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A Wellcome manifesto for science

How the next Government can
support UK research and make
the most of its strengths





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Foreword

Wellcome is a global research foundation supporting science to solve the urgent health challenges facing everyone. We support more researchers in the UK than anywhere else. Why? Because the UK is one of the best places in the world to do science.

The laws of motion, the theory of evolution, the structure of DNA, the first vaccine, the first 'test-tube' baby, the first blood transfusion. So many breakthroughs, and so many that have benefited health for people all over the world, have stemmed from UK science.

Decades of sustained government investment in research and infrastructure have kept the UK out in front. World-class universities, the NHS powering health research, and multinationals in tech and pharma based here combine to boost national R&D spend, capacity and impact.

For Wellcome, being based in the UK meant we were perfectly placed to make a big investment in genome sequencing in the 1990s. Today, the Wellcome Sanger Institute in Cambridgeshire is a world leader in genomic science, and the benefits are being realised in innovative cancer treatments and technologies to track viruses like Covid-19.

Research is always a good investment for government. Research generates better health, better quality health care, high-productivity jobs and a healthier economy; it's an engine for international collaboration and diplomatic relations; and most of the British public agree that R&D is an important investment for local communities.

But it cannot be taken for granted.

The UK needs a consistent, long-term approach to supporting and improving its research landscape. Otherwise, as other nations surge ahead, the UK risks losing its standing as a world-leader for science, technology and innovation, and losing a real strategic strength in the world.

Wellcome wants future governments to be ambitious for UK research so it continues to be the best place in the world to do science.

What does that look like? The UK should be leading the G7 in percentage of GDP spent on R&D, with a roadmap to put UK research on a secure financial footing. Alongside this, the next government needs to make the UK a more attractive destination for researchers, and continue to support and expand the UK's world-class research infrastructure. This will attract talent from around the world and enable UK science to thrive, both now and in the future.

The world needs ambitious governments to help solve the global challenges facing us all.

As the biggest non-government funder of research in the UK, Wellcome is committed to partnering with the UK Government to achieve this vision, and we will work with all parties to realise our shared high ambitions for UK research and its powerful impact in the world.

It's in all our interests to keep the UK playing a pivotal role as a global leader in research, technology and innovation, contributing to a healthier future for everyone.

John-Arne Røttingen
Chief Executive,
Wellcome



The world needs ambitious governments to help solve the global challenges facing us all.

The incoming Government must prioritise:

Short term	Medium term	Long term
<ul style="list-style-type: none">• Committing to a 10-year or more funding settlement for R&D, which would allow research organisations to plan strategically into the future.• Removing barriers for global research talent coming to the UK by reducing the upfront costs for visas.• Championing DSIT as a mechanism for cross-government policy coordination that keeps pace with scientific developments.• Reinvigorating efforts to deliver strong, inclusive research cultures by following through on the R&D People and Culture strategy.	<ul style="list-style-type: none">• Streamlining the development of essential research infrastructure by defining laboratories and other science facilities as Nationally Significant Infrastructure Projects (NSIPs).• Developing a comprehensive strategy to support research infrastructure in all its forms, backed by sustainable investment, that facilitates the advancement of key technologies.• Enabling international collaboration by making the most of existing routes and infrastructure, such as Horizon Europe, to drive science, research and the economy.• Supporting the NHS to boost research through enabling clinicians to undertake research, and harnessing patient data in a responsible and transparent way.	<ul style="list-style-type: none">• Setting a goal to lead the G7 in R&D intensity, in order to solidify the UK's role as a global leader for science and innovation.• Reinstating the 0.7% GNI target for ODA funding, including continued prioritisation of R&D within this, to allow the UK to work closely with the global community on cutting-edge research and development.• Ensuring research funding models are sustainable and reflect the total costs of research in order to stabilise R&D funding sources.

A Wellcome manifesto for science

Science has the power to generate new knowledge and discovery that can help the UK respond to urgent global challenges. The UK's strength in research can propel the economy forward and bring tangible benefits to human health, both here and around the world. But supporting research can't be a short-term ambition — it requires a sustained and consistent commitment from an incoming UK Government to ensure the sector and economy can thrive.

The UK is internationally recognised as a hub for innovation and scientific discovery. Now, it has an opportunity to live up to that global reputation by building on its existing strengths and making research and development (R&D) a central pillar in what the UK has to offer the world.

