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Virtual Event Series

Betting on Regenerative Medicine

Guest Speaker

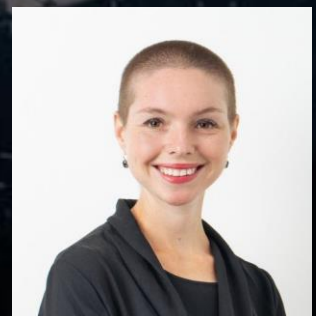


Mike Moradi
Managing Member
R3 Bio

Hosts



Kenny Estes
CEO and Founder
Diffuse



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Diffuse



DiffuseTap: Betting on Regenerative Medicine

Last time on DiffuseTap, **Mike Moradi, Managing Member at R3 Bio**, talked to us about regenerative medicine and what it is, current trends and opportunities in this space in light of COVID, and why VCs should be setting their eyes on this evolving industry.

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DiffuseTap

This networking session is part of our weekly virtual events series. Networking (you'll bump into at least a dozen high caliber fund managers) meets purposeful (you'll tap into brand-new sources of ideas) ... straight from your armchair like a boss.

Meet the Speaker



Mike Moradi is a biotechnology investor and entrepreneur with several successful ventures under his belt in nanotechnology and biopharmaceuticals. Mike has also been involved with the operation of several seed and venture capital funds. His current companies include [R3 Bio](#), a regenerative medicine incubator where he is Managing Member, and [Sensulin](#), where he is Co-founder and CEO, which develops a next-generation insulin for diabetes. LinkedIn: [@mikemoradi](#)

About Diffuse®

We are an alternative fund platform offering differentiated investment products. From digital assets to VC funds and beyond, we identify green field investment opportunities we feel will have market beating returns and turn them into professionally managed funds. For more information, visit www.diffusefunds.com.



KENNY ESTES: On to the main event, our speaker for today is Mike Moradi. Mike, do you want to introduce yourself?

MIKE MORADI: Certainly. Thank you for the opportunity to be the speaker here today. I'm Mike Moradi. I'm a biochemist by training, and I'm a first-generation American who dropped out of dental school in order to start my first company. That one failed miserably, and I had nothing to show for it. But thankfully, the second one worked, which made nanoparticle titanium dioxide, the active ingredient in sunscreens, automotive coatings, and anything that can be damaged by the sun. We sold that company a few years later to DuPont.

It was a nice exit. Not huge, but not bad for a guy in his mid-20s. I subsequently took a lot of what I made and dumped it into the next one. I didn't pay myself for three and a half years, and that one did not work. It's easy come, easy go. In that part of my career, the other one that worked made the transparent, conductive films in these very, very thin TVs that you probably are looking at right now, and in your living room. That company was sold to a South Korean supplier in the display industry.

The pivot for me back into life sciences was due to a family curse of sorts, meaning that both of my parents are insulin dependent and type two diabetic, and my oldest brother was diagnosed at age 43, which is how old I am today. That led to the creation of two companies working on FDA-regulated therapeutics for diabetes and its complications.

To tie everything off, my entry into the fund world was as a recipient of venture capital funds, and as a consultant to funds. I was an allocator at one point, as a trustee for a large pension system. I decided it was time for a new challenge, and thus, I got into a couple of funds. That's me in a nutshell.

AYLA KREMB: Beautiful. Maybe we'll start out with the company that you're working on now, but it might be helpful to just give everybody a definition of regenerative medicine. What does it mean? What does it include, and what are the current trends there?

MIKE: Regenerative medicine is a departure from the way that medicine has been practiced for the last few hundred years or so. The fund name R3 Bio comes from three R's, which are regenerate, replace, and repair. The whole idea is, rather than waiting until somebody is sick and giving them a pill or an injection, essentially we're trying to work upstream in the disease cascade, and trying to heal that particular disease (whether it's a type of cancer, diabetes, or otherwise) by going to the root cause. It's a simple, yet powerful idea.

This, frankly, may sound somewhat revolutionary — which I would argue it is — but it really was only enabled by the last 20 years of biology. The Human Genome Project opened up the inner workings of our DNA, enabling next gen sequencing, and all of the gene editing that you have probably seen in the news lately. We see it as a fundamental departure from the current trends in medicine, and we're excited to play a role in that future.



