



Programme overview

Programme on Tuesday, 10 September 2002

08.00	Registration Desk open			
09.00	RPA Update Lecture Theatre 1	HPA sponsored session Lecture Theatre 2	HPA Annual Delegate Conference Lecture Theatre 3	Lunch Exhibition Area
09.30				
10.00				
10.30				
11.00	Coffee Break Exhibition Area	Lunch Exhibition Area	HPA Annual Delegate Conference Lecture Theatre 3	Lunch Exhibition Area
11.30	Coffee Break Exhibition Area			
12.00	RPA Update Lecture Theatre 1			
12.30				
13.00	Lunch Exhibition Area	Lunch Exhibition Area	HPA Annual Delegate Conference Lecture Theatre 3	Lunch Exhibition Area
13.30				
13.45	Opening Ceremony – Dr S Smye, President and Sir K Calman, University of Durham Lecture Theatre 1			
14.00	Lunch	Grade A Lecture Theatre 2	Health Informatics Lecture Theatre 3	Management and Professional Matters Lecture Theatre 4
14.30	RPA Lecture Theatre 1			
15.00				
15.30				
16.00				
16.30	Poster Session and Reception (15.45 – 17.45) Exhibition area			
17.30				
19.00	Departure to Prince Bishop Cruise Collingwood College			

Programme on Wednesday, 11 September 2002

08.00	Registration Desk open			
08.45	Plenary Session Physics, Engineering and the Brain Lecture Theatre 1			
09.30				
10.00				
10.30				
11.00	Coffee Break Exhibition Area			
11.30	Spiers Lecture and Durham Lecture Lecture Theatre 1	Clinical Engineering Lecture Theatre 2	Technologists' Network Lecture Theatre 3	
12.00				
12.30				

Programme on Wednesday, 11 September 2002 continued

13.00	Lunch Exhibition Area				
13.30					
14.00	Radiation Protection Lecture Theatre 1	Emerging Technologies Lecture Theatre 2	Magnetic Resonance Lecture Theatre 3	Physiological Measurement Lecture Theatre 4	Graduate Network Seminar Room 1
14.30					
15.00					
15.30					
16.00	Tea Break Exhibition Area				
16.30	Annual General Meeting Lecture Theatre 1				
17.00					
17.30					
19.15					

Programme on Thursday, 12 September 2002

08.00	Registration Desk open				
09.00	Radiotherapy Lecture Theatre 1	Nuclear Medicine Lecture Theatre 2	Magnetic Resonance Lecture Theatre 3	Physiological Measurement Lecture Theatre 4	
09.30					
10.00		Coffee Break Exhibition Area			
10.30					
11.00	Coffee Break Exhibition Area	Nuclear Medicine Lecture Theatre 2	Coffee Break Exhibition Area	Coffee Break Exhibition Area	
11.30					
12.00	Woolmer Lecture Lecture Theatre 1				
12.30					
13.00	Lunch Exhibition Area				
13.30					
14.00	Diagnostic Radiology Lecture Theatre 1	BNMS Meeting Lecture Theatre 2	Bioengineering and Rehabilitation Lecture Theatre 3	Integration of Medical Imaging & Rapid Prototyping Workshop Lecture Theatre 4	
14.30					
15.00		Tea Break Exhibition Area			
15.30	Tea Break Exhibition Area	BNMS Meeting Lecture Theatre 2	Tea Break Exhibition Area	Tea Break Exhibition Area	
16.00	Diagnostic Radiology Lecture Theatre 1	BNMS Meeting Lecture Theatre 2	Bioengineering and Rehabilitation Lecture Theatre 3	Integration of Medical Imaging & Rapid Prototyping Workshop Lecture Theatre 4	
16.30					
17.00			BNMS Poster session and reception Exhibition area		



Programme Details

10 September 2002

RPA Update

- 09.00 Re-accreditation (IPEM vs SRP CPD Schemes)
Ian Keyes, RPA 2000
- 09.30 Suitability for RPAs
Sharan Pacjer, HSE
- 10.00 Corporate Body RPAs
Wendy Bines OBE, HSE
- 10.15 Discussion
- 10.30 Coffee Break
- 11.15 Transport regulations
Ian Barlow, DTLR
- 11.45 Justification regulations
Wendy Bines OBE, HSE
- 12.15 Radioactive substances management and BPM
Adrian Bush, Environment Agency
- 12.45 Discussion
- 13.00 Lunch
- 14.15 Communication with management
Peter Marsden, UCL Hospitals
- 14.45 Communication with the media
Patrick Cox, University of East Anglia
- 15.15 Communication with regulatory authorities
Peter Marsden, UCL Hospitals
- 15.45 Discussion
- 16.00 Poster Session and Reception

