

IMPERIAL

Building collaboration

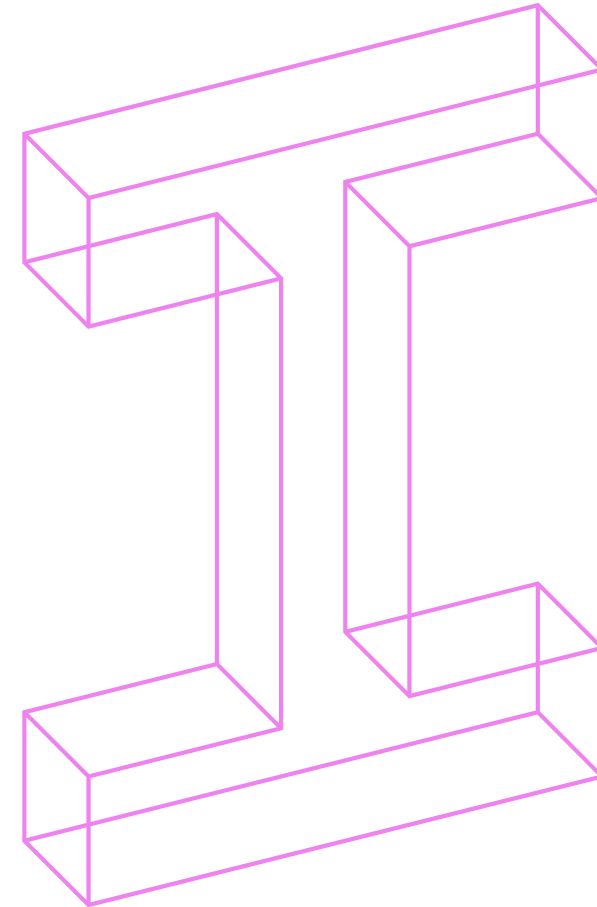
BioJapan 2024

About Imperial

We are Imperial – a world-leading university for science, technology, engineering, medicine and business (STEMB), where scientific imagination leads to world-changing impact.

Second in the world, we use science to try to understand more of the universe and improve the lives of more people in it. Across our **nine campuses** and throughout our Imperial Global network, our **22,000 students, 8,000 staff**, and partners work together on scientific discovery, innovation and entrepreneurship. Their work navigates some of the world's toughest challenges in global health, climate change, AI, business leadership and more.

Founded in 1907, Imperial's future builds on a distinguished past, having pioneered penicillin, holography and fibre optics. Today, Imperial combines exceptional teaching, world-class facilities and a habit of interdisciplinary practice to unlock scientific imagination.



Our leadership



Professor Hugh Brady
President



Professor Ian Walmsley
Provost



Professor Mary Ryan
Vice-Provost, Research and Enterprise

Imperial numbers

2nd in the world (QS World University Rankings 2025)

1st in Europe and the UK (QS World University Rankings 2025)

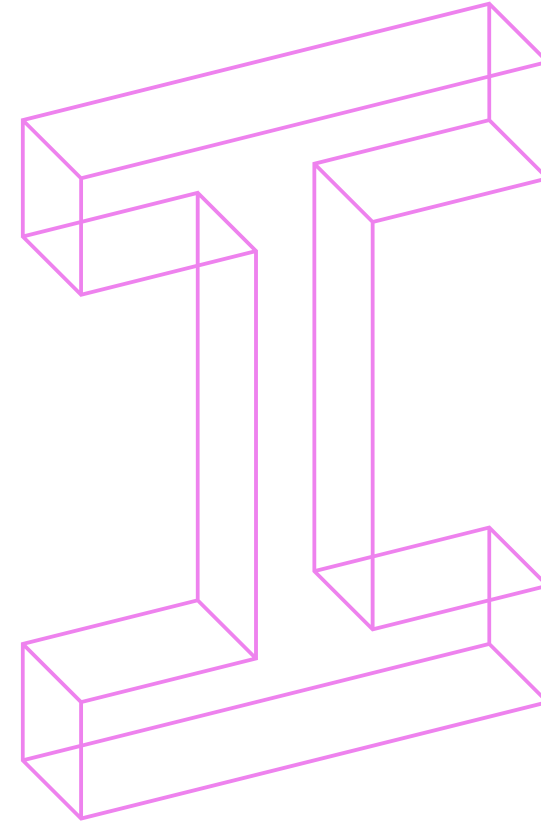
University of the Year (*Daily Mail* University Guide 2024)

University of the Year for Graduate Employment (*The Times* and *Sunday Times* Good University Guide 2024)

Greater proportion of world-leading research than any other UK university (Research Excellence Framework)

Gold Award (Teaching Excellence Framework 2023)

World class reputation in science, engineering, medicine, business and computing



Imperial numbers

284

startups over the past five years

£800m

investment raised over the past five years

£1.3bn

University income: nearly £1.3bn

£500m

Research income: more than £500m

143

Nobel Laureates Fields Medallists

Queen's Anniversary Prize 2021
University of the Year (The Times and Sunday Times Good University Guide) 2022
UK TEF Gold Award 2023 Athena Swan Silver Award

4* REF

Greater proportion of world-leading research than any other UK university

9

Campuses

Silwood Park
South Kensington White City Hammersmith Hospital Charing Cross Hospital
Chelsea and Westminster Hospital North West London Hospitals Royal Brompton Hospital
St Mary's Hospital