KENNY: In my mind, when I think of regenerative medicine, I think of stem cell research, which maybe is part of your mandate, but is also probably about 20 years out of date. How has the ecosystem developed and how is it growing over the last decade or so?

MIKE: Twenty years ago, this would have been impossible to pull off. There were no companies doing this kind of thing, and the FDA had no idea how to regulate stem cells. Maybe I could give you a parallel.

My co-founder at R3 is [Brock Reeve](#), who is the executive director of the [Harvard Stem Cell Institute](#). About 20 years ago, the federal government banned funding for research involving new lines of stem cells, effectively halting federal funding for stem cells. Entities like [NYSTEM](#), the [California Institute for Regenerative Medicine](#), and the HSCI were created a couple of years later to fill the funding gap.

Brock has been running HSCI since roughly 2005, which exists to find translational projects coming out of Harvard and Harvard hospitals. They don't really do any basic science funding. It's only projects that could eventually become a drug, a diagnostic device, or something similar. We plan to back exciting research from institutions like this and create new companies from scratch. To be clear, we have no special relationship with Harvard, which wisely has a non-endorsement policy for commercial activities. We're just another part of the larger ecosystem.

During these last 16 to 17 years, HSCI has been profoundly successful at creating companies and treatments, the most important of which, I'm sure you all know, is [Moderna](#). HSCI provided the first \$200,000 grant to the lab of [Derrick Rossi](#), which led to Moderna. Moderna was subsequently the largest IPO in history, and now has a \$170 billion market cap. That was just one of five or six unicorns that have come out of HSCI projects in the last decade. One of our directors was a GP at the fund which backed Moderna from the very beginning, and their recent fund was reported to have returned 15x MOIC. May we all follow in their footsteps!

To sum it up, we've gone from zero to now over 1,000 companies in this regenerative medicine space, and there are over 1,000 clinical trials underway, globally. You're just starting to see the first wave of [FDA approvals](#) for these treatments, many of which are curative in nature. It's not just about increasing lifespan and eliminating non-communicable diseases, but also increasing health span. It's a very exciting time for all of us in this space, and for patients everywhere.

AYLA: One of the bits that we touched on when we spoke in our prep call was how you very intelligently structured your entity to become able to do some of the work that you're doing. Could you maybe dig into how you thought about your business, and how you set up the structure?

MIKE: It was really more of a happy accident. As we went out to raise R3, we had a very standard, traditional GP-LP structure. Honestly, I wish I had met Diffuse before we went through this exercise, because you would have saved us from lots of "brain damage". But when we found our anchor investor, they were not allowed to invest into another fund by their LP agreement. We scratched our heads for a little bit. Then, their placement agent suggested an idea to build this as an operating company, or an evergreen fund model instead.



As a result, that \$50 million anchor commitment, on top of which we've since raised additional capital, has created this structure. Essentially, it's a Delaware LLC that will look and operate much like a typical early-stage venture fund or studio incubation model. But at some point, probably around year five, the design is to place this LLC into a newco as a wholly owned subsidiary and take that vehicle public.

We ended up hiring the same outside counsel that took [PureTech Health](#), [Allied Minds](#), and a number of other companies using a similar model, like [Bridgebio](#), [Everest Medicines](#), etc. From the LP's perspective, this is attractive, because there is no management fee. There is the freedom to exit much quicker than a typical 10-year closed fund, though long-term investors can also stick around when R3 is publicly traded.

Lastly, they can allocate from different pools than you are able to in a typical fund structure. The pension fund that I worked for at least had a dedicated allocation for alternatives. But in this structure, they could also potentially use a separate account mandate, a direct investment fund, or some other pool of capital. For the most part, the investment community has been very receptive to the model. A few of them can't quite figure out what to do with it, so we don't get everybody. But by and large, it's been a fruitful exercise.

KENNY: Maybe we can talk a little bit about what check size you're writing, what your investment criteria are, and what companies you invest in. You talked a little bit about IPOs, and the expected hold period. With that profile, do you expect that to just go quicker than regular healthcare tech investing? Or perhaps slower?

