SURREY MARSHALL SCHOLARSHIP

Further Information Provided by the University of Surrey

Biomedical and Molecular Sciences

Our research, underpinned by our emerging Core Technology platforms, integrates scientific and clinical disciplines into multi-disciplinary, cross-cutting themes which focus on human health, disease and treatment: Infection and immunity; Multifactorial diseases (including cardiovascular biology research); Neuroscience; Diagnostics and materials; Drug design, development and safety; and Systems Biology. In addition, there are a number of interdisciplinary partnerships with other University of Surrey Schools that support a research portfolio embracing a 'Molecules to Medicine' continuum. We enhance clinical research through a new Clinical Research Centre, the Postgraduate Medical School and a deepening relationship with the Royal Surrey County Hospital NHS Trust. £4 million has been invested in refurbishments and equipment, particularly into Functional Genomics, Proteomics and Metabolomics; a recently completed programme has also enhanced our Neuroscience infrastructure.

Electronic Engineering

Electronic Engineering is one of the largest departments in the University, with an overall postgraduate student population of about 450. The excellence of its research is also recognised by the prestigious prizes it continues to receive from both industry and government bodies. Funding from industry provides almost 50% of its overall research income. The main research centres within the department are:

The Centre for Communication Systems Research, (CCSR)

CCSR is an internationally recognised research centre, and is the largest academic Communications Research Centre in the UK. It is a key member of the UK Virtual Centre of Excellence, VCE, in Mobile and Personal Communications and has been selected as a member of both the Nokia and Ericsson Global University alliances.

The Centre for Vision, Speech and Signal Processing, (CVSSP)

CVSSP's internationally renowned research covers the analysis of image and speech data using techniques from signal processing, pattern recognition, computer vision and artificial intelligence. Its expertise and activities span, multimedia applications (video coding and retrieval), digital broadcast production, biometric authentication, document analysis, medical imaging, automatic visual inspection, mobile robotics, remote sensing, and dynamic 3D object and environment modelling.

Surrey Space Centre, (SSC)

Surrey Space Centre holds a unique place in satellite engineering research worldwide. Having pioneered cost-effective satellite engineering techniques to develop a series of highly sophisticated, yet inexpensive small satellites, it is now established as an international centre of excellence in academic research, teaching and commercial applications for small satellites, providing affordable access to space for a wide range of international customers. The research drives advances in small satellite technology that are exploited through the University's commercial company - Surrey Satellite Technology Limited.

Advanced Technology Institute, (ATI)

The new £10m Advanced Technology Institute is a collaboration between Electronics and Physics at Surrey in optoelectronic and microwave devices and circuits. The ATI has over 50 PhD students and 60 academic and research staff, whose research activities span the areas of solid state electronics and photonics. A further £4.5 M investment was made in May 2003 to provide equipment for nanoelectronics research and high performance computing.

Mathematics

The Mathematics Department at Surrey is one of the largest groups in the United Kingdom working on nonlinear mathematics and its applications. Research interests cut a broad swathe through both pure and applied aspects of this area, ranging from ergodic theory and symplectic geometry to novel applications in

electronics, meteorology, neurobiology, arterial flow, molecular motors and spacecraft dynamics. A particular emphasis is placed on research at the interface between pure and applied mathematics.

Physics

The Department includes about 120 postgraduate students and 60 academic and research staff, all actively involved in fundamental and interdisciplinary research in the areas of nuclear and applied radiation physics, radiation imaging, medical physics, soft condensed matter, and ultrafast and semiconductor optoelectronics. Roughly 40 per cent of the Department's students are postgraduates studying for MSc or PhD degrees. This proportion of postgraduates, one of the highest in the UK, reflects the Department's strength in research. Our research groups include: Experimental and Theoretical Nuclear Physics Groups; Radiation and Medical Physics; Soft Condensed Matter Physics Group; Photonics Group; and the Theory and Advanced Computation Group.

Environmental Strategy

The Centre for Environmental Strategy (CES) is the leading centre for Sustainable Development related research and postgraduate teaching in the UK. CES is firmly established, nationally and internationally, as a focus for cross-disciplinary analysis of long-term environmental problems. Research in CES is mainly clustered around two inter-related research areas:

- Environmental Systems Analysis applies rigorous analytic techniques to the assessment of environmental performance, with the aim of providing a sound scientific basis for sustainable development practices and policies
- Environmental Policy and Risk Management forms a natural adjunct to this more technical work and addresses a variety of social, economic and policy aspects of sustainable development.

Within these broad areas, work in CES is divided into a number of specific research themes; ecological economics and ethics; environmental management and policy-making; environmental systems analysis; sustainable energy; and development of educational software.