

HEALTHY PLANTS
HEALTHY PEOPLE
HEALTHY PLANET


John Innes Centre

The Sainsbury Laboratory

TSL



ONE VISION, TWO CENTRES OF EXCELLENCE

The John Innes Centre and The Sainsbury Laboratory are world leaders in plant, soil and microbial research



HP3 HUB

HP3 is a big vision. And we have big plans to make it a reality.

We are creating a one-of-a-kind international hub for plant and microbial innovation.

“A scientific discovery hub that speaks to health, use of land and climate change, asks one of the biggest questions of our age: can ten billion people be fed and kept healthy by 2050 without degrading the planet in ways that drive disease, shorten lives and overwhelm ecosystems.”

Roger Highfield OBE FRSB FMedSci
Science Director, The Science Museum



“The crises of climate change, biodiversity loss and food security are deeply interconnected. From soil to crop genetics, the brilliant people at the John Innes Centre are changing the way we understand nature – and using that knowledge to devise the next generation of science-led solutions for sustainable food production.”

Henry Dimbleby
Author of the National Food
Strategy and Managing Partner
of Bramble Partners

THE CHALLENGES WE ARE ADDRESSING IN PARTNERSHIP

The only way to address the unprecedented challenges that society faces is to come together in partnership with representation across scientific research, policy making, industry and farming.

With the creation of our HP3 Hub, we aim to lead the field and bring together the talent, tools and resources to advance science and technology in new and exciting ways and work with our partners to roll out real solutions.



● Food security and sustainable agriculture

● Nutrition and health

● The climate crisis



“Through our investment in HP3, we are creating a world-leading hub that brings together cutting-edge plant and microbial research with transformative technologies, accelerating discovery and translation to deliver tangible benefits for society, now and for the future.”

Professor Anne Ferguson-Smith FRS
Executive Chair, Biotechnology and Biological Sciences
Research Council (BBSRC)



Based at Norwich Research Park with a network of outstanding partners the: Earlham Institute, Norfolk and Norwich University Hospital, Quadram Institute and the University of East Anglia.

We're home to more than 40 research groups, with staff and students from 42+ countries around the world.



Our scientists have been awarded many extraordinary accolades including several Wolf Prizes, The Rank Prize and The Novozymes Prize.

Twelve of our scientists are Fellows of the Royal Society

THE WAY FORWARD

Science-led agricultural innovations can lead the way, and only by working in partnership with a wide range of partners and expertise will we be able provide holistic solutions to the era-defining challenges we face.

1

HEALTHY PLANTS

Growing healthier and more resilient plants means we can protect and improve our food sources. To increase productivity while using less land, water and chemicals, we are boosting resistance to pathogens and increasing plant size and yield.

