

URL: <https://stvp.stanford.edu/clips/the-potential-of-robotics>

Michelle Lee, CEO of Medra, explains her company's mission: to scale impactful research into something that can change lives. She explains how robotics offer the potential to automate repetitive tasks for biologists and allow them to focus on scientific discovery.



## Transcript

- Medra is helping scientists 00:00:04,140 and biologists with the same struggle and the same dilemma I faced in 2021, which is how do you take really impactful research and how do you scale it to something that can actually change lives? So I want you guys to, again, imagine you are a scientist and many of you guys are, I want you to imagine you're a biologist.. You just made a major discovery in your lab that you can synthesize something called mRNA, which can create proteins in the cells, but you don't have any proof about how mRNA can actually be useful.. Or maybe it can be turned into a drug and the only way to get that proof is to do lots of experiments.. It's pipetting, it's moving test tubes around.. It's sorting your samples in ice.. It's more pipetting just over and over again.. So when mRNA was synthesized in the labs in the 1980s, researchers were already dreaming of its therapeutic potential.. But it took decades before mRNA could be commercialized into a vaccine we all know very well, the mRNA Covid vaccine.. So almost 40 years from research breakthrough to scaled up impact that can actually change lives.. So what if instead of asking our very brilliant and highly trained scientists, instead of asking them to pipette day in, day out, we could just automate it with robots? So let me just show you some examples of what our robots can do..

Robots can run experiments overnight, over weekends.. Robots don't really get bored and tired of repetitive menial tasks.. Robots certainly don't get repetitive strain injury, which is like a real problem for biologists, when they're pipetting day in day out.. Robots can 10x the experimental throughput and accelerate our drug discovery process.. And this potential extends beyond drugs to even plastic devouring microbes that can clean up our oceans.. We can even have the robots to come up with new lab grown meat, which can replace factory farms that's creating so much greenhouse gas and maybe even combat really complex diseases and mechanisms like aging and be able to work on really exciting work in longevity.. So I just want, like, the thing that I want you to imagine is if every biotech and pharma company out there had 10 or even 20 of these Medra robots doing experiments for them and generating data, if scientists can now just focus on science instead of the monotony of repetitive manual bench work.. Imagine if the next generation of biotech companies, the future Modernas of the world, were going to create groundbreaking medicine with our robots.. Instead of taking four decades to come up with, go from a research discovery to a real drug, it takes them a year.. That's a scale that inspired me to start Medra in the first place..

And that's the reason I chose this path that I am on right now.. And that is to build robotics to accelerate scientific breakthroughs...