## Imperial College London

# The campaign for the School of Public Health

SCHOOL OF PUBLIC HEALTL

We are <u>transforming health</u>.

#### The School of Public Health at the White City Campus will:

- Pursue an integrated, holistic and multidisciplinary approach focusing on prevention and intervention.
- Span the continuum between physical and mental health.
- Use the power of data and technology to understand population health, and to bring health innovations to those who most need them.
- Apply global learnings to our communities, and learn from local interventions how to be more effective globally.
- Educate the public health leaders of the future, through cutting-edge learning techniques and a population and person-centred approach.

## What do we mean by public health?

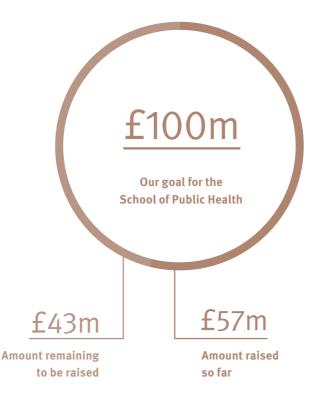
In our campaign for the School of Public Health, we define public health as the art and science of preventing disease, prolonging life and improving health. When expert knowledge and empirical evidence are combined with the ability to listen, communicate and inspire, public health becomes a social movement towards better health and wellbeing for all.

Imperial College London will bring the full power of the School of Public Health's research and education to the White City community. in partnership with local organisations, the National Health Service, and Hammersmith and Fulham Council.



# A moment of exceptional opportunity

The fundraising campaign for the School of Public Health at Imperial College London was launched in 2018 and comes at a moment of exceptional opportunity. We have already raised over £57 million towards our £100 million goal.



Technological innovation, big data and advances in scientific knowledge hold great potential for addressing some of our most intractable health challenges. These can range from the containment of deadly infectious diseases to the prevention of childhood obesity, alongside the treatment of dementia and other age-related conditions.

Researchers from our world-leading School of Public Health are pushing these new frontiers, working with local communities, the National Health Service and local authorities, colleagues from across Imperial and organisations around the world. At the same time, Imperial College London is re-imagining the university at its White City Campus, through deep relationships with its neighbours and a thriving ecosystem for collaboration across disciplinary boundaries.

The campaign for the School of Public Health will create a state-of-the-art hub for health and wellbeing research, outstanding education and community engagement at White City. It will support our academic leaders and degree programmes, and allow us to expand our research into current and emerging challenges.

We invite you to join us in seizing this moment.

# The campaign

The £100 million campaign for the School of Public Health will enable us to deliver a stateof-the-art building at White City, and transform and amplify our work in four areas:

## World health

Disease knows no borders. Taking a global view, we combine advanced data science and medical expertise to treat, control and prevent disease, and reduce health inequality around the world.

## Community health and policy

Communities are at the heart of public health. From White City to West Africa, from the young to the elderly, we are devising and delivering tailored care, education and prevention programmes to support all communities across the life course.

## Lifelong health

It's not just about adding years to life, but also life to years. Our research is giving more people the chance to live active, independent lives into old age.

## Children's health and wellbeing

All children deserve the best chance in life. By preventing chronic disease and infection in the early years of life, we are ensuring future generations have every opportunity to thrive and succeed.



# The White City ecosystem

Imperial's White City Campus is a place where great academics can work on leading research with corporate partners, entrepreneurs, the community and each other. The School of Public Health will both enhance and draw strength from this thriving, collaborative environment: there is no better place to transform local and global community health.

## Join us.

Professor Alison Holmes (centre), Professor of Infectious Diseases at Imperial College London and Associate Medical Director for Imperial College Healthcare NHS Trust, with a patient at Hammersmith Hospital. The hospital, home to several hundred researchers and clinicians from Imperial's Faculty of Medicine, is less than half a mile from the College's White City Campus, and has served the White City community for over 100 years.

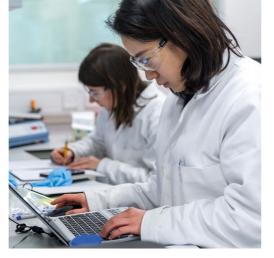
# The impact of Imperial

The public health challenges that London faces – including childhood obesity, poor air quality and a strained healthcare system – are felt acutely in White City.

