

LIVERPOOL EUROPEAN CAPITAL OF CULTURE

Special supplement of the Merseyside Branch of the Institute of Physics



Special supplement editor

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Published by IOP Publishing,
Dirac House, Temple Back, Bristol
BS1 6BE, UK.

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Institute of Physics.

Printed by Warners (Midlands) plc,
Bourne, Lincolnshire, UK.

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As Liverpool celebrates European Capital of Culture 2008, we remember the many scientists and engineers whose innovations have contributed to the building of this great city. The Institute of Physics has put together a programme of events to enable us to reflect on this past, while at the same time looking forward to exciting opportunities that lie ahead.

David Cox, editor

Merseyside is at the frontiers of physics

Frontiers of Physics is a pair of events organised by the Institute as part of Liverpool's year as the European Capital of Culture in 2008. The aim is to give an overview of areas where there have been exciting new developments in physics in recent years. We are delighted to welcome a number of high-profile speakers at the forefront of research in their fields to talk about the latest advances in physical science and to give a personal view of what the future may hold.

Dame Jocelyn Bell Burnell, who becomes the president of the Institute of Physics in October, will chair the sessions.



The stage is set for the big event.

There are two separate events: one on 21 November aimed at an audience of practising physicists, and another on 22 November that will appeal to members of the Institute with an interest in physics but who may not have been directly involved in the

field for some time; sixth-form students; and interested members of the general public. The subject matter of the presentations will be the same for both events, but on 22 November they will be slightly shorter and pitched at a more general level.

Both sessions are free and open to all. Registration is required for 21 November but not for 22 November (unless you are bringing a large group).

We hope that you will be able to join us for this rare opportunity to hear from such prestigious speakers.

The proposed programme is listed in detail overleaf (p2).

Frontiers of Physics programme

For further information, visit <http://www.merseyside.iop.org>.

Friday 21 November

Advanced registration is advised and places can be booked at <http://members.iop.org/eventbooking.asp?mastereventcode=C&eventcode=323>. Registration will also be available on the day, subject to availability.

1.00–5.30 p.m.	Chadwick Lecture Theatre, University of Liverpool
1.00 p.m.	Arrival and registration
1.30 p.m.	Welcome and introduction – Dame Jocelyn Bell Burnell, president of the Institute of Physics
1.45 p.m.	Particle physics – Prof. David Wark, Department of High Energy Physics, Imperial College
2.35 p.m.	Astrophysics – Prof. Michael Rowan-Robinson, Blackett Laboratory, Imperial College
3.25 p.m.	Break for tea
3.45 p.m.	Biophysics – Prof. Athene Donald, Cavendish Laboratory, University of Cambridge
4.35 p.m.	Fusion research – Prof. Steven Cowley, director of UKAEA Culham Division
5.25 p.m.	Closing remarks – Dame Jocelyn Bell Burnell

Saturday 22 November

The Saturday event takes place at Liverpool's new BT Convention Centre. There will be an hour's break for lunch just after midday, which will provide a great opportunity to see Liverpool's historic waterfront (lunch not provided). Directions to the venue can be found at <http://www.accliverpool.com/venue/findus/index.asp>.

No registration is required for Saturday's event. Teachers may like to bring groups of sixth-formers. These and other large groups should be booked in advance. Contact Louise Butcher (e-mail louise.butcher@iop.org, tel 07919 035 793).

10.00 a.m. – 3.00 p.m.	BT Convention Centre, Monarch's Quay, Liverpool
10.00 a.m.	Arrival
10.30 a.m.	Introduction – Dame Jocelyn Bell Burnell, president of the Institute of Physics
10.45 a.m.	Particle physics – Prof. David Wark, Department of High Energy Physics, Imperial College
11.30 a.m.	Astrophysics – Prof. Michael Rowan Robinson, Blackett Laboratory, Imperial College
12.15 p.m.	Break for lunch
1.30 p.m.	Biophysics – Prof. Athene Donald, Cavendish Laboratory, University of Cambridge
2.15 p.m.	Fusion research – Prof. Stephen Cowley, director of UKAEA Culham Division
3.00 p.m.	Close

'Visualise' brings science and theatre together

This autumn the Institute of Physics is bringing *Visualise*, a spectacular blend of theatre and science from Science Made Simple, to Liverpool.

This is an innovative mixture of live science demonstrations, physical theatre, visuals and music. The presenters use everyday objects in unexpected ways, demonstrating their mastery of the laws of physics to create a world of wordless mystery. Produced by award-winning company Science Made Simple, it has wowed audiences across Europe after being short-listed for a Total Theatre Award at the Edinburgh Fringe in 2007.

Hairline called it "An enjoyable and hypnotic show, mischievously presented and skilfully combining multimedia



Kiran Bidley

Date 13 November.
Venue Stanley Theatre, Liverpool Guild of Students.
Time 10.00 a.m., 2.00 p.m., 7.00 p.m.
Tickets £2.50 (including booking fee); free entry for schools.

effects with live science to engage a wide audience."

