

Pangea Bio, Accelerating drug discovery with nature-inspired science

As part of our quick founder questions series - or QFQs - we spoke to Sona Chandra, President and cofounder of Pangea Bio about using AI to unlock nature's neuroactive chemistry, working with Playfair Capital and growing a global network.

Temps de lecture : minute

20 June 2024

At Pangea Bio, we develop transformative medicines to treat neurological and neuropsychiatric conditions by using AI to unlock nature's neuroactive chemistry. Nature offers great potential to uncover novel medicines - in fact, 84% of approved neurological small-molecule therapeutics are nature-inspired, however, less than 1% of nature's small molecules has been mapped and explored. Our proprietary PangeAITM discovery engine combines technology across computational metabolomics and generative AI to explore the remaining 99%, identifying neuroactive molecules from medicinal species at a fraction of the time and cost of conventional methods. As we start with medicinally used species, we optimise our chances of success through drug development due to existing signals of effectiveness in humans. Our lead drug program is a proprietary small molecule targeting the TrkB receptor - one of the brain's master switches of neuroplasticity - and will enter Phase 1 trials in Q1-2025,

How has the business evolved since its launch?

Since launching the company in 2021, we have built a world-class team of 25 scientists, engineers, and entrepreneurs focused on discovering and developing therapeutics for central nervous system conditions. We've advanced our internal drug pipeline, including our lead drug set to enter Phase 1 trials in early 2025, with highly compelling data demonstrating its effectiveness across a range of conditions including schizophrenia, Parkinson's and Alzheimer's disease. Our AI discovery platform, PangeAITM has integrated more than half a billion data points representing the relationship between plants and people, and we've built an advanced technology stack to power natural compound discovery, with models that are already outcompeting many of the best-in-class comparators in the space. Our platform is currently scaling our pipeline of discoveries across neurological disease areas with significant unmet need. We've raised \$15 million in funding, secured multiple non-dilutive grants, and grown to a team of more than 25 people based across London and Berlin.

Can you tell our readers about your engagement with Playfair?

Female founded startups raise <2% of the total venture capital funding across the US and Europe (*World Economic Forum 2023*). Most funds require a warm introduction from someone within their network before even considering a meeting. This practice places female founders at a distinct disadvantage compared to their male counterparts, as they often have less access to these networks due to systemic barriers, resulting in gatekeeping before the pitch even begins. Programs like Playfair's Female Founders Office Hours (FFOH) are designed to bridge this gap by providing female founders with direct access to investors, mentorship,

and guidance to advance their entrepreneurial ventures despite traditional barriers.

Last year, we participated in the FFOH program and had the opportunity to connect directly with investors through the Playfair network. This initiative not only provided access to potential funding but also offered invaluable mentorship and guidance that significantly advanced our fundraising efforts.

Tell us about the working culture at Pangea Bio

Drug discovery is an intricate symphony, harmonising expertise from various fields such as chemistry, biology, and pharmacology. At Pangea, we take this up a notch by integrating advanced technology, bringing people from AI, data science, and software engineers into the mix. Given this complexity, collaboration is key. Our culture thrives on merging diverse perspectives to achieve our mission. We aim to blend the agility and speed of a tech startup with the rigorous, science-driven approach of a biotech company. This allows us to innovate rapidly while maintaining high scientific standards in our discovery pipeline, pushing the boundaries to develop groundbreaking therapies.

How can we make entrepreneurship more accessible in the UK and beyond?

Making entrepreneurship more accessible in the UK and beyond starts with providing better access to funding and creating strong mentorship networks. Many aspiring entrepreneurs struggle to get their ideas off the ground due to a lack of financial resources. By increasing the availability of grants, micro-loans, and investment opportunities specifically targeted at underrepresented groups, we can lower this barrier. Equally important

is the role of mentorship and networking. Connecting new entrepreneurs with experienced business leaders through structured programs and events can provide invaluable guidance and support. These two initiatives can create a more inclusive entrepreneurial ecosystem, helping more people turn their ideas into successful businesses.

What has been your biggest challenge so far and how have you overcome this?

