Introduction to James Hamet and Vistim Labs

Welcome back to this episode of the Reverse Alzheimer's Summit. I'm your host, Dr. Heather Sandison. I'm really excited to introduce you to James Hamet.

He's a visionary, neurotic entrepreneur, and he founded Vistim Labs, leveraging AI and software to redefine dementia evaluation With a notable track record including co-founding the $100M Neurable, James' journey began in empowering paralyzed patients and expanded to groundbreaking diagnostics.

He's a respected neurotechnology expert and he collaborates globally and has authored impactful research. Vistim Labs addresses inconclusive neurological tests through AI-driven predictive screening.

James epitomizes a tech CEO committed to innovation bridging research and practical healthcare solutions. We met recently to discuss using his new labs in our office because he's really solving this crucial component of getting good diagnostics happening for our patients who are suffering with cognitive decline.

James, welcome. Thank you so much for having me. Heather It's a pleasure. This is a really exciting conversation on the very cutting edge of dementia care and especially in the diagnostics.

You know, there is so much confusion and nuance around this idea that beta-amyloid plaques are proteins These misfolded proteins are the cause of dementia, but there's a lot more to it than that.

And I think as the technology, as the pharmaceuticals, as the research continues to evolve, we're going to want more precision in how we diagnose the different reasons for dementia and of course, using Dr. Bredesen approach, we do that.

But you have a really unique perspective to patients as well. So can you just dove into what exactly the lab does and how you get the information? Yeah, sure.

So we've created a new way of measuring functional biomarkers of cognitive decline. What we look at is how the person's perception is changing as early as it that relates to their brain disease, which could be, of course, damaging their brain and thereby reducing their ability to see the world.

So we look at how the person's brain processes visual information, and from that we can localize damage in the brain. We can assess with severity and that's how we are trying to make it easier for doctors and patients to more quickly identify which type of disease is affecting them.

How Visual EEG Testing Works

To measure the effects of therapy on that patient and really just to help doctors, you know, deal with these patients in a way that's more efficient or easy.

We like to take a lot of the guesswork out of the equation. There's so much to know about the person's health when you're trying to deal with a complicated situation like Alzheimer's disease, Parkinson's, ALS.

You need to know a lot of information. And some of this information isn't available, especially for a patient who just walks in the door and says, Hey, I think I have a problem.

So we try to make it so that the doctor has everything they need in that first day and that first visit to heal that patient. Okay. So walk us through.

How does a patient get this testing? Is it a blood test? Is it urine? Is it stool? Is it an EEG? What is it? Yeah, it's a good question. It's going to sound very, very simple.

But I think that most great inventions are very simple. You watch a video and while you're watching the video, the patient is wearing EEG. The EEG is looking at how the person's brain is responding to the different stimuli that we show.

The different stimuli are designed to target certain areas of the brain, spatially in the brain. And we can essentially see how the person is responding to that video and therefore, where there might be damage if there's a certain image or animation that the person's brain is not responding to.

You know, in the way that we've characterized and healthy people, then that's how we're able to see that, oh, there might be something interesting there.

And we have a very large database of patients who we've used this method on. And so we've been able to use AI and machine learning in order to correlate those deficits with the other end points that we have.

And so that was the first way that we demonstrated that this approach was viable and had clinical utility. Now we're taking it even a step further by showing a direct measurement of of brain damage.

If we can show that a person's ability to see is reduced by a certain fraction. Well, we can assume that a fraction of those neurons are not functioning as well as they should.

And so that's the new exciting direction we're going in. This really depends on visual perception. So what if someone already has issues seen? If they wear glasses or if they have some sort of age related macular degeneration or other other sort of eye issue that will affect their vision?

Yeah, that's a good question. We we require corrective lenses if the person has, you know, less than 2020 vision. In the case of macular degeneration, it's likely that this test won't be effective for that person.

We do require that the person has pretty perfect vision because we want to make sure that our system's not being biased by, you know, optical issues. We're looking for those visual processing deficits.

