin regimen.

Yeah, for sure. And it's all about incentive alignment. Particularly in the private healthcare industry, things are moving in the other direction, particularly in single payer jurisdictions like with NHS and other countries. But say, especially in the US there is this kind of. There's this really perverse incentive where say, health insurers, particularly health insurers and even doctors, so doctors are rewarded for services, right?

And for doing surgeries and things like that. But, what, if they could be rewarded for preventing surgeries or rewarded more for actually keeping people healthier and things like that. So, these things are not just I think limited to the healthcare industry. It's just the healthcare industry is very unique where they have this kind of [00:14:00] elastic demand in a way.

Like it's it doesn't, you don't care if how much it's gonna cost you, you get your appendix removed, you just gotta get your appendix removed. And so that's, yeah, that's the issue. And if you reduced healthcare costs from 4 trillion to 2 trillion, that's \$2 trillion of sales, which are not going into health insurers and or doctors.

So, there can be this kind of perverse incentives. So, one of the ways forwards and this is where the Pay for Success financing is coming in particularly with big payers, they realize particularly, particularly in the states, like 20% of GDP going onto healthcare costs.

We need a, this is not sustainable, particularly with the aging baby boomer population. We've gotta, we have to bring those costs down. We have to get more efficient. And so, one of those things is idea of value-based pricing or bundled care where they basically pay a fixed amount and then you basically are then [00:15:00] incentivized to basically treat as many people and reduce your costs as much as possible cuz you are then liable for those costs.

So, this area of financial innovation and I think crypto ultimately can be a kind of tool, a useful tool for that is where things are going. And actually, I believe deep down that a lot of these players and particularly say with pharmaceutical is what I wanted to mention.

So, two thirds of the new drugs that come out after about five or 10 years or however they end up being found not to be that much more effective than existing drugs despite billions and billions of dollars getting paid. And okay, that's fine. But I think as a scientist, as a person working in a pharma company, pretty depressing.

I can imagine. And as a doctor especially, you didn't come into this you also wanna, for us, me, us maybe as lawyers, we there's something to be said about client satisfaction. We charge a lot of money. Sure. But [00:16:00] that's one problem I had when I was growing up and working in law firms would be charging hundreds of dollars for a letter due to this sort of family that couldn't afford it.

And you always felt I'm not really adding value. So, people. I think that the industry wants to feel like they're really adding value. And at the moment there's this productivity crisis and scientists at the same time as well, they wanna be funded. So hopefully there is some I think it won't, I don't think it will happen from the inside, but with crypto, I'm quite hopeful that maybe from the outside we can show them how it's done and then and then hopefully these things might be adopted.

Eric: Let's break down some of the issues with the current US healthcare and pharmaceutical industry could apply to a lot of different places, right? The current IP and patent framework, there's certainly a lot of money that goes into getting a patent, but what does DCI provide with regards to the current patent framework?

Savva: So [00:17:00] yeah, the area that I'm interested in, I think DCI is a lot broader than that. There, there is other issues around, say, helping with publishing and helping with credentials and verification of data. My main interest is in that exact space around the IP reform and where DeSci can help with IP.

So yeah, so essentially So one, one of the things that we're working on with a, with a project called Molecule is this idea of an IP nft. And this idea comes out of the problem of the valley of death, which is basically this separation or this valley between say university research or research that's on the bench to the bedside.

So, getting through to patients. And the issue is that a lot of that early-stage research just isn't getting fund. And one of the reasons is that, if you do wanna get something funded, [00:18:00] typically you're at a university, you gotta go to a technology transfer office and you've gotta spin off a company.

And then there's gotta be like a negotiation. Okay, how much does university, how much the researchers get? And then they go out and try and raise and they might raise like millions of dollars to do one experiment when maybe it was a lot easier. What they really wanted was like two. 50 grand to do a much smaller experiment.

And what happens with IP and fts, it's like a framework to basically raise money a lot faster. You can basically mint a nft, you can do something called a research agreement with a

particular lab. And under that agreement it says the data that's generated by that lab is basically owned by the owners of their IP and ft.

And that's what I crypto has done in the past, say with NFTs, where that represent land ownership, where the owners of the nft, the NFTs linked to a t a deed of a land de and all real-world objects. So, in this case they're linked to [00:19:00] I.

And what that does in theory is it basically lets you then gives you more liquidity. So instead of having to spin off a company, you can just min this IP and FT, get more liquidity, get more money for your research, and then if you do eventually spin off onto a company, then that IP and FT can go onto that company.

So that's the kind of more, and that's using the more traditional IP. So eventually that data, if you're a biotech company, that data would basically form the basis of a patent application. That would be a trade secret initially. And then you file a patent application and then you're away doing the normal kind of raising for a biotech.

The area that I'm super interested in is this kind of area where these mechanisms could be used to create another kind of IP, which is a little bit like, again, what I was saying before, it's like the right to receive an outcome payment under a prize. For the data. So, you have some, basically, essentially a, a clinical trial data marketplace where you [00:20:00] have buyers that basically say the health insurers.