Living in one of London's most deprived boroughs, White City residents experience higher incidences than average for London of heart disease, chronic obstructive pulmonary disease and depression. With 25 per cent of residents under 15, childhood obesity is prevalent. A diverse community, White City faces several health challenges that impact different ethnic groups more severely, including Type 2 diabetes, coronary heart disease and strokes.

#### Convening and collaborating

Our work with our neighbours at White City is focused on respecting the talents and abilities of the people we are serving, and amplifying the power of neighbourhood organisations to deliver impactful and lasting change. Imperial has delivered events and programmes with national sports teams, youth and community clubs, charities and local authorities. The Invention Rooms, our flagship community space and point of entry for White City residents, provides workshops and hackspaces for our neighbours to work personally and directly with Imperial staff, students, alumni and partners to develop and test their creative ideas and share in the excitement of research and innovation. Researchers in Imperial College London's White City Incubator, a space within the I-Hub dedicated to growing early-stage science and technology companies; school pupils in The Invention Rooms participating in a makerspace workshop.



21%

Year 6 children in Hammersmith and Fulham who are obese.

37%

Children in London living in families below the poverty line.



#### Transforming health and wellbeing

In the field of public health, our roots in the White City community are strong and provide huge potential. The nearby Hammersmith Hospital, where the College has a major campus, has served the area for almost 100 years. We are working with both the NHS and local authorities to make improvements in healthcare delivery. We are lending our expertise in data analysis and evaluation to a consortium of local organisations to deliver a programme designed to improve health literacy and lifestyle choices, serving more than 2,000 individuals most at risk of loneliness, social isolation and chronic disease.

Imperial College London is uniquely placed to bring cuttingedge research expertise and evidence-based solutions to the public health challenges that affect our community most profoundly, creating a revolution in intervention, treatment and policy that will have both local and global impact.

#### CASE STUDY: Community connectors

Just a short walk from the new site of the School of Public Health is the Invention Rooms, a unique facility where the White City community can connect with Imperial students and staff, learn more about science and technology, and get hands-on experience of prototype design and 'making'. As well as hosting a full programme of activities for children and young people, the Invention Rooms is home to community-focused programmes such as Agents of Change, a network for women working in leadership roles in the local area. During the COVID-19 lockdown, Imperial staff and students have been working hard to support the most vulnerable White City residents. With community partners, we have delivered more than 240 science backpack activity kits to local families, provided tech assistance to elderly people at risk of isolation, and helped a local charity to move their exercise classes for older people online. These links with the community make the Invention Rooms an important connector for researchers in the School of Public Health who wish to work with residents on health challenges in the area. This work has already begun, with one project that involves local people in designing air pollution research already in progress.

## Transforming health and wellbeing

The campaign for the School of Public Health will enable us to create an outstanding hub for research, education, teaching and community engagement. Philanthropic funding for capital investments and support for public health researchers and students will transform our work in four key areas: world health, lifelong health, community health and policy, and children's health and wellbeing.

Join us in educating and inspiring the next generation of health leaders.

1st

For world-leading public health research in the United Kingdom (joint with Oxford University), in the 2014 Research Excellence Framework.

The second se

## World health

In recent decades, we have seen the impact of public health research and policy on world health outcomes.

#### The opportunity

The campaign for the School of Public Health will enable the School's leading world health researchers to be located together, in a dedicated building, for the first time. Philanthropy will provide space and technology to underpin new research collaborations and the expansion of the School's renowned Master's in Public Health, including an online programme accessible to students anywhere in the world. Global average life expectancy has increased by five years since 2000, the fastest increase since the 1960s. In the same period, we have seen deaths from malaria fall by more than 25 per cent, and HIV has become a disease that can be managed with treatment.

Today, researchers in the School of Public Health continue to deepen our understanding of disease. We apply cutting-edge machine learning and statistical methodology to understand the associations between genes and disease and the features that drive disease dynamics and progression. Our fundamental research into the population ecology and evolution of parasites helps us to understand the determinants of infectious disease outbreaks.

<u>100m</u>

Global cases of COVID-19 in the first 12 months of the pandemic.