The opportunity for an incoming Government

Research is at the core of tackling global health challenges, but its impact extends beyond health. By creating an attractive research environment, the UK could drive economic growth in towns, cities and regions across the nations, while enabling people to live more prosperous and productive lives. The R&D sector also provides excellent value for money — every £1 of public R&D spending stimulates between £1.96 and £2.34 of private spending¹. Research is also a priority for the public. The majority of people want to see politicians pay more attention to R&D than they currently do, and think it's an important area for the Government to invest in.²

The incoming UK Government now has an opportunity to redouble its commitment to science and research to transform the economy. As innovations and emerging technology advance, often at great speed, the UK must keep up the pace and secure its position as a global leader in this space. While other nations such as the US and China soar ahead with sizeable investments in innovation, the UK risks losing the strategic advantage it holds on technology if it doesn't take a consistent, long-term approach to improving the science and research landscape.

Our priorities for the incoming UK Government:

1. Lead the G7 for R&D intensity and put research on a secure, long-term financial footing
2. Ensure the UK is the most attractive place in the world to do research
3. Support the new and ongoing costs of a world-class infrastructure on a long-term basis

Without changes to how the UK attracts talent, funds R&D and supports research infrastructure, it risks falling behind peer countries. Crucially, if an unsustainable short-term approach to R&D prevails, the potential for research to solve some of the biggest health-related challenges could dwindle. If implemented successfully, this is an opportunity for R&D to become a catalyst for economic growth, and secure the UK as a world-leader in cutting-edge science.

Wellcome's role in the UK R&D landscape

Wellcome has seen time and time again the power of scientific discovery and the impact it has on people's health and wellbeing. As the largest non-governmental funder of UK research, we granted £820 million to UK institutions in 2023 alone, and our long-standing commitment to science and innovation has enabled new and life-changing discoveries.

We funded one-third of the Human Genome Project, which drove advances in genomic techniques and opened a whole new scientific discipline. This project has already led to multiple advances in health, such as genetic testing to diagnose previously undiagnosable developmental disorders, and new diagnostics and treatments for a range of cancers. It has also enabled technologies to be developed to track the spread of infectious diseases as seen during the COVID-19 pandemic.

Wellcome supports science to solve urgent health challenges facing everyone. We've committed to spend £16 billion to achieve our mission from 2022-2032. By maximising the benefits of science for people's health through funding excellent research across science, social science and humanities, we're contributing to a richer research ecosystem that puts innovation and discovery at the heart of the UK's global reputation.

We're funding research across these four critical areas:

Discovery Research:
transformative research to generate new knowledge with the potential to improve health and wellbeing.

“Research at the University of York is looking to develop new materials that mimic human tissues. Scientists will be able to use these to study diseases and predict how new drugs will work in the human body. This could significantly speed up new treatments, as well as reducing the use of animals in research.”

Luigi Martino, Research Lead: Tissues, Organs and Organisms

Infectious Disease:
reduce the risks and impacts of infectious diseases.

“Wellcome’s Infectious Disease team is funding the University of Glasgow to optimise the use of a bacteria called Wolbachia in mosquitoes. When put into mosquitoes, Wolbachia can be an effective, sustainable, and affordable tool to block the transmission of Dengue.”

Emma Maynard, Research Manager, Infection and Climate

Mental Health:
drive a step-change in early interventions for anxiety, depression and psychosis.

“We’re funding research at University College London to examine what it is about physical exercise that creates an antidepressant effect. This could help researchers to find better ways to manage and resolve mental health conditions.”

Catherine Sebastian, Head of Evidence, Mental Health at Wellcome

Climate and Health:
put health research at the heart of climate action.

“Researchers at Swansea University are improving our understanding of how heatwaves affect pregnant women. The research will focus on mothers from vulnerable communities in Wales and in London, analysing their bodies’ biological responses to heat and how it affects their health.”

Georgia Glasman James, Research Manager, Climate Impacts and Adaptation

**Wellcome
supports science
to solve urgent
health challenges
facing everyone.**

We are part of a wider R&D investment landscape, and we know the important role an incoming Government can take to ensure a strong, enabling environment for funders like Wellcome to invest.