The government will say, look, if you can generate clinical trial data that will save us a hundred million dollars because you are, you're proving that an off-patient drug works just the same as an expensive drug, or you can reduce hospitalizations by 50% or whatever, then we'll give you X number of dollars.

We'll give you 50 million. We'll give you, anything under a hundred million should work for them. And we could put that into a smart contract. Basically, it's basically x like a prize. And then that enables that them to pay out that money to, to the IP and FT owners. And the reason that's exciting is it creates a new, almost like a new kind of IP.

All of a sudden you have monetizing data and you have this kind of automated royal. And then you can look at much more sophisticated things instead of just pushing one drug on everybody, you can basically monetize an algorithm and a treatment protocol algorithm where you plug in your DNA and your blood tests and whatever the doctor basically decides is your diagnosis.

And [00:21:00] maybe CT scans, mri, things like that. And then it can determine like the optimal treatment protocol for you. And that's so I think that's where I'm the most excited.

Obviously, this doesn't have to happen through crypto, doesn't have to be on chain, but I think having that access to liquidity, then having the IP and fts being able to be traded on crypto markets in real time, and then having them go up and down in price in real time, things like that.

And doing it in a trustless and a transparent way, and also being able to determine ownership in a very trustless way. I think these are non-trivial use cases for crypto. And a and on top of that, I think the other reason is more the community and philosophy behind a lot of the crypto people.

They're very into the idea of open source of funding medicines as public goods. So, there's a lot of incentive alignment particularly say with psychedelics using off. A lot of psychedelics are off patent, their natural chemicals or they can't be [00:22:00] patented and maybe the active ingredient is like this this epiphany that you have and things.

And so, a lot of that is not really amenable and a lot of psychedelics also that they have a long-term effect. They could be curative in some ways. Or you don't necessarily have to keep taking the psychedelic to get the effect. I know that's not the case necessarily, but that's the kind of dream is that eventually improve plasticity.

And yeah, so psychedelics are very into that. And then longevity. So, I think there's a lot of non-trivial use cases. It's not just the hype dci, particularly in that space with IP and fts. I think there's some really useful, interesting things that we can leverage blockchain technology and also, yeah healthcare, data on chain, things like that.

I know there's a lot of issues. HEPA and GDPR and things with holding healthcare data on an immutable blockchain potentially and being able to encrypt that. But that's also another area I think is quite interesting. [00:23:00] Yeah,

Eric: we've done some episodes on secure multi-party computation or homomorphic encryption where like all that data is encrypted and then secure multi-party computation, you can actually leverage that data even if it's held by another entity, even arguably competitive.

And then you could leverage that data in an anonymized fashion. And then there's even things you can do that go well beyond what we have today with regards to even managing it at the source that's facilitating it. There's something called oblivious ram, where you get really deep into the secure multi-party level ensuring that no one can reproduce that data.

So, some pretty amazing things, but it also potentially facilitates use of data across different applications like, or it may not have been there previously. I find the repurposing

of drugs interesting where you've actually found the scenario where an off patent drug, which is no longer quite as expensive, cuz pharma, it's off patent, everybody can produce it and it [00:24:00] may have properties that are competitive with the ones that are on brand now and they're the ones that you know there certainly needs to be competition.

I know today you do have choices in some cases to do generic or the brand name and that actually does take the price of it down. But in other cases, that's the kind of positive outcome you want to encourage and maybe talk a little bit about, like examples of these repurposed drugs that could, that maybe they're not seeing the light of day, but they could also be used generically

Savva: as well.

Yeah, and that's I guess that's core part of what our IP might be eventually, although obviously this IP is out there. But we do think we have a bunch of low hanging fruit. There's a bunch of low hanging fruit out there. And part of the IP would ultimately be, say, the right to say, hey, if we can prove these things work in large clinical trials, and we'll receive an outcome payment either in [00:25:00] vast Mark commitment from the government or from a, from large payer or an outcome payment under like a prize fund.

So, one of them that we're really excited about is in the psychedelic space. So, ketamine has been shown to be one of the most promising new treatments for depression the last 20 years. Ketamine in itself is extremely cheap molecule. It's been around since the sixties, and since Vietnam war, it's an anesthetic.

But what's been shown is that if you give people a sort of sub anesthetic dose of ketamine, they get. And so almost like psychedelic state and this promotes neuroplasticity and then somehow, I don't really know how but it actually people that are suicidal and have treatment resistant depression basically gives them a gets them back from the ledge and has a long term mood boosting effect, which could in some cases, particularly with multiple doses last kind of months, up to Yeah.

Or more. So, this is [00:26:00] seen as a big breakthrough. The ketamine itself is a molecule extreme, extremely cheap. It's \$2 a dose. However, what a drug company j and j did Was created a version of ketamine. This is very typical for drug companies. We can talk about this.