192

Countries Imperial researchers have collaborators in

4

Faculties

Engineering, Medicine, Natural Sciences, Business

250,000

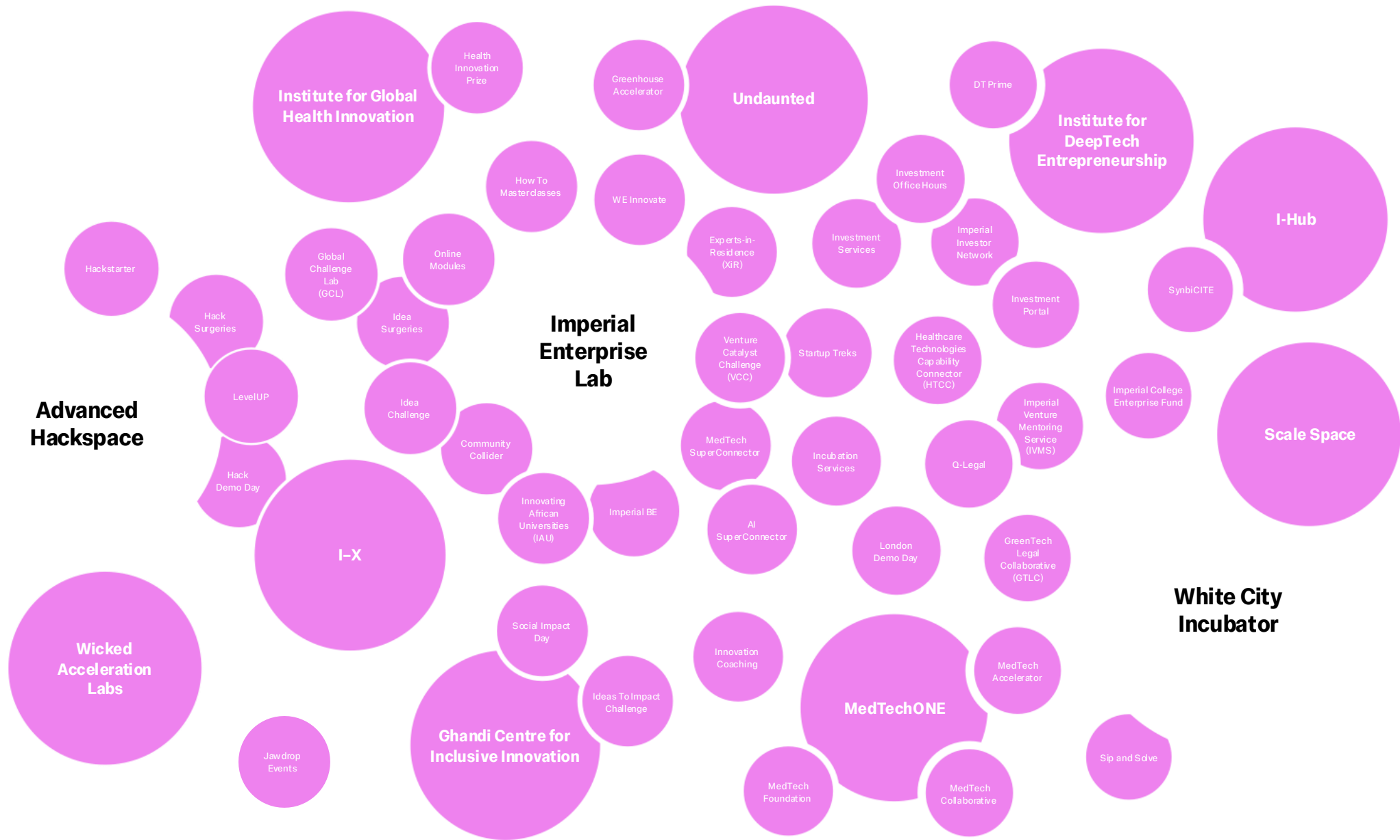
Alumni in 213 countries

23,000

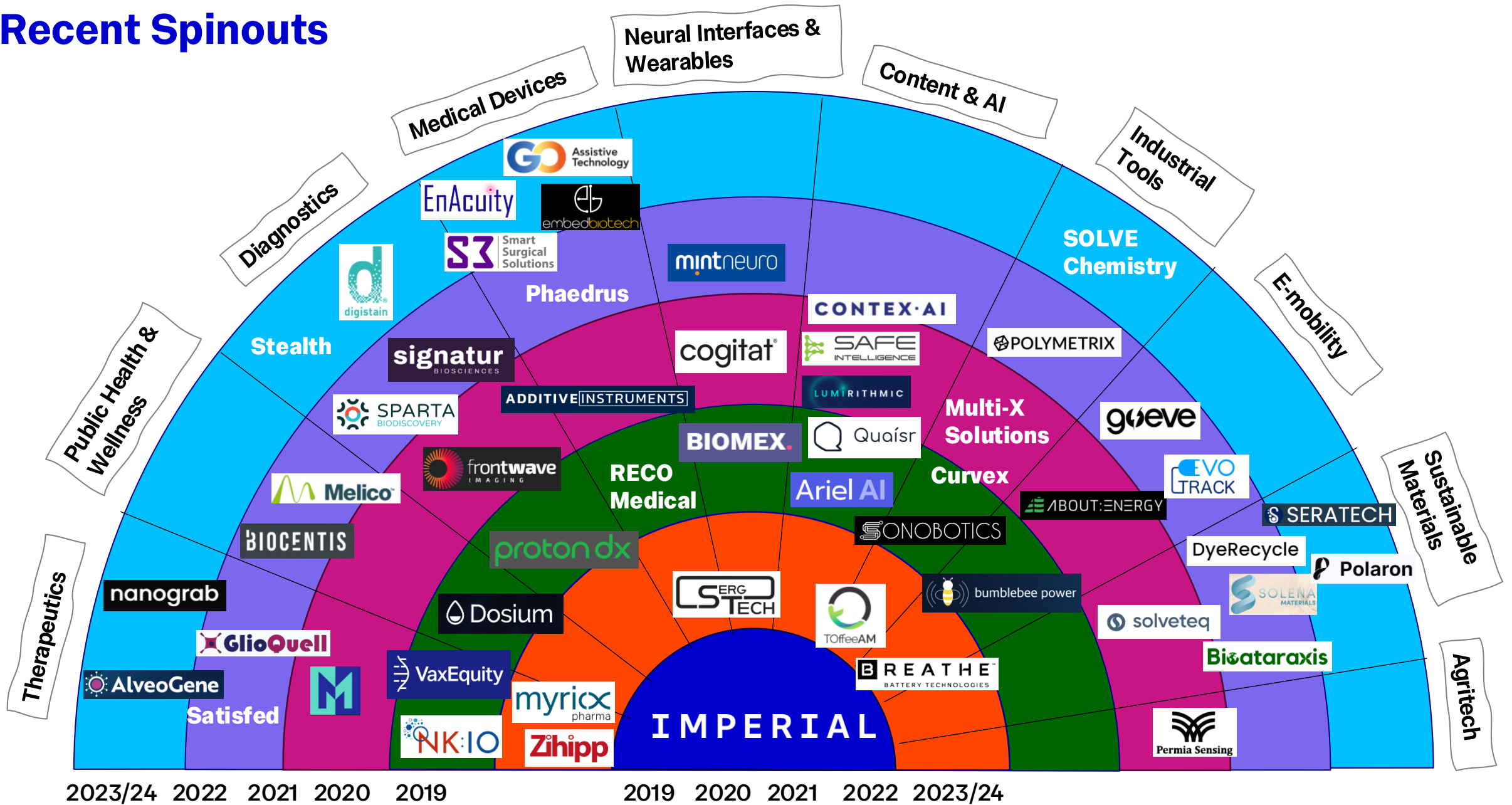
Students
12,000 Undergraduates and 11,000 Postgraduates

8,000

Staff



Recent Spinouts





- **9 London campuses**
- **6 teaching hospitals with world-leading clinicians**
- **White City Innovation District**

CENTRAL LONDON Campus locations

Key

- Imperial College Campus
- Hospital and Campus
- Campus shuttle
- Underground station
- National Rail station

Campus shuttle

Stops at:

- SOUTH KENSINGTON CAMPUS
- WHITE CITY CAMPUS
- HAMMERSMITH CAMPUS

Free to staff and students on weekdays.

For more information search for

Academic Strategy

Imperial today

Leading science

We are a science-based university with a difference. Our enduring STEM focus, and the exceptional disciplinary foundations that underpin it, are the reason for our continued high-impact trajectory and place among the top ten universities in the world.

Interdisciplinary research

We are an ecosystem that thrives on connection and collaboration. The complexity of the challenges before us demands a truly integrated interdisciplinary approach. At Imperial, we forge links between faculties, departments, disciplines, industries, governments and more because we know that greater possibility for advancement is found at those intersections.

Inspiring students

We are a welcoming home for scientific imagination; a place where exceptional minds are enabled with inspiration, resource and freedom so that they might look deeper, dream further and ask bigger questions.

Meaningful impact

We have the spirit of a 117-year-old start-up with an agility and orientation to the future that belies our age and heritage. Here you will find a culture of discovery, innovation and entrepreneurial thinking, where breakthrough science is chased, translated and applied at incredible speed and with transformative impact.

A trusted partner