1. Lead the G7 for R&D intensity and put research on a secure, long-term financial footing

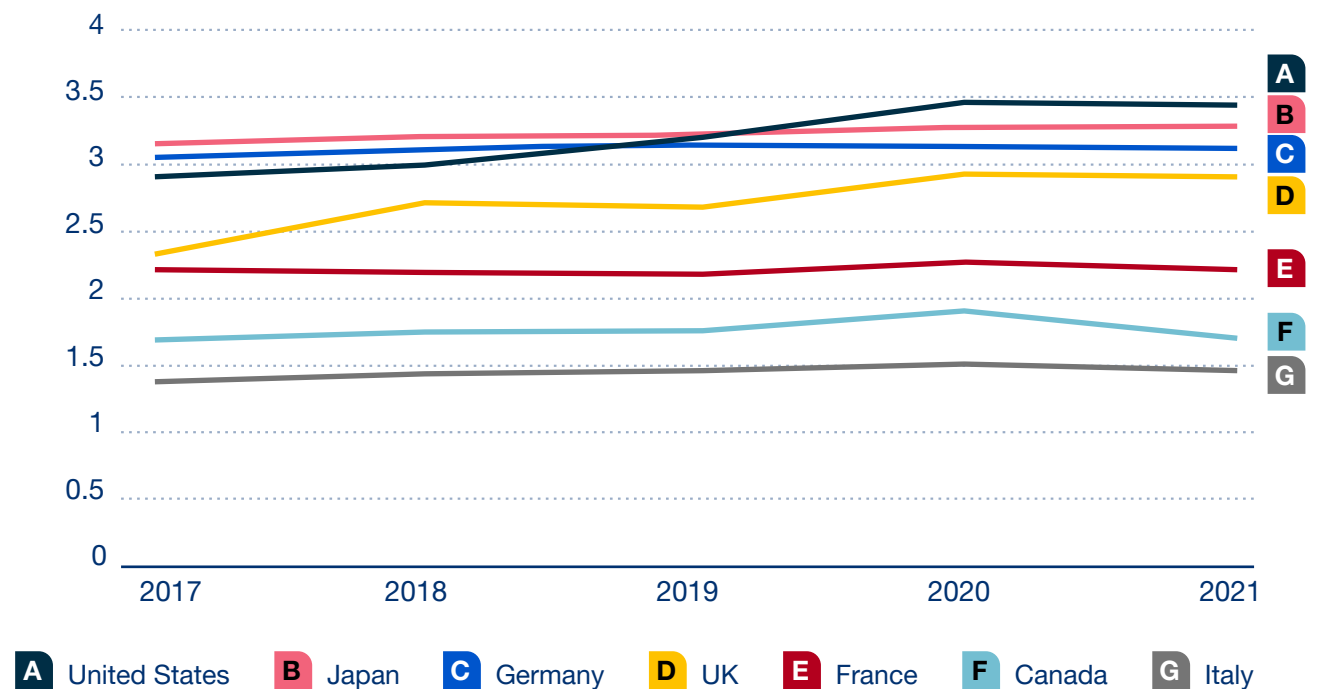
The UK is at a critical juncture to determine its role as a world leader in science and innovation. While R&D funding has increased in recent years, the UK must go further and prioritise long-term sustainable funding models. An incoming Government should aim to make the UK the most research-intensive country in the G7, and thereby establish its role on the global stage. The US currently leads the G7 in R&D intensity, with public and private investment amounting to almost 3.5% of GDP, followed by Japan (3.27%), Germany (3.13%) and the UK (2.9–3%).³ However, public R&D spend in the UK is markedly lower than peer countries, placing 27th of the 36 OECD countries.⁴ For this aspiration to be long-term and sustainable, an incoming Government should forge a plan that sustains and steadily increases R&D funding over a longer period, ultimately with the goal to lead the G7 in R&D intensity.

This ambitious goal of leading the G7 must be underpinned by long-term funding settlements, which would provide consistency and stability for the R&D sector. Science is a bet on the future, and so in order to thrive and support inward investment the sector needs to see the long-term planned funding and commitment of the UK Government. The current mismatch between future-focused research timeframes and short-sighted funding cycles means that research institutes struggle to secure appropriate investment, and researchers are caught up in time-consuming funding applications and less able to follow the science. With a commitment to increase funding cycles to 10 years or more, organisations can plan further than the next spending review and focus

on the work that needs to be done to achieve great scientific breakthroughs. Taking this step would send

a clear message to the international research community: that the UK is a leading hub for research.

