Cauldron

How to create the foods, fuels and fibres of the future? For co-founder Michelle Stansfield, hyper-fermentation technology and a partnership model are key.

Fact file

Co-founders Michele Stansfield, CEO, 43, and David Kestenbaum, CFO, 40

Investors Main Sequence and Horizons Ventures

First customer Nourish Ingredients, 2023

Headquarters Orange, NSW

Staff 20 and hiring

Interview by Jane Nicholls

What's your elevator pitch?
"Precision fermentation is technology that uses microbes to create molecules that are of commercial significance. For example, insulin is made using precision fermentation. Cauldron (cauldronferm.com) provides industrialisation and manufacturing services to technology companies that are trying to change the way we create the essentials for life."

What's the problem you're aiming to solve?
"To sustain the expected population of 10 billion people by 2080, we'd need another planet's worth of agricultural land to survive. By using precision fermentation we create bioidentical molecules that can be used to produce fat, protein, dairy and materials, such as plastic, in a more efficient and less energy- and water-intensive way."

How does it work?
"We use sugar to grow yeast in a tank with a supplied microbial strain that's been genetically engineered to switch on a gene in the yeast and produce a specific new molecule. Mostly it comes out as a dry, whitish powder, which is sent in 20-kilogram sacks to the customer to turn into a product."

How did you get it off the ground?
"David and Polly MacLennan started working on using microbes to feed the world in the 1960s and were the founders of contract R&D firm Agritechnology, where I worked for more than 10 years. They realised you need to use continuous fermentation methodology – or hyper-fermentation, as we now call it. Cauldron acquired Agritechnology's IP and infrastructure in Orange, NSW, as part of our seed round. We've changed the focus to create manufacturing capability for precision fermentation in smaller, smarter facilities."

How did you convince investors?
"The biggest challenge for precision fermentation is that the factories cost between US$100 million and US$300 million to build. Our disruptive hyper-fermentation technology allows us to build a facility for US$25 million and to stand up multiple facilities very quickly. CSIRO's Main Sequence fund is one of our two lead investors and its Precision Fermentation Roadmap in 2022 set the framework for us to communicate the value proposition of this industry. Having an independent scientific agency explaining that this is such a big opportunity is really valuable to companies like ours."

What's next?
"Cauldron is a regional company dedicated to building thriving, climate-resilient regional communities. That's important to me because I'm from a farming family. Our company is complementary for big agricultural organisations to help them diversify. Our vision is that when you're driving in regional Australia and see a large flour or sugar mill, Cauldron's metal tanks will be next to it."

Brenton Cox