2

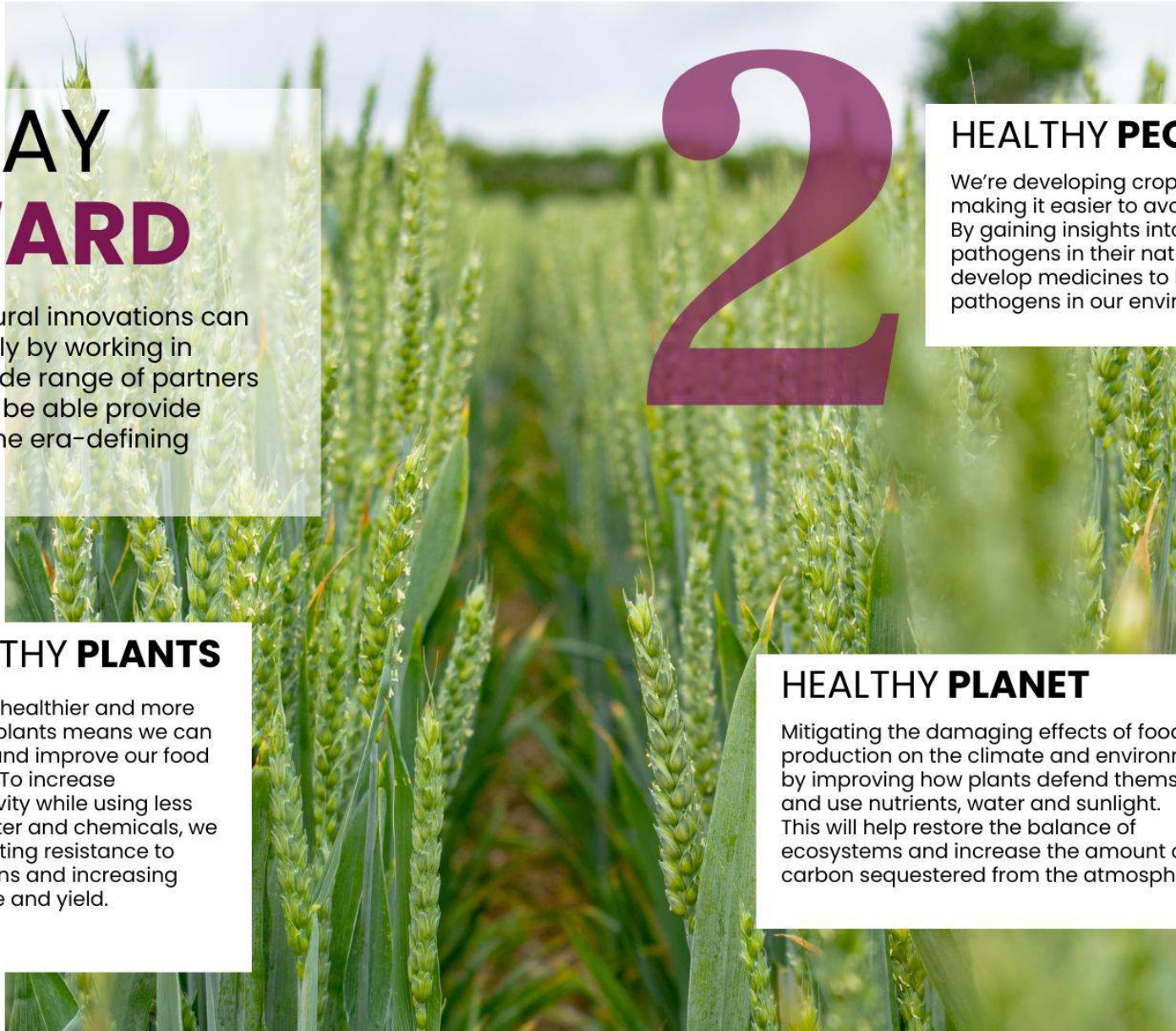
HEALTHY PEOPLE

We're developing crops that are more nourishing, making it easier to avoid malnutrition-based illness. By gaining insights into how plants interact with pathogens in their natural environment, we can develop medicines to help humans combat pathogens in our environment too.

HEALTHY PLANET

Mitigating the damaging effects of food production on the climate and environment by improving how plants defend themselves and use nutrients, water and sunlight. This will help restore the balance of ecosystems and increase the amount of carbon sequestered from the atmosphere.

3



HP3 IN ACTION

Healthy Plants, Healthy People, Healthy Planet has only just begun, and we have so much more planned. Here's a small selection of some of the major scientific breakthroughs we've already made.

- Averting harvest disasters
- Fixing nitrogen to help fix the climate
- Saving trees, biodiversity and human lives
- Combatting vitamin D deficiency
- Increasing wheat yield to meet global demand



Dr Eleni Vikieli recording visible and measurable traits such as yield, diseases, resistance and climate resilience of pea plants.

AVERTING HARVEST DISASTERS



Wheat Blast

Sharing knowledge is power.

When a new wheat disease, wheat blast, struck Bangladesh in 2016, there was widespread panic and fields were burned in response.

Professor Nick Talbot FRS and colleagues at The Sainsbury Laboratory, quickly established its movement across the globe and led responses and training of scientists in South Asia and sub-Saharan Africa.

PotatoPlus

Protecting a family favourite.

Varieties of potato that are completely resistant to late blight in the UK are well on their way to reducing or eliminating the need to spray for late-blight control fungicides.

Family favourites, the Maris Piper and Charlotte, precision bred to be late blight-resistant will enable farmers to dramatically reduce the application of fungicides to control this devastating disease and will stimulate the seed potato production industry in England.

MARPLE

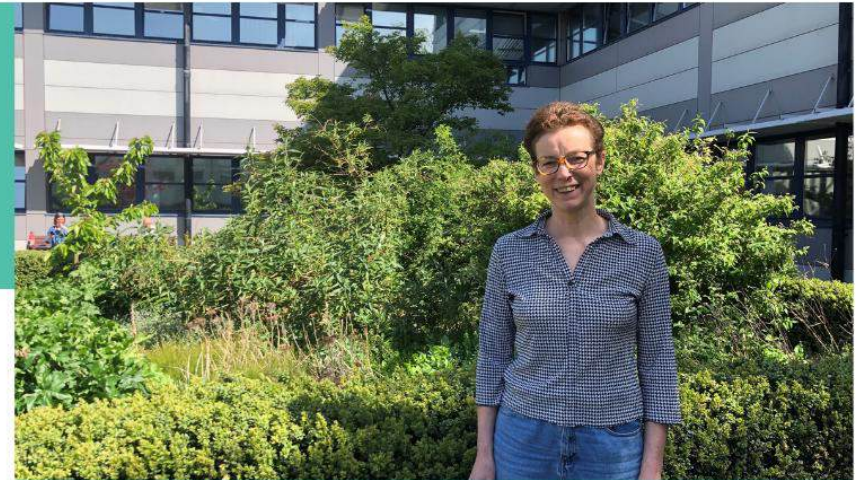
Providing a rapid response to plant disease outbreaks.

