





# **Brief Introduction to Oxford**

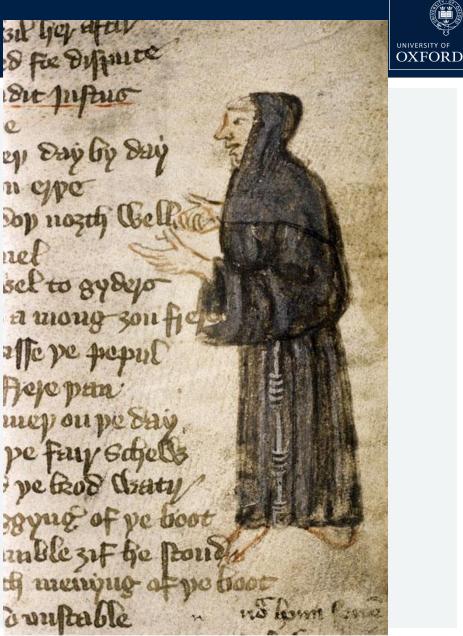
Professor Richard Hobbs, Pro-Vice-Chancellor (WP), Mercian Professor of Primary Care & Digital Health





# Oxford University's vocational origins

Oxford's origins in the 12<sup>th</sup> century was as an ecclesiastical organization, whose prime function was to train an educated clergy... professional education continues into the 21<sup>st</sup> century!



A Franciscan Friar. William Langland. *Piers Plowman* ('C' text), 1427. Bodleian Library MSDouce 104, f. 046r.

Oxford Institute of Digital Health

OIDH



Oxford: also famous in literature & films





Oxford Institute of Digital Health





# Regency Oxford



OXFORD TRANSPORTS or Albanians doing Denance for Past offences.



Oxford Institute of Digital Health





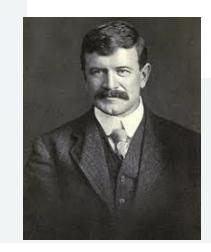
# The Oxford tutorial

"What an Oxford tutor does is to get a little group of students together and smoke at them. Men who have been systematically smoked at for four years turn into ripe scholars...

A well-smoked man speaks and writes English with a grace that can be acquired in no other way."

Stephen Leacock, My Discovery of England (1921)





# A global research powerhouse





 Ranked 1<sup>st</sup> overall and 1<sup>st</sup> for research for last 7 years



- 2<sup>nd</sup> in 2022, 2023
- 3rd in 2025



- Largest volume of worldleading research in UK
- Ranked 1<sup>st</sup> by volume of world-leading research in 12/31 subject areas and top 3 in 23/31 subject areas
- Ranked 3<sup>rd</sup> in world in 2021 by volume of research outputs in top 1% highly cited

Source: SciVal

- Oxford's activities in 2021/22 generated £16.9bn to the UK economy
- Including £10bn from research and knowledge exchange activities
- Oxford COVID vaccine generated £1 trillion benefit to global economy

Source: London Economics

Table 1 Total economic impact of the University of Oxford's activities in the UK in 2021-22 (£m and % of total)

	Total economic impact	£16,887m	100%
<u>ш</u> <b>?</b>	Indirect and induced impact	£281m	2%
	Direct impact	£165m	1%
	Impact of tourism	£445m	3%
	Indirect and induced impact	£3,128m	19%
	Direct impact	£1,907m	11%
	Impact of the University's and its colleges' spending	£5,035m	30%
	Non-tuition fee income	£373m	2%
	Tuition fee income	£553m	3%
	Impact of international students	£926m	5%
	Exchequer	£304m	2%
	Students	£254m	2%
	Impact of teaching and learning	£557m	3%
	Knowledge exchange activities	£5,984m	35%
	Research activities	£3,939m	23%
	Impact of research and knowledge exchange	£9,923m	59%
pe of impact		£m	%

