8th Expert Panel on the Global Startup Campus Initiative

Pranay Shah, Product Manager
Advanced Research + Invention Agency (ARIA)

27th May 2025

1 Introduction to ARIA

Why do we exist?

From climate change to AI and bioengineering, society faces enormous challenges and opportunities that can be uniquely addressed by science and technology.

Different ways of funding science and technology can lead to breakthroughs. To get to different outcomes we have to create a different approach.

Unlocking scientific and technological breakthroughs that benefit everyone

Established in January 2023 by the UK government with high levels of freedom and autonomy, ARIA is a new kind of R&D funding agency empowered to pursue bold ideas.

We fund teams of scientists and engineers to pursue research at the edge of what is technologically or scientifically possible.

£800m

Initial budget

We're an independent public body with funding set for our first five years. We activate the R&D ecosystem to act as a force multiplier, building new communities of practice and translating breakthroughs to real-world impact.

8

Founding Programme Directors

Our first cohort of PDs — the scientists shaping and managing the R&D we fund — bring a range of industry and academic experience. They have joined ARIA from across the UK — from Newcastle and Cambridge to Glasgow — and from the US.

~60

Lean operational team

We support our PDs with a team to achieve their best work, staying small to preserve high trust and move faster. Our team comes from of disciplines and sectors, including start-ups, non-profits, and the public sector.

Executive Team

Ilan Gur
Chief Executive Officer

Founded Activate.org to empower scientists & engineers to bring R&D to market. Previously founded 2 deeptech start-ups and was a founding ARPA-E Programme Director.

Pippy James
Chief Product Officer

Founder and CEO of a women's health start-up and Global Product Manager at Entrepreneur First.

Antonia Jenkinson
Chief Finance and Operations Officer

CFO of the UK Atomic Energy Authority. Prior to this, she was CFO/COO at the Satellite Applications Catapult.
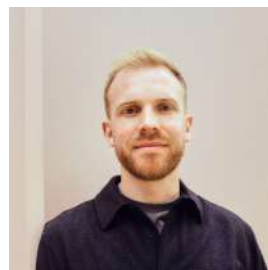
Dan Cole
Chief of Staff

COO at healthtech startup Accurx, which supported the care of over 50 million NHS patients. Prior to this, Dan worked in strategy consulting focusing on sustainability.

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Board of Directors

Matt Clifford
Chair
Co-Founder,
Entrepreneur First

Kate Bingham
Venture Capitalist +
former Chair of the
Vaccines Taskforce

Sarah Hunter
Technology and
public policy adviser

Angela McLean
Government Chief
Scientific Advisor

Stephen Cohen
UK Civil Service +
Gambling Commission
Commissioner

Advisors

Demis Hassabis

Founder and
CEO, DeepMind

Özlem Türeci

Co-founder and
Chief Medical
Officer, BioNTech

Katie Rae

CEO and
Managing Partner,
The Engine

Artur Ekert

Professional Fellow,
Quantum Physics
and Cryptography,
University of Oxford

Patrick Collison

Co-founder
and CEO,
Stripe

Hayaatun Sillem

CEO, Royal
Academy of
Engineering

Arun Majumdar

Founding Director,
ARPA-E; Dean,
Stanford Doerr School
of Sustainability

2 | How we work

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Research
+Invention
Agency | ARIA

Three core tenets of a new kind of R&D agency

Bold + long-term

We pursue R&D in under-explored areas that may seem far-fetched, but could unlock world-changing capabilities.

Multidisciplinary

We fund and manage projects across the full spectrum of R&D disciplines, approaches, and institutions to discover new pathways.

People, then projects

We empower our Programme Directors, and the research teams they support, with the resources and flexibility to dream big and experiment.

ARIA's theory of change

IMPACT

For a better world

A better future for the UK and the world

Our success is shaped by one question: when the children of the UK grow up, how will their lives have been transformed by ARIA's work?

Whether that's a life-changing technology or a burgeoning new industry, it should be obvious that ARIA played a catalytic role.

Over a decadal timescale, ARIA's investments will lead to significant returns by growing the economy, promoting scientific innovation and invention, and improving quality of life in the UK and beyond.

ARIA's theory of change

OUTCOMES

Creating the impossible

Technologies and industries

Momentum that takes an opportunity space into society.

Capabilities

New discoveries, prototypes, and demonstrations → evidence that it's possible.