HPA Sponsored Session

The new NHS: The impact on medical physics

- 09.45 **P Griffiths, Lincoln**
- 10.05 **R Clements, HPA Industrial Relations Representative**
- 10.20 **R Maskell, HPA General Secretary**
- 10.40 Discussion

Grade A Session

Chairs: Prof A Perkins and Dr W Morgan

- 14.00 A Transmission Ionisation Beam-Imager for Radiotherapy Verification
M Thomas, London

- 14.15 Characterising the distortion of an MR sequence for use in radiotherapy treatment planning
C Merry, London
- 14.30 The Dosimetric Properties of a Mini-MLC – Implications on Patient Treatment
J Williams, Liverpool
- 14.45 Modelling the CR imaging process to create threshold contrast detail detectability images using analytical methods
E McDonagh, London
- 15.00 Comparison of Film Screen and Computed Radiography (CR) Image Quality for Chest Imaging
I Honey, London
- 15.15 A novel algorithm for the measurement of kidney area from images acquired for ^{99m}Tc-DTPA renograms
A Buckle, Newcastle upon Tyne
- 15.30 Is it possible to use a modern gamma camera to make in-vivo vitamin B12 absorption measurements?
C Armpilia, London
- 15.45 What does Laser Doppler and cold challenge tell us about Raynaud's phenomenon
M Aldridge, London
- 16.00 Doppler ultrasound Resistance and Pulsatility Index blood flow measurements in axillary lymph nodes
R Perrin, Bristol
- 16.15 Evaluating electronic assistive technology - the wiseDX system as a case study
V Thorpe, Lincoln
- 16.30 Poster Session and Reception

Health Informatics and Computing

Chairs: Dr A Sims and Mr N Brown

- 14.00 Integrating the Healthcare Enterprise IHE and the Electronic Patient Record (EPR)
N Brown, Hereford
- 14.15 Integrating the Healthcare Enterprise (IHE) in the UK
I Chell, London
- 14.30 PACSnet and Integrating the Healthcare Enterprise
D Bhachu, London

Health Informatics continued

- 14.45 IHE as an aid to system implementation in the real world
D Plummer, London
- 15.00 The development of a Trust wide imaging network at Guys & St Thomas' NHS Trust
P Verma, London
- 15.15 Portable device for non-invasive measurements "Patient Monitor"
N Lipnitskaya, Minsk
- 15.30 Survival prediction of head and neck cancer using artificial neural networks
A F Taktak, Liverpool
- 15.45 Fuzzy logic expert system for ventilation of newborn infants
K Tan, Leeds
- 16.00 The development of an intelligent patient monitoring system in the neonatal intensive care unit
S Belal, Stoke on Trent
- 16.15 A Multi-Site Multi-Service Client-Focused Database for Community Healthcare
P Ganney, Hull
- 16.30 Poster Session and Reception

Management and Professional Matters

Chair: Dr J Agnew

- 14.00 The EPSRC support for research in healthcare
J Houghton, EPSRC
- 14.20 National Occupational Standards
S Hill, Birmingham
- 14.40 Medical equipment management and development NOS
S J Meldrum, Norwich
- 15.00 Assessment of competencies
P Griffiths, Lincoln
- 15.20 Chaired Discussion
J Agnew, London
- 15.45 Poster Session and Reception

11 September 2002

Physics, Engineering and the Brain

Chair: Dr I Chambers

- 08.45 Transcranial Doppler ultrasound
D Evans, Leicester

- 09.05 Stereotactic radiotherapy
J Warrington, Sutton
- 09.25 Imaging brain structure and function in dementia
J O'Brien, Newcastle upon Tyne
- 09.45 How can we measure the concentration of substrates and metabolites in the human brain?
P Hutchinson, Cambridge
- 10.05 Proton MR spectroscopy: basic principals and clinical application
D Birchall, Newcastle upon Tyne
- 10.25 Eletromagnetic investigation of the brain
C Barber, Nottingham
- 10.45 Coffee Break

Spiers and Durham Lecture

Chair: Prof A Perkins

- 11.45 **Spiers Prize Winner:** Near infrared Raman spectroscopy for the classification of epithelial pre-cancers and cancers
N Stone, Gloucester
- 12.15 **Durham Lecture:** The sun has got his hat on
B Diffey, Newcastle upon Tyne
- 12.45 Lunch