We are an ally of progress, seen by many of the world's leading knowledge and technology-driven organisations as a cultivator of exceptional talent and future leaders, and trusted as the partner of choice for research, innovation and impact.

The legacy of London

We are a global hub in a global city. Our work shapes the world and our community reflects it, brought together by the undeniable gravitational pull of London's energy, creativity, diversity, economy and opportunity.

Imperial tomorrow

This strategy imagines a path through an unpredictable world that is facing unprecedented challenges. It is a blueprint to ensure we continue to maximise our potential as a force for good in the world, to deepen our rare and specific competencies, and to serve students and society in the uncertainty of tomorrow.

After all, as one of the world's leading research universities, we are purpose-built to engage with uncertainty, and to summon our strengths against it.

This is how we prepare for the expected and the unexpected. This is how we rigorously fulfil our educational mission and our research potential. It is how we shape the future. And it begins with three core aims.

1. Enabling talent

Our strategy will develop the people and skills the world needs now and into the future. We will work to attract, nurture and champion the best local, national and global talent wherever they are, and to empower them with everything they need to make a meaningful difference.

2. Powering research

Our strategy is a plan to strengthen Imperial's enabling environment for discovery, innovation and impact. We will create an even more deeply connected knowledge community and interdisciplinary research powerhouse that will meet the scale and urgency of the moment and respond with intelligence, responsibility and agility to everything that comes next.

3. Amplifying impact

Our strategy will help to accelerate Imperial towards, and scale the impact of, new discoveries, inventions and ideas, and position us as a trusted convenor and partner for knowledge and tech organisations across the globe. We will look beyond our London campuses to our wider network and wider responsibility, honouring our social and civic purpose, in London for the world.