Note: All estimates are presented in 2021-22 prices, rounded to the nearest £1m, and may not add up precisely to the totals indicated Source: London Economics' analysis





# **University Organisation**

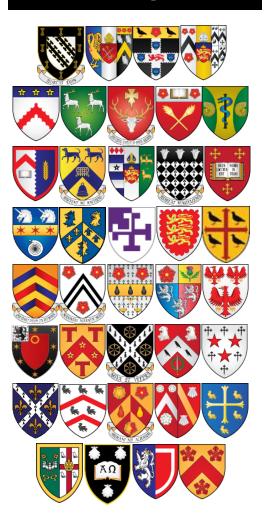
Oxford is a collegiate university, made up of 38 colleges and 100+ academic departments

#### Structure

### Colleges







Libraries and Museums

Oxford University Press

Continuing Education

Mathematical,
Physical and
Life Sciences
(MPLS)

Medical Sciences (MSD)

Universit

Central

Social Sciences (SSD)

Humanities (HD)

Chemistry • Computer Science • Earth Sciences • Engineering Science • Materials • Mathematics • Physics • Biology• Statistics

Biochemistry • Neurosciences Experimental
Psychology • Oncology • Paediatrics Pathology •
Population • Health Psychiatry • Surgical
Sciences...

Archaeology • Saïd Business School • Economics • Education Geography & the Environment • Blavatnik School of Government Area Studies • Law • Politics Sociology...

Art • Classics • English •
History • Linguistics • Medieval & Modern
Languages • Music • Oriental Studies •
Philosophy • Theology & Religion...

























# Role of the university and colleges for students

Every student is a member of a college as well as the university.







- Establishes the content and structure of degree courses
- Organises lectures, seminars and lab work
- Sets and marks exams and awards degrees
- Selects graduate students for admission, and organises tutorials for graduate students





### Colleges

- Provide accommodation, meals, common rooms, sports and social facilities, and pastoral care for their students
- Organise tutorials for undergraduate students
- Select undergraduate students for admission



# Undergraduate courses at Oxford include...

Archaeology & Anthropology

Computer Science

History

Modern Languages

Biochemistry

**Earth Sciences** 

History of Art

Music

Biological Sciences Economics and Management

**Human Sciences** 

**Oriental Studies** 

Biomedical Sciences

Engineering Science

Law

Philosophy, Politics & Economics (PPE)

Chemistry

English Language & Literature

**Materials Science** 

**Physics** 

Classical Archaeology & Ancient History

Fine Art

Mathematics

Psychology

Classics

Geography

Medicine

Theology and Religion





# Tutorial system

Oxford's distinctive tutorial system means that every student at Oxford has a chance to meet with an expert in their field of study approximately once a week.

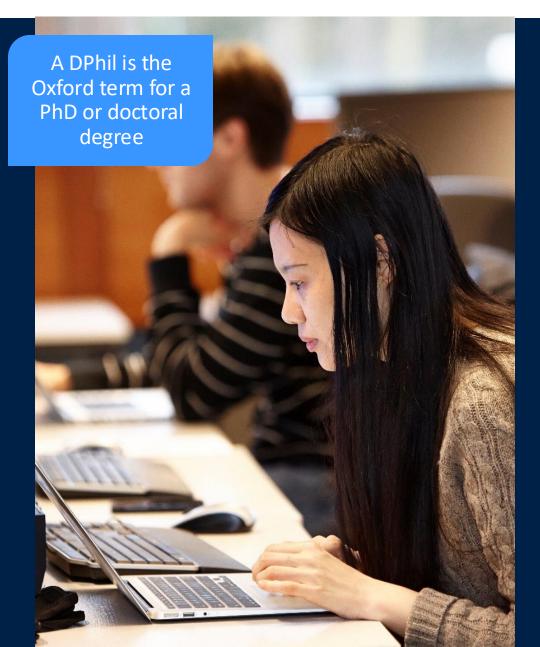


- At least once a week in each subject studied, small groups of students will spend an hour with their tutor, discussing a topic in depth.
- Students face rigorous academic challenges on a weekly basis. They will learn to
  - present and defend their opinions
  - accept constructive criticism
  - listen to others
  - think for themselves
- Encourages and facilitates individualised learning in a way that just isn't possible in a lecture
- Tutors can also provide support to students who are struggling