Okay. And then what if someone has symptoms of dementia, but it's not affecting their visual fields or it's not affecting their visual cortex? Yeah. So that's actually really, really fascinating with all of the patients that we've seen, including with patients who you would call subjectively cognitively impaired patients who believe that they have some level of symptom, maybe they are somewhat forgetful or or something like this.

They believe that they're sick. Right. For those patients, it's not always clinically evident that they are sick. And often these patients don't have a diagnosis.

The patient believes that they're unhealthy. Right. For those patients, even we can find these very small visual deficits. So we're not looking for the traditional sense of blindness.

We're not looking for someone who's unable to see a picture that's held in front of their face that would take you know, that's probably not even going to happen in their lifetime.

But what we are able to see is we're able to see the very tiny signs of visual impairment. Maybe the person's reading is not necessarily affected by this visual impairment, but it does affect their ability just to see things more clearly.

We show very small images, images with very high complexity. And so we're really testing to see if all aspects of the visual cortex are fully functioning, including and this one's important, the parietal lobe.

A lot of people forget that the parietal lobe plays a very important role in navigation. Right. And the parietal lobe is

one of the areas of the brain that is predominantly affected by diseases like Parkinson's and Alzheimer's disease, which is why sometimes these patients have trouble navigating.

Often an Alzheimer's patients first symptom that they notices, Oh, I can't find my way home when I go shopping. Well, we are able to look at that as well because our animations are not just here's a picture, it's also here's a picture that's moving.

Is the person able to see where that image has moved and track all of the small movements? So it's it goes a little bit more into the complex in terms of what the video is showing.

But the simple outcome is, yeah, we're able to look at not just can the person see black and white, can they see lines and shapes, but can they also see complex movements and patterns?

Who the Test Works For and Clinical Use Cases

And so this assumes that anyone who is suffering with dementia has some there is some impact on their ability to to perceive through their eyes. Yeah.

And we haven't and we haven't found any patient who hasn't had some level of visual impairment. Well, and then what about I have a couple of patients right now who have something called posterior cortical atrophy.

I don't know if you're familiar with that, but it has a bigger impact on the visual cortex. And so they tend to have relatively sharp cognition, even good short term memory, but really issues with depth perception and other vision and orientation, other issues like that that are actually quite pronounced.

So would this have a different sort of outcome? Would it show that their dementia was worse than what we would get on a MOCA, for instance? Yeah, that's a good question.

I believe that that's a subtype of Alzheimer's. We worked with a lab in Germany, a professor there has Alzheimer's patients who. Yeah, I mean, he treats them as different type of Alzheimer's patients that post cortical atrophy.

And it's very interesting. Yes, they have in a way, it's not their memory that's being affected. It's their ability to see visually. And so you have to use a different scale when looking at the severity for these two different types of patients.

Right. In order to see how progressed the patient is, for example, you really can't use a ruler like their memory for a patient like this where it's really that they're going blind.

I think that with our technology, our ability to differentiate these patients is what's most interesting and most valuable. We wouldn't we wouldn't confuse the two because the locations of damage would be would be somewhat different.

On top of that, I do think we would be more useful for the post cortical atrophy patients just because that is what we are measuring with the greatest amount of resolution, the visual processing.

So when you were describing this lab work, to me, basically this this workup, it's almost more like imaging than having your blood drawn and getting things like homocysteine or complete blood count or getting blood work done.

So what can this replace? Like instead of doing some other testing, can people use the Vistim Labs? Mm hmm. Yeah, that's a good question. What I really want to replace with this technology is the need to use crazy procedures like MRI, CT scans.

These devices and machines that aren't always available, they're not always available in the clinic in certain countries are not available. The average country doesn't even have a PET scan, for example.

Right. And the PET scan is is another another tool here that we'd like to replace. I see this as in the future, being able to provide pseudo MRI, pseudo CT.

I do see it as not necessarily needing to replace these tools. I think those tools are very powerful. They give you a powerful image, but the image lacks the 3D element.

It lacks the ability to show function, and it lacks the ability to show how this structure is performing. Over time, you can have neurons and they can be visible on an MRI.

That doesn't mean that those neurons are healthy, and it doesn't mean that those neurons are functional. And there's I mean, there's many scientists that we talk to about that who are frustrated.

