

Making waves **Alan Davies**

Wednesday 5 October at 7.00pm
Lindop Building, College Lane Campus

We all know something about waves; we've seen them in the sea and as ripples on a pond. We know that sound travels to our ears as a wave and that some properties of light can be explained by its wave nature. However, the mechanisms by which waves are propagated is perhaps not so well known. A particular feature of waves is that they are vibrations and it is this oscillatory behaviour which allows us to describe them in a quantitative sense.



Alan Davies is Professor of Mathematics at the University of Hertfordshire

Apollo in perspective – how we went to the moon **Jonathan Allday**

Wednesday 2 November at 7.00pm
Lindop Building, College Lane Campus

The moon landings happened so long ago, generations do not know how it was done and sometimes do not believe that it was done. This talk tries to capture the spirit of the time, why the landings happened from a political point of view, how it was done from a technical point of view and what blind alleys had to be followed on the way. The talk is heavily illustrated with images from the time, many of which will be new to the audience.

Dr Jonathan Allday teaches physics at the Royal Hospital School where he is also Director of Studies. He has been a space 'nut' since he was a spellbound 8 year old glued to the TV during the moon landings.

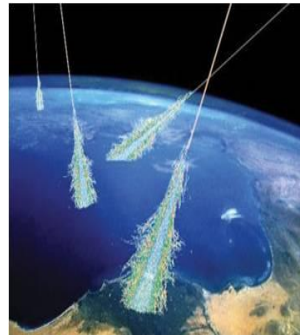


The mystery of cosmic rays **Alan Michette**

Wednesday 7 December at 7.00pm
Lindop Building, College Lane Campus

Cosmic rays, travelling at relativistic speeds, come from the Sun, the Galaxy & the Universe; more than 100,000 cosmic ray particles will pass through each of you during this lecture, and each of them could damage your DNA!

So what are they, and why are we here to tell the tale?



Professor Alan Michette, the Head of the Physics Department at King's College London, is one of the leaders of the UK CORUS programme to place cosmic ray detectors in schools, enabling pupils to participate in our understanding of the Universe.

Natural calligraphy – how nature draws beautiful lines **Jim Collett**

Wednesday 25 January at 7.00pm
Lindop Building, College Lane Campus

Jim will present a natural history of the line, investigating the questions of how lines are drawn in the physical world and what determines their qualities. Natural lines and trajectories often display surprising sharpness, unlike familiar ink figures on blotting paper. He will draw on some of his own photographs of lines and curves that we can see around us.

However the discussion will take in lines drawn on the very smallest quantum scales and those of cosmological dimensions, as well as philosophical aspects of the line and its manifestation in the arts.



Dr James Collett is an astrophysicist and artist-photographer working in the Science and Technology Research Institute at the University of Hertfordshire.

***Do we owe everything to the stars?
Jim Hough***

Wednesday 22 February at 7.00pm
Lindop Building, College Lane Campus

The discovery of hundreds of extrasolar planets has raised the possibility of discovering life elsewhere in the next few decades, and yet the origin of life on Earth remains one of the key questions for science.

The talk will cover how stars play a key role, not only in producing the elements for life, but also in providing the unique handedness in the building blocks of life.



Photo: Star-forming region NGC3063 (Hubble Space Telescope)

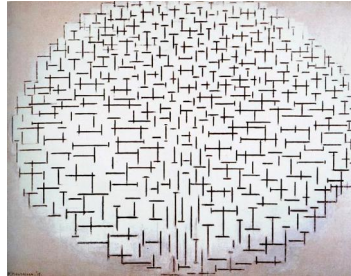
Professor James Hough is former Director of the Centre for Astrophysics Research, University of Hertfordshire.

***How round is an electron and why does it matter?
Michael Tarbutt***

Wednesday 28 March at 7.00pm
Lindop Building, College Lane Campus

How can you measure the shape of something so small that you can't even measure its size? This talk will be about an experiment that measures the shape of electrons. This shape is important in physics because it is connected to two basic symmetries of nature. The first is a symmetry between the forward and backward flow of time, and the second a symmetry between matter and anti-matter.

The talk will explore these connections, showing how extremely precise measurements made in a small laboratory experiment can answer some big physics questions.



Dr Michael Tarbutt is a Senior Lecturer in Physics at Imperial College London. He enjoys applying precise experimental methods of atomic and molecular physics to tests of fundamental physical principles.

***Maths and the making of the modern world
Chris Budd***

Wednesday 25 April at 7.00pm
Lindop Building, College Lane Campus

Nearly all of modern technology relies on maths but its applications can sometimes be a bit hidden away. In this talk I will open the lid on this technology and show you some of the maths behind Google, the Internet, Mobile Phones, Credit Cards, FACEBOOK and SAT NAV devices.

***The physics of finance
Steve Kane***

Wednesday 30 May at 7.00pm
Lindop Building, College Lane Campus

Many physical systems involve a certain element of randomness or uncertainty. Physicists have developed many techniques for modelling and controlling this randomness. Over recent years many of these techniques have been used in trying to model financial markets. This presentation gives an overview of how physics is being used in the world of finance.

**Institute of Physics Lecture Series
at the
University of Hertfordshire**



For further information on any of these lectures, please contact:

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This event is free but places may need to be reserved.