It's called evergreening. Basically, they do a molecule. They get the old version of the drug and they create a tweak version of the drug and they call the s ketamine. So that's in an It's

basically the lefthanded side molecule of ketamine, and they're charging \$850 a dose for this to treat depression.

Now that's fine because they did the clinical trials to put it through. They. Paid a few hundred million or whatever for those clinical trials to put it through. And they would've had to pay more actually than if somebody put through ketamine because this is a different drug. So, the FDA would wanna know that's safe and effective and things like that.

Now, ironically, there's an expensive drug, but randomized control trials by independent researchers have shown since then a [00:27:00] systematic review, which is a combination of randomized control. Trials have shown that actually ketamine potentially is more effective than esketamine. So here we have a more expensive drug and a less expensive drug, and a less expensive drug.

In Esketamine is an intranasal formulation. It's a little bit different, and ketamine typically is IV or Im but it's shown that the cheaper formulation of the drug is potentially more effective than expensive version. So, in, in a perfect world that should be an arbitrage opportunity.

However, because there's no. Way to capture that arbitrage opportunity that cost difference, which would save governments billions of dollars or hundreds of millions at least. There's no way of capturing those cost savings. There, there is a basically a market failure and the only way you can get around that is through direct public funding, where you've gotta pick the winners and basically give someone a grant.

And that's not efficient. It's very centralized. And it just doesn't really happen for whatever reason. No one wants to [00:28:00] do a 10 million clinical trial on ketamine. Even if it save a hundred million, the dms doesn't wanna do that. Charity doesn't wanna do that. It could cost 50 million, but it would make logical sense for them to pay a hundred million to somebody that proves ketamine works or is just as effective or if not more effective than ketamine.

And that's something we're trying to do actively at the moment while engaging with cms they run Medicare and Medicaid. It's not having too much progress, but we're trying and also nhs so yeah, is ketamine. Ketamine, I think is a great example of this market failure.

There's a lot of science behind a lot of low hanging fruit. There's other ones. So, for Covid particularly there's a drug called Fluvoxamine. Now people have talked about Imetin and hydroxychloroquine and things. I'm not gonna even go there, but Fluvoxamine definitely

does work. It's been shown to me can't say definitely anything yeah, not medical advice, but [00:29:00] in a large clinical trial in of around 10,000.

Shown to reduce hospitalizations by 90% and sorry, deaths by 90% and hospitalizations by about 30%, which is on par with another drug called vir, which was one of the first kind of patented therapeutics that come out by Merck and barda, which is a US agency that procures countermeasures, terrorist counter measures, basically procured 1.2 billion worth of vir, which is 800, \$700 a script

And so, they did an advanced purchase commitment, same thing. They said if you get the FDA approval, we'll purchase it. And then actually, I think purchased over a billion dollars' worth as well. So very expensive drugs. And the same that they're just as effective as the cheap drug. So, another arbitrage opportunity.

We're interested in things like low dose. There's another area with this interventional pharmacoeconomics we can talk about a little bit. But where there's a low [00:30:00] dose of a very expensive drug, it's just as effective as the high dose. This has been shown with Herceptin and Nili, I forget which some of it, but one of the, one of the maps.

And the other, I think the most, I guess the dream for us would be ultimately to move beyond even drugs and go into things like diets. So, if ketogenic diet could be shown to be just as effective as like Keytruda, which is bringing a 10 billion worth of sales a year imagine that, but, unfortunately no private incentives to fund the data, to generate the data.

Because of this market failure, what are the

Eric: barriers that you face? You mentioned you were trying with; I think one of the agencies and that didn't seem to advance. Do you think it's an effective lobbying issue? Are there barriers to get that wide scale adoption to address that market failure?

Cause as you mentioned, there's an inelastic demand. The system is pretty well greased all the way through, big drug companies goes to the doctor's office, [00:31:00] lunches, whatever, presents all these studies. How does DCI then take everything that it's produced and effectively mod I, I certainly understand the marketplace but what are the challenges that you face in having that marketplace respond to it?

Savva: On the DeSci side, I think and this is what we need to do, and this is our challenge, is find sources of what we call retroactive funding. So, this is people that basically are willing to pay for these this data, which is essentially a public good if we determine the

optimal treatment protocol for ketamine that treats depression better than s and we validate that in large clinical trials.

Even if we have a product, there's no upside for us anymore. We can't stop people taking off pain ketamine. So, we need some commitment. We need some people to say, hey, if you do this, we'll pay you for your product. We'll pay for your open ketamine, or whatever we wanna call it your branded version.

And so, getting that retro track of funding, getting that [00:32:00] commitment, that advanced mark commitment or that prize is the crucial that's the that's the barrier. And it's an unusual thing. It's You gotta go to someone and say, hey, look, we want you to pay us for this cheap thing, but really, you're paying us for the data, and this data is gonna save you a lot more money.

Or you should want to buy this data because it's gonna produce a billion dollars' worth of value for a 50 million payment or a hundred million payment. But getting them to do that we need to engage with maybe a management consulting firm to show that. But it's an unusual thing.

