

An illustration featuring a large glass flask with a cork stopper, a green mortar and pestle, a spilled pill bottle with white pills, a quill pen, and a small plant. The background is black with colorful abstract shapes in orange, purple, green, and pink.

Science Open Day

Pills & Potions

Saturday 25 February 2012, 10am–4pm
Information Desk: Windsor Building

Royal Holloway
University of London





Science at Royal Holloway

Royal Holloway is one of the major colleges in which the University of London has chosen to concentrate its science teaching and research. This is reflected by the Science Faculty's excellent results in the Government's teaching and research assessment exercises and in the calibre of our students, staff and cutting-edge research activities. On the basis of world-leading and internationally excellent research (4* and 3* standard), four of the departments in the Faculty of Science achieved top 10 rankings for their discipline across all universities in the UK in the 2008 Research Assessment Exercise. The results across the Faculty are impressive, reflecting the excellence of our research and this provides a very strong base for further research growth.

The College's new Science Outreach Officer, Lucy Yeomans, co-ordinates a broad programme of outreach activities with local primary and secondary schools, and sixth form and FE colleges, developing and presenting a varied programme of talks, demonstrations, visits, and hands-on workshops, and providing a contact and resource for the benefit of anyone working in education to support the teaching of science to all ages. The College's Physics Outreach Officer, Dr Simon Reynolds, provides physics workshops in schools and bespoke activities across the physical sciences on request, with a particular focus on increasing the number of young people taking these subjects to A-level or equivalent, and beyond. Visit our website for more information:

www.rhul.ac.uk/scienceoutreach

Pills & Potions

W Windsor Building foyer

This year we are pleased to showcase a range of displays and activities that involve pills and potions. The College was founded by Thomas Holloway, who made his fortune by manufacturing pills and ointment to treat a variety of common ailments, for people unable to afford expensive doctors' visits. His ingredients are featured in a specially commissioned piece of work by artist Flora Parrott that pays homage to his business success. A complementary display area, featuring images from the Wellcome Trust, explores his ingredients one by one – find out why we still use ginger, saffron, cardamom, and cinnamon, to help us feel better when faced with fevers or tummy ache. Activities in Biological Sciences and Geography give you a chance to explore further the plants people use to make themselves feel better, across the world.

Katie Maggs, Curator of Medicine, has delved into the Science Museum's collections and will be talking about the objects she has brought along. From pill cutters to patent medicine pots, you'll be able to see first-hand a wealth of intriguing objects used to make and sell the pills popped by our Victorian ancestors. And if you think you have a head for advertising, you can have a go at making your own patent medicine brand. Blood, Liver and Stomach rejuvenator anyone?

Key to Locations – please refer to the map on the back

W Windsor Building

M MRI Bourne Building (access along path between Bourne and Wolfson)

T Tolansky Laboratory

Q Queen's Building

B Bourne Building/Laboratories

Alan Turing Year

W Windsor Building

Running continuously throughout the day

2012 marks the centenary of the birth of Alan Turing, one of the finest mathematicians Britain has ever produced, and arguably the father of modern computing thanks to his ground-breaking, and life-saving, work at Bletchley Park. Displays and activities in Computer Science, Mathematics, and Psychology will all pay homage to Turing's contributions. Take the Turing Test, to see if you can tell if you're having a conversation with a computer or a person

Computer Science

W Windsor Building rooms 102 & 103

Running continuously throughout the day

- **Welcome to the digital world**

Our world has gone digital. From MP3 players, mobile phones, digital TV and digital radio, and traction control and anti-lock brakes in cars, to games consoles and electronic pets; all rely on computing and digital systems. Come and find out what it is about the humble computer that makes it pop up in so many places, and learn about digital technology past, present and future

- **Robot animals**
- **Lego robotics and obstacle course**
- **X-box arcade**
- **Scratch animation**

Mathematics

W Windsor Building rooms 104 & 105

Running continuously throughout the day

- **Codes and ciphers**

Learn how to send secret messages and break simple ciphers. Explore a collection of historically important twentieth century code breaking machines, and learn how the technology has changed over the years

- **Mathematical games**

Take part in a wide variety of old and new hands-on games and see if you can work out the winning strategies!

