Bret and Heather 79th DarkHorse Podcast Livestream\_ #NotAllM...

Sat, 10/9 12:12PM • 1:35:06

**SUMMARY KEYWORDS**

protein, vaccine, cells, spike, telomeres, mrna, point, evergreen, mice, fact, academics, animals, faculty, blog post, damage, nest, salk institute, zack, tissue, question

**SPEAKERS**

Bret, Heather

**Bret** 00:11

Hey folks, welcome to the Dark Horse podcast live stream number 7979. Totally.

**Heather** 00:20

That's the most critical moment of the day.

**Bret** 00:23

It is the most quizzical Yeah, what's gonna happen next? It's always exciting. But there's a lot going on a lot of really interesting stuff. In fact, there's so much going on that there's no way we can do it in one live stream. So some of the things that are going on this week, we may have to return to next week, of course,

**Heather** 00:37

and you know, we I never assumed that this was a news show. So I am eager to not feel compelled to speak to the things that are going on right now. Oh, I

**Bret** 00:48

don't know. I don't mean it that way.

**Heather** 00:49

I am. Unfortunately, I think that is a lot of what we're doing today, we are going to talk about some of the new stuff emerging in SARS COBie, to space. Some of some of what's happening in Portland's on what's happening at our former institution of higher ed evergreen, and then a little bit on nature, red in tooth and claw, which is where I prefer to spend my time right, rather than human nature red in tooth and claw, which is so much of our spend our time

**Bret** 01:15

it's a special case. That's the way I think of it. It's like It's like nature by other means. Yeah, yep. All right. So where are we headed first?

**Heather** 01:25

Well, first, just a few reminders that we encourage you to subscribe to join us at either of our Patreon spread just had one of his monthly conversations on his Patreon this morning. You can access an either of our Patreon Discord server, we answer, for instance, a question from the discord server every week in our q&a. And, and maybe that's that's announcements for now. If you have questions about logistics, not questions for the q&a, but questions about logistics, you can always email Darkhorse moderator@gmail.com as well. So yeah, I think we're gonna start by picking up on a conversation that we began last week with then brand new research that had come out from, say, from the Salk Institute, of course, just one, or maybe a couple of the researchers is at the Salk Institute, but of course, it's a team of researchers. And just a reminder, we introduced this research last week, I at that point, could not get access to the paper, I still don't know why. But very quickly, after we finished airing, we finished streaming there was there was an abundance of the paper just came came to us, I'm sorry, just a minute, there's chaos going on under the table

**Bret** 02:44

with so I should just point out while Heather is dealing with this, that we are, you know, new to the public eye in this realm, and you know, seasoned professionals would certainly have some way of dealing with Renegade cats who had gotten into the studio and we're making trouble we, on the other hand, have only the tools at our disposal and our hands our hands and yeah, here's the troublemaker in question. Yeah. Well, he's

**Heather** 03:09

this was an editorial comment by him when he was playing with the the cables below the table, proceeding from the fact that he's not getting as many treats lately as he as he as he once was. So okay, apologies for that. So last week, I we were only speaking from what we could see on basically the press release on the Salk Institute website. And just just a reminder first from in terms of what we said last week from the Salk Institute website, we read a couple of excerpts as follows in the new stuff, so they're, they're speaking about research that had just been published in boy I don't mean it's like circulation research, I think is the name of the journal. In the new studies. In the new study, the researchers created a pseudo virus that was surrounded by the SARS COBie, two classic crowd of spike proteins but did not contain the actual virus. exposure to the pseudo virus resulted in damage to the lungs and arteries of animal model, providing proving that the spike protein alone was enough to cause disease. tissue sample showed inflammation endothelial cells lie in the pulmonary artery walls. And later in that same piece, they said, this is the first study to show that the damage occurs when cells are exposed to spike protein on its own. So since last week, we have been able to read the actual paper and thank you again to the many of you who for it, and also I was just able to access it after after our stream, as well as a new statement from the authors, in which they say they're clarifying what they think the implications of their work is, as well as a blog post from a researcher in drug discovery, who has a regular blog in science with his take. And we've also noted changes to the Salk institutes news release, which of which there's no indication on the site itself. They don't indicate that they've actually changed.

**Bret** 04:52

Changes are present but it is not acknowledged there's a change right,

**Heather** 04:55

and we'll we'll we'll get to that. You know, it's fairly common to change posts. But in this case, the the change was distinct enough that if we hadn't actually shown my screen so that it was clear what was up at the time that we were talking about it, it would look like we had been disingenuous or even dishonest in our in our, to miss something but not in this case it was right at the top. So the change is right at the top. And I have you know, I have screenshots from last week and now to show an effect there's now but an additional change so we'll get there the original paper is is this and we will we will post Zach please can you show this? We will put a link to not this as a PDF but put a link to the URL where you can find this. Again, like I said, published in circulation research by a team of researchers including some at the Salk Institute, titled SARS kobie to spike protein impairs endothelial function via downregulation of Ace to and it's a short paper it's a dense paper. You know, very short very dense really not sufficient to you'll fully assess, but I will highlight and read this last. This last sentence in which they say this conclusion suggests that vaccinated generated antibody and our exogenous antibody against as protein not only protects the host from SARS Coby to infectivity, but also inhibits s protein imposed endothelial injury. Okay, so thank you, Zack. I also wanted to before we start talking about, about that, I will say that, that that from them, which is again the last sentence of their paper, in which they seem to say yeah, you know, we don't think this has bad implications for the mRNA and DNA vaccines, which obviously, as we all know, code for the spike protein. But it wasn't clear to me what that why that sentence was a therefore like what it followed from here is a statement. So Zack, you can show my screen again a statement from the author's that came out this week. Which, excuse me, the third paragraph of which reads as follows. For COVID-19, vaccination, a small amount of the spike protein mRNA package nanoparticles, Pfizer bio intact and Madonna or spike protein DNA carried by adenovirus Johnson Johnson are delivered into humans to intramuscular injection, the spike protein mRNA, or DNA after translation, the modified spoke spike protein, then function has antigens to be recognized by antigen presenting cells for antibody production. So this is this is what we've been told this is consistent with everything we've heard about the vaccines. And finally, one more thing to show before we talk a little bit more and before we talk about what's going on the SOC site, the link at the bottom. Now Actually, let's let's just let's just set this whole thing up first, before I really start talking about this is a this is not okay, it's not working. I was hoping to show a screenshot from last week. Here we go. So this is just from sec. This is from our live stream last week from the Salk Institute site in which you can see the top sentence read scientists have known for a while that SARS Coby to his distinctive spike proteins help the virus infect its host by latching on to healthy cells. Now, a major new study shows that they also play a key role in the disease itself. So if I, if I may, Zack, compare that to what the site looks like as of two days ago, in which the second sentence reads, now a major new study shows that the virus spike proteins, parentheses, which behave very differently than those safely encoded by vaccines also play a key role in the disease itself. So that's been added. There's no reference. And really, I think part of what we're going to talk about here is that this is a claim that is being made by a lot of people. But I don't think that there's any experimental evidence at least that I've seen research evidence that this is actually true that that the virus spike proteins, and the vaccine spike proteins inherently behave differently. We hope they do, and it's suggestive that they might, but we don't actually know this for sure. One more, one more link here, if I can.

**Heather** 09:48

So this now is the live site as of right now, and they've changed it one more time, which is that they've hotlinked that parent article, that parents article which says Have the virus spec proteins, they behave very differently than those safely encoded by vaccines. Well, what's the hotlink? It's to the same blog post in science translational medicine, which is exactly the same blog post that the authors of the paper in their clarification and their author statement points to. So, couple of things from a blog post, and then I think we've started up enough that we can we can start talking about it. Let me hear sparkpost, please. So Zack, please take off. Take me off for a moment. While I find this, because it's not working. Brad, if you want to, yeah, but while I make my computer, do what I want it to do. Alright, so I made it do what I wanted to do. Okay, so here is a PDF of the blog post, and I'm just I'm gonna try to start showing the PDFs rather than so that I know that we've captured the moment in time. So this was posted on May 4 spike protein behavior by a researcher named Derek Lowe, who was a regular blog in I can't remember now I think it's science translational medicine. And here are just a couple of quotes from his blog post. He says so I've been getting questions about what this means for vaccination relative to this, this spike protein paper out of the Salk Institute. If we're causing people to express spike protein via mRNA, or adenovirus vectors, are we damaging them just as if they'd been infected with Coronavirus? Fortunately, the answer definitive definitely seems to be no. He says later on. Now we get to a key difference when a cell gets the effect of an mRNA nanoparticle or an adenovirus vector that is the mRNA vaccines versus the DNA vaccines. That of course starts to express the spike protein. But instead of that being assembled into more infectious viral particles, as would happen in a real Coronavirus infection, this protein gets moved up to the surface of the cell where it stays. That's where it's presented to the immune system as an abnormal intruding protein on the cell surface. The spike protein is not released to wander freely through the bloodstream by itself, because it has a transmembrane anchor region that as the name implies, leaves it stuck. Later in the same paragraph, the spike protein produced by vaccination is not released in a way that it gets to encounter the ACE to proteins on the surface of other human cells at all. It is sitting on the surface of muscle and lymphatic cells up on your shoulder not wandering through your lungs causing trouble. Some of the vaccine dose is going to make into the bloodstream, of course, but keep in mind when the mRNA or adenovirus particles do hit cells outside of the liver or the site of injection, they're still causing them to express spike protein anchored on their surfaces, not dumping it into the circulation. So all of that suggests that the researchers and the drug development people believe that the spike protein that is produced by the mRNA and DNA vaccines is both modified slightly. And its method of of entry into the body both mean that it will be spreading much less widely than an organic encounter with SARS could be two in the wild such that actually this research suggests that we should feel better about these vaccines than we did before this research. That is the conclusion here and I think it's plausible, but it's not the only interpretation.