Communities

New partnerships, organisations, and networks → evidence that it's compelling.

Ventures

New investment, products, and businesses → evidence that it's valuable.

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ARIA's theory of change

ACTIVITIES

Empowering people

Entrepreneurial Scientists
Empowering scientists and engineers to break down silos and discover new pathways.

Programme Directors
Recruited into ARIA for three to five years to develop a vision for how technology could enable a better future, and direct our funding into research that can make it a reality.

+

R&D Creators
The research teams ARIA funds and supports to achieve breakthroughs.

+

Entrepreneurs
Ambitious deep tech entrepreneurs to achieve and advance our breakthroughs.

Directing research

Breakthrough R&D
Highly ambitious research and development aimed at unlocking world-changing breakthroughs.

Opportunity spaces
Important and under-explored areas that can serve as fertile ground for breakthroughs.

Programmes
Objective-driven challenges that have the potential to catalyse massive social and economic returns.

Projects
Visionary research that can change the conversation globally about what's possible or valuable.

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ARIA's theory of change

INPUTS

Leveraging our resources

Statutory Authorities

The ARIA Act provides autonomy and flexibility to unlock world-changing capabilities.

+

Funding

Sponsored by the Department for Science, Innovation, and Technology, ARIA is funded by the Government to amplify the UK's world-class research system.

+

Culture

A dedication to the public, a bold focus on long-term impact, a willingness to embrace feedback, experimentation and intentional changes of course.

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Over a decadal timescale, ARIA's investments will lead to significant returns by growing the economy, promoting scientific innovation and invention, and improving quality of life in the UK and beyond.

Our Programme Directors develop a concrete vision for how technology could enable a better future, and direct research to make it a reality

David 'davidad' Dalrymple

Gemma Bale

Angie Burnett

Jacques Carolan

Jenny Read

Mark Symes

Sarah Bohndiek

Suraj Bramhavar

Brian Wang

Claire Donoghue

Rico Chandra

Yannick Wurm

Nicole Wheeler

Ivan Jayapurna

Alex Obadia

Nathan Wolfe

Read more on how we found our new Programme Directors:
https://ariaresearch.substack.com/p/how-we-found-our-new-programme-directors

How it works in practice

ARIA PDs define an opportunity space — an area that we believe is likely to yield breakthroughs.

An ARIA opportunity space is:

+ Important if true

+ Under-explored relative to its potential impact

+ Ripe for new talent, perspectives, or resources to change what's possible

Each opportunity space is released publicly, and we invite feedback and input from the wider R&D community to help shape our thinking.
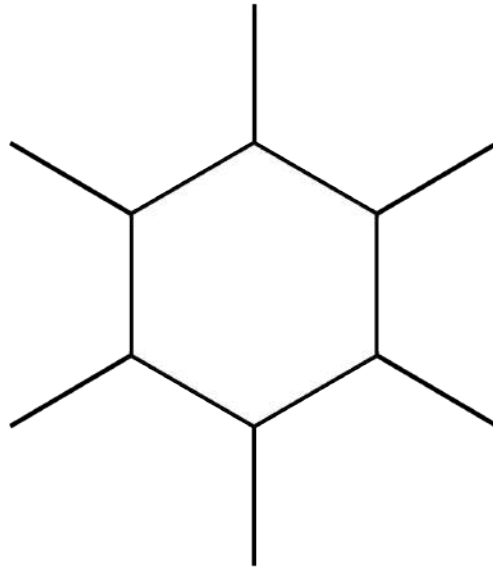
How it works in practice

Within an opportunity space, ARIA PDs develop and manage programmes that direct funding toward a focused objective.

An ARIA programme seeks to unlock transformative scientific or technical capabilities that:

+ Shift perceptions of what's possible or valuable

+ Drive significant social and economic impact

+ Are unlikely to be achieved without ARIA's intervention.

