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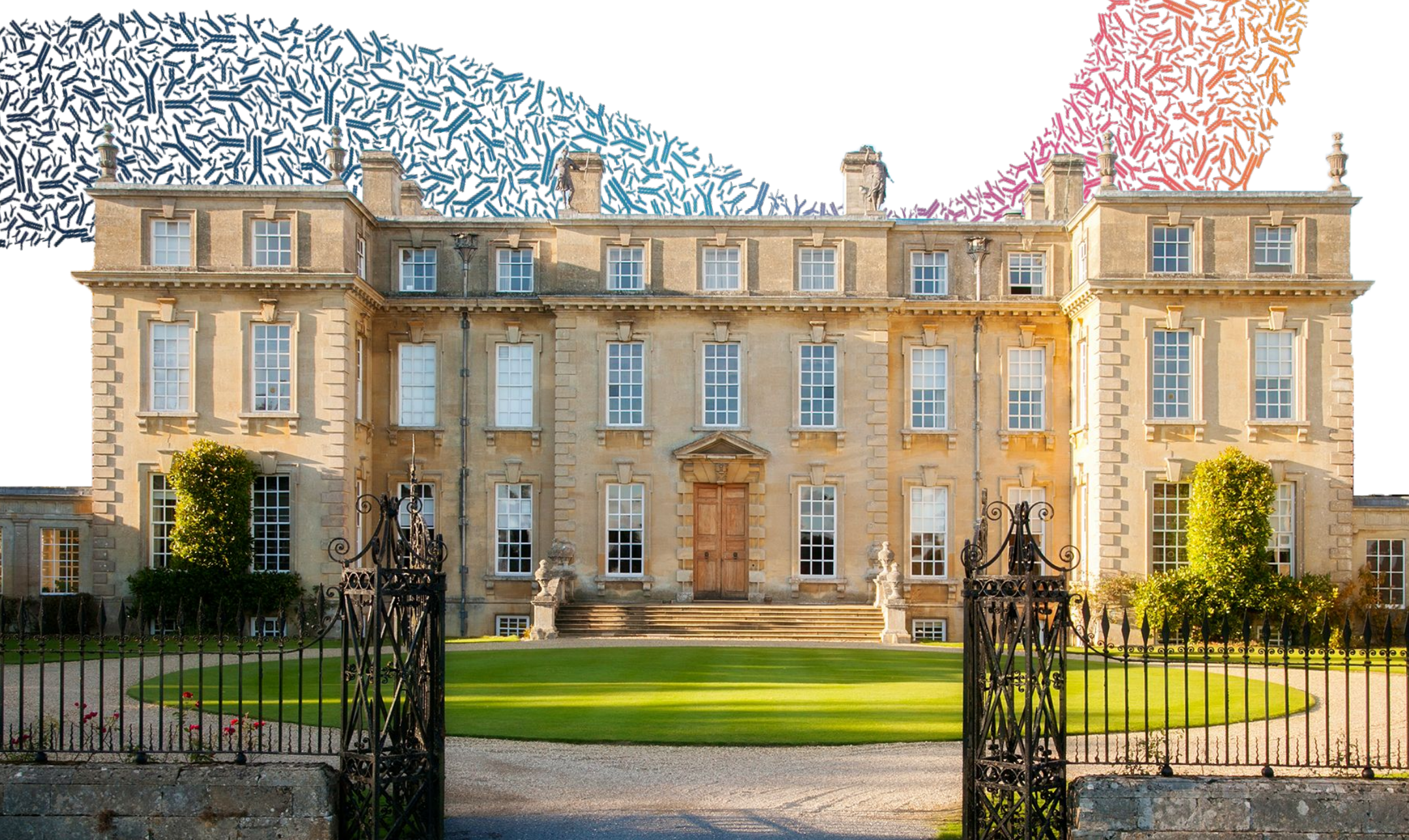
A meeting of **Biotech Founders**, **Government Policy Makers**, **Specialist Investors**, and **Pharmaceutical Experts** took place earlier this year.