MRI images sometimes look healthy for these Alzheimer's subjects and sometimes it's because they're early Alzheimer's. Sometimes it's because of something else.

Sometimes the MRI is just not able to show the damage because the damage is from a different angle. It's actually it's more nuanced than I can fully explain here.

But yeah, I don't necessarily see this as replacing these technologies long term, but I do see this as a way to have more accessible care. Right. If you're a patient and you have a concern and you don't know why you have this concern, right.

You're having a cognitive deficit for the first time of your life. You don't necessarily want to go get an MRI or a PET scan or do all of these crazy operations.

It would be very helpful to have a tool like ours that could provide a simulation. This is how your brain probably will look in these other tests. This is how your brain should look if it's healthy and based on these these differences, this these are the decisions that we can take and that thinking, that rationale is nothing that we want to do on our end.

That's the doctor's job, right? The doctor would then look at our images and decide, yeah, which which direction should we look at? Under a finer microscope.

And so for from a patient's perspective, they come into a doctor's office. Now the doctor needs to have some sort of EEG, so they're going to get the cap on their head.

Replacing Guesswork with Faster Brain Diagnostics

And it's going to basically create this connectivity. Right. There's there's some kind of wet usually it's a wet we call them socks, but they connect to the scalp and they pick up the electrical impulses and brainwaves from the brain so that there's some way to measure them.

Now, there's it's not like neurofeedback. There's nothing going into the brain. It's just a measurement of what is happening inside the brain so that we have some sort of baseline and the worst case scenario, you know, there's no poking.

There's no prodding, but you end up with an interesting hairdo on the other end of this. And you said it takes about, what, 20 to 40 minutes? How long does it take?

Yeah, yeah, yeah. Less than 30 minutes. Less than 30 minutes. As the technology becomes more advanced, our target is less than 5 minutes. Oh, wow. And then can doctors or patients, do they get results immediately?

For many MRI's, people have to wait a week or two or three to see their doctor and have that reviewed. And sometimes that can be really nerve wracking.

Like, what do they find? What's going on? Is this something that gets results pretty quickly? Yeah, that's a good

question. This is designed to give results the same day.

Well, you know, this isn't this isn't human interpretation. This is using machine learning in order to create estimated MRI images, estimated images. We do also have our own biomarker of function, but that's more used for the therapeutic side.

Right, to see the effects of the therapy, less so to evaluate the damage. But yeah, those results are available immediately. It's hard to make that claim today in terms of, you know, if you're a patient using this item for the first time today, I don't know if I can tell you for sure that you'll get your results today just because this is a new technology.

We released it only two months ago. So we are we are adding a manual review stage for the for the reviews, for the images before they go out, just to make sure that, you know, we would we would trust this report in the hands of the patient.

But, yeah, I mean, this is designed to give you answers today immediately that you can understand, not even as a clinician, just as a patient. Right. What is going on with my health and not just some subjective measurement of, hey, well, we think that you're doing better than average.

None of that, right? This is this is what you can expect from an MRI. This is the odds of the MRI showing that you have damaged if you were to do a PET scan.

This is the result that you should expect from the PET scan. Just to put the power of the agency back in the hands of the patient, because you do have a cornucopia of options and you want to choose the one that is the best one for you, which is the one that's going to come back conclusive.

Right. Which one is going to help me quickly get my diagnosis, quickly get my therapy, and most importantly, quickly help my doctor get me the right therapies that I can benefit.

And so would you recommend repeating this pretty regularly so that we can have and basically be able to assess if these therapies are working or if we need to change course?

Yeah, that's what I'm most excited for at the moment. It's very difficult to measure the effects of therapy such that most physicians don't even do it.

I understand that at your clinic you do, and I think that's one of the reasons your clinic is so successful. Right? Yours. And also any clinic that follows Dr.

Bell's method, that's what we want to do. We want to close the feedback loop, make it easier for every clinician to see the effects of therapy, but most importantly, to see effects of therapy that are related to the person's symptoms and their quality of life.