One of the most exciting and challenging aspects of our company and mission involves navigating a very complex network of diverse stakeholders. On one hand, we work with indigenous communities and countries with whom we sign benefit-sharing agreements to access a wide breadth of biodiversity and traditional medicine knowledge. On the other hand, we interface with pharmaceutical companies we aim to partner with, regulators, and of course investors across the tech and biotech landscapes, where our focus is to demonstrate the scientific rigor and scalable potential of our drug candidate portfolio and platform.

Coordinating across such a varied set of stakeholders requires exceptional communication and negotiation skills, as well as a deep understanding of each group's unique needs and perspectives. We approach this challenge by fostering strong, respectful relationships with transparent communication, regular updates, and actively seeking feedback to align our goals with the interests of our stakeholders.

Although challenging, working within this complex ecosystem is incredibly rewarding. Each piece of the puzzle across these unique stakeholders is critical to achieving the overall big picture, allowing us to leverage a rich tapestry of knowledge and expertise to unlock the therapeutic potential of medicinally used species.

How does Pangea Bio answer an unmet need?

At Pangea Bio, we're tackling three major challenges.

First, there's a huge need for new treatments for neurological and neuropsychiatric conditions like Alzheimer's and schizophrenia, which affect millions and for which existing treatments fall woefully short. We're on a mission to develop transformative therapeutics that can improve the quality of life and health outcomes for these patients.

Second, most drugs fail, especially due to safety and efficacy issues and what works in a lab often doesn't work in humans. We use our discovery platform to identify medicinal species that have been used historically for neurological purposes and apply AI to decode their active chemistry. This approach boosts our chances of developing therapeutics that are effective and safe in humans because we are starting with natural material that already has some signals of working in human biology.

Third, we're leveraging AI to revolutionise the discovery process of natural compounds from sources like plants, which traditionally was extremely slow, expensive, and labor-intensive. With our PangeAITM platform, we are cutting down discovery times from years to months and significantly reducing costs, making it possible at an unprecedented scale.

What's in store for the future?

Our vision at Pangea Bio is to transform the lives of patients with neurological conditions by becoming a market leader with a portfolio of game-changing neurological therapeutics for a wide range of conditions. We're continuing to scale our PangeAITM discovery platform, exponentially growing our underlying data to build one of the world's largest datasets of natural chemistry and continuing to develop cutting-

edge technology to discover novel active molecules from natural sources. We're also growing our global network of partners to tap into unique biodiversity from around the world to power our discovery programs. Plus, we're working to implement partnerships with healthcare companies to support their product pipelines and bring meaningful solutions to market.

What one piece of advice would you give other founders or future founders?

Embrace resilience and adaptability! Building a company is a wild ride with lots of ups and downs, so staying flexible and bouncing back from setbacks is key. Think of every challenge as a chance to learn and grow. Surround yourself with a supportive team, keep your vision clear, and don't be afraid to pivot when needed. It's not just about having a great idea—it's about being persistent and ready to adapt when things change. Keep pushing forward and believe in your mission—that's what will get you through the toughest times!

And finally, a more personal question! What's your daily routine and the rules you're living by at the moment?

It's tough to keep a daily routine in the dynamic environment of a startup, but I find that little rituals and practices help me stay grounded. Like many others, I never miss my morning cup of black coffee—it has the dual effect of waking me up while providing a quiet moment to organise my day before it kicks into high gear. I also try to start my days with a few minutes of meditation, which helps clear my mind - but nobody's perfect, so if I miss it in the morning I try to find time for it at some point even if it's on the train commute to work or in a quick break between meetings. And I am a big believer in taking care of yourself, so I am pretty consistent about ending my day with an 8-step skincare routine and a

stack of supplements. When it comes to philosophies, one that has really shaped my life is having a radical growth mindset. I've found that with the right approach, every setback is actually a stepping stone to evolving as a person. At the end of the day, it's all about staying grounded, taking care of yourself, and seeing every challenge as a chance to grow!

Sona Chandra is the President and cofounder of *Pangea Bio.*



À lire aussi

Approachability, investment and commitment, a profile of Playfair Capital

Article écrit par Sona Chandra