Imperial together

To ensure our strategy will have a meaningful and enduring impact, we know we must create opportunities for everyone in our community to fulfil their potential – always guided by our values and behaviours: Respect, Collaboration, Excellence, Innovation and Integrity.

Great people

We will continue to attract, nurture and support world-class talent from everywhere. Our strength comes from celebrating and harnessing the diversity of our community where everyone contributes their own perspective, experience and skills so that together we can excel in the delivery of our shared mission.

We will champion an inclusive culture and invest in people so that they are inspired and equipped to unleash their potential. We will build and maintain a culture centred on the wellbeing, growth and belonging of our community. We will create a diverse and vibrant community where our values are evident to all, and we are recognised as innovators in every aspect of our work.

Great environment

We will create an integrated human, physical and digital ecosystem that fosters and facilitates collaboration and community and promotes discovery, learning and innovation. And we will deliver sustainable campuses to meet our 2040 Net Zero Carbon commitments.

The pace of technological change has never been faster. We will leverage the digital landscape and increased digital innovation to grasp new opportunities that are essential to the achievement of our world-class research and education. We will create a world-class digital experience for students. Our staff will have the tools and facilities they need to undertake world-changing research.

Great support

A world-leading academic endeavour must provide everyone with the opportunities and tools they need to thrive. We will support our staff to deliver an inspirational education and to take the inception of a research idea through to publication and translation into real-world application.

We will give our students a consistently inspiring, tailored and supportive experience from application through to their lifelong interactions with Imperial as part of our alumni community. We will foster a culture of innovation and practice of continuous improvement where colleagues are empowered to combine their strengths collectively to turn great ideas into an even better service.

Key Initiatives



Transition to Zero Pollution

An initiative to foster systems thinking to deliver a sustainable zero pollution future.



DT-Prime

A programme to transform deep technology research into investable ventures with transformational potential.



I-X

A major new co-located research environment for AI and data science in collaboration with industry.

Services and support for industry



Clinical samples

Imperial College Healthcare Tissue Bank and the Multiple Sclerosis & Parkinson's Tissue Bank provide industry partners with clinical samples for their own R&D purposes.

ICHTB



Clinical trials

The Imperial Clinical Trials Unit works on major international clinical trials. ICTU can lead studies at all stages of clinical development from advising on unmet medical needs in a therapeutic area, designing, co-ordinating or monitoring international studies to the analysis and communication of results.

ICTU
Imperial Clinical Trials Unit



Diagnostics evaluation

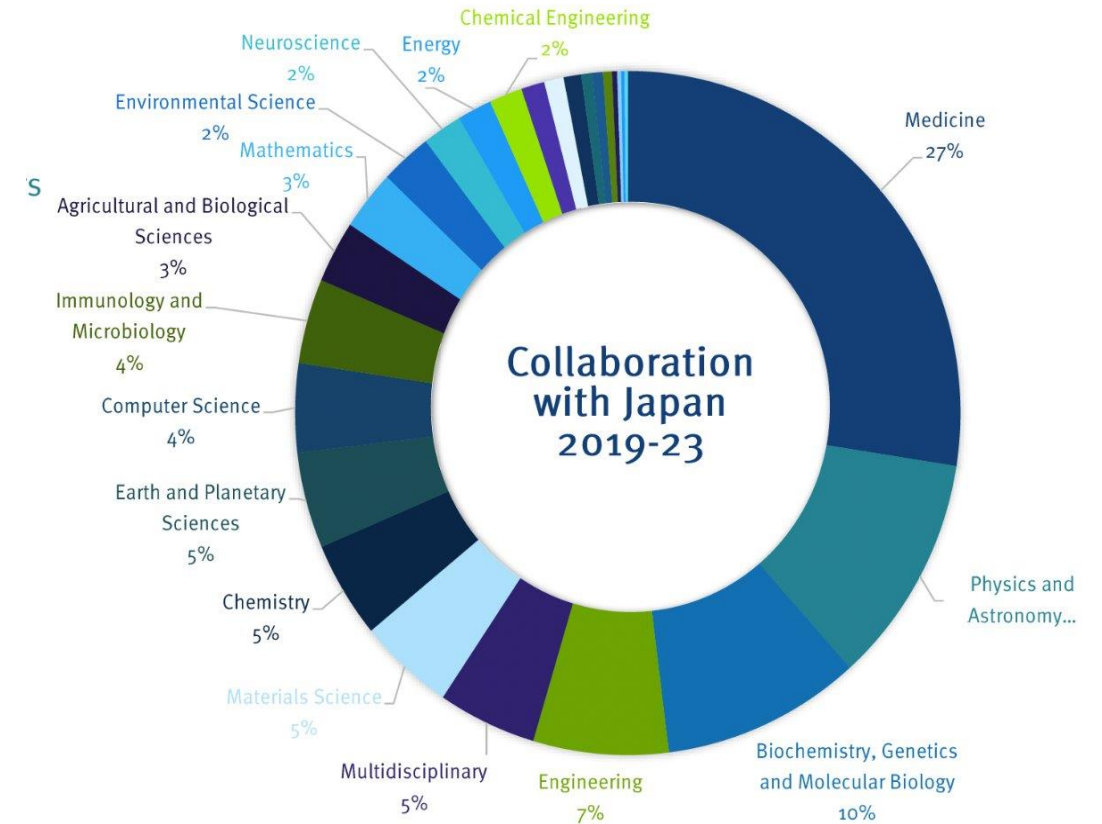
The London In-Vitro Diagnostic Cooperative provide a unique diagnostics evaluation service for diagnostics developers. Combining world-leading expertise in human factors studies with an extensive clinical network, they can provide real-world evidence needed at every stage of development.