It's, and there's a lot of the, all of the rails that, and at the same time, those same people be like, oh, we'll gladly pay you a billion dollars for your new a drug, which is probably less effective. Or we don't even know how effective it is because of I think it's just institutional inertia.

But there [00:33:00] are things coming around. So, there's this idea of the actually the same issue applies. You might have heard about this antibiotic. Antibiotics have this massive problem, this massive healthcare problem with antibiotics is that nobody wants to make new antibiotics because they work so quickly and they're usually used in third line.

And the less you use them, the better they are. So, it's like the opposite of the blockbuster model. So, you basically have this massive market failure as well. So, what they've done with antibiotics, DHS particularly, this is really recent as well. I think the issue is also that these things are quite new.

This idea is they do a Netflix subscription style payment model where they basically pay you for you produce the drug and we just pay you 25 million pounds or 25 million a year just for having access to this drug. And it doesn't matter how much volume you sell. And so, we basically estimate what's the social value of having this drug, like a lump sum, say \$250 million or pounds.

And then we just pay you that every over [00:34:00] 10 years. And that's like a prize essentially. That's what it is a surprise from making this drug and. We, what we wanna do is do the same thing, but for off patent drugs or these unable therapies or supplements or diets or even just data. So that's the, I guess the reframe.

And it's and talking to a lot of these people or their bureaucrats, they're not gonna, the other thing, they're never gonna lose their job by doing the same thing last year as they did this year. They're doing the same thing this year as they did last year. So, it does require law being, it does require a pressure in the same way that pharmaceutical companies do the same with a lot of the charities.

So yeah. But yeah, we, it's a barrier. It's a massive error. On top of that, you have these perverse incentives. You have this existing player private health insurers, which are not incentivized to reduce costs. So, a lot of barriers I.

Eric: I think the superbugs that are [00:35:00] antibiotic resistant has been something, I think in the last few years.

You've seen more of when pharmacies prescribe it and doctors prescribe it for almost any ailment, these variants of bugs or illnesses or infections that are resistant. So, it, it did detract from the efficacy of that antibiotic over time. And then you have to give more and more, but it's, it is a perverse model.

If you're manufacturing it and you're making money off of every single pill, then certainly you wanna sell as many pills as you can. But the flip side is that, from a public good perspective, it's backwards. So, it's, that's a perfect example of where the economics run against the actual benefit to the patient.

Savva: You can change the economics. So, you can change the economics by rewarding. Essentially, it's this area called de linkage. I think there's a website even called de linkage.org. And so, it's, it is an old idea and essentially, it's the idea of using a prize type [00:36:00] incentive rather than incentivizing people to sell as much product as they can.

You basically pay a prize to do some, to produce some socially valuable intervention.

Eric: And do you think there's a growing acceptance of that, or do you think that the battle still has to be.

Savva: That's interesting. So, I think the wins have changed coming. I think crypto's part of this there's actually something called the America Compete Act.

So Xpr I think has a lot of, had a lot of influence, a lot of people that basically they were lobbying a lot. And then particularly Schmid Futures, I believe Tom Kalia put me onto this, but McKenzie did this report on using incentive prizes. And now that led to this legislative change called the America Competes Act.

And what that allows, I believe is even 50 to a hundred million incentive prizes. The federal agencies can basically authorize and implement up to 50 or a hundred million incentive prizes to address basically to fund public [00:37:00] goods and to get the private industry involved in funding public cause in targeting specific bottle.

And so, we're hoping to leverage, we've done actually a memo for these people, Federation of American Scientists, and they have something called the Open sorry the day one project. We've done a memo. This is in pro progress, and apparently this gets out to the members of Congress and things.

We, we don't have a big lobbying or anything like that. But yeah, I think there is potentially a sea change and yeah, a lot of, I think political obviously drug pricing was this huge political football. So maybe it's good timing.

Is

Eric: there a pathway for DeSci to become a more mainstream or do you think it has this sort of element of where it's seen as fringy? Like how do you see closing that gap? If you frame, I guess it depends on your [00:38:00] audience and, you may not go to every single beneficiary in the space and say, Hey, we're DeSci.

You might say, hey we're about crowdfunding cures and research and what have you, but what is the acceptance level like when you're talking to government agencies and such, do they, is this a space that they're embracing? Are they giving you a polite hand wave? Are they being they skeptical, but potentially

convincible?

Savva: Yeah. To be sure, like when we talk to government and health insurers, we do not mention dci. We don't mention crypto. This is nothing to do with it. So that's the, I guess the thing under the hood in the back end, it doesn't, they don't even need to see that. And it's not really necessary.

But with the web, it really depends on your audience. It's been quite surprising as a lot of doctors that are really there's just individuals that [00:39:00] are super lit up by the idea of

Crypto and I guess the hope behind it. And so, a lot of scientists, a lot of doctor's lot of academics.