Right. It's not enough to say, oh, it's changed the proteins in your blood that you can't see. How does that affect my quality of life? It doesn't. If we can instead show, Hey, guess what?

We found these improvements in your ability to see visually. We found these improvements in your brain's functional ability to do complex math to to remember your location in real time.

These are the very important things that help people live better. I mean, I know that with Dr. Dell's method and of course, with your math, too, since you guys practice together, you guys have succeeded in bringing people back from dementia to healthy living.

So I wish I could say that I practice with Dr. Dale Bredeson. But just to clarify, I have my own practice. Well, you have. Your own practice. Is a been a mentor who I feel very, very fortunate to call him a mentor.

But I don't want anyone to think that we practice together. So just to clarify there, I wish. Thank you for the clarification. But but but I mean, still, you know, he's at least published evidence of bringing patients back from dementia to full healthy living.

And with the amount of Americans who today suffer from dementia and with the availability of methods like his, which you practice, I just think it's a shame that we still have patients that end up going to nursing homes and don't end up getting the care that they need and end up having, you know, the ends of their lives with without really any sense of control.

It's painful not only for them, but also for their family who, you know, I've heard so many stories now, even in my family, of people who, hey, my mom doesn't recognize me and I'm caring for her every day.

Tracking Therapy Response and Patient Outcomes

And it's just heartbreaking. It is absolutely heartbreaking. I used to build this this company called Durable Watch, which you introduced me from. My goal there was to help people in wheelchairs control things with their with their mind.

That was to give them agency. Because once you're in that situation, you have no agency. You're dependent on others to move you around. And here it really is actually the same mission.

It's to prevent people from being in those wheelchairs. Over half of wheelchair users today in the U. S. are there because of neurodegeneration that was untreated.

And I'm hoping that with this type of technology, we can detect neurodegeneration early. We can administer therapy and measure effects of therapy and ideally prevent people from going into that wheelchair state.

So that's that's my true mission here. Keep the keep the elderly young. Keep them out of the nursing homes, out of the wheelchairs, and in control of their lives.

I love it. Now everyone knows why I invited you on. Because we share the same passion and the same vision for making this an optional state of being to have dementia and Alzheimer's, not optional.

And so, you know, another important consideration is cost. How much does this cost to the patient? Yeah, that's a very good question. It's something that we're working on.

Our long term goal is for this to be fully covered by insurance. We have a plan for that. We're executing on that plan. We believe it'll be fully reimbursed by 2025.

At the moment, it's out-of-pocket. That is going to depend on the clinic. So I can't really say that for sure. And like on this recording. But what I can tell you is it's not more than a couple hundred dollars now.

So trying to make it accessible and if you're considering paying out of pocket for something like an MRI or a PET scan, plus, you know, the potential for using contrast and the risks associated with that.

Also for MRI, many people feel claustrophobic and so they choose not to do them, which can delay care. So having this as another option and maybe as a complement to the imaging or as an alternative potentially, if you're concerned about doing, you know, the radiation that comes with the pet CT or the contrast that comes with the MRI or the claustrophobia that comes with an MRI.

Yeah. And I think that the biggest challenge that I see personally is just the high rate of inconclusive testing. You know, doctors want to help patients, and I think that part is very clear and understood.

The challenge is when you have someone who comes in and says, hey, I can't remember my way from the grocery store back home. Right. I can't remember how to walk around my neighborhood.

It's very difficult for anyone, let alone a physician, for anyone to figure out what to do with that information. Do what type of blood test do I need to do?

Should I do a spinal tap? Should I do a PET scan? An MRI is is pretty easy to do because you want to rule out a stroke, right. But besides that, there really is very little guidance in terms of what to do with these tests, because you have to go in with the right test.

If you do a pet scan, for example, and you're using a trace or a contrast, you need to know which one that you want to use in order to look at which protein.

Right, because they only look at one protein at a time. So you have to really know in advance which of these proteins is going to be present so that you're doing a good test.

There's nothing more frustrating, I think, than doing a spinal tap or a PET scan, looking at the wrong end points, getting an inconclusive result, and then you're back at square one.