NIHR | London In Vitro
Diagnostics Co-operative

Imperial's research with Japan

Imperial works closely with most of Japan's top universities

- ✓ **Kyushu University** – Active collaboration for 20 years focusing on energy materials
- ✓ **Keio University** – Institute for Security Science and Technology working with Keio on setting up an international network of universities to address cybersecurity, including collaboration with Hitachi
- ✓ **Tokyo Institute of Technology** – Strategic ongoing research collaborations and jointly participated in Global Fellows Programme
- ✓ **Kyoto University** – Exchange of best practice and research between the two institutes in addressing global antimicrobial resistance in the UK and Japan.



Imperial with Japan

As one of the world's most international and innovative universities, we are seeking to grow partnerships in Japan and around the world

Imperial has worked with over 25 Japanese businesses in the past decade, in projects worth approximately

£10 million



Building collaboration

Imperial's offer to business

There are many different ways to work with Imperial.

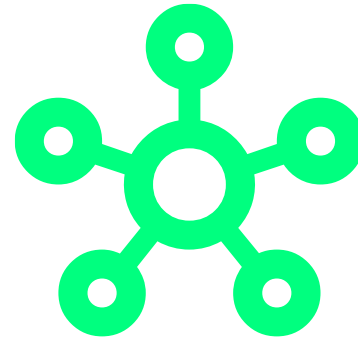
Imperial Enterprise offers our partners:

- The expertise of Imperial academics
- The talent of our students
- Entrepreneurial space across our 9 campuses
- Our high-tech facilities

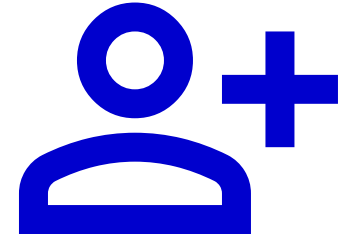
And much more. Talk to us about our flexible partnering approach and find out more.



Entrepreneurship



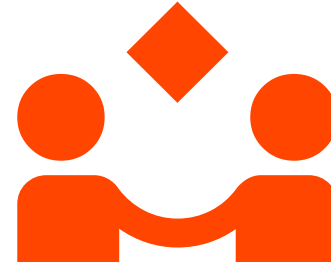
Engagement and Networking



Recruitment



Consultancy



Industry partnerships



Executive Education



Research Collaboration



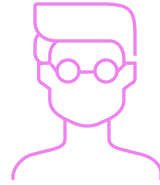
Startup and co-location spaces



Commercialisation and Investment

Imperial Enterprise offers partners access to and participation in our innovation ecosystem

We offer our partners:



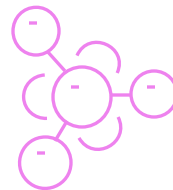
The **expertise** of Imperial academics



The **talent** of our students



The **entrepreneurial spaces** on our
9 campuses

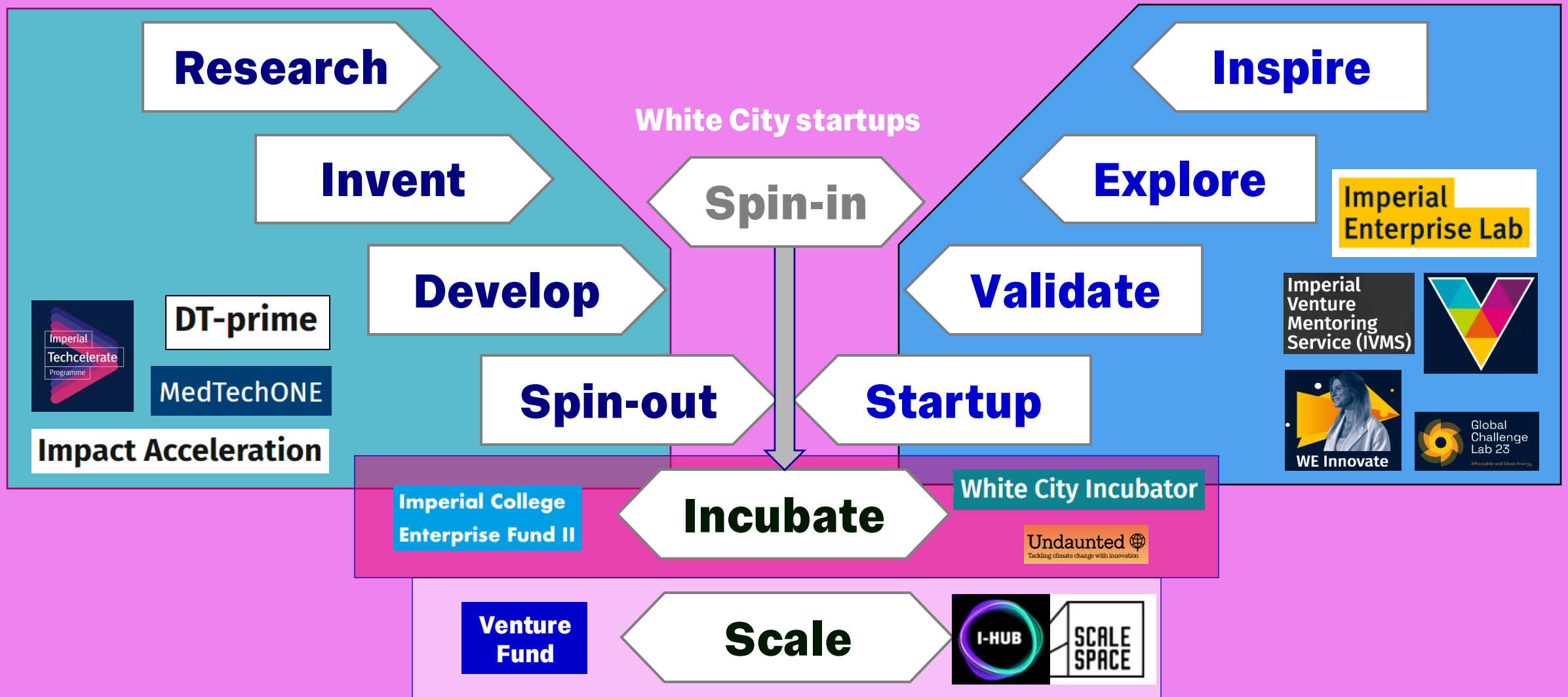


Our high-tech **facilities**

We have built an ecosystem tailored to the specific needs of academic and student founders

4,000+ Academics

21,000 Students



Major partners

250+
Corporate partners

Over £50m research funding
per year

Helping businesses innovate
globally

sanofi



SAMSUNG



Waters™

dyson



HITACHI
Inspire the Next



BASF
We create chemistry



Flexible Partnering Approaches



Flagship industry-funded centre

Corporate engagement

Proof of concept funds

Multi-university industry collaboration

Doctoral training centres

Sponsored research

Therapeutic fund



Multidisciplinary industry collaborations

Contract research



Agilent Measurement Suite at Imperial College

Established March 2018, £4m state of the art laboratory hosted at Imperial College's Molecular Sciences Research Hub

36 instruments supporting interdisciplinary research in areas such as clinical diagnostics, biopharmaceuticals, energy and chemicals, environmental science, food testing and agriculture, and materials research

Support development of PhD, MSc and undergraduates through establishment of a demo, training and seminar facility

Drive further collaborative projects to the benefit of both partners, and to move cutting edge research forward.

"We look forward to continuing the partnership with Imperial College London and working together on bringing more solutions and innovation to the scientific community"

Maria Angeles Diaz
EMEA and India Sales Vice President & General Manager at
Agilent Technologies

Immersive Partnership: Shell

- 340 people involved
- 11 departments
- 5 research centres
- 100+ Graduates hired
- £40m R&D Portfolio
- 150+ R&D consultancy contracts



IMPACT NEW METHANE AND ENVIRONMENT PROGRAMME (MEP)

The Methane and Environment Programme (MEP) was launched in May 2018, with the aim of conducting innovative research to improve our understanding of methane emissions and other environmental impacts associated with gas systems, and how to reduce them.

The team have already begun publishing some high impact research articles on the use of global warming potentials (GWP) and on the end-uses of gas for shipping and for hydrogen production. MEP works closely with industry partners including the Oil and Gas Climate Initiative and is a core member of the Methane Guiding Principles, an industry-led initiative to better understand, manage and eliminate methane emissions from gas supply chains.



Better turbochargers with MHI

MHI is a key partner for Imperial, with a major partnership that began in 2005. The collaboration has had a significant impact on MHI, with substantial improvements in advanced measurement techniques and simulation tools.



<https://www.imperial.ac.uk/news/194666/imperial-mitsubishi-launch-turbocharger-centre-develop/>

MHI-Imperial Future of Boosting Innovation Centre: Partnering with world-leading leading manufacturer in Japan to improve turbocharger design and develop cleaner engines



Imperial is a recognised centre of excellence in turbocharging and exhaust gas energy recovery. In particular, it applies experimental methods and advanced computational procedures to enhance our understanding and deliver impact for industry. It has attracted substantial support from Government agencies as well as from the turbocharger and automotive industries.

LONG-TERM PARTNERSHIP WITH A WORLD-LEADING MANUFACTURER

Mitsubishi Heavy Industries (MHI) is a key collaborator with Imperial and has been a major partner since 2005. The collaboration has had a significant impact on MHI, with substantial improvements in turbocharger design as a result of advanced measurement techniques and simulation tools.

MHI makes industrial machinery and equipment, including the manufacture of gas turbines, turbochargers and internal combustion engines. It is a global leader in R&D investment, spending £1.6 in FY2016, a 10% increase to enhance its competitiveness, particularly in the energy and environment sectors.

The Imperial-MHI partnership has to date mainly focused on improving technologies in exhaust turbochargers, and enhancing ways for reducing their size. It is led by Professor Eduardo Martínez-Botas, who heads up the Turbocharger Group and the Thermofluid Dynamics Imperial's Department of Mechanical Engineering.

STRONG RESEARCH BASE

Professor Martínez-Botas and his research group work on the unsteady flow aerodynamics of turbomachinery. This is a strong research area involving turbomachinery design, with new ways of managing air so that engines can better harness exhaust energy and enhance energy efficiency.

The researchers have also advanced modelling strategies for improving the selection and matching of turbochargers to appropriate engines. Their high-speed experimental research includes understanding of turbocharger flow conditions and turbine performance across a broader operating range than is at the design point. The researchers have also developed the Active Flow Control Turbocharger patented technology, as well as other turbo technologies currently in the portfolio of Imperial/Imperial.