**Bret** 13:31

Well, let's just say a couple things are going on one, that the idea of the protein, having an anchor that will keep it in the cell surface is the idealized version of what's going to go on. So kudos for designing it in this way. And let me put that in the context of how the vaccine should should work under circumstances where everything goes as planned. So let's take the mRNA vaccine one of them, you've got this lipid nanoparticle coat, it's covering an mRNA. It gets into the body through injection, it encounters some cells for reasons that I think are still a bit murky, it gets taken up that could be as simple as the nanoparticle coat being having an affinity for the membrane of cells that causes it to be taken up. Big asterisk there, which cells take it up. Why do they take it up? How different is it? How many cells take it up in one patient versus another? These are all big questions. Maybe somebody knows the answer, but it's not easy to find even for somebody who knows what they're looking for it. So you've got the mRNA gets dumped into a cell, the cell because all cells in the body make proteins from mRNA messages that are usually coming from the nucleus of the cell just simply translates this thing automatically. And the nature of the protein that gets translated has this anchor bit in it. That if all goes according to plan results in it sticking out The surface of the cell pointing out at which point the hope is, it will be encountered by antigen presenting cells, which will detect this cell will effectively take it up and then present it to a bunch of naive T cells, those of which those that fraction that tiny fraction of the T cells that it encounters will react to it because they are wired in such a way that they have an affinity, a low affinity at that point, they will be triggered to diversify, then and selection will create an ever better affinity for that spike protein.

**Heather** 15:37

The short version of that being the hope is these cells with the spike protein having been produced that are on the surface of them will be recognized by our immune system and thus we will be able our adaptive immune, many will go into effect and produce a response such that should we should, the person who is less vaccinated encounter wild type SARS, COVID to their immune system will then be primed and ready,

**Bret** 16:03

right, it will not be naive, even though they haven't encountered the virus before. And I should just say that in some sense, what this is, is a benevolent hijacking of the immune system, because what the immune system is doing these antigen presenting cells are maneuvering around the body looking for our cells that have been infected. So if your cell has been infected by a virus, it expresses some proteins that are native to it, and it expresses some proteins that are novel. And so these cells by finding our own cells that are displaying novel proteins get an indication of an infection. And then they take the evidence of that infection to a place where cells that are capable of responding to the infection are lurking the lymph nodes, for example. And anyway, it accelerates the process by which your immune system discovers the enemy gets a description of it, and then figures out how to recognize it really well and creates an army of cells that can then fight it. So what we do is, in this case, we trigger the presentation of this antigen on the surface of a cell that is not affected humanity, those who are deploying the vaccine, we who are vaccinated, well, scientists are using I just

**Heather** 17:15

I'm trying to figure out what we is here.

**Bret** 17:18

We the science technology complex, okay, are triggering human cells and an uninfected person to display an antigen as if it was infected, then the antigen presenting cells take over doing their normal job, collect that antigen, display it to cells that are capable of learning the formula and responding. And the whole thing unfolds in this way. The problem with this story, as deployed in that blog post, is that it assumes that everything works, as we hope it will. And there's actually very little chance that that's right, because what we are doing is completely novel with respect to the body, right? We are taking a pseudo virus, right a lipid nanoparticle code around an mRNA, we are infecting a cell with an mRNA that encodes this one protein hoping to get it displayed on the surface. But none of this says that that's what happens. It certainly is happening enough that these vac vaccines do create immunity. That is clear. But it does not tell you how much of this by protein is actually going through this process in the way the textbooks suggest and how much of it is ending up somewhere else. So for example, so basically, what I see in this blog post and all of the analyses that point in this direction, is a cherry picking of the information. Here are all the reasons that this is probably safe. And here are none of the reasons that it probably isn't right. And the point is you've got a collection of both reasons, they are correct. If the if the protein anchors in the surface of the cell, and the antigen collecting cells find it and they take it to some T cells that get a chance to learn it, then you're not going to have the effect that these authors found when they dumped spike protein into the lungs of what turned out to have been Syrian hamsters. Okay, so we wondered last week. But that actually turns out to be important, right? So it just so happens that Asian hamsters are one of the animals in which the accidental elongation of telomeres has been observed so

**Heather** 19:22

hot on just the lab mice, it's the lab hamsters as well,

**Bret** 19:25

right? In fact, I have made the claim that it is going to happen in the case of all, all creatures, all mammals in particular, or birds that are small enough and are bred for profit, because what happens is, when you breed an animal for profit, you want to get as high return on your investment in animal food as you can. So you breed young animals who reproduce faster, and by doing that, you destabilize the mechanism that creates an equilibrium and telomere length and you cause elongation. So you've seen it in hamsters, mice, rats, And domestic chickens,

**Heather** 20:01

I think you need to spell out I think you just jumped a bunch of the store. And I know this isn't the place to walk through all of the logic of antagonistic pleiotropy and senescence and telomeres and cancer. But you've just jumped to a conclusion that may not be clear to many

**Bret** 20:14

writers. And in fact, so I would imagine it's clear to those listeners are somewhat clear those listeners who are longtime listeners, and haven't counted the Tila Mir story here before, but it happens, the very short version is, as a graduate student, I was studying and evolutionary question and I stumbled into a medical question that turned into a huge hall of mirrors. The upshot is, what I was studying was this thing called the Tila mirror, which is a genetic sequence, a repetitive genetic sequence at the ends of chromosomes. And the length of this sequence appears to dictate how many times a cell can reproduce, if you do cellular damage, or you need to do regular maintenance, your cells have to be replaced. And so the length of this telomere dictates how much replacement you get. And therefore, it dictates how what your maximum longevity is going to be. Because basically, you've got a pool of cells for replacement. And when they're exhausted, you suffer the consequences of aging. So why would selection have built in a limit like that? The reason it turns out, and this was my contribution in one of my dissertation chapters is that if you don't have that limit, then lots and lots of cells in your lifetime get damaged in such a way that they keep reproducing and don't stop and they become tumors, which become cancers which kill you. So in order to avoid that fate, a limit has been built in to the cellular replication of all or almost all cell lines.

**Heather** 21:43

So just just to just a tagline it right, like you've identified a fundamental trade off between senescence, which is to say aging ish, and cancer, that you try to beat one and you're stuck with the other and there is no way to escape that trade

**Bret** 21:58

off. Yeah, and Or another way to put it is your capacity to do repair and your capacity to avoid cancer, our intention with each other. And so when selection has done is nicely balanced this and given us a very long life. But if you move in one direction, it comes at a cost to the other. So in any What does this have to do? What does this have to do this? So what I found out was that basically, the reason that people hadn't figured that out was that there was one result which made no sense and seem to suggest that that model was wrong, which we now know it isn't. But at the time, it seemed like that model had to be wrong, because mice had ultra long telomeres and very short lives. And that didn't seem consistent, because they should have the ability to repair their tissues for a very long time, given that their telomeres are even much longer than a human's. Now, it turns out to say

**Heather** 22:46

you should expect with long telomeres that their lives would be longer. Yes, although I believe I'm just translating what you just said, Is that not yet, okay.

**Bret** 22:54

And in fact, in some ways, this is true, their lives aren't longer, but their capacity to deal with damage is better by a lot. The reason that their lives aren't longer is because we have basically turned off their cancer protection, and so they all get cancer, and they all die early.