- **Shapes and patterns**

Learn how to make a range of 3D shapes and complex 2D patterns using simple maths

Psychology

W Windsor Building rooms 002 & 003

Running continuously throughout the day

- **The incredible eyewitness**

How good a witness are you? If you spotted a crime would you be able to help the police?

- **Your inner self**

Take our tests of breathing and heartbeat to see how aware you are of the internal workings of your body

- **Never believe what you see!**
Watch our demonstration and explanation of different visual illusions
- **Your amazing brain**
Find out how your brain works and what it looks like
- **Are YOU a sleepnule?**
Discover how new words get into your head – try our learning activities to find out
- **Collaborative learning in schools: The Slough Science Project**
We are investigating how children learn about science through working together. Try out some of our tasks for yourself

M MRI Bourne Building

Running continuously throughout the day

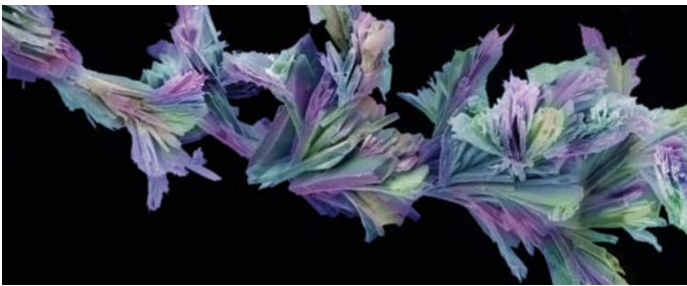
- **Imaging the brain**
We will be running regular tours throughout the day to demonstrate our brain imaging scanner in action. Visit the main Psychology display area for details

Special Exhibit

W Windsor Building room 004

Running continuously throughout the day

- **A journey in drug discovery for Alzheimer's disease**
Scientists from Eli Lilly will demonstrate some of the traps and pitfalls in the long road towards finding a drug that will improve the lives of Alzheimer's patients



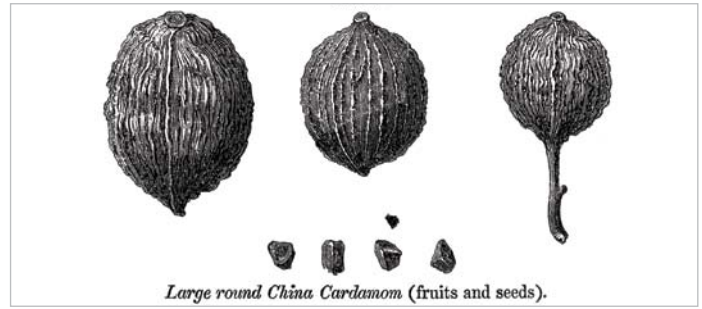
Annie Cavanagh Images

Physics

T Tolansky Laboratory

Running continuously throughout the day

- **Medical physics**
Find out how vital physics is in modern medicine, from imaging with MRI and x-rays, to radiotherapy
- **Particle physics**
How many different kinds of particles are there in the Universe? Make models of molecules and atoms and find out about the particles inside them, which make up everything from our bodies and the medicines we take, to the planet we live on and the stars around us. Visit our cloud chamber, where you can see the traces of passing particles, and talk to our particle physicists about their work. You can learn more about the different particles with our particle zoo and play particle guess who
- **How low can you go: low temperature physics**
What is a low temperature? What happens to materials at low temperatures? Our researchers will show you some of the materials they work with and demonstrate the incredible properties the materials take on when extremely cold, like becoming a superconductor or levitating
- **Roller coaster physics**
Build a roller coaster yourself using our collection of K'NEX to try out different designs and see what makes the fastest or best roller coaster
- **National Physical Laboratory**
Watch demonstrations, view displays, and talk with the scientists from the NPL



Wellcome Library, London

Earth Sciences

Q Queen's Building first floor

Running continuously throughout the day

- **Fossils Explained**
See some amazing fossils and learn about the evolution of life
- **Gold Panning**
Do you have the skill to be a prospector? Try your hand at our gold panning challenge
- **Earthquake!**
Hit the ground with a hammer to make your own quake, and discover how scientists detect earthquakes
- **Volcano**
Build a volcano and watch it erupt