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The group shared their perspectives to **surface the challenges being faced by techbio companies** using ML to accelerate drug discovery.

Read on for the meeting highlights...

Rebecca Mighell
LabGenius Scientist

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Q.

What's the formula for assigning value to a deep tech drug discovery platform?

“***We are going through a phase transition and the final equilibrium state is not yet clear***. *It's hard to estimate the relative value of the elements required for enabling this new digital biology revolution — whether it's the data, or the platform that generates the data. The key question is, whether the key entities will have the foresight to partner and bring together the elements required to catalyze this paradigm shift.*”

Dr Pushmeet Kohli
Head of Research,
Google Deepmind

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Q.

To what extent does capital fuel innovation?

“***More companies have died from indigestion than starvation***. *Capital doesn’t always unlock more innovation, sometimes it does the contrary. For the first time we’re seeing early funding rounds at a few hundred million, and only time will tell whether throwing resources at a problem is the best solution, or if it’s better to find a small group of incredibly dedicated people with a hyper-focussed, singular approach.*”

Leila Zegna
Founding Partner,
Kindred Capital

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Q.

Is capital fairly distributed amongst the sector?

“The last couple of years saw tremendous growth in the amount of capital invested in biotech (not including 2022), yet simultaneously we saw fewer new companies created. ***Capital is concentrated in a small number of hands/companies****, with a well-characterized founder archetype, and I don't necessarily think that’s good for innovation or new ideas.”*

Jack O’Meara
Founder & CEO,
Ochre Bio

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Q.

How can we accelerate capital distribution?

“Limited Partners can accelerate the deployment of money — the asset managers, pension funds, sovereign wealth funds of the world. We all have a say in healthcare yet ***the tightly controlled doors of LP allocation are hugely limiting*** *because whether they are limiting the doors to the tech investors or the bio investors, they aren’t allowing cross-pollination.”*

Julia Fan Li
Co-founder & CEO,
Micrographia

LabGenius

Q.

Can deep tech drug discovery companies solve for this problem alone?

"At some point, whether discovery or with an asset in the clinic, ***you're likely going to have to engage with pharma****. Things like validation, revenue or supporting clinical development can be pretty attractive, especially for ML enabled platform companies who are churning out assets. I guess the challenge is to show the utility of your platform, lead program and to plot a business model that doesn't give away too much too early in your development."*

George Foot
Co-founder & CEO,
Sixfold Bio

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Q.

What are the main challenges for emerging biotech companies when working with a pharmaceutical partner?

*“Pharma companies are actually a bit like your parents, **they ask the questions that matter, like ‘can I get a drug out of this?’**, which often makes biotechs jumpy as it holds their feet to the fire. We have to answer that question though because if the things you're doing don’t result in the development of better drugs, faster, then all we’re doing is feature bashing.”*

Edwin Moses
Chairman,
Achilles Therapeutics,
Avantium NV
and LabGenius

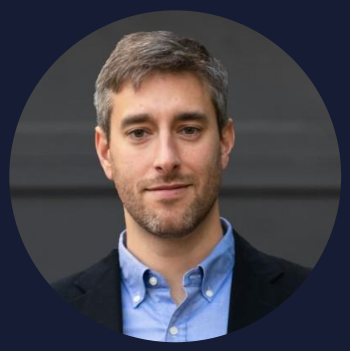
LabGenius

Q.

What does a symbiotic partnership look like?

*“It seems to me that **pharma companies are really good at the later stage development and clinical trial design** — that’s where they have a real edge on pretty much anybody in this room. It may require some creativity around deal structure but if there was a way that I could bring an advanced compound with good economics and hand it off to a pharma company, we could both work within our expertise.”*

Dr Nicolas Tilmans
Founder & CEO,
Anagenex



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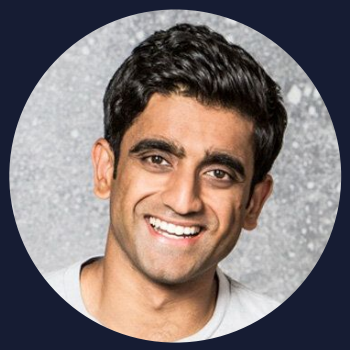
Q.