**Heather** 23:10

Not all my

**Bret** 23:14

god, not all,

**Heather** 23:16

but you're specifically talking about like we didn't expect to be going down, I think it's necessary. You're specifically talking about lab mice. So this isn't wild mice, wild mice do have short lives. But in the literature, what you found was, well, mice have long telomeres, and part of what you said was, I wonder if in fact all mice or if this is in fact a lab artifact, right? And then here we go. So

**Bret** 23:40

I made a prediction, which was actually if you test wild mice, you will find that they have short telomeres, which in fact turns out to be true. So that was a clue there that I was able to predict that without laboratories or mice. But anyway, that turned out to be accurate. The mystery from the point of view of the field was why are the telomeres getting elongated and what I think the field has still not understood and certainly not owned up to is that it's the breeding protocol. So initially, when this was discovered those few people who paid attention to it thought it was going to be the inbreeding that inbreeding somehow elongate Steelers, which it doesn't, nor is there any reason it should. It creates problems for sure, but it's not that it creates mentally retarded mice who have other pathologies, but all my spread, but it doesn't elongate tumors. What does elongate telomeres is breeding only young animals. So this is the only hypothesis left standing as far as I know for the elongation of telomerase. It's mine. And the hypothesis is

**Heather** 24:39

by which you mean all the other hypotheses for the long telomeres have been false if have

**Bret** 24:43

been falsified, right. So I would say that this one has the presumption of truth, and there's some evidence we won't go into it. But in any case, the point is when you breed only young animals because you're interested in your financial bottom line, and you want to turn Mouse Chow into mice at the highest possible rate. So your profit is the greatest at the end of the day, you breed these young animals, you're breeding animals who are too young to have died of cancer. So therefore, the penalty for being very prone to cancer is zero or close to it in evolutionary terms. Whereas the advantage evolutionary advantage in these breeding colonies, to animals that ratchet up and keep at a high level, their reproductive rate early in life is extreme. And so the point is, you're now selecting for mice that breed in an incredibly high rate, right? And you're not selecting that they maintain their cancer protection, what you do is you end up creating a species that's hyper prone to cancer, and hyper capable of repairing its tissues, which I argued, and my paper was published in 2002, I argued, was a major danger because we use these animals in pharmaceutical testing, right? It's our first line of defense. And the point is, an animal that is hyper capable of replacing damaged tissue will not show toxicity that would be very, very bad for people.

**Heather** 26:07

So just to say that again, and you've said it very clearly. But it was never the intention of the people who were breeding the mice for profit to sell to research labs, to create mice that had the capacity, a greater than usual capacity to repair tissue, that would have been actually criminal, right? That was not the intention, so far as we know, and no one has ever suggested that it was. That ability of the lab mice to repair tissue at such a higher rate than other organisms do was an unexpected consequence and indeed an unrecognized consequence until you came along of the breeding protocol. That was simply an economic decision.

**Bret** 26:48

Right? And the problem is, there is the implication that this elongation of telomeres has actually created a phenomenon where we think drugs are safe, we release them and then we discover that they do damage now of course, the damage that we see most critically is in the heart we see people have heart failure who shouldn't and then we start looking and we discover some drug like Vioxx has damaged their heart probably it's damaged across the entire body, but the nature of the heart is a it doesn't have much capacity for self repair. So it's very vulnerable. We could talk about why that is or not but anyway, there's that and also failures of the heart are utterly conspicuous so we noticed them so we you know, we think this is a heart damage but it's it's a more general kind of damage. But anyway, it intrudes in this story of the the Salk Institute study, in a couple of ways. One, their work was on hamsters. Okay, now possible they have sourced some hamsters that have normal telomeres. I doubt it. The evidence suggests that nobody is carefully monitoring whether or not the animals they're using as models have long telomeres or not, unless they're specifically working on telomeres themselves. So in general, people source bison apparently still has this problem, this vulnerability. So what that means, potentially, is that as much as they saw damage, when they dumped spike protein into the lungs of hamsters, the damage may actually have been more than they saw, because these animals have a unusual capacity to repair damaged tissue. Now, it's also possible that the way they did the study, they saw all the damage and the animals didn't get a chance to repair their tissues. But anyway, it's at least a possibility. But this intrudes in the story twice because other work involved in the thing cited in that blog post also uses not hamsters, but mice and they describe three strains. Yeah, if you go to that link, three strains of mice that were used Yep. Okay, and this is this is a

**Heather** 28:51

study that nature last year. Corbett at all.

**Bret** 28:55

Yeah. So this describes the anchor protein that is holding the spike protein in the membrane. And if you scroll down into their methods, you'll discover that there are three strains of mice that they use now. I don't by my side, I'm not an expert on buying mice, but I did look into these mice and lo and behold, at least one of these strains sure has the signs of being an animal with hyper long telomeres. So actually, Zack, could you put up the Wikipedia entry on the mouse strain that I sent you?

**Heather** 29:27

So Zack is about to show us one of the strains that was used in this corporate at all

**Bret** 29:31

that one of the three and this was this little spot check I did Oh yeah, I can't read that at all but if you scroll down to like the characteristics of the animal Okay, yeah, good. Scroll down. past history characteristics. Let's read that. Okay. E ba lb. Slash see mice are useful for research into both cancer and Immunology. According to Michael festoons. In breed strains of mice vo ABC strip substrates are particularly well known for producing the plasmacytoma is on inject with mineral oil, etc, etc, low incidence of mammary tumors. That's interesting that suggests the other direction, but they have Can you help me read this?

**Heather** 30:12

I'm trying, I'm trying to look at it on my own screen, I'm not sure where you are, it says,

**Bret** 30:15

most substrains how long we've got a productive lifespan are noted for displaying high levels of anxiety, are resistant to diet induced atherosclerosis. So this appears to be a animal that has high capacity for repair even in a vulnerable tissue. And somewhere on this page, it says that in older ages, they're prone to tumors.

**Heather** 30:44

You can keep talking, I'll see if I can find that. Oh, they are also reported as having low mammary tumor incidents, but do develop other types of cancers and later, most commonly, particular neoplasms long term and renal tumors. Okay, this is my first view of this at all right? Obviously, this is this is Wikipedia, which is often a great first pass, but we've neither resident any let's just

**Bret** 31:05

say, it is interesting that a very surface level investigation of this first mouse listed in this paper suggests an animal that gets tumors later in life is resistant to a kind of cellular damage. And all of that is consistent with it being an animal with hyper long telomeres, which would be the expectation unless somebody was carefully controlling.

**Heather** 31:26

So again, the implications Being that this would be a poor animal to use for drug safety research, at least, right? The worst, right? The absolute, there are many more implications than that. But at very least, you do not use such an animal that has been modified through breeding protocol to have long telomeres, and high capacity for tissue repair. In your drug breeding protocol, unless you're specifically correcting for that in your analysis. Well, probably I don't know, I don't know that you could, because guess what, it's a complex system. Stupid, right? Like, you know, that's where we are,

**Bret** 31:59

no, and that that is going to be the punchline of this whole thing is a, the use of these animals in a way that does not pay attention to this as a vulnerability is at the very least deeply negligent and has very important implications in our ability to assess anything about what the consequences are going to be in human beings. These are model organisms, yes, there's a problem using model organisms that can't be solved. A mouse is not a person. But that's not this problem. This way, a normal mouse could be useful, but a mouse that has had its telomeres elongated will consistently it is a systematic error that will lead you to believe things are less destructive than they actually are. Okay, so yes, we've got the issue of what animals were used in these protocols. And then we've got a kind of, but it's a kind of consistent failure that we frequently see in biological science, where people are attempting to make difficult things trackable, which is that they treat this as a simple system. Now, I think we have to give them their due, cellular biologists here have learned to manipulate these systems effectively. But pretending that the only thing that happens is what they are intending to happen is preposterous. And in this case, a let's say that the blog post at the triple A s site is roughly accurate, right? Let's say that this actually means that the vaccines turn out to be safe.

**Heather** 33:36

Well, and so the big mechanism by which would be accurate is there are many, but the one that I'm stuck on is actually that the spike protein is produced in cells, that it sticks to the cells and that those cells stay local. And that, for instance, when those cells die, either by natural means or by being attacked by the immune system, because they're being exposed, they're exposing spike protein that they that that spike protein is totally destroyed as well as opposed to released into free floating space. Right.

**Bret** 34:09

So let's say that that story is correct. The damage here is minimal. Okay, then, we're all hoping then this is safe by accident. Right? That that was a lucky coincidence, because I don't think anybody predicted that spike protein in and of itself was going to be destructive. And in fact, the mechanism by which this guy's dead, right? I mean, well, the at all Did, did they they came to this Yeah, but the mechanism is interesting. And so let's put it this way, those who have been assuring us that the vaccines are safe. Almost all of them do not, did not go through a process of thinking the spike protein would be dangerous on its own, but for the fact that it has an anchor protein, or an anchor sequence at its base that's going to keep it from getting to the places that it would do damage if it were free floating. I've seen no evidence of that conversation. Yes. The point is that's not a plausible conversation. The plausible the conversation was, it's a vaccine, it's been through safety testing, it's safe. And then it turns out that well, it could well be dangerous because spike protein itself is apparently destructive, which is a surprising result, a surprising result that goes through the spike protein causing dysfunction of the mitochondria in cells. Fascinating. Yeah, right. A very complex systems kind of phenomenon I should point out well is Yeah, but the point is, I don't think anybody would inherently come to this system and say, Spike protein itself, interacting with the h2 receptor could cause mitochondrial dysfunction. Now we need to check that separate from the rest of the separate from what the viruses can do. So anyway, if this is safe, it's safe. It's we're just, it's a matter of luck. Yeah.

