

Mayo Clinic Q & A - Dr. Clark Otley

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SPEAKERS

Dr. Halena Gazelka, Dr. Clark Otley, Narrator

N Narrator 00:01
Coming up on Mayo Clinic Q&A...

D Dr. Clark Otley 00:04
Mayo Clinic Business Development is really a facilitator of the Mayo Clinic strategy. We are that business arm that interacts with the external world. The nice thing is that sounds a lot like corporate speak, but the nice thing is, it's all focused on advancing health care for our patients.

N Narrator 00:20
With 7000 active inventors working in research, clinical practice, and education, innovation at Mayo Clinic comes from many directions. Doctors, scientists, administrators, and other health care staff are all involved in bringing forward new ideas and inventions.

D Dr. Clark Otley 00:37
The people in our institution are so creative, so amazing. I hope more and more people take advantage of it. It's an incredible environment for innovation that I'm proud of and appreciated every day for all the people working hard to help our patients.

D Dr. Halena Gazelka 00:52
Welcome, everyone to Mayo Clinic Q&A. I'm your host, Dr. Halena Gazelka. At Mayo Clinic, the Department of Business Development is the front door to business. From technology commercialization to strategic partnerships, the ultimate goal of innovation at Mayo Clinic is to

improve health outcomes and benefit patients. Here to give us an inside look at invention and innovation at Mayo Clinic is Dr. Clark Otley. Dr. Otley is the medical director for the Department of Business Development at Mayo Clinic. Welcome to the program, Clark.

D Dr. Clark Otley 01:26

Thank you, Halena. So excited to be talking with you today.

D Dr. Halena Gazelka 01:29

Well, I am very enthusiastic to hear from you as well. I think this is a little understood side of Mayo Clinic, and I'm really excited to talk about it. Can you tell us just who is Mayo Clinic's Department of Business Development?

D Dr. Clark Otley 01:44

Well, Mayo Clinic Business Development is really a facilitator of the Mayo Clinic strategy. We are that business arm that interacts with the external world. And we do it through our two divisions. So, the first division is Mayo Clinic Ventures. That's our technology development and commercialization branch, which is responsible for taking all the incredible inventions and intellectual property from our inventors across the enterprise and trying to advance them and get them to the bedside for our patient's benefit. The second division is called Corporate Development. And that is focused on large strategic partnerships and joint ventures and acquisitions to advance Mayo Clinic strategy. That sounds a lot like corporate speak, but the nice thing is it's all focused on advancing health care for our patients.

D Dr. Halena Gazelka 02:31

Wow, that's impressive. I'm really curious, how does Mayo Clinic Ventures find innovators? So, how do Mayo Clinic innovators get in touch with you or link up with you to bring disruptive health care technologies to market?

D Dr. Clark Otley 02:47

You cannot stop our innovators. They're everywhere. They pop up from all different places. So, we have about 7000 active inventors among our employees across the institution. And they're not just doctors. They are scientists, they are administrators, they are allied health staff, people with a creative idea are our inventors. And of course, at Mayo Clinic Ventures, we work really closely with our research shields, our practice shields, and our education shield leaders, our department chairs, to try to get that technology advanced. We've got a pretty good track record. Inventing is really hard. To actually have something go from that idea to the bedside, the average is about 10% success rate out there in the industry. Our success rate is more like 30%, which is pretty, pretty wonderful.

D Dr. Halena Gazelka 03:36

That's impressive, I would have actually thought it might be less than 10%. From, you know, you hear about how difficult it is to get a patent and produce something. What is the vetting process for ideas? So you must, you have 7000 people wanting to bring you ideas at least, and maybe more? How do you vet them?

D Dr. Clark Otley 03:55

We've set them as kind of objectively and scientifically as we possibly can. So, every year, we have about 700 invention ideas coming across our doorstep. And we have to put the resources into the ones that are most promising. And so, we have a process to evaluate them on a number of criteria, including what's the likelihood of them coming to fruition? What's the magnitude of that impact that they might have on patient care? Whether they have patent protection, and whether their market out there is saying, "Yeah, we want that." And then for those inventions that seem the most promising, what we do is we have a really robust ecosystem. We have technology development managers, we have patent liaisons, we have licensing managers, we even have some funding to support projects that need a little bit of a nudge. And then we also use, obviously, the Business Development capabilities to move these things forward.

D Dr. Halena Gazelka 04:49

It sounds like a one stop shop.