<u>32.2m</u>

Deaths from cancer, cardiovascular diseases, lung disease and diabetes in 2016. Imperial College Community Jameel Imperial College Comment London Imperial College Imperial College

This vital research shapes our focus on the prevention of disease. For non-communicable diseases like heart disease and chronic obstructive pulmonary disease, this requires large-scale studies to understand the barriers to behaviour and lifestyle change and close collaboration with healthcare practitioners, policymakers, non-governmental organisations and patients. For infectious disease, we are leaders in the development of new vaccines, and our research evaluates the public health impact and cost effectiveness of vaccinations against COVID-19, malaria and yellow fever, Ebola, HPV, HIV and polio.

Where we still lack the knowledge and resources to prevent diseases, Imperial researchers are at the forefront of their treatment and management. Our research informs the management of infectious disease outbreaks and we are at the front line in our work to address and manage emerging health crises, such as the COVID-19 pandemic.



The founding of the Jameel Institute was announced in 2019. President Alice Gast is shown here with Hassan Jameel (Vice Chairman, Community Jameel) and Fady Jameel (Vice Chairman, Community Jameel)

#### <u>CASE STUDY</u>: At the forefront of the global COVID-19 response

Led by Professor Neil Ferguson, the Abdul Latif Jameel Institute for Disease and Emergency Analytics (the Jameel Institute) has helped to inform the response to the COVID-19 pandemic, both in the UK and internationally. Co-founded by Imperial and Community Jameel in October 2019, the Jameel Institute was catapulted into the global spotlight with the emergence of the pandemic just a few months later. Applying their expertise in data analytics and infectious disease outbreak modelling, Professor Ferguson and his team have provided independent evidence to inform government action to control the pandemic and mitigate its impact. It was following an Imperial report which predicted that a strategy of mitigation (where the aim is to slow but not stop the spread of the virus) would overwhelm the NHS and lead to hundreds of thousands of deaths, that the UK government introduced the first national lockdown.



Worldwide, people are living longer than ever before. But gains in life expectancy are not matched by improvements in health. Millions of older people experience longterm conditions such as diabetes, heart disease and dementia that limit their independence and enjoyment of life.

#### The opportunity

With philanthropic support, we can take our research on health through the life course to the next level. Additional research capacity will enable us to expand existing projects focusing on dementia and to begin major new activity in women's health, in collaboration with the George Institute for Global Health, UK. At the White City Campus we can translate our findings into recommendations that will enable people to live longer, healthier lives in the UK and internationally. With no cure for dementia yet available, early diagnosis and prevention is key. We run largescale studies that track the cognitive health of participants over an extended period of time, before any symptoms appear. This gives us unique insight into risk and protective factors for neurodegenerative disease, which can inform methods for early detection and prevention. From diagnostic tests for Alzheimer's that detect changes in the back of the eye that are associated with earlystage disease, to evidence of the protective effect of lifestyle changes in middle age, our research has clinical and policy impact.

Although genetic factors play a part, how healthy we are in old age is largely shaped by our experiences throughout life. Imperial researchers are unpicking the complex causes of common diseases of old age to identify what factors put us at greater risk of ill health in later life. From pioneering work on the long-term health impact of biomolecular changes caused by poverty in childhood, to research into sex-specific factors that shape women's health over the life course, our work provides policymakers with new evidence on how to promote healthy living and healthy ageing.



of the UK population will be aged 65+ by 2041.

Professor Robyn Norton is Acting Executive Director of the George Institute for Global Health UK and leads an international programme to promote women's health, emphasising gender differences in non-infectious diseases and health issues particular to women.



Our expertise is in shaping care for older people. From international studies that predict future life expectancy around the globe, to the use of biomarkers to improve the accuracy of forecasts of the number of people with dementia in the future, our research gives policymakers the tools to plan for future care needs. During the COVID-19 pandemic, Imperial researchers showed how government guidelines put more than 7 million people aged over 60 at risk, by recommending that only the over-70s shield themselves.



people in the UK estimated to have dementia.

#### <u>CASE STUDY</u>: A new focus on women's health

The success of international programmes aimed at improving maternal health means that non-communicable diseases, rather than childbirth and related complications, are now the leading causes of death and illness among women.

To address these new health challenges, we need to widen our focus beyond women's reproductive health and look at the whole life course. Imperial researchers, with colleagues at the George Institute, an independent global medical research hub with a UK base at Imperial, are developing new approaches to women's health, with the aim of creating a new understanding of different risk factors, barriers to care, and responses to treatment that exist between women and men.