### Graduate study

- Graduate students make up half of the total student body at Oxford.
- Oxford offers more than 300 different graduate degree programmes.
  - "Taught" Master's degrees
  - Master's and doctoral degrees by research
- The University receives around 24,000 applications for roughly 5000 places for graduate study each year.
- Almost two thirds of Oxford's current graduate students come from outside the UK.
- Over 1,000 fully funded scholarships are available for new master's and doctoral students each year.

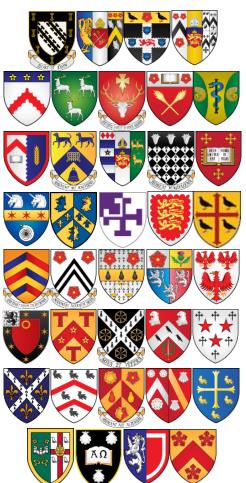


#### Structure

# **Divisions and Departments**







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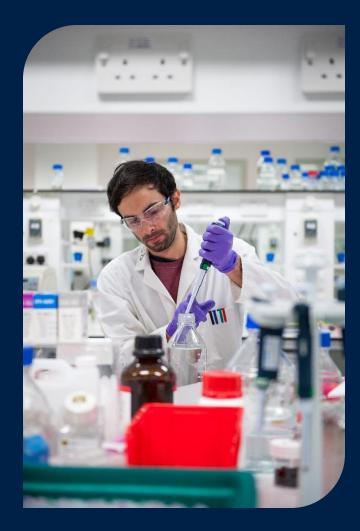
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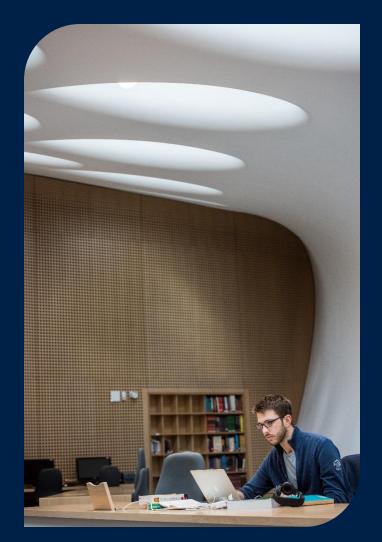
# Mathematical, Physical & Life Sciences



- Wide expertise
  - fundamental study of the structure of matter and the origins of life
  - applied work in areas such as biomedical engineering, nextgeneration solar cells and drug discovery
- Investigates societies' major challenges:
  - development of new energy solutions
  - improved cancer treatments
  - understanding climate change
  - preserving biodiversity
- Plays a leading role in many major international research projects
  - the Large Hadron Collider and the search for the Higgs Boson
  - major telescope developments such as the Square Kilometre Array and the European Extremely Large Telescope



#### **Social Sciences**



#### Oxford's social scientists

- deliver world-leading research that challenges current ideas and theories
- explore new ways to think about and benefit society
- have a real impact on public policy

Its researchers tackle many of the challenges facing the world today, with particular strengths in

- aid, poverty and development
- big data
- conflict, justice and crime
- · environment, climate change and resource management
- future cities
- global economic performance and management
- governance
- migration and population



#### Humanities

- Oxford is at the forefront of humanities research worldwide.
- Humanities research at Oxford stretches from ancient and classical civilisations to the intersection between humanities and neuroscience





The Oxford Research Centre in the Humanities (TORCH) promotes interdisciplinary research. It currently sponsors 9 major research programmes and has 18 research networks covering subjects as diverse as ancient dance, medieval mysticism and war crimes investigations.