Geography

Q Queen's Building ground floor

Running continuously throughout the day

- **The geography of pills, potions, and health**
Enjoy interactive events and displays that explore the relation between environment and health
- **Forensic geography**
Discover how scientists can reconstruct the illnesses and injuries of the past through studying archaeological skeletons, and hear our expert identify the health problems that can be detected in real skeletal remains. Learn how fossil pollen and insects can be used in forensic examination of fossils, to show how environments influence health and adaptation
- **The geography of the Fever Tree**
Find out how quinine and the cinchona tree made the modern world
- **Amazon room**
See the sights and hear the sounds of Amazonia in the company of our South America specialists
- **University Challenge**
Come and watch teams of Year 9 pupils from local schools pit their wits against one another in this mini University Challenge



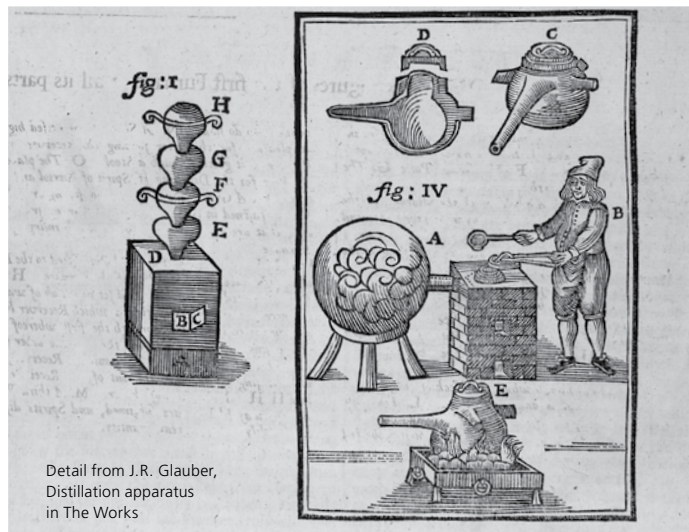
Wellcome Library, London

Biological Sciences

B Bourne Laboratory Level 2 Teaching Labs and foyer

Running continuously throughout the day

- **Cooking at -196°C: the chemistry of ice cream**
Vanilla or strawberry? Watch our chefs at work and taste our very special ice cream
- **Make your own tablet!**
Come and see how medicines are made. Procter & Gamble (the maker of Vicks cough & cold medicines) will be on hand to demonstrate how pills, lozenges and rubs can be made. You can even have a go at making some yourself!
- **DNA take away**
Explore the beauties of the double helix by making a model of your own DNA, or find the DNA inside a living thing
- **Wizard lab: the magic world of chemistry**
Discover the magic of chemistry and come to meet the wizards!
- **The chemistry and characteristics of Holloway's potions**
The constituents of Victorian medicines and their effects
- **What's in a mould?**
Come and see how slime and mould are used to cure diseases
- **Medicines and plants**
Did you know that vegetables, fruits and herbs are good for you? Guess the origin of medicines, and the properties of the plants from which they come
- **The healing power of tomatoes**
Discover how plant pigments such as yellow and red protect our body against cataracts, heart disease, and cancer
- **Pink is not just for girls**
The pink plant with the million dollar price tag! Harnessing 21st century technology so we can use plant extracts to make us healthier
- **Spotlight on rare diseases**
Revolutionising treatments with new technologies
- **Muscles and movement**
Learn how we move, and make muscle fibres with our researchers
- **The social buzz**
Despite their tiny brains, bees are capable of extraordinary feats of behaviour. Come and see how brave these important pollinators are and how our researchers learn from them
- **Not just green carpets but life above our heads!**
See how we can improve the urban environment using green roofs
- **Take a guess?**
Our ultimate quiz, identifying plants, animals and bugs from our collection