And obviously you have the extreme skeptics as well with DSI in particular. Yeah, it's a broader question, I think. And defi and web three generally, there is a kind of an element of a bit of a culty kind of feel, which people like they want to be in the in crowd. And I think that's actually creating barriers to adoption.

But, and so a lot of people that are in this particular in crowd, they don't mind that there's high barriers to adoption because then actually what happens is that people, once they're inside, they feel that kind of, okay, now we're part of this thing and there's this other out there, and we are like on the no, and we are gonna, we're all gonna make it and these guys aren't gonna make it basically.

And that kind of speaks to the kind of speculative they call the DJ kind of [00:40:00] side of things. Yeah, so from my perspective, I hope that it does get to adoption. And I think part of that is actually creating some really interesting use cases. And I personally think that this particular thing, funding public goods, medicines as public goods and science is a public good, is gonna be a very good use case because it will actually provide real world value, as we're saying, potentially billions of dollars in cost.

And then create what's called a regenerative model. And to be sure, a lot of people in crypto, particularly in this area called refi, regenerative finance, where they're very focused on climate change, things like that, the idea of carbon credits, right? It's essentially the same sort of thing.

You, you create a market for something and then you, through that market you have you get the private industry involved and then potentially create a more [00:41:00] upside and then, yeah, like a positive feedback loop.

And do you see DeSci as inviting?

Eric: Let me frame the question differently.

The people who are the most active in this space now or at least maybe the most influential, has it hit the medical establishment or the insurers or governments are they coming to like to engage in this way?

Savva: Yeah, I think slowly. Definitely. So, for instance, some of the big on the cryp besides some of the biggest kind of pundits or whatever, or just like Vitalic, but end I basically founded e one of the most famous living people in crypto.

He's very much into the idea of longevity, and I think he really likes DeSci and the idea of retro the public that's [00:42:00] funding you knows, spoken positively about Vi Ado. So that's that. And who is another he's a very he's well known in that space. He was just on the list. Friedman podcast as well, talking about dci.

So, starting to get into public consciousness on that side. And the industry side, I actually Vita do, did just get a 500,000 invest. They bought from Pfizer bought 500,000 worth of Vita tokens, which was a bit controversial in the community, but apparently, they're basically there and providing advice and helping their things as far as like deal flow.

So that's a bit of an endorsement. There's been a few publications in nature magazine. And so, I think there is quite a bit, because I think the issue is that it's new. The people that are involved are real scientists and very smart people, and also [00:43:00] I think probably more importantly there's a sense of things are not going well, we're not going well, and we need maybe something to different, like to help and ultimately our hope that politicians will get on board interventional

Eric: pharma, pharmaeconomics, pharmacoeconomics.

That's a mouthful. Did tell us a little bit about what it is and how it

Savva: fits into DeSci. Yeah, we're definitely like a branding person. Yeah, it's a lot of problems. Pronunciation

Eric: is a, is my key

Savva: part of branding, right? My, my name un monopoli therapies. We've gotta come up with some better stuff.

But Crowdfunded cures, I don't know, even people have said what is this about? Is it crowdfunding? So, we gotta think about that. But yeah, interventional pharmacoeconomics, it's basically, it's actually some, I've been talking about it now for last month [00:44:00] nonstop. It's very exciting because it's almost like this Pay for Success prize model but wrapped into something so tight and around clinical trial DeSci we're essentially, I was so excited to hear about it.

So, it's a gentleman Dr. Daniel Goldstein, who's one of our advisors. He's working with the, which is one of the biggest payers in in in Israel. And almost in the world, I think second biggest in the world. And what he does is, goes around, as I was saying before, is that you can look at saving money through giving a low dose of a very expensive drug cancer drug.

And by doing this it's, I'm amazed by it. It's almost it's like inventing called Fusion or something. It's you. The problem with clinical trials is that they're expensive, but with these interventional pharmacoeconomic models, what happens is you put half of the people on a very low dose of [00:45:00] the drug, or a generic drug, let's say the same thing, a very cheap generic drug, and then half of them on the expensive one.

And normally you would be giving everyone the expensive treatment, but because you're putting people on the half or on the low-cost dose and you're do, then you're randomizing them doing clinical trial, which is expensive. The cost difference between those two arms is exceeds, can exceed the cost of doing the clinical trial.

So basically, you have a clinical trial that pays for itself. And so, this is like for us, if we can convince, we should be able to go to a payer and say, hey, you can do a study comparing ketamine to s Ketamine, and you might be paying \$200 million a year to treat 10,000 people with s Ketamine, which costs \$20,000 a year.

And if we put 5,000 people on ketamine, effectively you're not paying anything. Or let's just say it's zero. So, you can save \$20,000 per patient you put on [00:46:00] Ketamine and then that should save you. Instead of paying 200 million just by doing this trial, you're now paying a hundred million dollars.