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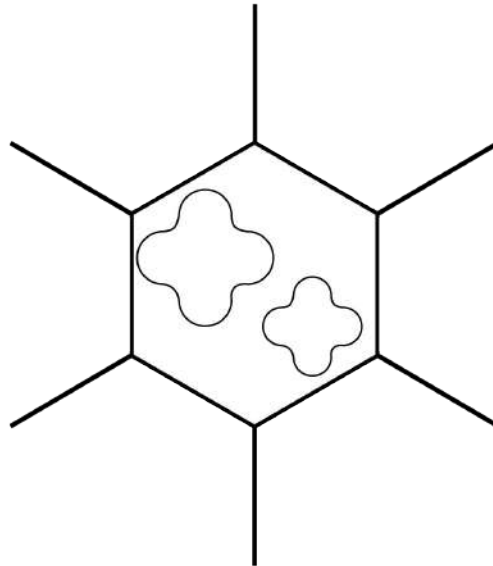
How it works in practice

Within a programme, ARIA PDs direct the review, selection, and funding of a coordinated set of projects, whose collective aim is to unlock breakthroughs that impact society.

Projects are led by Creators, research teams that ARIA funds and supports, sourced from all corners of the R&D ecosystem.

We welcome applications from individuals, universities, research institutions, small, medium and large companies, charities and public sector research organisations.
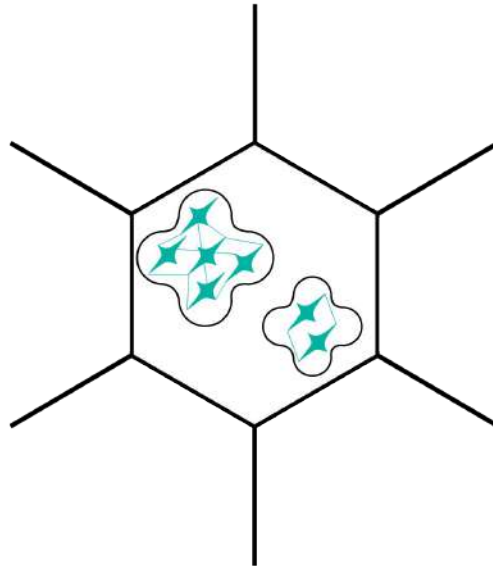
How it works in practice

Outside of a programme, PDs can support opportunity seeds.

These are small but ambitious projects aimed at uncovering new research pathways aligned with an opportunity space.

Programme Director Support

Programme Director

Programme Specialist
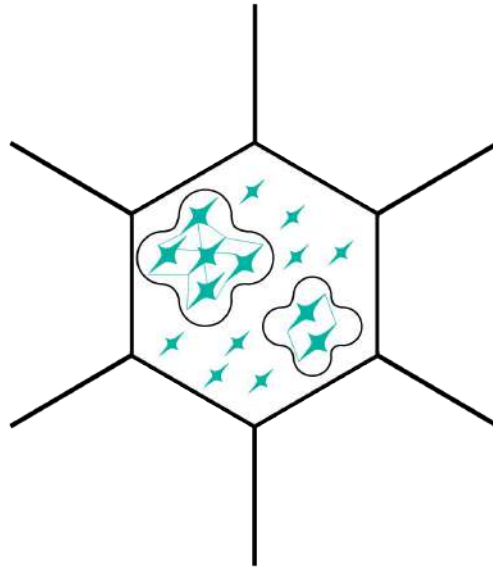
Technical Specialist
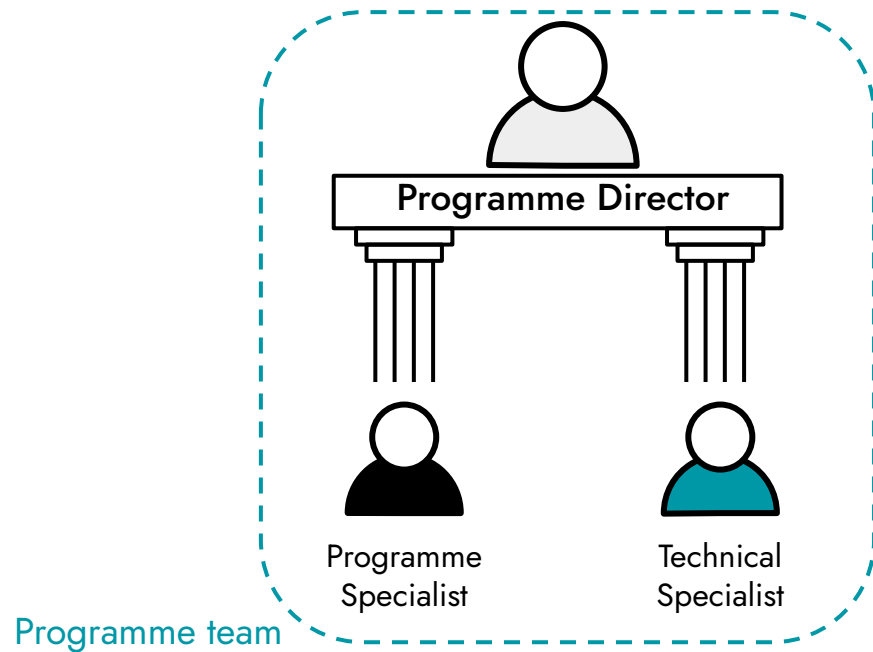
Operational teams (Comms, HR, Legal)
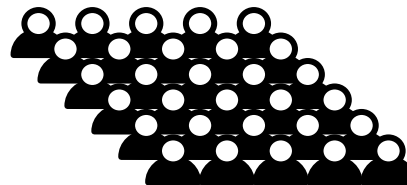
Networks and advisors