**Heather** 35:50

I will say I want to make a correction to one thing that I said last week, when again, you know, we'd only see in the Salk Institute site and not the paper. And my Yeah, we're kind of reeling from the possibility that the spike protein was was sort of going to be on the loose, right? And I do think that we have reason to think that even if these vaccines don't basically keep the spike protein as contained, as we are being told that, that it is that is going to likely to be more contained than it is when exposed to wild type virus. I think that that is I have, I have seen enough analysis without seeing the actual data, if they even exist, to think that that is true that the exposure to the spike protein from the vaccine, body wide will be less than exposure to the protein from the virus. But you know, to what, to what degree and at what, what scale? We don't know. But I think I said last week, you know, I've been hoping for traditional vaccine, and boy, I'd be first in line, I still would prefer a traditional vaccine for other reasons because of the lipid nanoparticle technology involved in the in the mRNA vaccines, for instance, but a traditional vaccine would have the spike protein on it as well. And so that actually, that would not address this problem at all. And in fact, additional vaccine might be worse for you with regard to spike protein exposure, then one of these new mRNA or DNA vaccines? Well, I believe I do like I want to be clear that I don't think a traditional vaccine would actually solve this problem and might actually make it worse.

**Bret** 37:29

Well, a traditional vaccine might cause this problem, it could be worse. The distinction between the DNA vaccine and it's viral code, and the RNA vaccine here does not Marshal in favor of the one of those over the other. Right. So anyway, there's a lot to be said. But overall, I mean, I don't I don't want to get dragged out of the careful area that we have carved out for ourselves.

**Heather** 37:59

Right. But I was uncomfortable, right? Like I I believe that what I said last week with regard to effectively, I didn't say it quite this clearly. But oh my god, this makes me want a traditional vaccine even more. I don't think that's actually warranted by this research at all. Well, I think you know, I I remain favorable to the DNA vaccine over the mRNA vaccines, because there's one less kind of novel technology involved the adenovirus code versus the lipid nanoparticle code. But this research anyway, the finding that the spike protein itself causes tissue damage, does not Marshal in favor of nutritional of the use of a traditional vaccine over either of these, either these types of vaccines currently,

**Bret** 38:44

no, but other things here clearly do. And some of them I have not heard discussed anywhere. Okay. Okay. So one thing that is clear, I think, is that the mechanism of action, the intended mechanism of action here, where mRNA is make it into cells cause those cells to present foreign antigen means that those cells are then going to be destroyed by the immune system. So one thing that is true, is that we need to have a conversation about how much damage is being done to normal healthy tissues in order to get the immunity, is there a level of damage to tissues that you should accept? Absolutely. On the other hand, how well calibrated is that, given that we are using a novel technology in order to get the mrnas into these cells? How many cells are damaged in the case where a patient takes up a huge amount of this stuff into a disproportionately large number of cells, right? Are we talking two orders of magnitude difference how I don't think these things can be well calibrated given how novel This is? Because we don't know. You know, we don't know how to efficiently get it into to cells to get the cells to display this this spike protein. So Even in the best case, the answer is those who told us this is safe. And we know that based on what we've seen so far, we knew they were wrong. Based on the long term unknowns, those long term unknowns clearly exist. But there's also a short term set of unknowns here, which won't manifest until later, if you're destroying healthy tissue, because that's necessary to get the spike protein displayed, which is necessary to get the immune system to learn the trick. Right, then the point is you are borrowing from future repair capacity. Are you borrowing enough to matter? I don't know. But that's a possibility. And it's a question that has to be asked.

**Heather** 40:34

Just a minor point, but I think that still qualifies as a long term, long term concern that it's you know, it's it's a, it's a thing that might be happening right now. But if we don't see it until until later, this is exactly what we've been saying that anyone who is claiming that these that any of this is totally safe, is either confused or lying, because we cannot know. And we are not saying that it isn't safe. And we're not saying that people making those claims are inherently trying to deceive you, although some of them may be simply they haven't been on market long enough for us to know and who are providing a possible mechanism by which there might be long term effects. That is effects. That may be beginning to happen now. But we have no way to see them until later.

**Bret** 41:19

No, I would say I want to correct two things. Okay. One, I am saying this is unsafe, I am not saying it is harmful enough to matter. But it previously we've been very careful. And we have said that something that does no harm is not necessarily safe, playing Russian roulette, and clicking the trigger and having no bullet come out does not harm you. But it is not safe.

**Heather** 41:40

So your distinction I think, is or safety is in the same space as risk and harm is the act is actual art. Right? So like I do think this needs real clear language every time you say it, because it's not alright, words are not used cleanly by anyone. And so you're saying I, I, I understand that there has to be risk. And I'm not saying that that therefore means there is harm, right? But for the word risk here to say, but I'm

**Bret** 42:09

going to upgrade that, because I have been super careful about that. And I've said I've used this example deliberately, the fact that you have put a gun to your head and pull the trigger is not inherently harmful, but it is inherently unsafe. Okay, so that distinction is the important one. Now, I think, with greater clarity about the mechanism of action when things go right, we know that there is harm being done to tissues in the course of action of this vaccine, we don't know that it's significant. It could be that for some reason, I can't see that the number of cells that are affected is small, and that the amount of damage is negligible, and therefore, you know, it's fine.

**Heather** 42:49

Well, the hope for I mean, I think like the platonic ideal of what is going on here is that there's an injection that is that is intramuscular. That hits as little sort of capillary bed as possible. The spike protein, you know, very little, the little banana particles do their jobs. And so the mRNA doesn't get, you know, released into the intracellular space, but it's actually all encapsulated and goes into cells spike protein is produced those those cells on which the spike protein is produced stay there. And then the immune system kicks into action comes and does its its thing. Are any of the cells that the lipid nanoparticle encased mRNA encasing? mRNA actually moving around maybe. But, you know, if in again, in the platonic ideal of the situation in which the person who's being vaccinated is very healthy and the person who is vaccinating by some combination of skill and luck gets it exactly right. And you know, does not hit, you know, part of the cardiovascular system, for instance, there there should be very limited travel of the spike protein presenting cells post vaccination.

**Bret** 44:07

Yeah. On the other hand, the I think, given the mechanism of administration, there is a whole lot of uncertainty about how much of anything ends up any particular place, right, it's supposed to go into the muscle, it's not supposed to go into the cardiovascular system, some of it will of course get there by virtue of the fact that muscle is vascularized out of necessity in the same way that other tissues are but even more so because the need for oxygen is so high. But, but the point is okay, so you've got some needle and it's injecting a fluid that takes up a volume into a space that doesn't have that volume so it's going to do some damage and so well, but it's I'm no No, no, no, no, no, no, he did look this blog post makes the point here's why that's this is safe, and it draws a cartoon. And one of the pieces of this cartoon is actually misleading. Okay, seriously misleading. What is it? So the point is, the blog post says, it doesn't go into the circulatory system. Of course, some will make it there. But basically it goes into the lymph system. Good. Yeah, that's what I would hope, okay, goes into the lymph system, and drains into the lymph nodes, right? lymph nodes, that's good, because that's where the immune cells are hanging out, trying to discover what to fight next. But that is actually a wrong cartoon, right? That's not an antigen presenting cell bringing a message from an infected piece of tissue or a pseudo infected piece of tissue into the lymph node, that is this pseudo virus spilling into a lymph node. Now, whether or not it has an effect on the lymph node depends on whether lymph tissue or not T cells, lymph tissue itself, the lymph node itself, and the cells of which it is made, express the ACE to receptor, which they do. So this thing gets spilled into the lymph nodes, which have the receptor that the spike protein binds to write. does COVID do damage to lymph nodes? Yes, apparently it does serious damage to lymph nodes. So the whole idea that sort of loosely speaking, this virus goes into a place where it's not in contact with the tissue that this new report suggests is super vulnerable. Okay, that's good. But how good is it? Is this really safe? Now it's being spilled into a system that has the receptor necessary for the damage to be done? Where the disease itself does the damage, which gives us secondary confidence that this mechanism is actually there? Does it inform the immune system when this thing spills into a lymph node in its vaccine form? I don't know. It certainly could. If a lymph node tissue the tissue of the wall of lymph node, gets the gets the vaccine expresses this particle the antigen presenting cells will likely discover it there and inform the t 's the naive T cells that are hanging out in the lymph node, that's all possible. But the idea that we know enough about how all this is going to unfold that we're anywhere near in a position to say, yeah, this is actually good, is preposterous.