MIKE: I can start on the company side. If you look at the latest [Silicon Valley Bank Life Sciences annual report](#), you'll see that biotech companies are going public much faster, and their returns are on par with tech companies. I believe the median was 2.9 years from the first institutional investment to a significant exit. That means a billion-dollar M&A event, or a market cap exceeding a billion dollars. As a result, the incentives are aligned for us to build up enough clinical evidence to [take these companies public](#), ideally, with a phase two trial result that's favorable. But the median amount of capital to get a company to that point is about \$57 million.

If you've been following this space, you know that there's a big bifurcation in the life sciences venture capital community, where on one hand, you have these mega funds that are raising well [beyond a billion dollars](#) every 18 months. And on the other end of the spectrum, you have several niche funds, whether that niche is geographic, or by focus like ours. The way we see it, with our lead investor and one or two other investors, we can come up with that capital and essentially take a company from start to exit in a relatively short amount of time.

But to answer your question, with a \$100m raise, we might incubate a company with \$500,000 to \$1m and provide seed funding for another \$2.5m as the sole investor. We would lead or co-lead the Series A round with our partners and investors and top out at \$10m per company. Our primary investment criteria at the formation stage would be (1) team, which might be entirely scientists, and (2) great science that addresses an unmet medical need.



AYLA: One of the questions that came up here in the chat is around the logistics of your business and how it's set up. Are all the operating and admin costs of the LLC covered within the LP commitment since you don't have a management fee?

MIKE: Yeah. That's the beauty of this structure. It's very, very simple. We have a board of directors which our lead investor chairs. It also includes an independent director. Basically, we would have an annual budgeting process with board oversight, shareholder protections, and external audits, just like any other operating company. So far, the investment community has been okay with that structure.

KENNY: There you go, appreciate it. Joe Milan also says you're very impressive, so kudos on that. And he has a question about Neil Riordan's stem cell work and what your thoughts are on that. I have no idea what that is, so hopefully you do.

MIKE: I don't personally know [Neil Riordan](#), or enough about his work. Although I guess I could say that one of the neat parts about our team is that the scientific advisory board consists of the three most senior scientists at a very prominent institution. Each of them is entrepreneurial scientists who started many companies including a few unicorns each. Without going into too much detail, one was a scientific co-founder of what is now [Gilead](#).

This is a company that we hope none of you ever need their [Remdesivir drug](#), for COVID-19. But I think the design is, because they've been building their own relationships and careers in the scientific community, they can also help us identify great science. That is the feedstock from which we would be building new companies from scratch. It's a typical company creation model. And of course, great scientists are the linchpin to making that work.

AYLA: What's another thing that will be interesting to dig into? How do you see this space evolving? And why is it that the venture has dropped into this space at the rate that it has, considering previously, this was more of a large-scale private equity investment opportunity?

MIKE: Frankly, it's because of COVID. In the past 18 months, we've seen a record number of financings in biotech, and the returns are stellar. A lot of those are starting to dip their toes into the regenerative medicine space. I would say it's companies like Moderna and of course [Pfizer](#) that are leading the way and getting us out of this global pandemic.

I think it was a little bit tough to sell a niche fund concept prior to that. I'm not saying that the pandemic is a good thing. But the one silver lining is that it shines a very bright light on the great work being done in labs worldwide. We see that this is going to be a golden age for biology.



That excitement is what is driving the massive investment into the sector. To your question, it's not like it's all rosy. Any new technological wave is going to bring challenges. What happens to our pension systems when people are living 100+ years on average? And what if somebody cracks the code and essentially can extend life much, much further than that? We're just not equipped to handle some of the change that's coming down the pipeline. But at least those of us on the bleeding edge are really starting to think about these things, and we'll do what we can to at least stave off some of the worst effects of all this change.

KENNY: Fascinating. I thought about that before, that totally makes sense. If life expectancy goes up, there's all sorts of stress in the system. It's very intuitive now that you say it out loud. As you say, it's not all rosy out there. And I understand it hasn't all been rosy for you. What are some of the lessons you've learned along the way in your investing process?

MIKE: I suppose one lesson is that, from my time spent on the allocator side, I didn't really think too much about the experience of the GPs, who had to fill out all these massive questionnaires. On behalf of allocators everywhere, I apologize to all of you who are fund managers. One of those lessons from this side of the table is that it really does help to have people like Kenny in your corner. That is, people who can help fill out that questionnaire, which could be 60 or 70 pages.

