

RUTHERFORD APPLETON LABORATORY

LASERS

The Central Laser Facility is one of the world's leading centres for high-power laser research. Two large lasers, Vulcan and Sprite, are in operation. Vulcan is the most powerful laser dedicated to civil research in western Europe. In addition the Laser Support Facility maintains a wide range of smaller lasers for use at RAL and on loan to universities.

PARTICLE PHYSICS

Particle physics is the study of the properties and interactions of the elementary constituents of matter. Major pieces of hardware and software associated with experiments at European laboratories are designed, constructed, and commissioned by RAL. The Laboratory acts as a focus for the collection and analysis of the experimental data then produced.

TECHNOLOGY

Technology Department is a centre of engineering expertise in a number of areas. It undertakes a wide range of work, from engineering on the minute scale of a microchip to the building of massive instruments such as telescopes and superconducting magnets. In addition it manages research programmes in microelectronics, wind energy, and radio communications.

FACILITIES AND PROGRAMMES

SPACE SCIENCE

The Space Science Department is involved in the design and construction of instruments for space satellite missions covering earth observation, solar system studies and astronomy. It has a Space Environment Test Facility with large ultra clean laboratories in which instruments are assembled for final testing prior to launch. RAL is a technical centre for space science for the British National Space Centre (BNSC).

ADMINISTRATION

In an organisation whose main purpose is the pursuit of a full and varied scientific programme, professional administration is vital. Every scientific project relies upon the smooth and efficient provision of support services, from expert photography and reprographic services through comprehensive financial and personnel support to the management of the domestic infrastructure such as catering, transport and accommodation.

ISIS

ISIS is the most powerful pulsed neutron source in the world and has made major contributions in many areas of physics and chemistry. Neutrons are produced by accelerating pulses of protons almost to the speed of light and directing them onto a heavy metal target. They are then used to study the structure and properties of materials.

INFORMATICS

Informatics Department exists to provide the best and most suitable information technology, and advice on how to make the best use of it, to engineers carrying out research in universities. It also carries out research itself to determine what the best really is. There is a strong emphasis on helping users, from making best use of existing software to incorporating new technology such as the transputer into their workplaces.

CENTRAL COMPUTING

Access to powerful computers is vital to today's researchers. These computers are used to perform enormous calculations and to process vast amounts of data quickly. The Atlas Centre at RAL provides a range of advanced computing facilities, including two super-computers which constitute an important resource for numerically intensive computing in the UK and abroad. This is accessed through a computer network, also supported at RAL.

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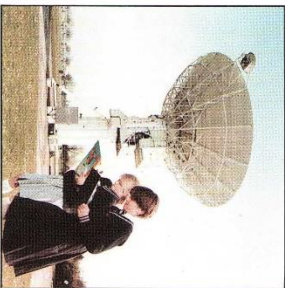
WORKING WITH SCHOOLS

The main function of the Rutherford Appleton Laboratory is to support research in the fields of space science, lasers, materials, particle physics, computing and information technology. The Laboratory achieves this by developing and operating world class facilities and by being a centre of excellence in advanced scientific and engineering techniques. Many of the scientists and engineers amongst the 1300 staff collaborate in research projects themselves. In all around 8500 scientists and engineers make use of RAL in some way each year.

WORKING WITH SCHOOLS

VISITS

RAL welcomes school visits. A visit will be tailored to suit the needs of the group, and will normally involve an introductory talk covering the work of the whole Laboratory and a tour of two or three areas of specific interest.



CAREERS FAIRS

The Laboratory is eager to participate in local careers fairs in order to promote careers in science and technology in general, as well as to publicise opportunities at RAL.

TEACHER PLACEMENTS

The Laboratory encourages teacher placements. Working with the Teacher Placement Service and the Education Business Partnerships of South Oxfordshire and West Berkshire, RAL offers one placement per term to a local teacher.

The Laboratory is giving assistance to local schools to enhance the industrial relevance of the teaching of these new vocational courses.

INDUSTRIAL SUPPORT FOR GNVC IN SCHOOLS

SCHOOL PRIZE SCHEME

Each Year Heads of Science in the secondary schools local to RAL are invited to select a pupil to receive the RAL prize for practical achievement in Year 9. The prize winners then choose their prize from a book list supplied by the Laboratory. The prize includes a tour of the Laboratory's facilities and an evening reception at RAL to which teachers and parents are also invited.



TALKS

Some of RAL's top scientists, engineers and computer experts are available to visit local schools to talk about their work.

ENGINEERING APPRENTICESHIP TRAINING SCHEME

Each year school leavers are recruited locally to train as Engineering Apprentices. The training scheme takes the form of a 4-year indentured apprenticeship. In September the trainees join the Laboratory for a short induction course before attending Abingdon College of Further Education for one year. Subsequent years are spent at the Laboratory being trained in appropriate engineering skills and then developing those skills. Day release to follow academic studies continues in parallel with this on-the-job training.

WORK EXPERIENCE

RAL offers a limited number of work experience placements each year. While there is always a great demand for placements in areas such as Space Science and Technology opportunities are also available in other departments.

EVENTS

Many schools-oriented events are held at RAL. These include open days, lectures, presentations by the Living History of Science and science problem solving days. Details are publicised regularly to schools on our mailing list.