**Heather** 47:21

I agree with that. And I also think I'm listening to you talk about it, I am once again reinforced my concern that I know you share with me that part of what is happening is this, you know, ever greater specialization, as you know as as, as humans come to know more and more about our world. Those people who decide that they want to become scientists are expected to specialize more and more and more and more, we have very few generalists who are able actually to across domains. And of course, now we have people enforcing not crossing lands, right. And you know, exactly at the same moment, there's all this talk about, oh, we value interdisciplinarity. And now there's biophysics and biochemistry and all this is like Actually, we got more and more specialized, we value reductionism more and more part of that is again, about the the bottom line because research is funded. You know, because universities get more money, the bigger the grants are, and the bigger grants require big equipment and you know, big money work. And so big science gets funded to the rather than small science, small science being the kind of work that requires conversation and thinking things through, you know, just it doesn't take that much money to fund this sort of thing. And so it doesn't get prioritized by, by University. So you know, that's, that's a whole nother thing. But I believe that part of what we are being fed part of what is going to the media, and part of what the public is being fed is based on some good faith and some bad faith. And right now, I'm not going to try to untangle which is which here, but, you know, scientists who were trained to specialists who really think that because they understand this little tiny piece of something, and that, you know, in this case, the research is about an affiliate damage, right, and, and vascular damage, I believe, as well. And you're talking about limp. Well, this research doesn't have anything to do with lamp. So you know, we don't have to talk about that in a blog post about whether or not this has implications for vaccine and does it. And, you know, that's an error in the kind of science that we are now promoting via this economic model that's entirely about money and markets, as opposed to actually about discovering of what is true.

**Bret** 49:28

So another way to say that, going back to what we said last week, is that as that as the complexity is faced with ever narrower tools, and some of this is out of necessity, right, you need specialists to wield some of these techniques because they're difficult. But as that happens, the degree to which you lean on the precautionary principle should go up, not down, right. And so in effect, what you're saying is that the narrow focus of each of the specialties that is looking at this is causing them to be deaf to the possibility of all kinds of damage that are on the table, right. And so because those things are on the table, a rational person would say, actually, what we know about this is not nearly enough to say that it is safe. Now, I would also just, I think, as a final point here, say that the upshot of the Salk Institute paper and the blog post, the upshot is, actually, this is a good thing, because the vaccines are creating antibodies that will block the spike protein and therefore the damage that we've just discovered. And I don't think expected, that happens as a result of the spike protein being present is actually going to be prevented by the vaccine. Yes, that's true, after the vaccine has caused the immune system to produce those antibodies, the idea that this is therefore good news is preposterous. As we said last week, the best category to be in from the point of view of safety from all of the possible risks is no vaccine, no COVID. Now the problem is no vaccine and no COVID leaves you vulnerable to getting COVID, which is obviously very bad on its own. So it is quite possible that

**Heather** 51:22

even so far as we can tell, without long term data on either COVID or vaccines. People more people, a higher percentage of people have a very bad reaction, haven't COVID then have a very bad reaction to vaccines, it is more dangerous to get COVID than it is to get a vaccine. As far as we can tell, and by by a lot,

**Bret** 51:41

probably. And we can say that because we don't have long term data on what happens to people who get COVID or the vaccine. So that unknown cancels, right, because it exists for both. And so I agree if I had to choose between the vaccine and running the risk of long term damage, or a COVID, I choose the vaccine. But this isn't safe. And pretending that this is positive news doesn't make any sense. What they've discovered is welcome to complex systems. Something really interesting happens from the spike protein alone, Spike protein alone triggers a large amount of damage, quite measurable. And that has potential implications here. And it adds to the unknowns going forward. So I just I've become allergic to the assurances of people who know something that this is all very safe based on what they know, there's nothing in what they know, that puts them in the position of saying, Hey, we need to exercise caution when all of the smart people I think, recognize that this whole system is out of control and caution needs to be exercised.

**Heather** 52:48

For what it's worth. Just, you know, I do think it is the complex systems. And that's what we've been talking about the entire time. But I don't I do think that that blog posts that blog post felt reduction of sciency. To me, and also somewhat political, on the fact that both the authors of the paper in their clarification and the Salk Institute site, point to that blog post further reinforces that sense of mine. But I don't get the sense that even though the clarification by the authors of the paper is a little bit more strongly worded than I think we can actually know about what this means about vaccine safety. My my sense is that they are trying to do good work, and that they that they are not, they are not in this political game in the same way that for instance, the guy who wrote the blog post,

**Bret** 53:38

oh, I absolutely believe that to at least the one author URI who showed up in a television segment. Oh, yeah, we'll

**Heather** 53:47

link to that. We'll link to that. I don't think we're going to show it here. But But yeah, here's

**Bret** 53:50

the problem. Okay. And I must say, I have some sympathy for somebody just trying to do good scientific work, who discovers some interesting pathway reports the result and then suddenly discovers that it's being discussed whether or not this has implications for whether you should get the vaccine and they don't want responsibility for not getting the vaccine, because then people will definitely dive of COVID if they don't get the vaccine, and they do get the disease doesn't mean some people well as a result of that pathway, but here's the problem. And I you know, I want to be very clear about this. I won't speak for you, though, I can't see how this doesn't apply to both of us. We are discussing the safety or lack thereof, of a effective prevention for a disease that is clearly out of control and which we regard as highly dangerous. Okay, that has implications. People may hear what we say, decide not to get a vaccine, and some of them may die, some of them may get sick. In fact, somebody else who dies who had no choice in the matter, that's a very terrible position to be in the reason Isn't that we are in this position is that the lies that cause people to believe things are safe, when they are not safe, are vastly more dangerous. And you can see this very clearly in the lab lead question which took a big leap in the direction of mainstream this week week with Nicholas Wade's new article, and the very important quote in it from David Baltimore, where he says that the, the sequence in the fern cleavage site is the smoking gun that points toward the laboratory. In any case, we are getting to the point where we can now see that what we were told about the certainty that the viral origin was natural, was preposterous for the entire time. And that those who assured us of that, therefore, were telling us something with the kind of scientific certitude that just simply was not justified by anything they could possibly have known. And so, you know, that's the context. The context is a world in which scientific certitude should be reserved for cases where something is scientifically certain. And it isn't. It's being used politically to get us not to think about certain questions that certain people don't want us to look into. And, you know, frankly, I would say, we are betting that in the end, the safest thing we can do is promote honesty in the discussion of all of these questions that fewer people will be harmed. If we are simply honest, even though the fact is it will it's a sword that cuts both directions.

**Heather** 56:33

That's right. I did want to say just a minute or two on this Nicholas Wade paper that just came out, you can show my screen briefly, Zack This is you just posted it on his medium page origin of COVID following the clues, did people or nature open Pandora's box at Wuhan? And Nicholas Wade, Zack, may I? Thank you. Nicholas Wade is a longtime science reporter who is often published in New York Times and science. And this is, you know, this is one and a long line of people, including us from the beginning have been saying this Nicholson Baker said it in January. We set it on Real Time with Bill Maher in January I went back and found the first time we were talking about it extensively was our 10th episode. On April 25 20, it was called saris covi, to unintelligent design question mark. And we were then talking about the paper that Yuri Dagon had just published on medium, which you then did a full interview with him in June of 2020. So both of those last two are up on YouTube, and I'll put them into the, into the show notes as well. So that's just a little bit and you know, there's been plenty of there have been a tremendous number of researchers now behind the scenes who are who are who are talking about this.

**Bret** 57:52

But we have to point out not just behind the scenes, Alina Chen in particular, and responses Reto have both taken great risks and been courageous and absolutely deserve to be highlighted. Absolutely.

**Heather** 58:03

And we've talked about both of their work here before too. I did not go I mean, we've been talking about this, really from practically the beginning. And the virus might have escaped from a lab. If I had said that, and I did say that, you know, when we were saying that a year ago, we were branded conspiracy theorists and right wingers and loons. Right. And guess what? Saying that doesn't make us any of those things that it never did. Right, the reality hasn't actually changed. And I think what has changed is the social landscape of the Overton window with regard to what people feel is socially acceptable to say and to consider. But the fact is, and I said this, I said this, I think at the q&a last week, and something that's gonna come out as a clip, if you don't consider all the hypotheses for something, if you don't consider it actually your responsibility when you're trying to understand a pattern or an observation, like, oh, there's this virus that just caused you know, worldwide destruction. I wonder what that source is? Oh, nope, there's only one explanation possible. That is anti scientific right there. That's not conspiracy thinking. That's not right wing thinking that's not loony thinking. That's anti science that is literally anti scientific to to believe that there is one and only one explanation. And to ask questions about whether or not there might be other possible explanations is itself the problem. Asking the other looking for the other explanations, and keeping them alive until they have been falsified is an important part of the scientific method. It's not the only part of the scientific method. But all good scientists do that thing. And no one who doesn't that is no one who says you can't consider that hypothesis, even though no one has really looked at it. They're not actually doing science. They may have a credential. They may claim to be doing science, but that's not science.