Okay. I didn't really learn anything new other than this biomarker is not there and potentially it's not there yet. So potentially I have to I have to do this test again, but in a year.

So that's that's what I'm that's what I mean. When I say to guesswork originally, we want to remove the guesswork because there's more information to be had before making a costly decision like this.

Do I need to pay out of pocket for a PET scan? I mean, I'd actually love to ask you, Heather, you know, what do you see with your patients when they choose to go through with these procedures?

If I choose to get an MRI, I mean, how much my paying out of pocket. Yeah. You know, we I don't tend to do a lot of imaging because I don't always see it change the course of treatment.

Most patients, by the time I've seen them, have seen a neurologist. And it's it's not really my area of expertize in terms of MRI's and Katie's. And that isn't I'm not doing things that are acute.

Like if someone potentially has a stroke, then hopefully they're going in through through the emergency room and they're getting that addressed straight away.

Strokes need to be treated immediately. And so hopefully those are identified and treated through the emergency room. When I see someone they've typically been to a neurologist, potentially had some workup or they've been to their primary care and they've been offered the the traditional medications for cognitive decline.

And we were running neuro clients for a while. But my understanding around those was that you really wanted to use the same MRI machine and you wanted the same radiologist, hopefully looking at those.

So neuro quants are the quantitative. They're measuring the different parts of the brain, the hippocampus, the ventricles. They're measuring these different parts of the brain so that over time you can see, okay, are these things atrophy?

Are they getting smaller? Are they getting bigger? At what rate are they changing? And so really, what you want is to be able to compare serial images.

So compare them from year, year to year, year to year to year. And if you don't have the same machine in are being used and you're not potentially using the same radiologist, even though you're using the same software, you might get differences that draw the wrong conclusion.

That was my understanding. And then these were quite costly out of pocket. They were running anywhere from $600 to 1200 dollars, depending on which imaging center was doing them, and it kept changing.

So one imaging center would have it available for a while and then they would let their licensing for the software lapse and we'd have to go to a different imaging center.

And so it became less valuable from my perspective. And many times it was something that we were using to track changes.

Access, Cost, and How to Get Tested

And I always caution patients, if this isn't going to change the course of treatment, if you are concerned about resources, if you're allocating dollars to this and you don't have it, most apply, then let's make sure we focus first on the labs that are going to change the course of treatment.

And so that's when we wanted to focus more, you know, on the toxins, on the potential infections, on the nutrient imbalances, because those really direct the treatment plan.

So there's a there's a lot to consider. And I talk patients through that and I feel like what you were offering, particularly when it's covered by insurance, you know, it becomes a no brainer.

If if you don't have if there's not an out-of-pocket costs to it, then of course, we want to get this done. And I think if the cost you know, if the cost is a couple of hundred dollars, that makes a lot of sense for people.

They don't have to go through, you know, schedule the MRI. It's a very easy thing to do. If it takes less than 30 minutes and it's under a couple of hundred dollars, that's a pretty accessible test.

And I love this idea of being to being able to track changes over time. A picture, even if it's an AI generated picture, a picture can tell a thousand words, right?

There's so much communicated and it's really inspiring, really motivated, motivating to see your brain grow, which as you mentioned, Dr. Bredeson and Kat Toups, Anne Hathaway, Deb Gordon together, they did a clinical trial that was published in the Journal of Alzheimer's Disease in 2022, and they showed MRI's where the brain the brain tissue was actually increasing.

And so seeing that, of course, when patients see that it is so motivating to stay on track and to continue with the therapy. Yeah, I remember going through a weight loss program where I would get frustrated, stepping on the scale every day.

Why isn't it changing? But but when you do that over a period of months, when you do that with a therapy, you know, like when you do that with a real intervention, whether it's dietary or metabolic, and then you start to see the changes that are long term.

I mean, it's just so motivating. It keeps you on it. I remember struggling with specifically the different types of diets, and then the moment I started to see real progress was when I felt the strength to actually stick to something.

You know, one of the reasons that I started this technology as well is that my parents are physicians. My dad is a neuro radiologist. So the story that you're telling me now about how, you know, looking at the different machine, making sure using the same neurologist or the radiologist, you know, my dad and I, we talk about that all the time.