R&D intensity in the G7



Source: OECD. Gross domestic spending on R&D (indicator). 2024.
Accessed via: <https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm>

Global collaboration is vital in enabling a healthy, thriving environment for research. Through Official Development Assistance (ODA) R&D funding, the UK collaborates with low and middle-income nations across the world to solve urgent health challenges. This form of R&D funding is an important and unique method for mutual knowledge exchange which often has real-world and far-reaching impacts. The UK Government's ODA spending commitment was cut in 2021, and it is vital that the 0.7% GNI target for ODA funding is reinstated to support strategic research partnerships with other regions.⁵ Within this, ODA spending on R&D must remain a priority to secure the UK's role as a leader and to set an example of best practice in development R&D. An increase in the UK's commitment to ODA research will help it to meet its R&D domestic spending goals, support UK institutions through high-value domestic economic activity, forge strong diplomatic relationships with other nations, and ultimately create a positive impact on health at both a global and local level.

Ensuring R&D spending is on a secure and long-term footing is essential, and the next Government must cultivate sustainable research funding models that are fit for both the present and the future. The current funding model for research relies on cross-subsidy, mainly from university international student fees. While this is an indication of the success of UK Higher Education as an international export, this model creates a precarious situation, posing a risk of research funding fluctuating according to the political and economic interests of other nations. UK research must be empowered to stand on its own two feet, rather than being at the mercy of geopolitics. Research funding must also account for the total costs of the research taking place. This includes ensuring that charity funding for research is properly supported through the Charity Research Support Fund.

The incoming Government must prioritise:

- Setting a goal to lead the G7 in R&D intensity, in order to solidify the UK's role as a global leader for science and innovation.
- Committing to a 10-year or more funding settlement for R&D, which would allow research organisations to plan strategically into the future.
- Reinstating the 0.7% GNI target for ODA funding, including continued prioritisation of R&D within this, to allow the UK to work closely with the global community on cutting-edge research and development.
- Ensuring research funding models are sustainable and reflect the total costs of research in order to stabilise R&D funding sources.



An employee at work inside the Bugworks facility in Bangalore, India 2023.
Photographer: Abhishek N. Chinnappa/Wellcome Trust

Clinical academics have declined from **8.6%** of consultants in 2011 to **5.7%** in 2020.⁸

Tommy Tagg, Laboratory Technician, writes notes at the Sainsbury Wellcome Centre in London, U.K. 2023.
Photographer: Jason Alden/Wellcome Trust



2. Ensure the UK is the most attractive place in the world to do research

Great research is only possible thanks to the people doing it. The research workforce is vital to cutting-edge discoveries and driving economic growth in the sector. The incoming Government can play a significant role in ensuring the UK research environment is prosperous and attractive to talent.

Domestically, the sector needs to see a commitment to supporting the talent it already has and making the most of the workforce within the NHS and universities – ensuring that research is an attractive career choice. Internationally, in order for the UK research landscape to thrive, and its global reputation to hold fast, the people at the heart of research must be inspired and able to work here. The UK must create a thriving research environment with strong links to the international community to encourage best practice and diversity of thought.

The environment in which researchers work – and the incentives that drive their behaviour – makes a big difference to the productivity of the sector. Creating a strong, inclusive research culture is vital to the retention and attraction of talent, which powers excellent research. The Government's R&D People and Culture Strategy set out an ambition to build research capacity by creating a world-leading research culture in the UK. An incoming Government should reinvigorate this strategic approach by delivering a more inclusive, dynamic, productive and sustainable UK R&D sector in which a diversity of people and ideas can thrive. Doing so would create a competitive advantage as an attractor for talent.

The increasing cost of visas for researchers poses a significant barrier to recruitment, and there is

a substantial financial difference for researchers coming to the UK compared to other countries. Currently the upfront cost for a family of four on a five-year Global Talent Visa is £20,980, which is multiple times that of other nations. For the UK to provide a globally competitive offer for researchers, and particularly those early on in their careers, this must be reviewed as a priority.

The value of research collaboration

The research community is an international one, and collaboration is vital for sharing best practice and securing the UK's status on the global stage. Attracting and retaining international talent while ensuring the UK research sector's connectedness with the international community will position the UK at the forefront of scientific exchange. We welcome the UK's recommitment to Horizon Europe, which offers research collaboration at a scale that wouldn't be possible at a country level. International collaboration plays an important role in driving new discoveries, innovation and the economy. An incoming UK Government should make the most of existing collaboration routes and infrastructure, such as Horizon, to enable the UK research sector to maintain ties to the global research community. The UK should also ensure that Horizon is merely the beginning of its ambitions for international collaboration, not the end.