#### **Medical Sciences**

- Largest biomedical research centre in Europe
- At forefront of medical research from the genetic and molecular basis of disease to new vaccines for major diseases
- One of the UK's largest clinical trial portfolios
- Translational expertise in taking discoveries from the lab into the clinic.
- Longstanding network of clinical research units in Asia and Africa, enabling world-leading research on the most pressing global health challenges such as malaria, TB and HIV.
- Renowned for its large-scale studies examining the effect of smoking, alcohol and diet on cancer, heart disease and other conditions.





# Departments/faculties

Departments/faculties grouped within each division

Teaching and learning for graduate and research students

Lectures, seminars, lab work

Head of Department; Departmental Administrator

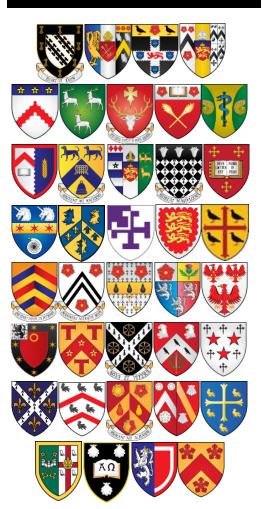


#### Structure

#### **GLAM**







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# Gardens, libraries and museums

Oxford's Botanic Garden is almost 400 years old and holds over 6000 species of plants.

The Ashmolean Museum is the oldest museum in the UK and houses a collection of art and antiquities which ranges back over 4000 years.

The University Museum of Natural History houses the University's life and earth sciences collections.

The Pitt Rivers Museum holds one of the world's finest collections of anthropology and archaeology.

The Museum of the History of Science holds the world's finest collection of historic scientific instruments.

The Bate Collection holds a collection of musical instruments dating from medieval times to the present day.











# University of Oxford Museums: Treasures from China

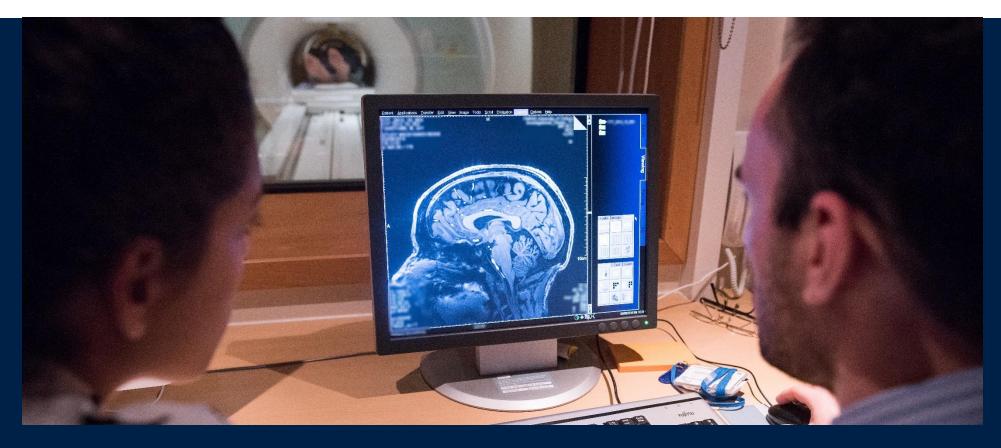






- •A painted leaf from an album of paintings of Buddhist adepts, c.1800.
  The Bodleian Library.
- •An ornament from Siu Fui, Sichuan Province, made from filigree silver inlaid with kingfisher feathers, 1907.
  The Pitt Rivers Museum.
- •A Greenware jar, c. 550–599. The Ashmolean Museum.
- •The Selden Map of China, bequeathed to Oxford in 1659.
  The Bodleian Library.