So, you should do this trial. And that's This is the tricky part to actually get them to be convinced. I definitely have not had people knocking on my door and asking me to do these things. So, there is a problem that there's some disconnect, but hopefully, I think with the right, like maybe a management consulting firm can come in and say, hey, actually maybe someone might do it.

So, it's, we're excited about that because if that clinical trial works, now you can do an advanced mark commitment and actually say to them, okay, if ketamine is showing B to be equivalent or more effective than ketamine, Will you purchase another a hundred million from us, from our version of ketamine or pay for this prize?

And so, we can get an outcome payment. And then that sort of creates this kind of regenerative model that lets us go out, potentially go to doctors. Cause [00:47:00] we talked about before this problem with like sales reps going to doctors. It's actually not that bad because what happens is doctors are busy people and they might not know the latest research.

And some, those salespeople in theory are meant to educate them and there, it's what a good salesperson is supposed to do. It's supposed to solve your problem. And so, there's

a, there, there should be a reason why there's an economic model to actually go out and educate doctors about this, about ketamine and this branded ketamine that say, or this new ketogenic diet or whatever.

And the other beneficial thing I think in, particularly in a very litigious place like the States is by having an economic model behind us and being able to create a marketing center to go and take these things to market through FDA, you then have someone to sue if things go wrong.

We don't know. Obviously, the future's uncertain and maybe ketamine causes urinary problems with people. Maybe there's an addiction element, something like that. And so, we need, we need to have that. And so that you have [00:48:00] health insurers, I'm sorry malpractice and insurance, and then you have a recall insurance and things like that.

And that's what insurers are supposed to do. But if you don't have an entity that can be insured and it's responsible for things that go wrong, I think that could be a problematic thing. So that's why yeah, getting into the weeds a little bit, but I definitely think that There is combining interventional pharmacoeconomics with this Pay for Success model.

Advance smart commitment model is a very is quite a good can create a business model for essentially open-source medicine.

Eric: Awesome. So, let's talk a little bit about the economic model from we talked about the degens, the speculators. In a public goods model, you get paid after the fact.

You create some kind of instrument, which we'll talk about in a second, where the people who invest upfront, they're locked in for a period of time and then they could potentially benefit on retroactive funding assuming it's successful. [00:49:00]

Savva: Yes. That's what we talk about, the IP and fts, so we can create that.

So, there's a difference between retroactive funding and spective funding. I don't know if these words are made up or not, but these are the words we're using now. Prospective funding is basically the investors, and they're the ones that put the money up front first. And in the rich on the hope that if the project works or if they produce the public good, then they'll get retroactive funding.

So, I guess the DGS would be more the prospective funders, although ironically, probably a lot of them, I think my personal viewers, but I don't know, everyone's, maybe we're not sure, but these Ip are probably likely to be deemed securities. And so those prospect funders should probably gonna be an institutional accredited investor rather.

So less of degen types. However, the retroactive funding is actually the most important part. And because that's driving the whole model and we need; it'll be great to get the degen to all pile and. On the retroactive side and create this massive hundred million dollar [00:50:00] prize for open-source psychedelic medicine or for longevity, open-source longevity medicine.

And getting those people on board is probably a bit trickier. We're thinking like NFTs because NFTs, as art people speculate on NFTs as art. And the idea is that actually this idea of a hyper cert, we're working on this pilot actually with Vita Do and Longevity Prize with this other project called Hyper Certs xyz.

And it was coming out of Kevin from Bitcoin is one of the, they're one of the biggest funders of public clouds and the crypto space. They've, I think they've funded over sixty-five million or 70 million worth of open-source software projects. So, he's now excited about the Saudi Hyper Service, which is basically.

A way of incentivizing people to fund public goods through these things which are called, which traditionally in the effective altruism community would impact certificates. And the [00:51:00] idea is that similarly to this idea of pay for success contracts and social impact bonds, what we call, what we talked about before you could provide incentives for investors to invest in the delivery of public goods and they'll get some upside out of that.

So that's something we're working on now. The issue I think is that hyper service might, we don't want hyper services to be deemed as security. My personal preference is that basically hyper certs are just a certificate of impact that you get for, as a retroactive funder. When you fund something like you fund the successful clinic, you pay out for the successful clinical trial data that repurposes, ketamine.

And then you'll get a hyper cert with a number of impact points. That is maybe proportional to the, like improved health outcomes, percentage improvement in health outcomes versus usual care. And that's your number of impact points. And your hyper cert is now like a badge that you have, like a trophy and maybe that there might be some speculative market around that, like a bit like sports [00:52:00] trophies and things, but that's not a, that should be less likely to be deemed as security.

And that's where I think hope, I'm hoping that the degens, whoever can get in on that side and start, instead of buying basically pictures of apes and which are like \$3 billion market cap. You think that they wanna maybe fund open-source medicine and be disruptive and at the same time you can make these it's art pieces as well.