The NHS, working in collaboration with research organisations, has the opportunity to become the leading research engine for the UK's medical and clinical research. However, the UK is currently

seeing a steady decline in the number of clinical researchers and academics.⁶ Many clinicians have cited major concerns with increasing bureaucracy, time for research being squeezed out, and NHS duties increasing.⁷ This is having a damaging effect on research and the UK economy, and must be urgently addressed to make sure the talent and expertise within the NHS is being put to best use. In order to retain its world class reputation and ability to enable cutting edge medical research, NHS clinicians must be supported to engage with research. Unlocking the potential for patient data to play a crucial role in research will also help harness the full power of the NHS. This must be supported by proportionate regulation and trustworthy systems that enable the public's engagement and support.

The incoming Government must prioritise:

- Reinvigorating efforts to deliver strong, inclusive research cultures by following through on the R&D people and culture strategy.
- Removing barriers for global research talent coming to the UK by reducing the upfront costs for visas.
- Enabling international collaboration by making the most of existing routes and infrastructure, such as Horizon Europe, to drive science, research and the economy.
- Supporting the NHS to boost research through enabling clinicians to undertake research, and harnessing patient data in a responsible and transparent way.

3. Support the new and ongoing costs of a world-class infrastructure on a long-term basis

For the UK to be an attractive place for scientific investment and talent, the infrastructure for great research to take place must exist. Research resources such as labs, scientific databases, and biological samples are the foundational infrastructures that enable discoveries and foster innovation. These should be accessible to researchers who need them, and to a high quality to enable their work.

Key scientific technologies, such as engineering biology, have the potential to unlock the UK's competitiveness, should their infrastructure needs be met.⁹ R&D infrastructure also has the potential to help local communities thrive, with two-thirds of people supporting a lab being built in their local community, citing better paid jobs and support of their local economy.¹⁰ The next Government must strategically invest in the full range of infrastructures that supports the advancement of key technologies to create a catalytic research environment that cements the UK's scientific authority while boosting the UK's economy.

Wellcome's investments demonstrate the impact of strategic funding in supporting physical and digital infrastructures. Wellcome has funded innovation in bioimaging over many years, including: the electron Bio-Imaging Centre at Diamond Light Source, UK Biobank Whole Organ Imaging Studies Initiative, and the European Bioinformatics Institute. This support has already led to significant advances in health research, and has ensured state of the art methodologies and complex datasets are accessible to life science researchers.¹¹ These foundational resources underpin bold discovery research, fostering innovation and breakthroughs across disciplines.

Championing a long-term strategy

To have maximum impact, charity investment in research infrastructure should be underpinned by government-funded support. In order for the UK to have a more productive and growing economy, it must increase capital investment on physical infrastructure. Credible commitment from the UK Government to infrastructure projects signals long-term ambition and commitment, inspiring confidence in collaboration and investment from external stakeholders.

Access to infrastructure is crucial for driving excellent research. However, the demand for laboratory space is far outpacing supply, which is exacerbated by existing issues researchers are facing in accessing readily available infrastructures, such as bioimaging facilities. For example, proposals for new laboratories often face delays due to cumbersome planning processes. To streamline their development, laboratories and other science facilities should be designated as Nationally Significant Infrastructure Projects (NSIPs), as projects of this award undergo a simpler development approval process.