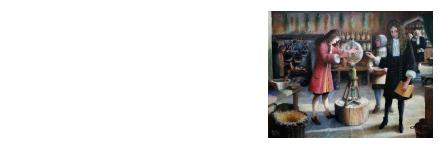


#### Research and Innovation

For the intensity, breadth, quality and impact of its research, the Oxford University has few peers anywhere in the world.

### Scientific milestones over 800 years of history





Robert Boyle and Robert Hooke identify living cells through microscopy

Dorothy Hodgkin, pioneer in X-ray crystallography, wins Nobel Prize for Chemistry



Jenner Institute deve COVID-19 vaccine based on ChAdOx platform

2020

1650s

1964

2000

1200

1400

1600

1800

1266



Roger Bacon's Opus *Maius* espouses the importance of experimentation in scientific study

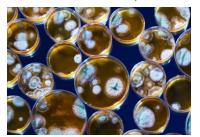


**Edmond Halley** successfully predicts the return of a comet

1703



Howard Florey and others treat first human patients with penicillin



1979

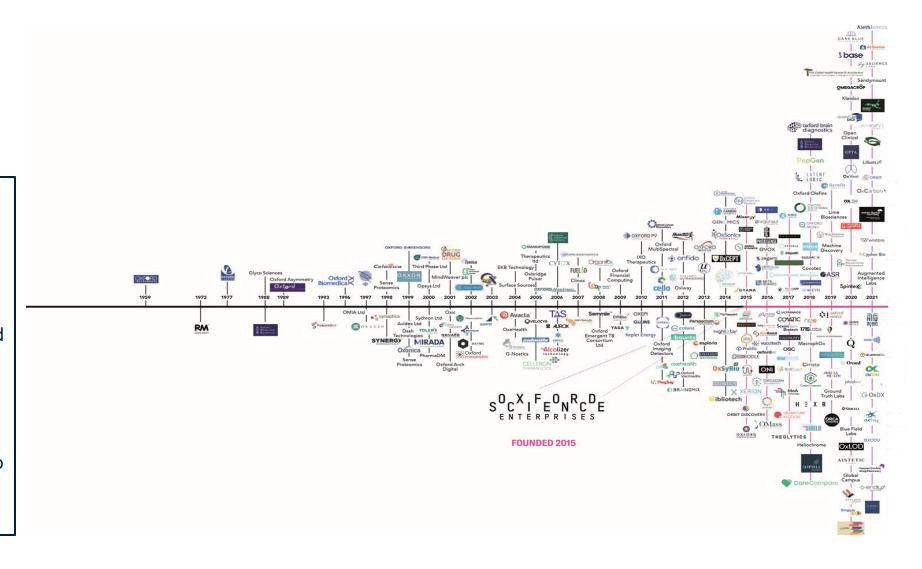
John Goodenough and others discover the Li ion battery



#### Innovation and commercialisation



- Oxford spinouts increased from an average of 4-5 companies per year in 2015 to over 20 per year in 2021
- Catalysed by Oxford Sciences
   Enterprise, \$1billion venture fund dedicated to investing in Oxford spin-outs
- Investment in Oxford spinouts increased from an average of £125m per year (2011-2015) to >£600m per year (2016–2021) and over £1bn since



#### Innovation and commercialisation



- Largest creator of new companies from UK university (>300; a third in last 5 years)
- Oxford spin-outs raised >50% of all external investment in UK spin-outs (2021)
- Secured 50% of all IP licensing income to UK universities (2021)
- £143m in licensing income from Oxford-AstraZeneca vaccine (2022)