**Bret** 59:58

So I do have to wagging my finger a little bit at Nicholas Wade here, not to you. So first of all, I should say his article is quite good. It does a very good job of explaining difficult material. It covers a lot of really important ground. I do think there's nothing new there really except down then there are a couple of new things. But in general, what is there is Nicolas Wade's in parameter, which allows us to discuss this it has given it another jump in the in the direction of being considerable in polite company. But that is, you know, Nicholas Wade is late to the party, right? And why am I blanking on his

**Heather** 1:00:47

name? Nicholson Baker?

**Bret** 1:00:49

Yeah, Nicholson Baker's article covered a lot of the same ground. And I don't remember how many months ago that was January, it was January. So that was, he was early. Likewise, Matt Ridley has been on this beat for a long time. It's like November. So in some sense, as those of us who have faced all of that stigma has made it possible to discuss this in public, we see more and more people willing to acknowledge what is obvious, which is that this was a viable hypothesis from the beginning, that there is effectively no evidence that has emerged that points in the direction of nature. And although there's no direct evidence that points to the lab, the amount of evidence that points indirectly to the lab keeps growing. So yes, it's getting safer and safer to talk about this. And you can expect more and more people to find their way into the discussion. But you

**Heather** 1:01:43

know, I gotta say that I was really rooting for the frozen ferret badger stake hypothesis,

**Bret** 1:01:47

oh, man, that by it's the most delicious hypothesis on the table. But the other thing, and I can't really explain this, Nicholas Wade, really screws up the use of the term theory. And for no reason that I can surmise for one thing, he's clearly seen a dark horse. And I cannot imagine he has not seen our description of the importance of this, by calling the lab leak a theory, you are putting those of us who are taking risks in order to make it clear how likely This is in jeopardy, right? You are putting us in danger of being accused of cheating. And the point is, we have to be very careful. So this is a hypothesis. And there is no theory because nothing has withstood test sufficient to call it one. So why on earth given the two words, I just want somebody like Nicholas way, the next Nicholas Wade, to look at those two words. And when you choose to use the word theory, ask yourself why you didn't use the word hypothesis. And if you think they're synonymous, then you have some studying to do, they are not synonymous, there's a reason we have two different words. And they actually have a hierarchical relationship. Now in some places, in physics, for example, you will find the distinction routinely blurred, and I think physicists should clean up their act on this. But the point is, this isn't physics. This is biology and biology. This is a well understood distinction. This is the thing that we lean on when people say, Darwin's Darwin's work is just a theory, right? We always say just a theory doesn't mean what you think it does. It's as close to saying something as a fact, as we ever get in science, right? Well stop abusing poetic license in this case and start using the word hypothesis correctly. And at the point that we have a theory for where this came from, we'll let you know.

**Heather** 1:03:48

Alright. We want to talk a little bit about what happened at evergreen. Yes. You want to say something about Portland? And I don't know. Yeah. So we're already at an hour.

**Bret** 1:03:59

But I will I will do a Portland thing quickly, but I don't think we can ignore it. So, Zach, you want to put up the Olympian article about what took place? Olympian in Portland and that Olympia, the Oregonian, sorry, they have a very similar Oh, and their logo. Okay, so here's the Oregonian, what happened is in North Portland, which is the fifth quadrant of Portland, there was a concentration Yes. But anyway, in North Portland, there was a confrontation. And what apparently happened is that a driver who claims he did not know that there was a protest going on, drove his way into a weekly protest. And this is a protest that goes on without permits or anything you drove into this protest and was immediately challenged by protesters. Now the weekly protest is to get quote unquote, Justice for Patrick king. Men's who was killed by police in a confrontation in which he had just shot to people and then came at police pointing his gun at them, and they shot him 12 times and he died.

**Heather** 1:05:12

Do we know what justice would look like?

**Bret** 1:05:16

It begs the question a weekly protests to get justice in the case of a man who was shot by police under circumstances that I think and it's not as if this is simply the police having declared the shooting justified. There is video from two different angles of this shooting, you can see it yourself. And in fact, Zack, do you want to go to the other article on the Yeah, the video from the other article would be good. So anyway, it's not the most beautiful video in the world. Because yes, because it's a graphic and its content and because it's surveillance video, so you know, some sort of cc TV thing. So he's about to come running. You can see the police over there on the right, you can see Kevin's in the circle running app police gun out, they shoot him. There's video from the other side. So this is a thoroughly documented instance, in which a man who happens to be black is shot by police having just shot two people and threatening the police. But the but the man who was shot I just shot I just shot two people. So you know, but that

**Heather** 1:06:30

has nothing to do with what happened last week. What happened last week was in the middle of a weekly protest in support of justice for the guy who was shot by police well,

**Bret** 1:06:38

but it does have something to do with it in the sense that you have a weekly protest. And in that weekly protest, you had people brandishing high powered rifles. So this protest contained people walking around with high powered rifles. Now I should point out, in some sense, the reason that I want to raise this is that I have the sense that, you know, evergreen was a cautionary tale for Portland and Portland as a cautionary tale for at least the West Coast, if not the nation that we are headed into very dangerous waters. Now it happens that the guy who drove into this protest had a weapon. Now I think that weapon was a handgun, and I believe it was loaded with some sort of non lethal ammunition. That's how it's described by the Oregonian, but he was armed. And these protesters were armed with incredibly high powered weapons. Now, probably all of that is legal. Because there are two ways that those weapons in the hands of the protesters could be legal. Oregon is an open carry state. Portland, prohibits the carry the open carrying of firearms. But if the people who were carrying the firearms had a concealed carry permit, then the prohibition does not apply to them. And if the weapons were unloaded, it does not apply. So

**Heather** 1:08:09

wait, if you have a concealed carry permit a prohibition against open carry doesn't apply to you cannot make any sense. Correct.

**Bret** 1:08:16

I'm serious. I am quite. Maybe I misunderstand the law. But I believe that this is the way the law reads. So the idea is the state of Oregon allows open carry and it has something called a will if Oh,

**Heather** 1:08:29

so but Portland doesn't unless so basically the state law overrides the city law. Yeah. Okay. Okay.

**Bret** 1:08:35

So in any case, I can't say that any of these weapons that showed up at this confrontation were illegal if they were either unloaded, even though it was in Portland, where open carry is prohibited if the people who were open carrying had a concealed carry permit than they are exempt, and if the weapons were unloaded, then there would be legal. So nothing says that this was inherently illegal. But what is clear, is it this is incredibly dangerous, that we are dealing with a situation in which people engaged in a what I would think is a preposterous protest in the interest of justice where it isn't, as you point out clear at all what that would even mean, right? These people are walking around with, you know, with the AR fifteens in the street, some driver who doesn't know that there's a protest encounters them as drivers. Well, if you're protesting in the middle of the street, he is armed. Suddenly, he's surrounded by people who have high powered weapons. I mean, you know, what has to happen to recognize the danger of this, right? This is incredibly dangerous. So anyway, I just didn't see that that could happen here in Portland, and we could not comment on it. If I've misunderstood anything about what's taking place. I'm sure people will alert me in large numbers. I would imagine

**Heather** 1:10:00

Sure, but which is which is good when we do actually get something wrong that we hear about it from a lot of people. We don't get things wrong and we hear about how we did we also hear about it. And sometimes sorting through those two things can be difficult.

**Bret** 1:10:13

Yeah, I'm positively in favor of the first one.