Programme team

3 | What we're working on

Programmable Plants

Programme Director:
Angie Burnett

Scalable Neural Interfaces

Programme Director:
Jacques Carolan

Mathematics for Safe AI

Programme Director:
David 'davidad' Dalrymple

Smarter Robot Bodies

Programme Director:
Jenny Read
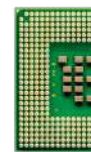
Nature Computes Better

Programme Director:
Suraj Bramhavar

Scoping Our Planet

Programme Directors:
Gemma Bale and Sarah Bohndiek

Future Proofing Our Climate and Weather

Programme Director:
Mark Symes

Bioenergetic Engineering

Programme Director:
Nathan Wolfe

Emerging areas

Perpetual Flight
Programme Director:
Rico Chandra

Ocean Biomanufacturing
Programme Director:
Ivan Jayapurna

Extending Our Perception
Programme Director:
Claire Donoghue

Engineering Life's Energy
Programme Director:
Nathan Wolfe

Molecular Fabricators
Programme Director:
Ivan Jayapurna

Secured by Nature
Programme Director:
Alex Obadia

Predicting Evolution
Programme Director:
Yannick Wurm

Sculpting Innate Immunity
Programme Director:
Brian Wang

Collective Intelligence Engine
Programme Director:
Nicole Wheeler

Proactive Biodefence
Programme Director:
Nicole Wheeler

Unlocking Superorganismal Secrets
Programme Director:
Yannick Wurm

4 How we fund

Who we fund

An R&D Creator (or Creator for short) are the individuals, teams who receive ARIA programme or opportunity seed funding.

Our Creators span startups, non-profit R&D organisations, multinational companies, academia, and more, bringing together the expertise, capital and networks required to pull new ideas into prototypes, and onward to real-world applications.

Our five principles of funding

Our responsibility starts with the UK taxpayer

We're institution, background and location agnostic

We drive transformational not incremental change

We're globally minded in our reach and ambition

We always seek to catalyse not compete

5 | Taking idea to impact

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Supporting value creation and the translation of breakthroughs

Entrepreneurial PDs

Our Programme Directors have
experience in startups

Equity-free funding

ARIA's funding is
equity-free, empowering
scientists to translate their
work into applications

Activation Partners

Working with world class
organisations to take R&D
into real world impact

Why?

By injecting more:
+ Entrepreneurial talent
+ Capital
+ Ideas
+ Organisations

into our opportunity spaces we can drive our research towards massive social and economic impact

Who?

+ 9 deeply technical and highly entrepreneurial organisations

+ Pioneers of new science innovation models, world-leading research labs, and deep-tech accelerators

+ United by a commitment to propel early-stage R&D to world-changing innovations

How?

They'll launch & deliver UK-wide initiatives over the next three years, including:

+ Developing hardware from scientific breakthroughs

+ Creating new research organisations for focused R&D

Prototype and develop products from inventions.

Translate neurotechnology research into applications.

Launch Venture Café gatherings in the UK.

Identify and develop FRO-shaped opportunities.

Launch the 5050 programme in the UK.

Accelerate the impact of ARIA-backed research with AI.

Transform early-stage ideas into societal impact.

Place top AI researchers in leading UK science labs.

Expand the diversity of science translation mechanisms in the UK.

Summary

Freedom and flexibility

ARIA's freedoms are crucial in enabling us to pursue research at the edge of the impossible.

People, then projects

Empowering people, from our PDs to our Creators, increases our chances of success.

Idea to impact

Orienting our spaces and projects towards value propels us towards creating societal impact.