KEY IMPACTS

7.6%

Improvement in performance under part-load by a non-sulfate turbine engine

2.4%

Improvement in performance from a new low-noise turbine engine

1.8%

Improvement in performance from a new compressor engine

For further information, please contact Professor Eduardo Martínez-Botas, Head of Turbocharger Research, Engineering Department, Imperial.ac.uk



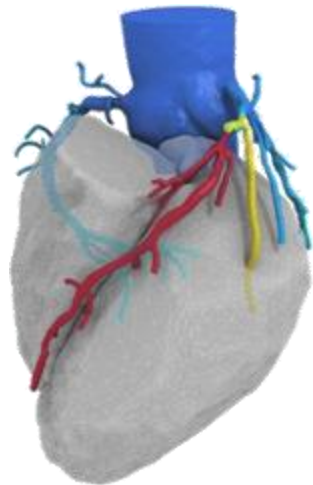
"The work with MHI has not just advanced our understanding of exhaust turbochargers for cleaner engines, but it also had enabled new concepts based on this understanding"

Professor R Martínez-Botas

Engagement with a healthcare SME

Bringing personalised heart disease diagnosis closer

A new mode of engagement partnering with California SME to accelerate turning cutting edge science into ground-breaking products that can positively impact how patients with suspected heart disease are diagnosed and managed.



"The collaboration with Heartflow will not only open new and exciting research directions, but it will also pave the way for bringing our latest deep learning technology into clinical practices and thus will have real impact on the healthcare of thousands of patients"

Dr B Glocker

Cultivating strategic partnerships to foster knowledge exchange

Examples of Industry funded R&I Centres

- Co-located staff
- 2-way engagement
- Maximising impact
- Fast response
- Flexibility
- Trusted partners



DIGITAL ROCKS
SUSTAINABLE GAS
ADVANCED INTERFACIAL MATERIALS
MOBILITY & LUBRICANTS
SHELL LEONARDO CENTRE



Rolls-Royce
VIBRATION UTC
NUCLEAR ENG UTC



PHARMA SYSTEMS ENGINEERING



SINOPEC GEOPHYSICS ACADEMY



PETRONAS

PETRONAS CENTRE FOR ENGINEERING OF MULTIPHASE SYSTEMS



BP
BP INTERNATIONAL CONSORTIUM FOR ADVANCED MATERIALS



HEARTFLOW LAB



GlaxoSmithKline

ENGINEERED MEDICINES LAB



RAIL TRANSPORTATION MANUFACTURING



Agilent

MEASUREMENT SUITE AT WHITE CITY



ROBOTIC VISION LAB



SPARK IGNITION ENGINE COMBUSTION



LIGHTWEIGHT MATERIALS



IMAGING HUB



PILOT PLANT



QUANTUM SIMULATION



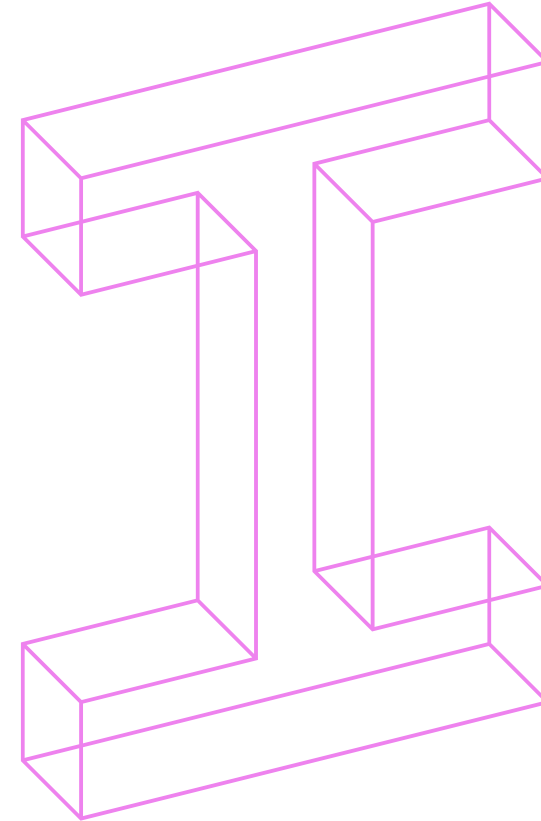
HITACHI AND IMPERIAL CENTRE FOR DECARBONISATION AND NATURAL CLIMATE SOLUTIONS

DIGITAL DEMONSTRATOR

Research partnerships

Imperial Enterprise helps set up research collaborations with Imperial's academics that can help your company innovate and find solutions to its business challenges.

With backgrounds in industry and academia, our team is perfectly placed to help academics and businesses make the most of these opportunities.