D Dr. Clark Otley 04:51

It's a one stop shop, but we also are very partnership oriented. So we work with external companies and external entrepreneurs to kind of create teams around the technologies to advance them. It's a lot of fun.

D Dr. Halena Gazelka 05:03

So, are people from outside of Mayo Clinic bringing you ideas as well, who just want to work with you?

D Dr. Clark Otley 05:10

Absolutely. About 50% of our technologies come from Mayo Clinic inventors and 50% come from external inventors, coming in looking for a scientist or a physician with clinical insights. Because they're largely engineers on the outside, they want somebody who would tell them, how will this actually work in a patient care setting? So, it's inside and outside.

D Dr. Halena Gazelka 05:32

Dr. Halena Gazelka 05:32

So, Clark, Mayo Clinic was recently recognized as number one research institution for technology transfer. What differentiates us at Mayo Clinic that we would receive a ranking like that?

D Dr. Clark Otley 05:45

We were pleased by that ranking. But honestly, we really focus on getting things done in Business Development. So, in terms of differentiation, I'd say it's a lot of different things. And this did not happen overnight. You know, we are a very successful technology development group. But it's been a lot of hard work over decades, honestly. If we didn't have top level support from Gianrico Farrugia and Christina Zorn, our CEO and CAO, we wouldn't go anywhere. We have an amazing relationship with Greg Gores, our Dean of Research, and his partner, Heidi Dieter. Amy Williams, our Dean of Practice, and Natalie Kane, her partner, all very supportive. So, it takes a lot of people. Then, of course, we have the resources I mentioned before, and really a kind of win win set of policies that incentivizes our inventors to really work hard, because a lot of this happens on nights and weekends. So, it's discretionary effort, and kind of that whole milieu has created a great opportunity for invention at Mayo Clinic. But, the number one thing, is our mission. That's the key door to success, Halena. Our mission drives us to help our patients and that's the golden standard for us.

D Dr. Halena Gazelka 06:57

The needs of the patient come first.

D Dr. Clark Otley 06:59

Exactly.

D Dr. Halena Gazelka 07:01

Say Clark, I'm curious, because you have seen a lot of people bring inventions in and people who are innovators. What does it take? If someone has the drive to bring an idea to fruition, what makes someone a successful inventor?

D Dr. Clark Otley 07:17

Our inventors come from all over the enterprise. They have lots of different characteristics. And honestly, I admire them a ton because they're so driven by helping our patients. When I asked our MCV team, what makes a good inventor, what differentiates somebody who tries hard but doesn't succeed from somebody who gets a product into the market? It is a number of things. It is obviously, a creative, inquisitive mind. Somebody who's brilliant. Somebody who has lots of drive to help our patients. Dedication to our patients and having that solution impact our patients is really important. The honest truth Halena, is that most of our inventors don't make a lot of money from their inventions. They may have positive impact more than maybe a

monetary impact. Some do make money from the inventions. But really, the biggest payback I think, is that sense of satisfaction. We call it the anti-burnout pill. People are creative, they feel young, they're stimulated, they're working with teams. It's a really positive environment. And the ones that really do well are ones that collaborate and work with great teams, lots of ideas, they're open to changing their idea based on the feedback that they're getting from the market. And then they have to persevere. It's a long road from the idea to the actual product.

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Dr. Halena Gazelka 08:39

There's nothing more satisfying than helping someone else. We all know that. And so, imagine being able to make an incredible impact on patient care. That must feel amazing.

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Dr. Clark Otley 08:49

Yeah, at scale. And that's what our inventors seek, they seek to, in their day job, help patient by patient, family by family. But then in their invention world, they want to impact the world and they have that possibility.

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Dr. Halena Gazelka 09:03

Clark, earlier you mentioned how you help to support the strategic priorities of Mayo Clinic. Can you just give us an idea of what some of the key initiatives at Mayo Clinic are that Business Development is supporting and working toward?