# <u>Community</u> health and policy

Community health and policy is central to the mission of public health research: improving the health and wellbeing of individuals, families and communities through prevention, intervention and policy.

#### The opportunity

The campaign for the School of Public Health is a landmark moment in Imperial's commitment to the White City community. With space for community engagement and close collaboration with patients and the public, the School of Public Health will bring cutting-edge research expertise to the public health challenges that affect our community. What we learn from our work in White City will have global implications for health and wellbeing.



Professor Deborah Ashby, Head of the School of Public Health, at the Imperial Clinical Trials Unit, based at White City.

The insights of general practitioners and primary care professionals, working at a community level, can have global impact.

The health of hundreds of millions of people worldwide has been improved over time thanks to vaccination programmes, policy initiatives and the dissemination of research findings to the public. At the School of Public Health, we are leading the way in tackling the major health challenges of this and future generations, such as COVID-19, obesity, air pollution, and diseases of ageing, including dementia. We use our expertise and extensive networks to improve the physical and mental health of communities – locally, nationally and around the world. We work closely with GPs, NHS partners, industry, local authorities, overseas governments and universities to improve public health and <u>primary care</u> through high-quality research, training and advocacy. We are preventing disease by better understanding conditions such as diabetes and cardiovascular disease and combining the discovery of risk factors with <u>prevention and education programmes</u> in the community. We apply our expertise in <u>data science</u> to harness the power of routinely collected health data in the improvement of healthcare delivery and patient outcomes.

We provide the evidence base for more effective <u>interventions at population level</u>, from finding the links between cancer and environmental factors worldwide, to the epidemiological study of neurodegenerative diseases, such as Alzheimer's and Parkinson's, which informs new methods for early prediction and prevention.

## 7m

Early deaths each year as a result of air pollution

91%

of the world's population breathing poor quality air

#### <u>CASE STUDY</u>: Fighting for clean air for all

Billions of people in communities around the world are exposed to harmful levels of air pollution, with the health of hundreds of millions put at risk. Imperial is at the forefront of efforts to tackle this challenge, with world-leading expertise in environmental epidemiology within the School of Public Health and an air pollution network uniting more than 80 engineers, scientists, health researchers and policy experts. With the appointment of one of the UK's foremost experts on air pollution research, Professor Frank Kelly, as the inaugural Battcock Chair in the School of Public Health, Imperial is set to become an international leader in the field of air pollution and health. Thanks to support from Humphrey Battcock and other anonymous donors, Professor Kelly was able to join Imperial in 2020, transferring from King's College London with his team of 68 researchers. At the White City Campus, Imperial plans to create a new Centre for Air Pollution Research which will offer a suite of advanced laboratories for aerosol and toxicology research, plus dedicated space for cross-disciplinary collaboration. One early research project is tracking the long-term effects of pollution on the health and cognitive development of children who were exposed to poor quality air before birth.

# Children's health and wellbeing

The effects of disease, lifestyle and social disadvantage in childhood and infancy are felt throughout life, often becoming apparent only in old age.

#### The opportunity

Imperial is internationally recognised for its expertise in the diseases of childhood. Our research is informing health policy and interventions, shaping vaccination programmes and leading to new treatments. At White City, we have an opportunity to connect this expertise with the community, learning directly from children and their families about their health needs, and developing solutions that will have a major impact on child health not just in London but around the world. By understanding genetic and lifestyle risk factors, and by intervening early in life to prevent disease and improve child health, public health research can alter the trajectory of the whole life course. Researchers in the School of Public Health are looking at how early interventions in childhood can reduce the risk of individuals developing chronic diseases.

We are exploring new ways of tackling excess weight in children, including by improving the way obesity is measured and piloting new web-based tools to help clinicians. Our work on respiratory diseases such as asthma uses birth cohort data and statistical machine learning to identify genetic and environmental risk factors, ultimately informing the development of new drugs.

We are also investigating how differences in care for premature babies affect health throughout childhood and into adulthood, with the aim of improving care for pre-term and newborn babies. Other research focuses on the effects of mobile phone technology on cognitive development and the effects of the COVID-19 pandemic on teenage mental health.

An Imperial researcher with a young visitor at the Imperial Festival, the College's flagship public event; Professor Mireille Toledano, Mohn Chair in Population Child Health, is Director of the Mohn Centre for Children's Health and Wellbeing, which was created thanks to a £25 million donation from Imperial alumna Marit Mohn



Working with clinicians, local authorities and local community organisations, we are developing a combined approach to mental and physical health in children. In White City we are leading a childhood obesity intervention that reaches children and young people in every aspect of their lives, from the playground to the place of worship.

