

## **Embrace Creativity in Biotech**

**We can make a difference by working differently, with diverse teams and a fresh approach to development.**

**By Ryan Beal, MD**

When I co-founded a biotech firm five years ago, we knew that to reach new areas, we needed to avoid the well-worn paths of big pharma's typical teams and development processes. We decided to flip that model on its head, assembling a team that would foster innovation, think openly and creatively, take risks, quickly advance new technologies, and find perpetual motivation in our real-world potential to help people. In five years, we've succeeded not only on the strength of our ideas for biotech, but also by building an exciting team and taking a development path that's more agile, functional, and fun.

### **Diverse Teams Mix Things Up**

If you know biotech startups, you can rattle off a list of standard job titles and background training. That predictability is a problem. We're starting companies from scratch with the aim of producing medical innovation – our teams should reflect that uniqueness, creativity, and spark. That means bringing together a diverse set of voices, from different scientific disciplines, medical specialties, and areas of engineering and business. The ultimate balance is a mix of creative thinkers and experts to consult when you need them.

In our company, leaders have backgrounds in medicine, human physiology, nutrition, biochemistry, and neuroanatomies. Our scientists studied chemistry and biochemistry. Not all of these areas relate directly to our work, but we want that mix. We have a diverse group of very smart, accomplished people working to solve a problem, unburdened by "how it's always been done." When we need specific input, we rely on our advisory board, and we work with some of the best physiologists, formulation chemists, and medical researchers from around the world. We don't want to fly completely blind, but we want to do a lot of "blind flying" because that's how we end up in new destinations.

### **R&D Design Is Flexible**

New biotechs start with a hypothesis. In big pharma, testing that hypothesis would start with digging deep into their pockets for highly detailed, thorough research. In some cases, this slow approach makes sense, but that doesn't mean it's best for everything. As you plan how you'll test your hypothesis, consider starting with some basics before you delve into slow, expensive, in-depth analysis.

As an example, our biotech startup has developed a drug delivery platform technology. In corporate development, research would have begun by investigating the technology's mechanism of action at the cellular level. We would have really cool electron scanning

microscope shots of the process. In the five years since our company started, that research might well have burned through \$100 million or more before starting human trials.

Instead, we tried the opposite approach. We looked at the drug delivery platform technology as a black box. If we put very safe, commonly used drugs into the black box, would it deliver the drugs to their target? We wanted to know what the black box could do, not what was inside it.

Without spending \$100 million of research, we answered that basic question, studied drugs using our platform in humans, and applied to begin phase 2 FDA trials. Now we're at the stage where it is important for us to understand the mechanisms of action, which will help us enhance the technology, and we're happy to spend the resources on something we already know will work.

### **If You're Failing, It's Working**

"Ever tried. Ever failed. No matter. Try again. Fail again. Fail better." This popular quote from Samuel Beckett turns up on tattoos and Instagram posts, but you're unlikely to hear it in a large corporation, where teams assiduously strive to remove anything resembling "failure."

Innovation requires risk, which means we have to view failure not as a cataclysmic event, but rather as part of the journey toward our goals. The big pharma model is anti-risk. Junior scientists and middle management drive the experiments, while senior management focuses only on business. The scientists and managers are on their own, afraid to take risks that might look like personal failures, rather than just negative scientific outcomes. There's a strong aversion to risks both big and small.

The result: small incremental improvements dominate, and major innovations are very rare.

To create the right environment for innovation, we have to embrace failure. In a biotech startup, that works best when the company's entire team succeeds or fails together by participating side-by-side in trials, either in a hands-on capacity or in the thinking and planning process. Scientists can freely take risks and innovate because the whole team understands the project and shares responsibility.

When we first conceptualized our company's technology platform, we didn't know if it would work. We said, "Let's try it. What's the worst that can happen? If we fail, we fail." It worked. More trials led to refinements, and then to clinical applications. But that mindset has remained a core part of the company. We've tested a lot of extraordinary ideas, some of them have worked, and that's allowed us to advance the science. Our team continues to take risks all the time. We know that we may fail, and that's okay. We celebrate the innovative thinking and hard work behind the research, learn from it, and quickly move on to test the next hypothesis.

### **Patients Offer Perpetual Motivation**

In a biotech company, there are individual accomplishments and team successes, and those are all highly motivating. But a successful trial or product release isn't the most potent source of motivation; strong, self-perpetuating motivation comes from the real-world impact the team

can have on improving people's health, longevity, and quality of life. Put patients first, and make your goals for improving their medical care part of every discussion.

Because our company's innovation is a drug delivery platform, our team can think creatively about how to apply it in the future. Today, treatments for gout and melasma are in trials, and we think our technology will help people with those conditions. What other conditions could we treat? Our mission is ultimately to impact some of the most challenging medical problems, whether it's topically administering vaccines in the third world without needles or delivering cancer therapy through the skin to minimize gastrointestinal distress. We can't necessarily achieve those things in a year or two, but actively working to help people in need motivates our team every day.

We've built a talented team, energized by paradigm-shifting common goals and empowered to work creatively and fearlessly. Anything is possible.

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