**Heather** 1:10:15

Absolutely. 100%. It's, it's just it's, it's harder to always know, because we do get a certain amount of you got this wrong. It's like no, actually, your argument doesn't make sense. Anyway. I also don't want to keep talking about evergreen. Yep. Right. But, boy, Was there some fascinating news out of evergreen this week. So for, for those of you who are somehow watching this, and don't know that we were tenured at evergreen for all, we were professors at evergreen for 15 and 14 years, respectively, and left in 2017, under some duress. Since then, evergreen has been tanking. And the President, President bridges who brought the whole situation in 2017, to fruition, he really created it, it was that was his baby. That was his project. And you know, he'll never admit to it, but he did create it. He said, I don't know exactly why I'm late last year is something I'm done. I've done my work, I'm going to go back to the faculty and teach. And they have been running a presidential search. And for those of you not in academia, high level searches, administrative searches, and academia are big, long, drawn out processes. And in this case, there's a consulting firm, which has become the thing and it's a long list of people on the search committee and all of this. But this came out this week that all three finalists to be president of the Evergreen State College withdraw from process and it says it's a year long process that it's been already This is stunning. Like, this has been apparently a year long process. I can I can have my screen back. Thank you. This has been a year long process by which they had I forgot it was like 60 something applications which is pretty low for a college presidency. And they apparently interviewed seven semi semi finalists and then brought three I think to campus, although I'm not totally sure it wasn't entirely virtual usually. Usually, even for a faculty position, you'd have a two or three day interview on campus and meet with the various committees and for president or for VP position you'd have you basically have open q&a sessions with like faculty and staff and with students maybe as well. And to have gotten to this stage and have and have already been interviewed and to have all three finalists step down is extraordinary. I've never heard of anything like it. And according to Benjamin Boyce, who many people will be familiar with who was a student at evergreen at the time and has been has been careful and adamant and persistent in his pursuit of truth in terms of what is actually going on at evergreen in the aftermath as well as on a number of other subjects. He says in a tweet following this this reveal quote they've now got an interim provost last one quit interim VP of diversity, equity and inclusion. Last one quit Interim Dean of Student Affairs last one quit and will the interim financial Phoebe current one leaving so that this is not going well. I want to read a couple of paragraphs. Just as a little bit inside baseball here I kind of apologize but I kind of don't but only read a couple of paragraphs from a piece that I wrote in 2019 called on college presidents as an invited scholarly piece in

**Heather** 1:13:46

and let's see, I think I've just lost sex so I can't have him show him show that so I'm just gonna read these couple of paragraphs from my piece from a couple years ago. Perhaps the worst set of fiscal decisions made at evergreen involves administrative bloat. In 2015. There were four college divisions, academics, Student Affairs, Finance and Administration and advancement. By early 2018. Bridges had increased that to seven, adding diversity and inclusion, indigenous arts, education and college relations. The first two of these can best be understood as social justice divisions or pandering to same. The third is public relations. Academics was further weakened with a newly hired diversity and inclusion vice president was appointed vice provost, a position newly created an ill defined the near ubiquity of diversity officers now a campus should itself be questioned as new research finds that their presence has no effect on the hiring of other people of color on campuses where they serve, just apparent medical in my in my piece. Having done all this, on May 14 2018, bridges announced that in service of a leaner budget and in order to consolidate activity across divisions, Student Affairs would be disappeared, mostly subsumed within diversity and inclusion and academics would be further weakened by the addition of yet another vice provost. Finance administration will receive new leadership none other than bridge's former chief of staff who was hired without a search, thus further eroding faculty and staff input to administrative decisions. In short, the administrative legacy of this president, again, this is from two and a half years ago now I'm writing is to extinguish or sub substantively disempower three or four previous college divisions create three new ones of dubious value staff, with people likely to be loyal to him personally, all while making the unverified claim that the restructuring of the administration is a response to the fiscal crisis. So here, are you back, Zach? Okay, you can show my screen here. Here's the prospectus, that I find the recruitment announcement for the president of evergreen, it's it's glossy, it almost It almost looks like the school has it going on. And on page three, we have a list of the Board of Trustees currently at evergreen the executive officers which to say the president and VPS and the search committee. There's a lot to say about this page. But the thing I want to draw our attention to is that we have under executive officers, one President George bridges, and six now divisions of the college. I don't know what I have not been able to figure out exactly what has happened. There were seven when I was writing two and a half years ago. And indeed, the personal acquaintance of bridges is second listed here. JOHN Carmichael is Vice President for Finance and operations. We have college relations here. We have advancement, which was already a thing. And we have the Vice President of indigenous arts, education, tribal relations. And right in the middle of the list, our interim provost, their interim provost, and vice president for student and academic life.

**Heather** 1:16:54

Academics has been reduced to an adjective. academics, last I checked, was one of maybe the main function of a university, or at least one of two main functions and everything else has to come later, right? It's academics, which is to say we are pursuing truth and knowledge and art and beauty and analysis and clarity. And it's the students. Right, so the students, the student affairs branch of the college was combined with academics, and then later on academics itself was demoted even within the position that exists for academics. The next one down here is the Interim Vice President for inclusive excellence and student success. And Zach, you can take my screen off here for a moment. So I can say, while I read that, and I thought, I thought, inclusive excellence and student success. That sounds like a euphemism to me. So I went looking to see if that was indeed a renaming of diversity, equity and inclusion. And indeed it is, which I found when I searched on the first VP of diversity, equity inclusion at evergreen who was just hired 2017. Well, she's gone. Yep. And she has on her LinkedIn page, Zack, you can show that her position started as Vice President and Vice Provost for equity and inclusion, and 2017. And then it was changed to Vice President for inclusive excellence and student success, one year later. So this renaming of things in order to obscure what is actually going on. I feel like this is a known tactic and nothing good goes down that road, like inclusive. What is it again, inclusive, inclusive excellence, inclusive excellence and student success? Students examine how could surely or not why students successful might want students to fail? Right, right. And you have all people you don't we know that academics have sometimes been fascist, and therefore anyone who was speaking on behalf of academics is probably a fascist themselves.

**Bret** 1:18:59

Oh, my goodness. Yes. Did you know that academics and Academy share the same route? Hmm, yeah, yeah. So yeah, this is all rather incredible. In addition, I mean, I think it's clear that if any of these folks had stuck it out, they'd have the job, right?

**Heather** 1:19:18

Yeah. So none of them wanted the job. Well, but having seen them, sorry,

**Bret** 1:19:23

let's point out what that actually means. Because a These are people who wanted such a job enough to apply, right and to endure the process, which is not simple or easy or straightforward. So they got to this stage thinking that they would still want the job. Presumably they all have access to Google and they know something about the place that they would have been walking into. But the job is a pretty good job. From the point of view of the perks. I mean, it pays very well,

**Heather** 1:19:54

as I recall was that waterfront house rightly comes when

**Bret** 1:19:57

it comes to the beautiful house on the waterfront. In the Puget Sound, a beautiful office overlooking a lovely campus, right? It's a it's not a bad job, except for what you have to do and so well, but there's always something. There's always something and I think it is I mean, I don't want to guess. But I've watched Benjamins. And now analysis of this and it sure looks like what happened is that the faculty were and collegial is the euphemism being used. I think that they were probably kind of vicious in trying to ensure that whoever took the job would sign up for the bogus story that the woke among them have been spreading about what happened to evergreen, which is that what happened at evergreen was evergreen was attacked by all right this, that and the other, rather than those very people, misled students who, you know, in partnership with the president sank the place.

**Heather** 1:20:59

I've got another I've got another thing to read to you then exactly apropos from again, and I have just two more excerpts really to read from this on college presidents piece that I that was published a couple of years ago that I wrote, quote, in the months leading up to the protests, President bridges pander to the protesters privately blamed lack of action on his Provost, while his Provost was equally certain that it was the president who needed to act and tried to silence dissent within the college by offering goodies to those who were speaking out in exchange for their silence. Further, you never took those goodies? No, I didn't. Furthermore, he empowered social justice faculty by allowing them to push through policy changes strong arm their critics and make slanderous claims against other faculty with no correction or follow up. For months, social justice faculty wrote nasty and often epithet filled emails directed at Brett Weinstein, because he questioned the way the college was being run. Afterwards, several dozen faculty demanded an investigation of him for the mortal sin of accepting an invitation to appear on Fox News. They'd become faculty trolls hiding under bridges. I was pretty pleased with that line when I wrote it. Yeah, that's awesome. So you could argue that academics has long been subsumed under academics at this college. Right. I mean, certainly that was what was happening back in 2017. But I mean, just to follow up on what you just said, Who would want that job? And what must have happened? You know, they they, like you say they all have access to Google. Like what what possible reason what they have had to not expose themselves to at least both sides of the story with regard to what was going on at evergreen before applying to such a job? Like, could they really have thought that even if the people who are currently driving the school into the ground, are utterly wrong, and they are about their story about what is happening, that somehow they could walk in and save the place? Because there's they're still in charge? The yahoos who made 2017 happen are still in charge, with the exception of the outgoing president who said, Yeah, my job here is done. I'm leaving. Well,

**Bret** 1:22:53

so I mean, I don't know how to describe what I suspect happened based on knowing the players that we still know there. Yeah. But I have the sense that this is really a demonstration. You know, we said early on in the meltdown of evergreen, that the lesson of it was that the place was proving itself incapable of learning. Right, instead of recognizing that something must have gone wrong in order for what happened to happen and to change course, yeah. Right. It kept doubling down, right, it kept doubling down and said, not only were we not wrong, but we were righter than we ever knew, and it kept putting its foot on the gas, right? Yeah. So the point is having done that, to the point that the college is now down below 50% of its students, apparently it's completely hemorrhaging all of its administrators. Right after having done all of that, the small number of faculty who made this happen, I think they're just hoping against hope that they can control the story until it finally exhausts and something turns around, which won't happen. But I my guess is what these candidates encountered was a faculty that wanted to control what this new incoming person agreed took place in 2017, which would then tie their hands with respect to doing anything about it. Because if you were going to do something right and rescue the college, you would first have to acknowledge that whatever happened in 2017, did not work out for the best. And having acknowledged that the people who made it happen would be back on their heels. So my guess is they're not going to find anybody tolerable who could actually do the job.