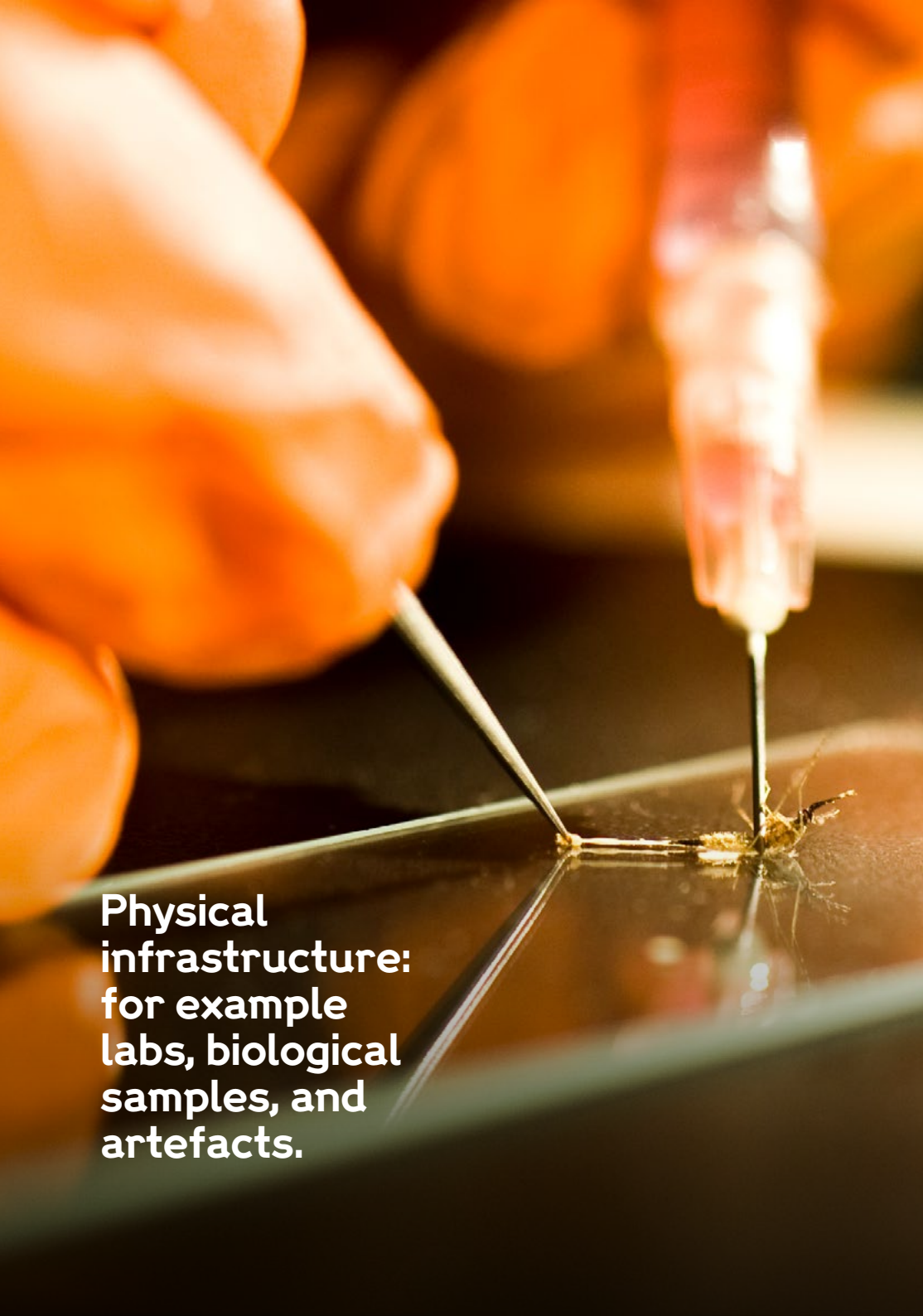
An incoming UK Government must consider how infrastructure is funded and supported on a long-term basis to improve access for researchers to undertake their vital work. In addition, it should also consider how to make best use of these investments by ensuring the facilities surrounding them – such as transport links – are enabling and driving science and research. By aligning planning regulations with the needs of the research sector, and improving

access to existing resources, the UK can embrace ambitious growth opportunities and maintain global competitiveness.

The speed of decision-making, including laboratory planning bureaucracy, affects the UK's global research competitiveness. Government coordination, facilitated by the Department of Science, Innovation and Technology (DSIT), enhances decision-making agility to ensure policymaking keeps pace with scientific advancements. DSIT's missions include creating a long-term national plan for research infrastructure and identifying infrastructure opportunities for critical scientific technologies. The UK Government needs to continue championing research infrastructure at the core of its agenda to harness research's potential for economic growth through DSIT.

The incoming Government must prioritise:

- Developing a comprehensive strategy to support research infrastructure in all its forms, backed by sustainable investment, that facilitates the advancement of key technologies.
- Streamlining the development of essential research infrastructure by defining laboratories and other science facilities as Nationally Significant Infrastructure Projects (NSIPs).
- Championing DSIT as a mechanism for cross-government policy coordination that keeps pace with scientific developments.



