

## Department ranked top for research impact

**Sussex takes two top spots in a new ranking of UK universities based on the average number of citations per academic paper.** The latest issue of *Science Watch*, published by Thomson Scientific, puts Sussex top of the table in both physics and space science for 2001 to 2005.

## Young Physicist of the Year

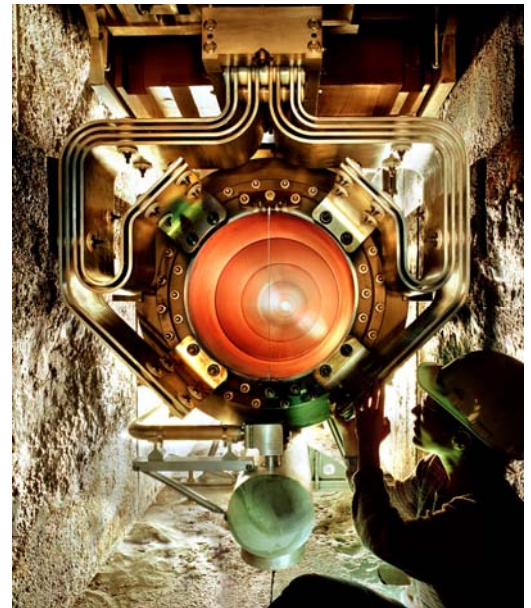
**Sussex graduate Sharon Ann Holgate has been awarded the Institute of Physics Young Professional Physicist of the Year award at the Savoy in London.** The award was 'for her passionate and talented promotion of physics and the public perception of physics through her books, articles, talks and broadcast work'. Since completing her doctorate on thermoluminescence at Sussex in 1996, Sharon has been working as a freelance science writer and broadcaster; she is currently writing *Solid State Physics: An Accessible Introduction for Undergraduates*. Her first book, a children's popular science book 'The Way Science Works' (co-authored with the late Robin Kerrod), was shortlisted for the Aventis Prize for Science Books in 2003. Sharon maintains close ties to the department, where she holds a visiting fellowship.

## Physicists celebrate a major neutrino discovery

**Drs Lisa Falk Harris and Philip Harris are taking part in the Main Injector Neutrino Oscillation Search (MINOS), designed to study ghostly sub-atomic particles called neutrinos.** The Sussex team designed a system to measure energy emitted by interacting neutrinos within a 5,400 ton underground detector. The experiment involved beaming neutrinos through the earth from Fermi National Accelerator Laboratory in Chicago to the detector 450 miles away in Minnesota. Speaking on Radio 4's *Today* programme, Dr Falk Harris said the findings will shape further work: 'Neutrinos were thought to be massless, but we now know that isn't so. They exhibit the most extraordinary behaviour - due to a quirk of quantum mechanics, the fact that they have slightly different masses allows the three types of neutrinos to transmute from one to another as they travel along.' Dr Falk Harris adds; 'Our results will set the scope for further studies of neutrinos for years to come, ultimately helping us understand the formation of the Universe.'

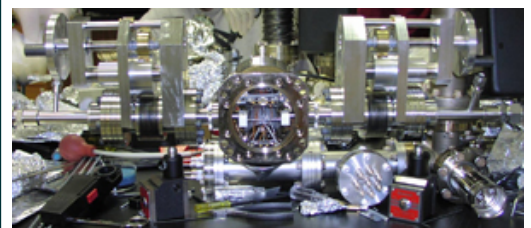
## Astronomers find massive galaxy cluster

**Dr Kathy Romer is leading a project that has led to the discovery of the most distant known cluster of galaxies.** The cluster, 10 billion light years from earth, is also likely to be the most massive yet found at such an early era in the universe. The distant cluster - named XMMXCS 2215-1734 - is revealed as a dense gathering of hundreds of galaxies, and weighs approximately 500 trillion times the mass of our sun. Most of the mass is 'dark matter', a mysterious form of matter that cannot be seen by telescopes. 'Clusters like this are vital to our understanding of how galaxies formed in the first place', says Kathy. Kathy can be seen talking about this cluster in a major new video exhibit at the Royal Greenwich Observatory.



## Major advance in quantum computing

**Dr Winfried Hensinger, head of the quantum technology group at Sussex, has built a new type of ion trap with colleagues at the University of Michigan.** In the process they also made the world's smallest ion trap - just 0.023mm from electrode to ion, the width of a hair. Miniaturised ion traps will be a vital component of future quantum computers. Dr Hensinger said: 'We now have a realistic chance to develop the world's first large-scale quantum computer', adding: 'Quantum computer technology is likely to unlock some of science's biggest secrets, by processing information hundreds of times faster than current computers'. Winfried's work was recently listed in *Scientific American's Trends in Research, Business and Policy*.



## International recognition for a physics undergraduate

Following a summer placement with Dr Claudia Eberlein sponsored by the Nuffield Foundation, fourth year undergraduate Robert Zietal (pictured) had his work published in *Physical Review A* (a prestigious international journal). He continued this work through his final-year project and a second paper will appear shortly. He has recently accepted a DPhil place to continue their work on theoretical quantum physics once Claudia returns from maternity leave in the autumn (baby Charlot was born in February).



## Research placement degree doubles in its second year

The unique research placement degree programme is attracting top students to Sussex from across the UK. This MPhys degree includes paid research placements on campus for three years and is only offered to students who achieve three As at A level and who have passed a rigorous interview. In its first year, three students were accepted onto the programme. This year there are six and we expect the number of applications to keep rising as more physics teachers hear about this unique opportunity for their brightest students.



Emma Kurwetz, Markus Vogt, Sophia Lloyd, Rajiv Ramasawmy, Keiran Lee and Lee Suttle – Year One research

## Sussex voted Best place to be

Students have voted Sussex Best place to be in a survey of 40 leading UK universities conducted last autumn. The findings come from the International Student Barometer (ISB), conducted by i-Graduate. With more than 800 overseas and 1,300 home undergraduate and postgraduate students from Sussex responding, it provides a wealth of information about how students find every aspect of 'the Sussex experience'.

## Sussex continues to ride high in university world rankings

Sussex has been named among the world's top 100 universities for the third year running and scored among the top 20 places to study in the UK according to three separate league tables.

A global poll by American magazine 'Newsweek' placed Sussex 14th in the UK and among the top 100 in the world. For the third year running Sussex has been ranked joint 12th in the UK and among the top 150 in the world by the Institute of Education at Shanghai Jiao Tong. The University was also ranked 20th in the UK and 100th in the world by the 'Times Higher Education Supplement'.

## New halls of Residence

New student residences being built in the centre of campus will be ready for the start of the 2007 academic year, housing up to 250 students sharing flats of four to seven study bedrooms, each with an en-suite bathroom. Together with the new development just over the road from the campus, this will lift the proportion of rooms with en-suite facilities to nearly a third.

## Physics students are football champions

A physics team of fourth-year undergraduates and DPhil students has come out top in a campus-wide five-a-side competition, winning both the indoor and outdoor leagues. They even beat the University football team!

Some of these DPhil students went on to win the Department football league, beating the undergraduate teams. The undergraduate teams tried to get their own back during the tug-of-war tournament on Red Nose Day, but without success.



## Girls out-pull boys

With a graduating MPhys class that has an even gender split, it was just too tempting not to pit the girls against the boys in the recent tug-of-war competition. The teams were well matched, and after a spirited performance from Leah Hunt, Jessica Grove-Smith, Katie Harrison, and Lizzy Brama (European Long Distance Triathlon champion) the girls beat the boys 2:0 (see below).

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