So, you can that's something we're working on now at the moment. We've got a 1,001 NFTs produced by Mid Journey, which is an ai. AI tool by a, it was a, an algorithmic he's tick expressionist artist mike, peer price. And so, he is for us that we're hoping to sell to raise a retroactive fund for opens psych medicine to treat depression. Awesome. [00:53:00] So

Eric: like in the context of like you mentioned, some of these things might be securities and obviously that's a problem when you're trying to fund a small entity.

Have you ever thought in the context of appealing to a crowd cuz maybe VCs wouldn't be as compelled, but maybe, the community who are excited about this thing would, they just may not necessarily fit into your traditional instrument, but there is something called crowdfunding. Crowdfunding lets you raise up to 5 million initially with some audited financials, which is not a small sum, and you can do it collectively with other things, but crowdfunding sort of appeals to a very different community, maybe, possibly a more civic minded community where, you know, whereas a venture capitalist might be more focused on, how do I make money?

What's my 10-x potential? A community that doesn't get to see these deals all [00:54:00] day, maybe excited about the prospect of being part of something. And you could still also award them. NFTs, I'm not pitching, I'm just throwing it out there. What do you think? I'm just,

Savva: I'm spiting No, this is great.

And you're spitballing and direct, like this is the right direction. I think. But to be sure, I think the investors, the accredited investors are likely to be impact investors. We hopefully would be engaging with those kinds of people that are very engaged with a particular field like Vita do is basically like a big fund of VCs, but that's basically run by community.

It's a Dow and they're very interested in funding longevity research. And there, it's actually a nonprofit. So, they're not so much, they do want some upside, but they're not as, as a hundred percent motivated as like a VC or something like that. So, you've got the impact investors, you've got the crypto kind of funds.

Crowdfund actually, so there's two sides of it. And I think this is actually the retroactive side. The traditional crowd funding, [00:55:00] like a Kickstarter is actually a little bit like the, what we're talking about with retractive funding in a way. It's like pre-sale, your pre-sale. You're saying.

And then by using that, those pre-sales, you are, you're now funding your market, getting, building your markets, an advanced market commitment. And then there's the equity crowd funding, which is a little bit newer where you're basically then investing in shares and you're getting a share of the company.

And obviously with that, yeah, there's, there is you can fit into some exemptions around that. So that's on the perspective funding side. From our perspective, I mean we want to use every tool. I think that. A crowdfund website where people can crowd fund on the perspective prize, pretty all the data, and also come in on the IP and f t or prospective side, investor side.

I think that makes a lot of sense. For future [00:56:00] iteration of the platform. Something else I wanna touch on

Eric: is social tokens that have reputation associated with it. Does that play a role in DeSci? Because certainly reputation matters within the scientific community. It certainly matters more when you're trying to engage a lot of people in a trust, in a trustless environment.

I'm not sure. I think trust is an important part but having that reputational component that's validated, maybe if they're engaging in a certain way that bolsters their reputation that they can take when. Interact. So, this notion of an of a decentralized id, which you take with you, so whatever community you go into, you bring some component of your reputation with you versus necessarily like relying on, oh, I'm on LinkedIn, which could also be gamed.

Obviously, you could claim to be the person on LinkedIn, but not, but a decentralized ID could potentially allow you to bring some of that reputation with you. Do those reputational dynamics represent something that has application in the DCI community, or is that [00:57:00] sort of maybe a little more of a stretch?

Savva: No, definitely. So for a researcher, basically , in the case, how much impact you've had, how many expectations you've had, things like that sort of measure reputation, there's a lot of issues around that and a lot of gate keeping with a lot of the higher impact journals having basically paying, requiring you to pay to, to publish particularly like nature and things like that on, on, on the magazine.

And then they don't even do it in the peer review and. There's a lot of issues around that, but we won't go into that. That's publishing. But reputation, I think one of the issues around DCI and particularly the web three community is this idea of but it's a good thing as well.

It's not so relevant, but maybe slightly more relevant with this whole idea of pipe research. If you fund, if you donate to things, you have a badge and then that badge can be associated with you to say, hey, I've done this amount of public good I've produced this public good.

And then that [00:58:00] you might get some retroactive rewards in the future from a philanthropist on that basis. Yeah, I think people are definitely talking about this topic. And it is very, obviously very important in the for science and science to ensure that ultimately the data can be trusted and that you can, who's saying, where the data sources are coming from and people that's saying who they are or who they actually are.

Eric: Anything that I, that we haven't touched on that maybe we should jump on before we drop off?

Savva: No, I'm happy to talk through a little bit about the system, how it works, just a very brief overview of the, this medical prize protocol that we're basically doing and how it works and Because I think it can be, it's quite a useful protocol.

It could. Create, basically put a price on impact. I think this is one of the trickiest things with impact markets is like, [00:59:00] how do you actually price impact, automatically. Like how you create a market mechanism to put a price and to pay the appropriate amount of price, and then on top of it, to not just pay the right price, but incentivize people to deliver more impact.

So, it's a competitive, so you're leveraging the super intelligence of the markets. When capitalism works great, you have, you have these amazing, expensive devices, iPhone, whatever. And ideally, they should get cheaper and cheaper over time, or technology should get better and better over time.