Year-7 pupils have also given the thumbs-up: "Unbelievable. It was very cool. You actually get to see the things in front of you."

The lack of dialogue means that the show is suitable for all ages and levels. People are invited to make their own observations and discoveries, igniting their curiosity and

ultimately motivating them to find out how the world works.

For more information about the show, visit <http://www.sciencemadesimple.co.uk/page34g.html>.

There will be three performances during the day with some tickets for the daytime performances reserved for schools (particularly suitable for 7–11-year-olds).

Tickets cost just £2.50, thanks to a generous subsidy from the Institute of Physics, and they will be available online from early September at <http://merseyside.iop.org> and from the Liverpool Guild of Students.

Schools wishing to bring a group should contact Louise Butcher (e-mail louise.butcher@iop.org, tel 07919 035 793) to arrange free admission.

Merseyside celebrates its rich history of physics



Linking up with the designation of Liverpool as the European Capital of Culture for 2008, the Institute's History of Physics Group, the Merseyside Branch and the Department of Physics at the University of Liverpool intend to hold an event about the history of physics in Liverpool on Wednesday 10 December. This will be held in the Leggate Theatre at the newly opened Victoria Gallery and Museum, which now houses all of the University of Liverpool's art and science collections in the beautiful interior of the University's Victoria Building, designed by Alfred Waterhouse in 1892 and now open for public access. There will be an opportunity to view the galleries



Clockwise: the prestigious Jack Leggate Lecture Theatre; the refurbished Victoria Gallery and Museum; and the science collection housed inside the University's grand Victoria Building.

and attend the meeting.

Four talks will begin at 11.00 a.m. and finish at 4.30 p.m., with a buffet lunch and light refreshments. The speakers will include Dominic Dickson, Peter Rowlands, Gerard Hyland and Mike Houlden, and the meeting will cover the work of Oliver Lodge, Lionel Wilberforce, Charles Barkla, James Chadwick, Otto Frisch, Herbert Fröhlich, Joseph Rotblat and many others, leading up to the present day. There will also be an exhibition of documents, photographs and artefacts, and a DVD featuring several of the major players.

For further details, contact Dr P Rowlands (e-mail p.rowlands@liv.ac.uk).

**Visit the
Institute
of Physics
Merseyside
Branch
website at
[merseyside.
iop.org](http://merseyside.iop.org)**

Liverpool catches the physics buzz



Have you been on the buses in Liverpool recently? Keep a look out for some amazing physics-facts posters, such as the one shown here demonstrating the gecko's incredible ability to defy gravity by its ingenious use of van der Waals force to cling upside down.

There are six different posters, all of which are linked to the Institute of Physics website at physics.org/facts/, where interested visitors can explore the important physics behind the startling facts.

The original "Know how now" series of posters first appeared on buses in Manchester, attempting to spread the word about physics.org.

Science Butlers serve up a class act

In another first for the Institute of Physics Merseyside Branch, this summer we will be hosting the Science Butlers – a street-theatre group that has been working with us to develop a special science-based act that brings together imaginative performance, intriguing science and good old-fashioned service.

You will be able to see the Science Butlers at various festivals across the country, including the first day of the British Association Festival of Science in Liverpool on 6 September.

For further details and information about future appearances, visit <http://www.sciencebutlers.org.uk>.

Right: with centuries of combined service, the Science Butlers draw from a wealth of knowledge and experience, with each bringing their own special skills to the organisation.



Stellar show is set to be a big hit

BIG BANG! is an original musical aimed at a range of audiences. The show charts the careers of two young scientists from their student days, in the present time, through to their rival claims to the Nobel Prize, 20 years on. Their progress is followed by four famous scientists from the past – Albert Einstein, Marie Curie, Isaac Newton and Galileo Galilei – who take an increasingly active part as the story proceeds. Through comedy, songs, music, dance and drama, the show explores aspects of both the content and process of science, and in particular the importance of presenting scientists as people.

There will be a gala charity production on 12 September at 8.00 p.m., with proceeds going to Marie Curie Cancer Care. Other performances take place on 8–12 September at the Eleanor Rathbone Theatre, University of Liverpool. Tickets can be booked via the festival website (www.the-ba.net/festivalofscience) or by contacting the booking office (tel 0207 019 494).

The Institute of Physics invites you to take a walk on the science side



Scienceplaces (<http://www.scienceplaces.org>) is the perfect place to plan a short walk.

From September the Institute has included a three-mile walk around sites in Liverpool associated with important scientific or engineering achievements. The website gives details of the route, along with a commentary that can be downloaded onto an MP3 player and taken on the outing.

The first Liverpool walk starts at the new Victoria Gallery and Museum on Brownlow Hill. The gallery opened at the beginning of July. If you haven't visited it yet, you really ought to. If people find this walk enjoyable there is another one planned next year, taking in the waterfront.

Scienceplaces has details of the Manchester walk that was added last year and news about a second outing that is being launched this October.

Left: Victoria Building, designed by architect Alfred Waterhouse.