

2007-

School of Physics, Engineering and Computer Science and Centre for Astrophysics Research, University of Hertfordshire, UK

**Visiting Professor of Physics and Research Fellow**-Established the STRI/CAR Polarimetry Laboratory. Research on optical signatures of biologically active molecules for the detection of extraterrestrial life, polarimeters, radial velocity spectrometers.

2002-2006

Central Laser Facility, Rutherford Appleton Laboratory, UK

**Consultant, Visiting Scientist**-Management consultant, laser design consultant. Project leader for the HiPER laser project for an Inertial Fusion Energy fast ignition and high power/energy research facility. Principal Investigator, IAEA Fusion Energy study.

2002-

Martin Technology Consultants Ltd, Hemel Hempstead, UK Director Laser and geophysics technical consultancy. Design, manufacture, and sale of geophysics surveying instruments for archaeology .

2000-2002

BAE SYSTEMS plc, Farnborough, UK

**Director Concepts**, Future Systems-Responsible for the generation and management of new concept studies and demonstrations leading to new streams of business for the company. Managed corporate investment of £15m/yr in concert with corporate R&T and customer capability groups.

**Managing Director**, European AeroSystems Ltd., Future Systems, Warton, Paris-Responsible for the operations and performance of EAeS, a joint venture company of BAE SYSTEMS and Dassault Aviation. Full P&L responsibility, 65 Anglo/French staff, research and development for advanced military air systems.

**Head of Advanced Systems and Technology**, Future Systems-Responsible for the technical support of future programmes and the supporting R&D across all sectors of BAE SYSTEMS business.

1995-2000

Marconi Electronic Systems Ltd., Stanmore, Edinburgh, UK

**Technical Director**, Radar and Countermeasures Systems Division-Responsible for future programmes, systems development, and research and development. Responsible for strategic planning and new business development for EW and EO countermeasures. Responsible for environmental, health and safety, and IT for the Headquarters site of Marconi Electronic Systems.

Technical Director of Defence Systems and Electronic Warfare Divisions in prior organisations.

1994-1995

Technology Consultants, Alexandria, VA, USA

**Consultant** -Independent technology and strategic planning consultant. Benchmarking, technology transfer, technology assessment, IT consultancy, and preparation of research contract proposals.

George Mason University, Institute for Computational Sciences and Informatics, Falls Church, VA, USA

**Adjunct Professor**-Program advisor for aerospace technology, satellite data systems, laser and particle beam interactions, metadata frameworks for large data input and storage of science satellite data.

1993-1994

British Aerospace Inc., Government Programs Office, Arlington, VA, USA

**VP Technology Programs**-North America-Identification and acquisition of new technology, demonstration projects and technology transfer opportunities. Company interface with ARPA, strategic defence programmes.

1988-1993

British Aerospace Defence Ltd., Dynamics Division Stevenage, UK

**Senior Executive New Business** -Developed new missile system business. Generated and managed development programmes for ground and air defence systems of value £75m with a staff of 45.

**Head of New Projects**- Led a thirty member team of senior engineers developing new technology and system concepts for future land, naval, and air defence missile systems.

**Executive Chief Engineer** - Electronic & Strategic Systems-Manager of Navigation, Antenna Design, Command and Control, Simulators, Electronic Warfare, Directed Energy, and SDI Engineering departments. 400 staff and total budgets >£35m.

1985-1997

University of Bristol, Bristol, UK

**Visiting Industrial Professor** -Industrial and research advisor to the Department of Electrical Engineering in pulsed power, computational physics, communications, and electro-optics.

1984-1988

British Aerospace, plc, Sowerby Research Centre, Bristol, UK

**Principal** - Chief Scientist and Manager of the Corporate Research Centre. Technical Co-ordinator for BAe Corporate SDI activities. Responsible for 100 staff and budgets of >£10m. Biomedical Consultant, Bristol Blood Transfusion Centre.

1975-1984

Lawrence Livermore National Laboratory, Livermore CA, USA

**Senior Staff Physicist**-Particle Beam Program- Developed techniques in laser/particle beam physics leading to the discovery and demonstration of the laser guiding of charged particle beams.

**Operations Director**-Inertial Confinement Fusion Program- Responsible for experimental operations and system management of the SHIVA and ARGUS lasers, at that time the largest laser systems in the world.

**Group Leader** for Component Development- Directed oscillator and amplifier research for large fusion lasers.

1981-1982

Atomic Weapons Research Establishment, Aldermaston, UK

**Senior Research Fellow**-Radiation Physics -Conducted laser plasma physics investigations under joint UK/USA security agreements. Designed/managed laser systems for classified experiments.

1970-1975

US Naval Electronics Laboratory Center, San Diego, CA, USA

**Physicist**-Electro-Optics Division-Developed fibre and integrated optical waveguides and switches, performed basic research on II-VI and III-V semiconductors. Invented several integrated optical devices now industry standards.

Education:

1974

University of California, San Diego PhD Applied Physics (Electromagnetics)Thesis title: Image Propagation in Graded Index Media

1970

San Diego State University MSc Physics (Nuclear)Thesis title: A Statistical Analysis of Fission Neutron Cross Sections of U238

1969

San Diego State University BSc Physics (Distinction)

Professional Societies and Organisations:

Fellow of the IET, Fellow of the RAS, SMIEEE, SMOSA, Chartered Electrical Engineer.

Selected Appointments and Training:

1996-2009

DSAC/ISTA independent member

1995-2003

Univ. of Cambridge Engineering Dept., Management of Technology advisor

1990-1993

SBAC Guided Weapons Sectoral Group, Vice Chairman and Chairman-elect, member of the SBAC Technical Policy Committee.

1991-1992

Sir Isaac Newton Institute of Mathematics, Univ. of Cambridge, Industrial Consultant

1988-1991

SERC Central Laser Facility Review Panel member

1988 INSEAD (BAe senior executive business training, Fontainebleau, France)

1987-1989 UK Pulsed Power Association - Industrial Officer

Various dates: NATO, TTCP, IEPG, IAEA representative

Languages

German, French, Spanish all at 'survival' level

Awards/Patents:Twelve US and UK patents in light modulation, optical logic, integrated optics, laser/particle beam technology, electromagnetic launchers, particle detection, ANPR techniques

Publications:Authored or co-authored over 50 refereed journal papers on integrated optics, semiconductor physics, laser media, non-linear optics and laser/particle beam physics, polarimetry. Numerous invited papers and articles in non-refereed open publications.

Other:

Editorial Co-ordinator, Hertfordshire Archaeology 2003-2010

Citizenship: British, DOB: 19/12/41, Married