And that's capitalism working. And what if we could do the same with impact? And that's what we're trying to do with the system. Not really sure. It hasn't really been tested yet, but it's the idea is that you have a sort of prize pool, like a big lump of money. And then say a fixed amount is paid out every year, and it's said 20% is paid out of the price every year, so it never runs out.

And so, the more, the bigger the price pull, the more that's paid out every year, and [01:00:00] everyone can model that. And the idea is that every year if you have an IP and FT or you're an IP and FT Holder, you can ask an evaluator to validate how much impact points that your IP and FT has generated.

And that makes you eligible to receive an outcome payment from that 20% that comes out split between the number of registered IP and fts, which at that stage, once there's proof of impact, that would be called hyper certs as. But let's just keep them as IP and fts. And then what happens is that creates this market equilibrium whereby so you might register, say, for five years to receive outcome payments of the 20% proportional to the impact points.

So, if you produce 50 impact points and there's another project that produces 25 impact points, it's another produces 25, you'll get half of that 20% and the other people will get 25% of that 20%. So yeah, 25% of that [01:01:00] quarter each and half. And then the idea is that eventually there'll be such a number of IP fts registered, is that no one else will wanna register unless they think that they can produce a lot more impact points.

Basically, sweep us. So maybe someone comes along and does 200 impact points, so then they will receive like the super majority of that. So, there's always that risk of someone coming in and basically outcompeting, which is how capitalism should work. You're pretty secure that if you've got a good amount, that you've got some income streams from royal history, and then what happens after five years you drop off and then that creates a more money that it's available for other people.

And so that's the idea. I just wanted to explain through that. And that's the protocol we're trying to build using a smart contract. And we think this could be create basically a way to price impact, maximize impact. Basically, you've got money coming in for some cause that you want, whether that's, Indian [01:02:00] woman getting a computer science degree and or number of trees planted.

And this prize, this impact prize poll will basically maximize the number of impact points you get at the other end in a very transparent way and also very Decentralized way. And with very minimum moving parts, you just have to have an evaluator that can evaluate impact as long as the measure of impact is quite robust.

Number of trees planted or percentage improvement and health outcomes for a standardized biomark as usual care, this thing should be pretty much automated. Just put money in the top and your impact on the other end.

Eric: I remember the name of the website that you evaluate. The charity.

Savva: Oh, charity Navigator. Charity Navigator. Or this give as well this give I think it actually gives

Eric: metrics, but a lot of people, they donate to a charity and that's what they look at and that's their metric but opens up a whole new community. You can [01:03:00] measure it online, you can measure it over time.

It can accrue to you; it can actually be something that facilitates your engagement in the community. So, it's. It's something that can make how should I say, more engaged charitable investing.

Savva: It's actually, the ideal of it, problem with charity is you give your money to a charity and then you have to rely on their reputation.

But if it's just a protocol and you know you really prepaid for what you want, and this charity just maximizes the thing that you want, basically like a, it is leveraging the super intelligence of the market. It's like a super intelligence that's like maximizing paper clips and just maximize the number of whatever things that it is you want for the money that you pay in and without much human involvement.

And the protocol that's to me quiet. I think that's even better than a charity because you don't necessarily even have to worry about the reputation. You just have to make sure that the evaluator is [01:04:00] evaluating the metrics and a and you have a metrics that are very robust and very difficult to gain.

Yep. I would agree.

Eric: And listen, people wanna find out more about you. They want to engage. Where can they reach out to you? Where can they learn more about the community? And what are some interesting Dows I mentioned molecule. I know you mentioned Vita Dow. Maybe a little bit of the landscape for somebody who's interested in just learning a lot more about the space.

Savva: Yeah. I believe if you Google DeSci world I think that's, there's a list of a lot of the projects. Jocelyn Pearl from ultra-rare Dr. Jocelyn Pearl. She's got she basically has a chart that sits out a lot of the, all of the DCI projects in the community which is a great reference.

And for us, if you go to crowdfunded jurors.org you can see a bit more information. We've got a landing page here, and then our socials are on the [01:05:00] bottom right of the definitely sign up to our newsletter. We want to do this open psychedelic medicine in Ft Drop. Definitely reach out to me, crowdfund and cures.org.

But yeah, we've also got a Discord link and we've got about 200 people on Discord now. And we talk about things like these examples of these off-patent drugs or un

monopolizing therapies. We're always posting. New examples coming out every day almost. And yeah, and just happy to get involved, particularly, people that are engaged with payers or on, around financial innovation, value-based pricing.

Up to hear from new folks, anyone involved in the regulatory side around FDA regulations and pharmaceutical reimbursement. I'd love to hear from you and anyone that's got contacts and with any of the big three management consulting firms or big four accounting firms that might be able to help us do a feasibility study and convince some [01:06:00] of these payers, which would also be super awesome.

Excellent.

Eric: Thanks so much for coming on.