What are the biggest competitive threats that deep learning bio-pharmaceutical companies face today?

“***The talent and the capital today are very much a zero sum game***, *which is the reality of the ecosystem that we play in. Most of the investors in this forum have probably spoken to every entrepreneur, so even on a tactical level there are disagreements in terms of strategy and investment outcome.*”

Zavain Dar
Founder,
Dimension



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Q.

Who will improve the drug discovery failure rate?

*“We are in an industry where there is 95% failure, and **it’s the new generation of biotechs and founders who will approach this problem differently** and really deliver on the promise of human health, building the next generation of trillion dollar companies.”*

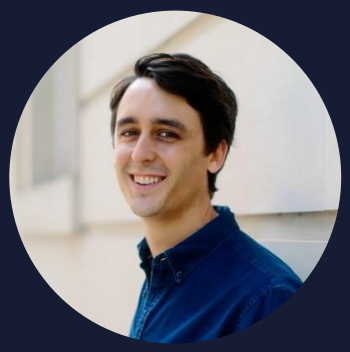
Tim Guilliams
Co-founder & CEO, Healx

Q.

Will biotech follow traditional technology and start modularizing?

“The story of tech companies is written on open source and builds upon abstractions, meaning that they can quickly iterate their products. In biotech, the modularization and abstraction of value chains is yet to come to bear beyond the use of contract research organizations. Owning the full value chain is the modus operandi. ***But as software begins to eat biology, there's a chance that biotech companies will need to pivot to modularization*** *over full value chain ownership in order to remain competitive.”*

Nathan Benaich
Founding Partner,
Air Street Capital



Q.

What should come first, the data or the algorithm?

“There is the prevailing view in the space that it’s all about the data and the algorithmic development will be outsourced to academia. However, we feel very strongly, based on results that we’re seeing, that the algorithmic side matters a lot. However, ***the tension remains; adapting drug discovery to meet the constraints of deep learning, versus adapting deep learning to meet the constraints of drug discovery,*** *and what the middle ground looks like.”*

Daniel Cohen
Co-founder & CEO,
Valence Discovery

Q.

Should deep tech discovery platforms be used to build therapeutic pipelines?

*“If we consider this question purely from a positive impact perspective, **it would be optimal to monetize the technology platform itself**. For example, imagine the reduced impact if AlphaFold was only applied to one therapeutic area, rather than being available for use across all. Is there a business model where a platform can be applied to multiple uses, rather than having to use it to generate a single or small set of assets?”*

Ali Afshar
Co-founder & CEO,
Mytos

A word from The Ditchley Foundation

“As a generalist, it strikes me that we’re talking about human health. We’ve just been through a pandemic, and yet ***there are powerful market models for building companies to sell you adverts but there’s no model for this****. I think this is a really interesting question for society moving forward; How can we make this happen? I hope we can help you answer this question by continuing to build connections across silos.”*

James Arroyo OBE
Director,
The Ditchley Foundation

A word from LabGenius

"For me, the really exciting thing is that we are at the start of something, ***we're taking these disparate technologies, and we're knitting them together to overcome inherent biological complexity****. My hope for the future is that our children and grandchildren will look back at those who are currently breaking new ground at the interface of biology and technology and see that they have laid the foundations for a whole new way in which disease can be tackled."*

Dr James Field
Founder & CEO,
LabGenius

With thanks to...

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AIR STREET CAPITAL.