You really do have to look at these images in cereal in order to make use out of them. And how do you connect that to therapy? It's still it's still difficult.

It takes significant changes in the brain to see changes in an MRI. Right. And so that's one of the reasons that I wanted to, you know, try to build this technology here.

To pick up on more nuanced things. Yeah, I can't tell you. I've had half a dozen times at least someone come into my office with a neuro quiet, with some sort of imaging and say, the campus is so small.

And I don't know at that point, you know, did they maybe anatomically, they just have a relatively small hippocampus, maybe they started there or did it change?

And is that evidence that there is that's part of the manifestation of dementia in their brain at an endemic level? I don't I don't know if I just have a good one.

Yeah, yeah. It's really more. Like well and some people they get they get concussions when they're kids or or they play sports and and they don't tell you.

Right. They forgot to tell you. Oh, by the way, I used to play football in college. Well, you know, just a minor concussion is going to cause amyloid in the brain.

Okay. Yeah. I mean, nights of sleep deprivation will cause that there are so many things that can lead to to dementia. And I think that that's why it's so important to be precise.

But this is is just a really powerful tool. And I know that using the AI, it is only going to become more and more so. And also, I'm just really thrilled at how accessible you're making it to patients.

So if somebody who's listening wants to get this testing done, how do they go about finding a doctor who's offering it? Should they tell us how we can find out more?

Yeah, that's a very good question. I mean, I would say speak with others, speak with Dr. Sandison. Alternatively, yeah, it's we have to make sure that we do this the right way.

I'm not technically, I think, allowed to send people to clinics, for example. But what we can do is we can tell you a list of clinics that have our technology, and then you can pick one that's close to where you live.

We have clinics that are in California using our technology. There are clinics in Arizona, southern Florida. We're mostly starting in the south. But if we don't have a clinic near you, please let us know and if you have a neurologist there who you like working with, we'd love to bring our technology to them.

Or a Bredesen trained provider. Yeah, Bredesen trained provider. I mean, this is this is not a technology that we're holding back. I didn't build this company to make money or not.

It's not our goal to charge patients or doctors anything. Our goal is to get the technology out there even at cost. So if there's a clinic that wants this technology, you know, we'll make sure that it happens somehow.

Then we'll bring it to your neighborhood and make sure that you have access to it. So the way that you're getting this out there is by connecting with doctors who are basically willing to set up the infrastructure in their offices to provide this test to patients.

So that sounds like really doable if you can if you have a bredeson trained provider, they're typically going to be really interested in technology like this.

And they might have, especially if they already have an EEG machine. It might just be a matter of plugging in the software so that they can get this test going for you.

So let them know and please let them know about James and his work and direct them to his website so that they can learn more if they're interested. Yeah, I will say that, you know, a Bredesen trained provider that's a provider who believes that they can help you, who believes that they can actually provide therapies and bring you back to normal living.

And that's key for believing in our technology as well. A lot of clinicians, you know, they see their job is just to diagnose and then prescribe. That's not every clinician and it's definitely not I would say the clinicians that I've met in the private practice world and certainly not the clinicians that you know who are familiar with Dale Bredesen's

work.

So yeah any clinician who really wants to improve your condition not just you know, help you live with the symptoms, those are clinicians we want to work with.

Awesome. And so tell everyone again how with your web addresses and how they can find out a little bit more if they're interested. Yeah, sure. So our Website, is vistimlabs.com and you can email me easily James@vistimlabs.com And Vistim is spelled?

V I S T I M and it means Visual Stimulation. I'll even leave my phone number. I'm not afraid of the telemarketers. My number is 2039403751. You can call me directly.

I'm a normal human just like you. James. Thank you so much. It's always a pleasure connecting with you. I'm so inspired by your passion and also to see your dedication and compassion for people who are struggling.

So thank you for doing the work you're doing to create solutions and get the information out there, the testing out there, so that people can get the help that they need to reverse and prevent dementia.

Thank you. Let's Reverse Alzheimer's.