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Dr. Clark Otley 09:20

Sure, we absolutely are aligned with the strategic plan of Mayo Clinic - Cure, Connect, and Transform, and all of our Business Development activities go to support those activities. So, in those three buckets, in the cures bucket, people are trying to invent the next level of cure. So, we work very heavily with our practice and research colleagues and innovators. They're doing all sorts of things. Trying to restore people's vision who are losing their vision, diagnosing cancers through blood tests, manipulating people's gastrointestinal tracts so that they don't get diabetes, controlling seizures, regenerating organs, all those kinds of scientific things are unbelievable. In the Connect pillar, we're working with the practice, obviously, the Center for Digital Health and Mayo Clinic Platform and we're providing actual care for patients in their homes in new and novel ways. Advanced by technology, we're extending the care of patients who are pregnant, to make it more efficient and more effective for them in less disruptive ways. And then there's a new emerging trend to provide Mayo Clinic quality cancer care outside the walls of Mayo Clinic. Really, really exciting. And then finally, in that transform pillar, Mayo Clinic Platform is very heavily into that. And they're looking to develop transformative data science-based platforms and solutions that sit on that platform that are powered by the greatest data science that make our care is more personalized, more accurate, more predictive, and more effective. And then we work with Mayo Clinic International, obviously, to get all these kinds of things out there to the world. So, we're heavily reliant on, and take all of our marching orders from, the Mayo Clinic strategic plan.

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Dr. Halena Gazelka 11:06

Clark, your enthusiasm is contagious, and it's exciting. Let's make it more tangible for some of our listeners. Can you tell me a little bit about or describe some of the innovations, for instance, that have come forward because they've been shepherded by your department?

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Dr. Clark Otley 11:23

Well, we'd have to have about 700 hours to go through the list! We've got literally 1500 active technologies ready for development and in ongoing development. So, it's a big list. But let me highlight three. The first one is Dr. Barham Abu Dayyeh's technology. This is a catheter that goes endoscopically through people's GI tract down into the small intestine. And then they do what's called the electroporation, which is a little bit of an electrical current that creates little pores in the intestine. And what they're finding is by treating the small intestine, which is a key mediator of our digestion and our metabolism, you can actually reverse or prevent people from getting diabetes. A major, major impact potential, so that is super exciting. They're having great safety and efficacy results with that technology. The second one would be a viral technology. This is invented by Dr. Michael Berry. It's a single-cycle adenovirus vaccine platform, so this can be used for a lot of different things, including vaccinations against infectious diseases, and also vaccinations for cancer. And we are just finishing a phase one trial in Australia for COVID-19 vaccination, where this single-cycle adenovirus vector is creating great mucosal immunity, that's where the virus enters, as well as systemic immunity. So, a big breakthrough there. And then finally, in the AI space, I think people have heard a little bit about our Mayo Clinic cardiologists. Amazing, amazing scientists working with our partner from the Platform called inference. And we formed with Business Development, a company called Anumana. That company's main goal is to develop and get out into market all these ECG or electrocardiogram-based algorithms that can literally not only diagnose existing illnesses but predict illnesses that are going to happen in the future. It is amazing stuff, Halena.

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Dr. Halena Gazelka 13:24

That really is amazing. All of those are wonderful examples. And the one that's most tangible to me is the Apple Watch study, because I enrolled in that study and sent my ECGs in and was happy to do it. Clark, this is all very exciting. As we're wrapping up today, is there anything else that you would like our listeners to know about inventing at Mayo Clinic?

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Dr. Clark Otley 13:45

Well, we have a big, big milestone we're about to hit with Business Development. And that is, probably sometime in December 2022, possibly in January 2023, the billionth dollar of revenue from our invention activities is going to come back to Mayo Clinic. Can you believe that? That's an incredible measure of success. And the money is not the primary thing. It's all the inventions that have generated that that are the main emphasis. But we do get the money back into Mayo Clinic. And obviously, as a not for profit, what we do is we reinvest it into the clinical practice, research, and education mission of Mayo Clinic. And part of that goes to support the next generation of inventors, so that they can create the next billion dollars' worth of inventions that help our patients and then come back to support Mayo Clinic. So, I would just emphasize,

having been privileged to work with Business Development for about nine years now, the people in our institution are so creative, so amazing, and our business development infrastructure and our invention ecosystem is so powerful that I hope more and more people take advantage of it. It's an incredible environment for innovation. And I'm just proud of and appreciative every day for all the people working hard to help our patients.

D Dr. Halena Gazelka 15:08

How exciting and congratulations, Clark. That's just amazing.

D Dr. Clark Otley 15:12

Thanks Halena. I had nothing to do with it. It's all on our inventors and our innovators who are responsible for that.

D Dr. Halena Gazelka 15:20

Thank you so much for being here today, Clark. This has been a great conversation.

D Dr. Clark Otley 15:24

Thanks, Halena. I appreciate your time and being able to share the message.

D Dr. Halena Gazelka 15:28

And thanks to all of you too, for listening in. We appreciate Dr. Clark Otley being here to talk to us about inventing at Mayo Clinic. I hope that you learned something. I know that I did. And we wish each of you a wonderful day.

N Narrator 15:42

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