# OSE investment portfolio focused on four key goals





#### Enabling people to lead longer, healthier lives

**+£400m** invested by Oxford Science Enterprises

**41** enterprises, now worth over

+£3.2bn

#### Preventing, predicting, and

**O ULTROMICS** AI diagnostic for heart disease

Caristo AI prediction for heart disease

Portable lab-quality **OSLER** diagnostics

**Treating:** 

**OMass** 

evox Rare diseases

Neuromuscular and genetic PepGen

diseases

Orphan disease and *immunological* conditions

mirčbio Autoimmune disease

Solid tumours, autoimmune, **T-Cypher Bio** and infectious diseases



#### **Protecting the** future of our planet

+£105m invested by Oxford Science Enterprises

13 enterprises, now worth over

+£755m

#### Feeding the world and keeping us safe

**+£50m** invested by Oxford Science Enterprises

11 enterprises, now worth over +£460m

#### Sustainable agriculture:

moa

Sustainable herbicides

wild

Crop upgrade platform

Precision crop intelligence

#### **Safety:**



*Post-quantum cryptography* 

*3D* – printed helmets

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**Education:** 

BibliU Digital textbooks

#### Accelerating the pace of positive change

+£185m invested by Oxford Science **Enterprises** 

24 enterprises, now worth over +£1.1bn

#### **Next-gen computing:**

OQC Quantum - superconducting

♦ioxford ionics Quantum – ion trap

*Quantum - photonic* 

*Quantum – silicon* 

SALIENCE

Hybrid photonic processor

#### **Research tools:**

**RE®FEYN** 

Mass photometry

ONI

Nanoimager microscope

#### **Industrial capability**

Alloyed

Digital solutions for metal



Hyperspectral imaging

#### Clean energy:





Concentrated solar power

#### **Resource efficiency:**



Battery management

**Evolito** 

Electric motors

mixergy

Smart hot water tanks

#### **Biodiversity:**



Natural capital measurement

Note: Impact mapping: only includes companies where Oxford Science Enterprises has invested +£250k (including exits, not including companies that have closed). Some companies have been mapped to more than one category.

# Investing in world-leading research facilities





Li Ka Shing Centre, £115m, 2017

Including Big Data Institute and Target Discovery Institute applying biomedical data to development of treatments for diseases worldwide



Beecroft Building, £50m, 2019

State of the art facilities for theoretical and experimental physics, enabling ground breaking research and attracting world-leading talent (e.g. Prof. Shivaji Sondhi, Wykeham Chair, 2021, ex-Princeton)



Life & Mind Building, £202m, 2024

A transformational research building for psychological and biological science at Oxford, to house over 1,000 researchers and support staff – the largest building project the University has ever undertaken



Institute of Developmental and Regenerative Medicine, £32m, 2022

World-leading facilities to support the development of new drugs and therapeutic strategies to tackle these chronic illnesses



Kavli Institute for Nanoscience Discovery, £92m, 2021

A new centre for interdisciplinary, collaborative research on nanoscience, bringing physical sciences into the cell



Stephen A. Schwarzman Centre for the Humanities , £200 m, 2025

To house Oxford's humanities faculties, a new institute for ethics in AI, and performing arts and exhibition venues