53%

London children who reach a good level of development by age five.

# 100,000

Children aged 5–16 in London who have a diagnosable mental health disorder.

#### **<u>CASE STUDY</u>:** A new vision for children's health

How do we safeguard the health of children who grow up in poverty? And with one in six children now thought to have a mental health disorder, what can be done to improve children's wellbeing? These are some of the questions being addressed by researchers in the Mohn Centre for Children's Health and Wellbeing, which was established in 2018 to bring together expertise in children's health from across the School of Public Health and the wider College community. One new project is exploring the impact of the COVID-19 pandemic on the mental health of adolescents in the UK. Working with 5,000 London teenagers, researchers will look at what factors promote resilience to mental health problems caused by the pandemic, and whether changes in the use of digital technology, such as social media usage, during the pandemic have had a positive or negative impact on mental health.

## The campaign

The School of Public Health at Imperial's White City Campus is founded on collaboration and partnerships within our community, with clinicians, with researchers here and around the world, and with visionary donors who share our commitment to health and wellbeing. We invite you to join us through your support of this transformative campaign, which will shape the future of public health both locally and globally.

Join us in tackling the greatest health challenges of our, and future, generations.



# Join us

Imperial College London's £100 million fundraising campaign will create a new, innovative and interconnected School of Public Health at our White City Campus. All gifts at every level will help make this vision a reality.

Your support can enable us to create a groundbreaking multidisciplinary hub for leading research, education and community engagement in health and wellbeing. The new school at White City will have collaborative, flexible and interactive spaces for our academics, collaborators, students and the local community. These capital investments will have a great multiplier effect, bringing together academics and changing the ways they interact.

The campaign will also support our academic leaders through chairs, fellowships and scholarships. This support enables us to attract new people to lead centres, helps our thought leaders develop and mobilise networks, and gives them the flexibility to engage and learn with the community. The campaign will also enable us to transform the future of health by inspiring and educating the next generation of health leaders.



Angela Bowen, Director of Development – Faculty of Medicine and Global

We invite you to join us through your support of this transformative campaign, which will shape the future of public health through innovation, intervention and prevention, and have both a significant local impact and global reach. We would be delighted to work with individual donors to find the area of most interest. Working in conjunction with our philanthropic partners, we can develop tailored, philanthropic opportunities with options to fund our spaces, people and programmes to ensure your gift has the greatest impact. Join us in transforming health and wellbeing for individuals and communities all around the world.

# Visionary philanthropy

Since its 2018 launch, the campaign has attracted significant philanthropic support. A donation of £25 million from Marit Mohn established a new centre for children's health, where researchers will tackle the health threats affecting children in London, the UK and beyond. Gifts from Humphrey Battcock and other anonymous donors totalling £3.5 million will enable Imperial to convene Europe's largest grouping of researchers working on air pollution and health. In partnership with Community Jameel, in 2019 Imperial established the Jameel Institute, a major new initiative which unites expertise in data analytics and epidemiology, to improve understanding of diseases and health emergencies in the most vulnerable populations across the globe. We are profoundly grateful to everyone who has supported the School of Public Health through their generosity, advocacy and advice.

p w tl a H c a a F ( ) t t w o tl g

"Pollution is one of the biggest public health threats of our time and is causing huge damage to the environment, people's health and quality of life. Funding this vital research will enable us to understand even more about this global threat. Imperial is well placed to carry out this research and get results."

Humphrey Battcock, Campaign donor

"The Jameel Institute will serve as a beacon for the power of health data analytics, transforming lives locally and across the world. We are proud to support such important and urgent work."

Fady Jameel, Vice Chairman, Community Jameel

"Imperial's academic excellence and ambition for White City is inspirational – and I am pleased to play a part in it. While rooted in the local community, this new centre will drive discoveries and improve global understanding of childhood disease. We have the opportunity to change the lives of local young people in a way that will be felt for generations to come."

Marit Mohn (MSc Chemical Engineering and Chemical Technology 1973)

## Imperial College London

To discuss opportunities for support, please contact:

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imperial.ac.uk/giving/campaign-for-the-school-of-public-health