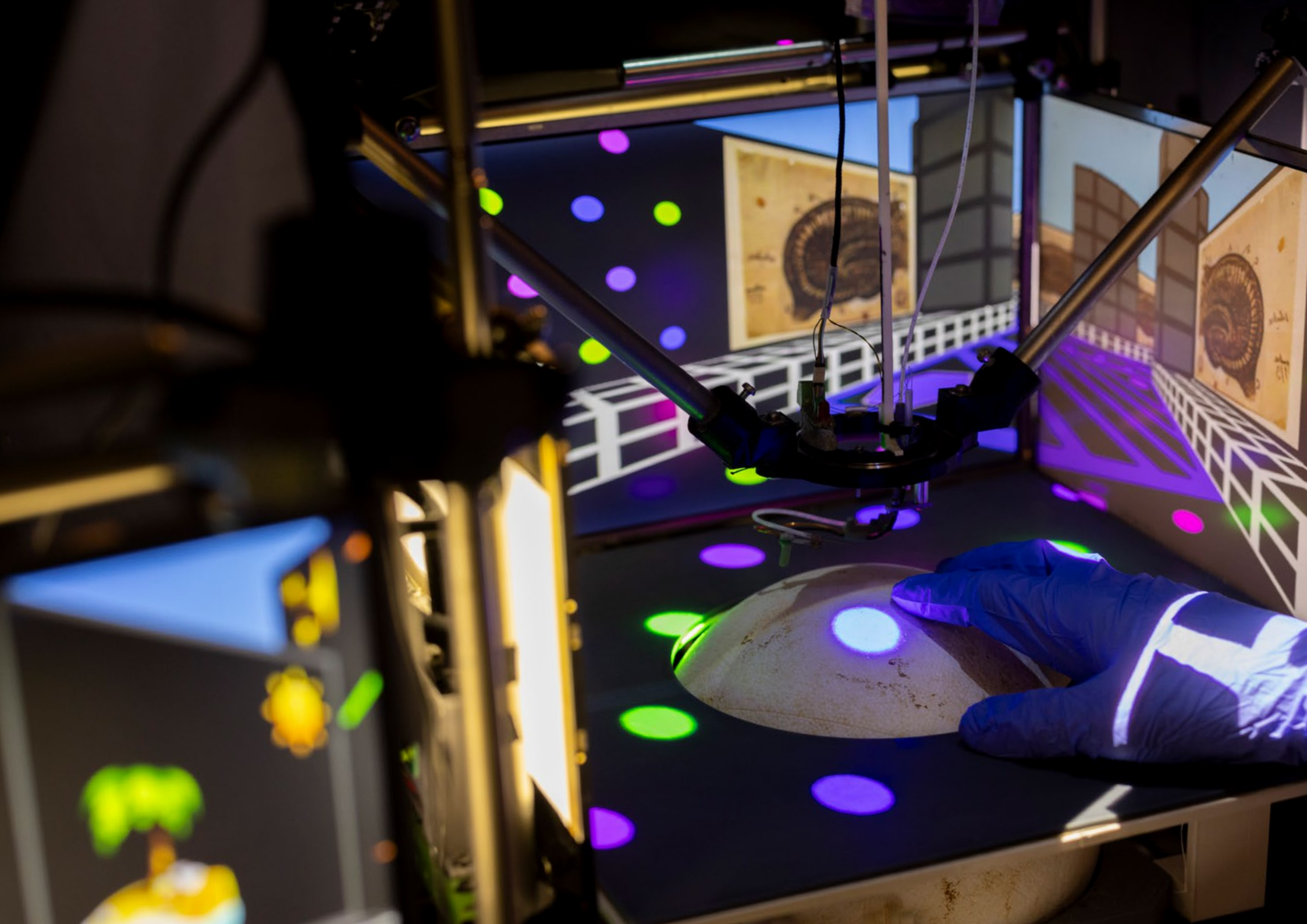
**Physical infrastructure:
for example
labs, biological
samples, and
artefacts.**



**Digital infrastructure:
for example
scientific
databases
and images.**

Endnotes

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Wellcome supports science to solve the urgent health challenges facing everyone. We support discovery research into life, health and wellbeing, and we're taking on three worldwide health challenges: mental health, infectious disease, and climate and health.

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