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CellVoyant

DITCHLEY

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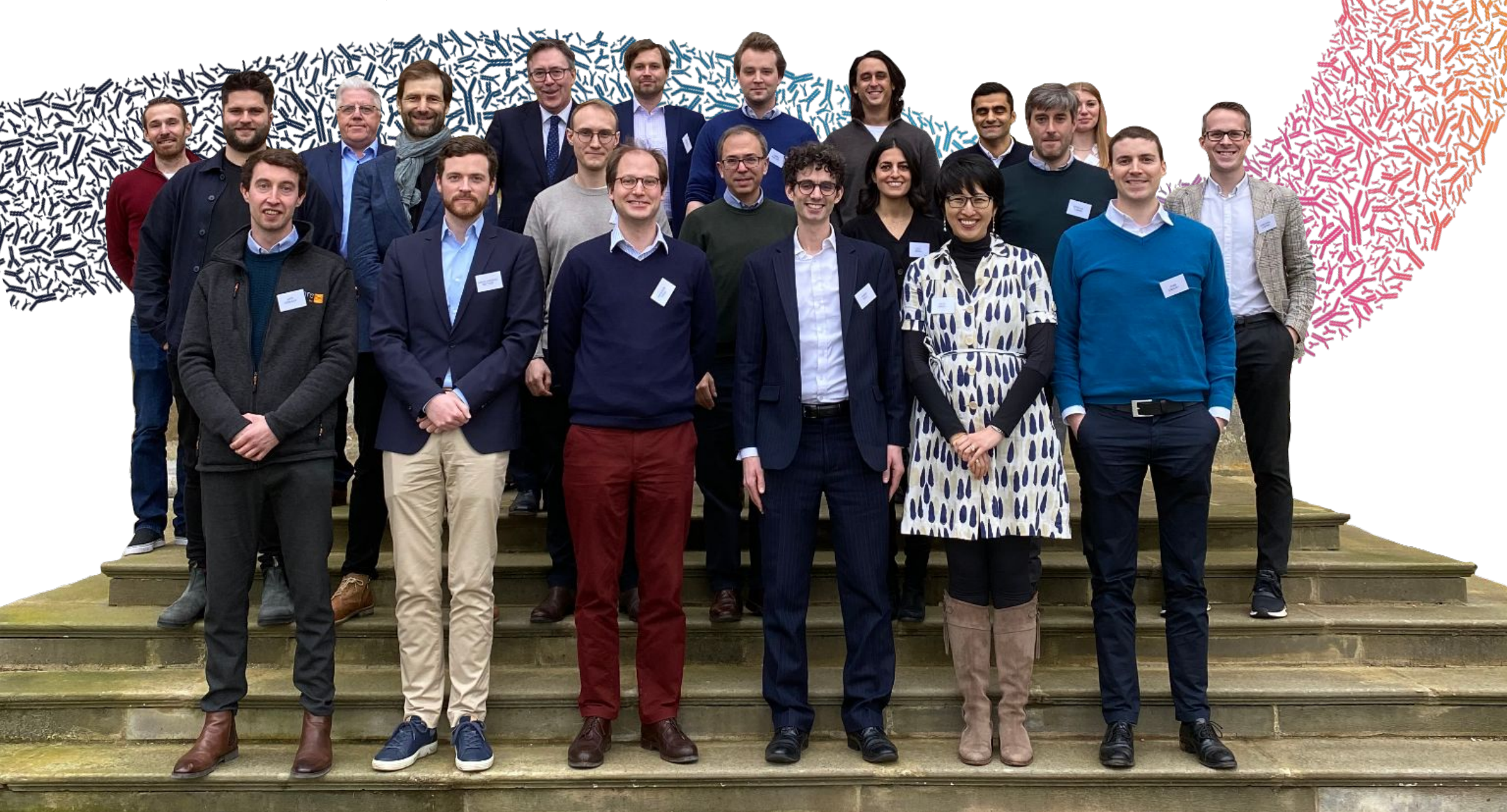

About LabGenius

Headquartered in London, LabGenius is a leading machine learning-driven protein engineering company. LabGenius' highly multidisciplinary team brings together the very best minds from the fields of computer science, robotic automation and synthetic biology. The company's core technology platform, ***EVA™***, enables the rapid discovery of novel therapeutic antibodies.

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