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KEYNOTE · HPC-AI CONFERENCE

The Venture Scientist and the Compute Layer.

What HPC-AI unlocks for science founders

Dr Riam Kanso · Founder & CEO, Conception X

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2026

A bit about myself

01

**PhD in
Neuroscience,
University of
Oxford**

02

**Centre for
Computational
Science, UCL**

03

**Founder & CEO,
Conception X**

04

**Independent
Advisory Board,
SOFAIR, UCL**

Science of Fundamental
AI: a UK AI research lab

We find researchers whose science could become a company, and back them to build it.

01

Discover

We find PhD researchers and postdocs across 90+ universities in 15 countries.

02

Develop

A nonprofit programme that turns their own research into a fundable company.

03

Back

An angel syndicate that invests alongside them as they raise.

CONCEPTION X

We discover and back Venture Scientists: researchers who found companies from their own scientific work.

700+

PhD researchers
backed

200+

science companies
founded

90+

partner universities

15

countries

£1B+

portfolio value

THE PREMISE

The researchers most capable of building the next generation of deeptech companies are already in our universities.

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The researchers most capable of building the next generation of deeptech companies are already in our universities.

Serious compute, at the right moment, decides whether they do.

THE DESIGN PROBLEM

Support at the right moment changes who becomes a founder.

34%

of researchers start companies with the right support
at the right time

1.7%

start companies without it

Compute changes three things for a science founder.

01

Validation speed

Answer the hard technical question before the money runs out.

02

What can be built

Reach problem sizes that exact methods on a laptop or departmental cluster cannot.

03

Who can build it

A two-person PhD team can run science that once needed an industrial R&D lab.

CASE STUDY 01

QMatter

Quantum-inspired simulation software that makes molecular modelling accurate and affordable enough to guide drug discovery.

Dr Alexis Ralli, CEO · Dr Tim Weaving, CTO

PhDs in quantum computing and chemistry, UCL

\$1.2M pre-seed led by 55 North · 2026

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Quantum simulation trades accuracy for computational reach.

The problem

The most accurate quantum chemistry methods work only on small molecules. Real drug molecules are larger than what's tractable.

QMatter's approach

Distil problems into a smaller, more manageable form. Reduce computational resource required. Extend applicability to problems previously out of reach.

CASE STUDY 01 · QMATTER

A two-founder company ran their simulation across the whole compute stack.

Quantum computer	IQM · Leibniz Supercomputing Centre	Finds the electron configurations that matter
GPU cluster	NVIDIA Hopper · LRZ AI cluster	Evaluates their energies
GPU supercomputer	NVIDIA Eos	Scales the calculation up
QMatter's method	Running on NVIDIA CUDA-Q	One workflow across all three layers

Target: a G-protein-coupled receptor. A consortium run with UCL, TU Munich, LMU, NVIDIA, LRZ and IQM. Source: LRZ, March 2026.

What compute changed for QMatter

LENS	EVIDENCE
Validation speed	Predicts acidity (pKa), a routine drug-discovery measurement, to within 1 unit computationally instead of by slow lab synthesis.
What can be built	A GPCR drug-target simulation running across quantum hardware and GPU supercomputing, built on a compression engine now under a US patent application.
Who can build it	Two UCL PhD researchers. First place, IBM Quantum Open Science Prize 2023. Now a \$1.2M pre-seed led by 55 North, with two ~\$200K commercial contracts nearing completion.

CASE STUDY 02

Mater-AI

An AI discovery engine for thermoelectric materials that turn waste heat into electricity.

Running on Isambard-AI

£2.25M of UKRI- and DSIT-backed national compute access through the AI for Science programme

Gatleen Bhambra, COO

Co-founders, spanning quantum physics, materials science and operations

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CASE STUDY 02 · MATER-AI

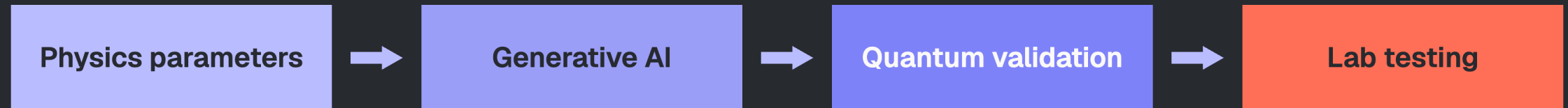
Mater-AI discovers thermoelectric materials using AI, physics-based modelling and quantum methods.

70%

of global energy is lost as heat

10–20 yrs

to find a better thermoelectric material by conventional R&D



Source: Mater-AI deck, June 2025 (company figures).

What compute changed for Mater-AI

LENS	EVIDENCE
Validation speed	Candidates in minutes, and the predictions hold up: 7 of 9 AI-generated materials have been successfully synthesised in the lab.
What can be built	Novel structures rather than tweaks to legacy materials, generated and screened on Isambard-AI with quantum device modelling in the loop.
Who can build it	A PhD team spanning materials, AI and quantum physics, led by co-founders Dr Nickel Blankevoort and Gatleen Bhambra. Backed by XTX Ventures, £2.25M of national compute access and a £130K lab grant with Cambridge.

CON

What these case examples have in common

01

Insight first

Both started from a scientific idea their founders owned. Compute made it testable.

02

Proof is the currency

Early money went to proof-points: results that investors and customers can check.

03

Small teams, big science

PhD founding teams working at a scale that once required an industrial lab.

Researchers lose compute at exactly the moment they need it most.

01

During the PhD

Allocations belong to the grant and the group, not to the idea that could become a company.

02

At spinout

Leaving the university often means leaving its cluster behind.

03

sometimes at pre-seed

Startup credit programmes are built for software workloads, not simulation at scale.

What I have learned from watching our founders build:

-
- 01 Allocate more compute to researchers with a venture idea, before they incorporate.
 - 02 Let access follow the founder out of the university.
 - 03 Pair capacity with the expertise to use it, designed with Venture Scientists.
-

KNOW A VENTURE SCIENTIST?

Applications are open until 6 December 2026.

Venture Scientist 100

A 9-month fellowship for the best 100 researchers in Europe, selected each year.

Raise

A 10-week investment readiness programme for science teams moving fast towards their first raise.



Scan to apply

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For PhDs, postdocs and early-career researchers in the UK and EU. Programmes start March 2027.

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Thank you.

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