More importantly, if you can eliminate some of those risks around the custody of funds, and the back-office operations tasks like reporting or tax, by having very experienced people in your corner, not only will that save you a lot of time and the headache of having to deal with those things, but I would think that it would make your fundraising go much more quickly. That was one key lesson.

Another lesson is, just in the last 18 months in particular, we were a bit concerned that it would be very difficult to raise a new fund because nobody could really travel. And of course, that was somewhat true, initially. But I've seen others raise 9 figure funds in a few months, and 100% virtually.

But there's really something to be said for the 24 hours that you can spend in person with somebody, and have dinner with the team, which we did for the first time this past month.

Another lesson I learned from that was, because everybody's in the same boat, a lot of the larger family offices are willing to take chances and allocate capital without even having met us in person, ever. So don't let that discourage you from waging a fully electronic or online campaign.

AYLA: Yeah, that's pretty good insight. And I think that everybody here in the room has faced that to a certain extent, in fundraising. It's a very fun experience, mainly involving a lot of paperwork and phone calls. But one of the bits that is interesting is, I would assume a lot of the genuinely new ideas in this space come out of universities and other research institutions.



How do you come up with new ideas? How do you structure the relationship with those institutes? Because I guess at scale, you need more ideas than you might be able to generate as an entity on your own. And what equity do they own at that point if you do pick up a good idea from them?

MIKE: This company creation model relies almost entirely on intellectual property generated at either universities, companies, or research institutes. You can spin off an idea from a mid-size biotech company, and if you're doing company creation, at least the old rule of thumb is (it depends on the institution), you might end up giving up somewhere between 2 to 5% of the equity for the license, depending on the nature of the license agreement, the amount of capital available, and other factors.

That includes how many patents there are, how much money the institution spent, and whether you're patenting these ideas globally. I think at the end of the day, if you carve out additional equity for management, the scientists, and the other people involved in founding that entity, you could conceivably own 80% of the company on day one.

Our team consists largely of operators, people that have been building companies for the last 20, 30 years. So we might step in as the interim CEO for a company for the first 12 to 18 months. And I guess one of the implications of that is, you need to have a good recruiter involved, whether that person is on your team directly, or an outside person who really knows the space.

That's because you have to bring in the right kind of talent to shepherd these projects through to an early proof of concept. And at least in our space, it's a very difficult niche to find the right talent. We're just relying upon the networks that we've built over the past 20 to 30 years. Admittedly, I think it's a bit of a departure from the typical venture capital model that has been so prevalent. But we were excited enough to put a new twist on this, because the needs of patients are so great. At the end of the day, the patients are the most important reason why we're here.

I'd like to share one final thought for all your viewers. I am 100% convinced that now is the single best time to be starting a new company. The pandemic has disrupted basically every industry, some more than others. Every supply chain is being re-invented as we speak, and it will likely be nimble competitors that become the household names of the future. We happen to be in a new segment of medicine, which we believe to be particularly transformative, though we want to offer a word of encouragement for all of you who are out there building something new, investing in those entities, or just encouraging others from the sidelines. May fortune be on your side.



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Dennis Chookaszian
Corporate Director, CME Group

DiffuseTap: Institutional Grade Governance

Sharing his decades-long expertise on corporate governance, Dennis discussed how to avoid a co-partnership going sour, the problem with overly idealistic CEOs, and the importance of keeping your board in check. [Read on](#)



Susan Brazer
CEO & Founder, LionShare Media

DiffuseTap: Media Metaverse 2022

Susan talked about the 2020 digital media landscape; the evolution of media distribution; how converging, emerging technology points to the metaverse; and the prospect of having an open, decentralized, and free Web 3.0 marketplace. [Read on](#)



Raj Mukherjee J.D.
VP/Global Head of Tax, Binance.US

DiffuseTap: Crypto Taxes Decoded with Binance.US

Raj explained the complexities of the US crypto tax landscape, how he built a dynamic tax information system for Coinbase and Binance from scratch, and how investors can profit from crypto without getting caught in a taxation mess. [Read on](#)

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