**Heather** 1:24:34

Yeah, I think that's right. So let me just read the last three short paragraphs of this this piece that I wrote on college President's speech that I was invited to write, and it was published in 2019. You may share my screen if you'd like Zack. Abraham flexner, the founder of Princeton's Institute for Advanced Study wrote extensively on quote, the usefulness of useless knowledge and in 1939, with regard to Germany and Italy, wrote, universities have been so reorganized that they have become tools of those who believe in a special political, economic or racial creed. Now and then a thoughtless individual and one of the few democracies left in this world will even question the fundamental importance of absolutely untrammeled academic freedom. The real enemy of the human race is not the fearless and irresponsible thinker be he right or wrong. The real enemy is the man who tries to mold the human spirit so that will not dare to spread its wings. So I then finish off the piece by saying, We need look forward rather than back. We arrived here on the shoulders of giants and we ought to learn from them. In 1871. In his inauguration as the president of the University of Michigan, James B. Angell, who has been credited with overseeing Michigan's transformation into an elite public university, give a speech that is still worthy of our consideration. Angel argued that an institution should quote, never insist on the faculty pronouncing the shibboleths of sect or party. All modern institutions should heed his words well. So evergreen is one giant Shibboleth test. And so too are many colleges and universities following its insane lead. And we are all the universities that could win be honorable academic contests who are standing up and saying, not here, not now. Not in my name. Where are they? Yeah,

**Bret** 1:26:23

no, it's well this goes back to zero being a special number right? It has to be zero or else things would turn around so somehow we are stuck alright I think we have arrived there No, I

**Heather** 1:26:42

want to talk a little bit about Robin so Okay, good. Yeah. So we are coyote situation is mostly as as calmed down a little bit, but it's been raining a fair bit. So we haven't been able to try the the wolf urine that was suggested to us. So we still don't know about about whether or not that is worked. The idea being that you don't apply it when it's going to rain because it just washes off and it's useless. But what we have seen is we have we have a lot of birds around us and probably a number of nests, we see evidence that there are Steller's Jays nesting nearby and Robins and hummingbirds although we have not seen any of the nests and a couple of crows which I adore although I feel somewhat differently about after this week's activities. A few crows showed up in one of the trees one of the maples over our deck today this week rather and started harassing some Robins or rather got closer to a spot that I couldn't see very well and the Robin started harassing it and shortly thereafter I see a crow flying away being mowed by four Robins with what is clearly a baby something and presumably baby Robin in its mouth the next morning between us we then saw this happen three more times. for babies in one nest seems like a lot on the other hand we haven't seen it again and so maybe that was in fact that that damned crow exhausted the one nest or maybe there were two nests because I don't know they're to be cooperative breeding and Robins although I should have looked it up before talking about this you know why? On what basis we're there for adult birds chasing after this Crow and you know, really, really mobbing this girl whenever it shows up now and and you know, we don't have them bird banded or anything, so I'm not sure it's the same crow each time. But I feel like this crow found a meal, found a source of food and came back repeatedly until it until it basically ate everything in that one nest and right after that you were seeing what looked like territorial stuff on the ground between two Robins that might have been precursor to establishment of new mating bonds.

**Bret** 1:28:54

So I will say we know something about Robin's because back when we lived in Olympia, we had a nest that was inhabited two years consecutively by different species. The first year was inhabited by Steller's Jays who raised three chicks. The second year was inhabited by Robins, who raised three chicks. And we actually did some filming out the window.

**Heather** 1:29:14

We have the good sense to build this nice like three feet below our bathroom window. So it was kind of

**Bret** 1:29:19

marvelous. We got to observe all kinds of interesting behaviors about Robins that I had no clue about before at least in any case, so three is a plausible number.

**Heather** 1:29:29

We saw three there Yeah, and we saw no evidence of cooperative like ello parenting or anything cooperative

**Bret** 1:29:34

so breeding I don't say cooperative you know could be helpers at the nest, although I don't know if such things exists in Robins. But yeah, anyway, something could be a group of nests, just nearby for schooling behavior could be helpers at the nest. Could be some other anomalous explanation. You know, crows get mobbed. So it could be that just some other animal joined in in the mobbing. But Who knows. But it's certainly it was fascinating, a little bit heartbreaking to watch this. I mean, you can imagine and, you know, certainly it caused us to think a lot about the fact that for, I assume this is not true for all birds. But for many birds, the safety of their eggs and chicks is going to depend on predators who are capable of getting to the nest not knowing where it is. So how much of the behavior does that actually drive? Right? Are they flying in ways that don't lead back to the nest in a straightforward way? So they can't be simply easily observed?

**Heather** 1:30:34

Absolutely. That and you know, behavioral changes for sure, and possibly, desktop architecture changes as well, right, like so you might you might predict that even within a species, possibly, although nest architecture is pretty well conserved within species for birds. But you might, you might expect that in high predation areas, you would see selective pressure towards a cavity nesting rather than cup nesting. You know, cup nests being more accessible to anyone who wants to come in and grab your babies cavity nesting being easier to defend. Yeah,

**Bret** 1:31:04

if you can get through the hole in the cavity and your predator can't then that's a decently safe way to go. Yeah. Yeah, so anyway, it was totally fascinating to watch. I will say with some embarrassment, it was very difficult to get a picture of any of this if I if I had seen the first successful predation, I might have been able to station myself if I had known that further ones were coming I might have been able to station myself and get a picture but I didn't.

**Heather** 1:31:31

Yeah, well, I mean, it did I think, unfortunately, you were only able to see the last one because it happened very early. The second two happened very early one morning when I was up and there was no reason for me to pick up but anyway, I got you up at that point. And you in fact saw the fourth one but it was it was it? Yep. That was it. So anyway, a little nature unfortunately read and I guess beacon clock.

**Bret** 1:31:54

Yeah. Now we have a little bit of a predicament assuming that is the end of the the Robin story. That's it. Okay. We have a second, we have a bit of a predicament. He just said we're good. Not that predictable. Okay, another predicament, which is that things were so busy this week, that we don't have a good candidate for the thumbnail here. And I'm going to make a suggestion unless you've got one ready to go. Okay, so I'm going to reveal something, which is that I was actually contacted about the possibility of applying for the job of President of evergreen,

**Heather** 1:32:30

but not not this week. No, once ago, oh, no. Yeah.

**Bret** 1:32:33

And and I it's hard to imagine, hard to imagine as good an idea as it would be that either they would offer the kind of leeway necessary to fix the place, or tolerate me in the slightest. So

**Heather** 1:32:48

as I said, in a tweet this week, responding to Benjamin who asked for me to apply for a job I would have to be or, you know, there would have to be a guarantee that you could clean house yes, no, it's it's our guarantee would not come.

**Bret** 1:33:00

But in light of that there was this picture that evergreen used to use on its front page, it had one of these front pages of its website, it was a rotating thing where there were, you know, five or six pictures in rotation, and there was one that turned out to be me on a bicycle. Riding past the Evergreen sign was quite a good picture. And at the point that things went down in 2017. And we left the place they disappeared it but I did manage to get a copy. So I'm going to dig up that copy. Maybe we can use that as a thumbnail, if you can actually find it. If I can find it. I think our Friday All right, good. So we're gonna we're gonna use that one. That will be the explanation for it. Okay. All right.

**Heather** 1:33:43

Okay, well, so we will be back next week, same time, same place. We'll be back in 15 minutes for those of you watching us live on youtube and with a live q&a, answering your questions that you pose here now in the Super Chat this hour and next. Again, we encourage you to subscribe to this channel. Like the video, subscribe to the Darkhorse clips channel. And share share with people and also consider joining us at one or both of our Patreon where on mine You can get access to a once monthly private q&a That goes for two hours on the last Sunday of every month. And Brett has conversations with his Patreon every month again he had one of them this morning. Totally on fire totally on fire totally does not surprise me you've got a folks work

**Bret** 1:34:35

awesome. Yeah, it's a great group of people. That is that is

**Heather** 1:34:39

terrific. So yeah, maybe maybe that's it for now. And you know, as always, I will suggest that you be good to the ones you love and eat good food and get outside.

**Bret** 1:34:52

Totally agree. All right, be well, everyone