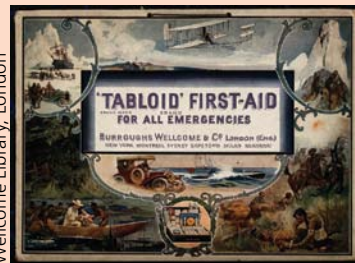


Special events

W Windsor Building Auditorium

Entry to the following events is by ticket only. Tickets are free and are only available on the day; numbers are limited. All tickets can be obtained from the Information Desk in the Windsor Building Foyer

Henry Wellcome: From Invisible Ink to Potions and Pills 11.30am (tickets available from 10am)



Wellcome Library, London

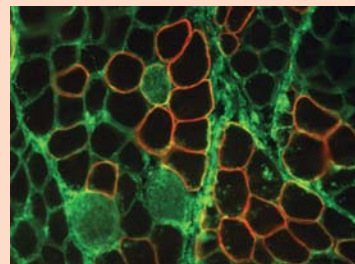
Ross MacFarlane
Wellcome Trust

Ross MacFarlane is the Research Officer for the Wellcome Library

Suitable for ages 8 and up

Genetic Medicine for Muscular Dystrophy and Inherited Illnesses

1pm (tickets available from 10am)



Professor George Dickson
Royal Holloway

Professor Dickson is an eminent research scientist investigating genetic therapies for rare and inherited diseases

Suitable for ages 8 and up

From VapoRub to Virology: 100 Years of Innovation from Vicks

3pm (tickets available from 1pm)



Dr Mike Leigh

Associate Director for Health Care R&D at Procter and Gamble

Suitable for ages 8 and up



Principal's welcome

I would like to extend a very warm welcome to all visitors to our annual Science Open Day. This event is immensely popular, offering all ages the opportunity to see some of the work of our science departments, to meet staff and students and to explore aspects of science with them. The broad spectrum of activities and research represented ensure that there will be something of interest to everyone.

Nobody can question the need for the public to have a better understanding of scientific issues and for practicing scientists to hear the concerns of the public. As a Higher Education Institution, Royal Holloway is committed to exciting people about science and to engaging with the community around us.


I hope you enjoy the day.

Professor Paul Layzell, Principal, Royal Holloway, University of London

General information

W Information Desk

- Campus guides on hand to assist you
- Lost property
- Lost children will be taken to the Information Desk
- St John Ambulance is available in the Windsor Building

 Follow us on Twitter @RHULScience
Keep in touch using #scienceopenday

Refreshments (See map overleaf for locations)

A wide range of food and drink will be available throughout the day

- | | |
|---|---|
| H The Hub | Open 10am-4pm
Sandwiches, snacks, hot and cold drinks. Hot meals available between 11.30am-1.30pm |
| C Crosslands Bar
Founder's Building | Open 10am-4pm
Jacket potatoes and wedges available between 11.30am-1.30pm |
| S The Store on Campus | Open 10am-4pm |
| W Windsor Building Foyer | Open 10am-4pm |



Join our mailing list

If you would like further information about studying at Royal Holloway, call us for a copy of our Undergraduate or Postgraduate Prospectus or departmental brochures, on 01784 443399 or visit www.rhul.ac.uk.

To receive details of forthcoming events at Royal Holloway, please fill in the panel below. You may leave this at the Information Desk or send it to: Events Office, Royal Holloway, University of London, Egham, Surrey TW20 0EX.

Name..... Address.....

Address.....

Postcode..... Email.....

Please note: you do not need to complete this form if you are already on the mailing list.
Data Protection – Your name and address will be held on our database to send you details of other College activities only.

Royal Holloway gratefully acknowledges the kind support of our sponsors for this event:



Key

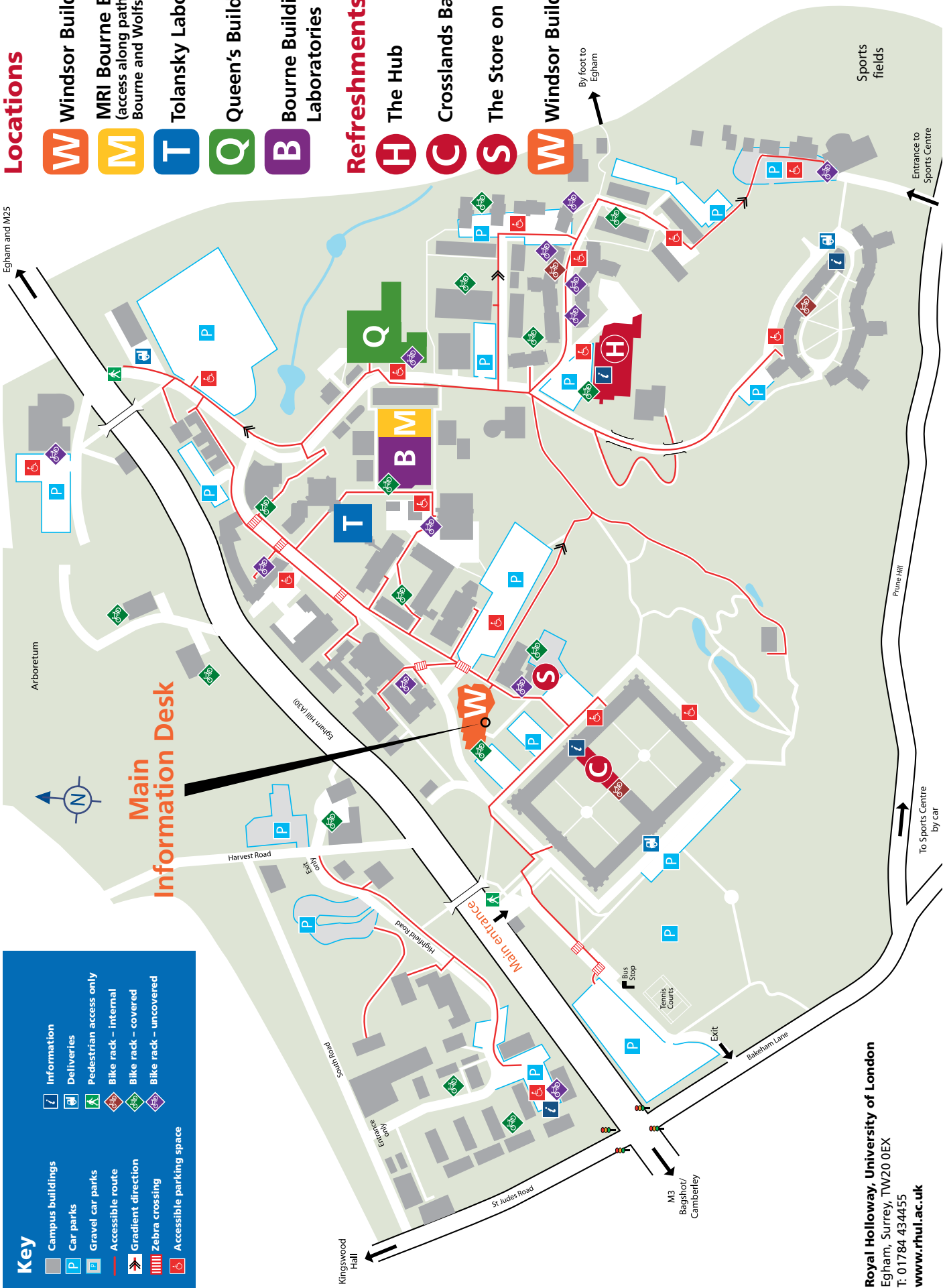
- Campus buildings
- Car parks
- Gravel car parks
- Accessible route
- Gradient direction
- Zebra crossing
- Accessible parking space
- Information
- Deliveries
- Pedestrian access only
- Bike rack – internal
- Bike rack – covered
- Bike rack – uncovered

Locations

- W** Windsor Building
- M** MRI Bourne Building (access along path between Bourne and Wolfson)
- T** Tolansky Laboratory
- Q** Queen's Building
- B** Bourne Building / Laboratories

Refreshments

- H** The Hub
- C** Crosslands Bar
- S** The Store on Campus
- W** Windsor Building



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Note: The information in this publication is correct at the time of going to print (January 2012), but there may be amendments to the programme.