A diagnostics methodology developed by Professor Diane Saunders OBE, in collaboration with CIMMYT, provides valuable insights to inform disease management systems and allows a rapid response to a pathogen outbreak.

MARPLE is a portable near real-time diagnostics system that analyses the wheat rust's genome to determine which strains are present and inform a targeted response. The results are generated in just two days, making it ideal for responding to crop disease emergencies in field.



SAVING TREES, BIODIVERSITY AND HUMAN LIVES



Professor Anne Osbourne FRS OBE

When it comes to the Chilean soapbark tree, medicine does grow on trees.

The soapbark tree (*Quillaja saponaria*) contains saponins, which are powerful adjuvants that increase the effectiveness of vaccines for illnesses like Malaria, Covid and Shingles. Until recently, saponin extraction came at the cost of the trees themselves and the ecosystems around them.

Along with international partners, Professor Anne Osbourne FRS has isolated and mapped the elusive soapbark genes and enzymes that produce the vaccine-boosting molecules.

Her team has now reconstituted this genetic pathway in another plant, *Nicotiana benthamiana*, so we can use the soapbark's medicinal properties without needing to touch the trees themselves.

PARTNERSHIPS FOR PROGRESS

We can only do what we do because of our generous donors and funders.

Thanks to their progressive vision and initial investment of £51m, we secured UKRI Infrastructure Fund investment of £317.7m. As a result HP3 is underway.



OUR DONORS



Sir Anthony Habgood

OUR RESEARCH FUNDERS AND SUPPORTERS



Gates Foundation



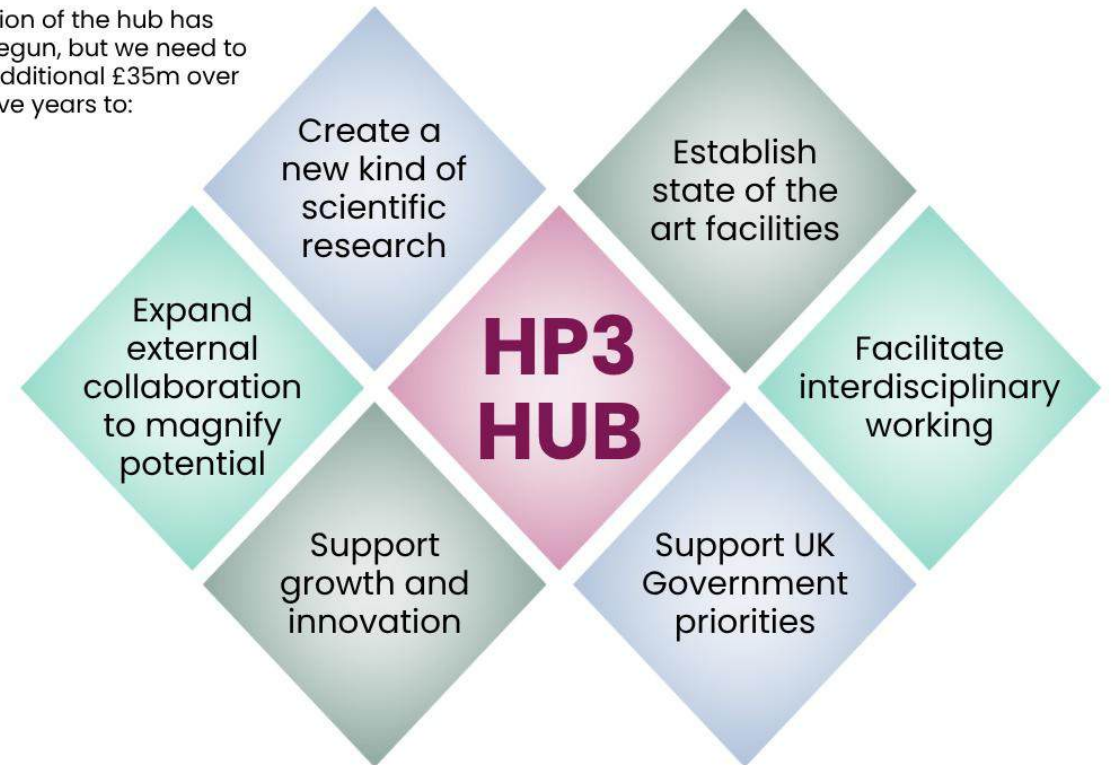
THE ROYAL SOCIETY



FULLY REALISING THE HP3 VISION

Your philanthropic investment can help us maximise our public/private partnership to harness the power of plants and microbes to meet the world's most critical challenges.

Construction of the hub has already begun, but we need to raise an additional £35m over the next five years to:





BE PART OF THE SOLUTION

The Sainsbury Laboratory

TSL

Plant Health Discovery
for a Sustainable Future



John Innes Centre

Unlocking Nature's Diversity

Please join us.

If you would like to learn more about partnership opportunities, please contact our Director of Development, Angela Bowen

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