**Life and Mind Building** – £200m, on site, practical completion October 2025

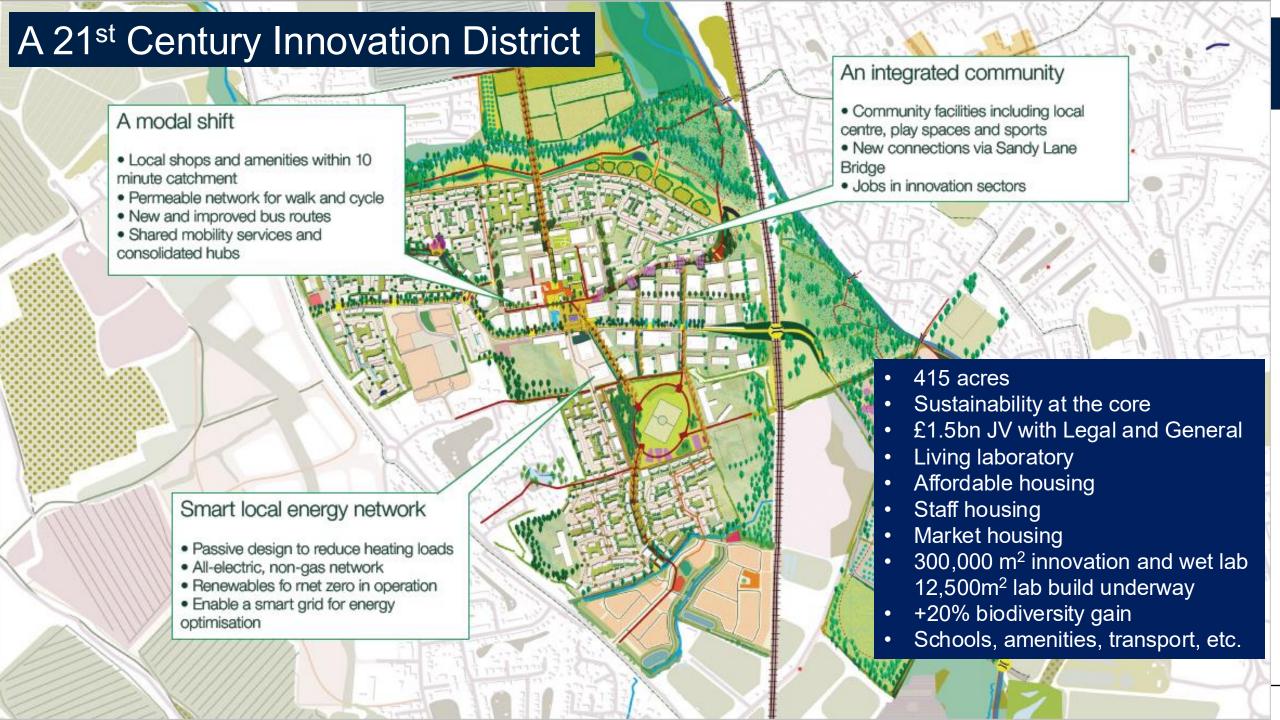


Pandemic Sciences Institute - £120m, with £55m capital gifts secured, RIBA 2 design

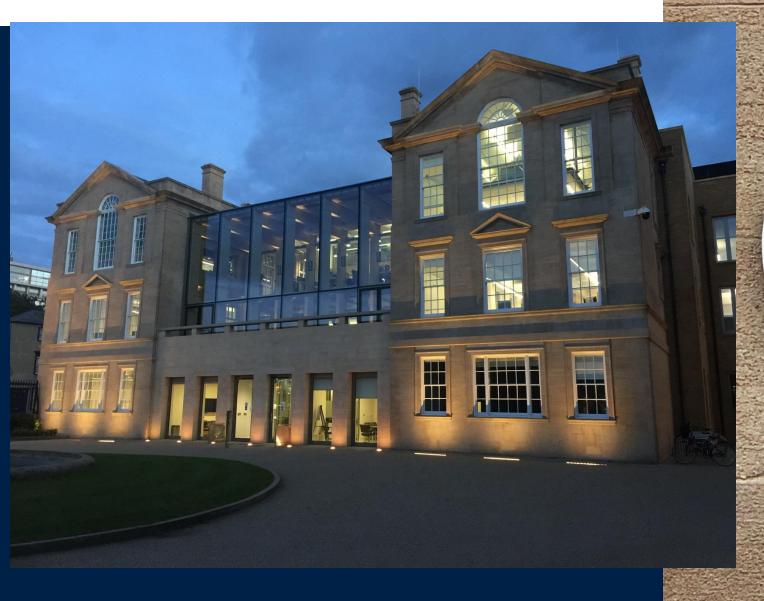


Global Health Building – £40m, Planning permission granted, within PCSA period





Oxford University: An Overview



The Radcliffe Primary Care Building

#### **PENICILLIN**

The first antibiotic was first used to treat infection here at the Outpatients building of the former

RADCLIFFE INFIRMARY

on

12 February 1941

12 February 1941