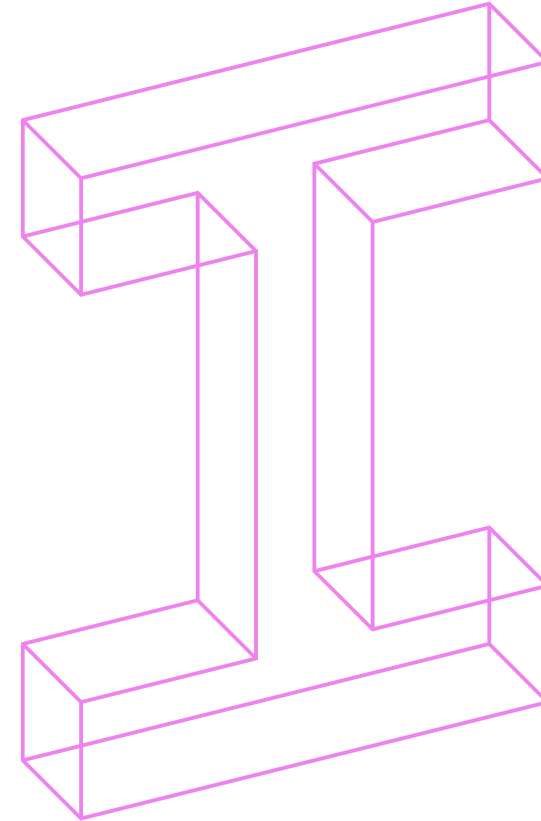
Licensing

Companies can innovate and enter new markets by licensing technologies developed in Imperial's labs.

You can view our technologies available for licensing at Imperial.tech, the platform we use to promote Imperial researchers' innovative technologies.



[More information](#)



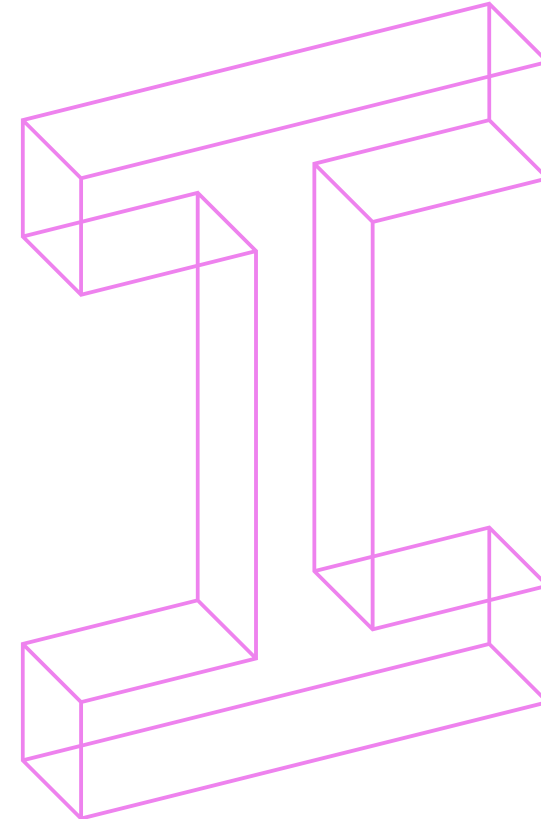
Consultancy

With a pool of almost 4,000+ Imperial researchers and academics at their fingertips, Imperial Enterprise has been finding the right consultants to meet the challenges of external organisations for over 30 years.

From expert advice to use of specialist equipment, training, testing and analysis, we provide bespoke solutions to meet your needs.



[More information](#)



Consultancy examples



Disperse

Consultancy for general-purpose guided wave inspection software developed through research into non-destructive evaluation



Robofold

Imperial's expertise in finite element modelling applied to help take the Robofold system into mass production



Proteostatis Therapeutics

Imperial's expertise in Cystic fibrosis, drug development and clinical trials helped Proteostatis Therapeutics assess potential treatments to improve lung function

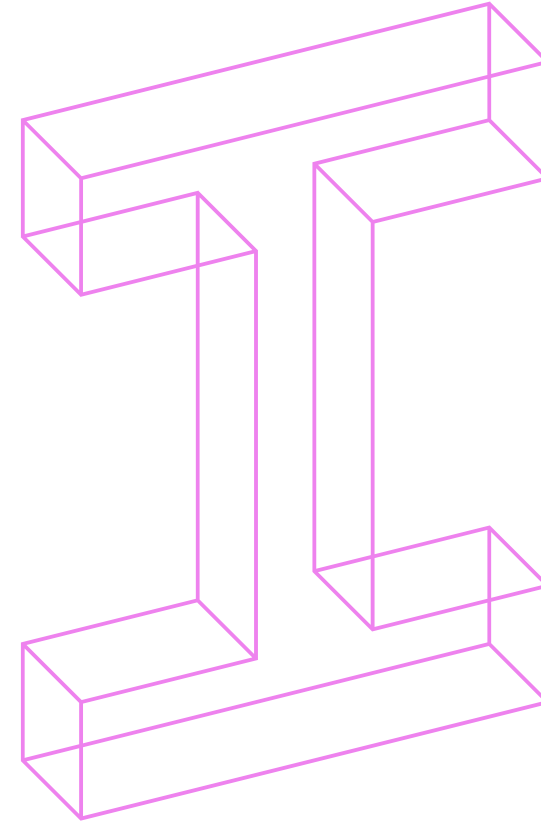
Imperial Business Partners

Imperial's flagship corporate membership programme provides curated access to the best of Imperial's people, technologies, expertise and facilities.

Using events, consultancy, training and technology foresight, we give members practical, actionable insights that help them shape the future of their business.



[More information](#)



Imperial Business Partners Pathfinder

An energy provider gains insights into the electricity mix

IBP leveraged the expertise of Imperial's Energy Future Lab to commission a report into electricity market design

Report aimed to assess how electricity markets can be re-imagined for a significantly decarbonised electricity production mix by 2050

Covered ways in which market design affects investment in renewable energy

IBP curated roundtable discussion with the client, academic authors, and members of the UK's Department for Business, Energy and Industrial Strategy



More information

IMPERIAL

Thank you

ご静聴ありがとうございました