

## 5. Mammoth Biosciences: “Suddenly the world is your oyster”

Backed by Jennifer Doudna in a world still waking up to gene editing's potential, Mammoth has some big ambitions



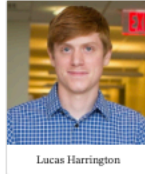
CEO:  
**Trevor Martin**

CSO:  
**Lucas Harrington**

BASED:  
**Brisbane, CA**

**Backers:** The \$150 million D round last fall was led by Redmile Group, with participation from Foresite Capital, Senator Investment Group, Sixth Street, Greenspring Associates, Mayfield, Decheng Capital, NFX and Plum Alley.

**The scoop:** Nobody knows better than the crew at Mammoth Biosciences how important CRISPR/Cas9 has been to birthing the gene editing field. And no one knows better than the folks running this Jennifer Doudna startup just how much the field still needs to be developed.



Talking with Trevor Martin, brimming with youthful enthusiasm, the next-gen approach seems inevitable.

“Our philosophy at Mammoth is that it’s really about having the broadest toolbox,” says the Mammoth CEO. “So that’s the foundation of the company and as

we’re building and pioneering these next-generation therapeutics and diagnostics, everything ties back to this toolbox ... where you can have the hammer and the screwdriver and the wrench and the ruler.”

Too many times, he says, a biotech takes one tool and builds the company around it — even as the technology around building tools changes.

“Maybe they license on a university or whatever it is and everything has to revolve around that,” he says. “I think we take a very broad view, and that started at the beginning of the company, where we pioneered this whole new field of CRISPR-based diagnostics and we just take this really broad view of CRISPR generally — where it’s not just a gene-editing tool.

“We have this concept of Mammoth of what we call CRISPR-plus and that’s how do we combine the CRISPR systems with other functionalities, whether that’s things like base editing or that’s activating or inhibiting. And once you start thinking about CRISPR as this kind of search engine for biology and this way of programmatically sending proteins anywhere you want to any DNA and RNA, like suddenly the world is your oyster — whether it’s diagnostics or therapeutics or subclass of therapeutics. And I think that’s built into the DNA and RNA of Mammoth and that’s one of the things that really makes us unique.”

The toolbox now includes miniaturized Cas14 as well as CasΦ, which is used to overcome some of those Cas9 limitations with greater versatility.

It’s a young crowd, at least by your average gray-haired norm seen in most biotech C-suites these days. Stanford-grad Martin was 29 when he co-founded the company about five years ago with Janice Chen and Lucas Harrington.



But with Doudna heading up the scientific advisory board and the world still waking up to the fast-changing world of gene editing, the company gained early credibility. It didn’t hurt that Tim Cook at Apple was an initial investor. And 10 months ago, Vertex, with its deeply respected research team and game-changing aspirations to create new cures, signed on with a partnership that totaled \$700 million in size. Bayer also signed up for a collaboration, and while Martin still isn’t saying much about what they’re working on, he’s all in on what they are trying to do here.

Mammoth, he says, is “really focused especially on *in vivo* (in the body) and this idea of permanent genetic cures, like one-time treatments.”

Curiously, Mammoth already has an approval to its credit, with a Covid diagnostic greenlit in an emergency use authorization from the FDA. But it’s still not quite ready for prime time, as Mammoth works on a more decentralized test for broader use.

“This is something that was just in the lab a few years ago to go all the way through and going head-to-head with the established technologies like PCR,” says Martin. “And one of the really cool things is that the FDA’s emergency use authorization sheet then added CRISPR as a category, right next to these technologies that have been around for decades and decades. And I think that’s a testament to the power of the technology and also the immense work of the team, night and day, to get that done, and I think it’s a huge milestone in terms of really benchmarking where CRISPR diagnostics fits in the overall diagnostic landscape.”