Clinical Engineering

Chair: Mr C Griffiths

- 11.45 Some electrosurgery generators & a capacitive plate
D Smith, Edinburgh
- 12.00 Evidence based PPM planning
R Price, Leeds
- 12.15 Selecting the right partner: The crucial step in medical device management
J Amore, Edinburgh
- 12.30 Developing The Role Of The Clinical Engineer Into A Multi-Skilled Holistic Engineering Function
P Grainger, Dublin
- 12.45 The role of the clininal engineer and engineering technologist
D Cook, Reading
- 13.10 Lunch

Technologists' Network

Chair: Mr A Iles

11.30 Healthcare Science – fact or fiction?
G Hindhaugh, Newcastle

Professions – who needs them?
T Fowler, Newcastle

Voluntary Register for Technologists
D Burrell, Birmingham

Technologists' Training; Overview,
Questions and Answers
D Pearson, Nottingham

Discussion

13.00 Lunch

Radiation Protection

Chair: Dr CL Chapple and Mrs G Reay

14.00 A study of the measurement uncertainties
in ultraviolet dosimetry for phototherapy
A Coleman, London

14.15 Revised Risk Estimates for Energy
Imparted from Latest A-bomb Survivor
Data
A Meade, Dublin

14.30 Determining Diagnostic Reference Levels
J Clinch, London

14.45 Effective Dose in Paediatric Computed
Tomography
S Willis, Newcastle upon Tyne

15.00 Survey of CT Doses in Ireland.
T Kenny, Dublin

15.15 Regulation and National Minimum
Standards for Class 3b & 4 lasers and
intense light sources
S Saimbi, Birmingham

15.30 Application of the R(EPPI)R 2001 to a
large London teaching hospital
A Moreton, London

15.45 Tea Break

Emerging Technologies

Chairs: Dr J Minns and Dr D Hitchings

14.00 **Guest Lecture:** The young brain -
Autobiographical memory and the brain
from birth
Sue Leekam, Durham

14.20 **Guest Lecture:** Communicating with the
world - A window on the brain

R Bates, Leicester

14.40 **Guest Lecture:** Wear and tear - Iron
accumulation as a cause of
neurodegeneration

A Curtis, Newcastle upon Tyne

15.00 **Guest Lecture:** The older brain - The
biological bases of brain ageing and
cognitive decline

J Edwardson, Newcastle upon Tyne

15.20 **The Health of the Brain Workshop**

Aimed at identifying emerging physical
sciences and engineering techniques
which focus on the health of the brain

15.45 Tea Break

Magnetic Resonance 1

Chair: Dr Stephen Keevil

14.00 The Quantification of Aortic Stenosis
using Breath hold and Conventional
Gradient Echo MR techniques
M Panoutsopoulos, Leeds

14.15 Comparison of FSE and SSFSE in the
determination of left ventricular mass
M Graves, Cambridge

14.30 Development and evaluation of
interactive SSFSE for cardiac and
abdominal MR imaging
M Graves, Cambridge

14.45 A flow phantom for catheter tracking
under MR
M Miquel, London

15.00 Rapid Analysis of Geometric Distortions
using Harmonic Phase (HARP) Analysis
S Nicholas, Portsmouth

15.15 Discussion - will MRI replace X-ray
imaging for cardiac diagnosis and
intervention?

15.30 Tea Break

Physiological Measurement 1

Chairs: Mr W Allen and Mr R Royall

14.00 Dynamic neural network analysis of
cerebral blood flow autoregulation
R Panerai, Leicester

Physiological Measurement 1 continued

- 14.15 Comparison of Two Non-Invasive Methods for Measuring a Blood Pressure Waveform.
T Birch, Southampton
- 14.30 Estimation of coherence between cerebral blood flow velocity and EEG activity in newborn babies
D Simpson, Southampton
- 14.45 Effect of Caffeine on Cerebral Blood Flow; Why do Xenon Clearance and Transcranial Doppler give Different results
M Lunt, Bournemouth
- 15.00 Influences on the interaction between heart rate and blood pressure
E Bowers, Newcastle upon Tyne
- 15.15 The Mathematical Modelling of Blood Gas Variation in the Ventilated Neonate
C Evans, Leeds
- 15.30 Automatic repolarisation measurements using magnetocardiography
F Smith, Newcastle upon Tyne
- 15.45 Reconstruction of Respiratory Signals from Bed ECG Measurement Using Wavelet Transform
W J Yi, Seoul
- 16.00 Coffee Break

12 September 2002

Radiotherapy

Chairs: Dr R Harrison and D MM Aspradakis

- 09.15 Accelerator commissioning for IMRT: small MU segments and small fields
M M Aspradakis, Newcastle upon Tyne
- 09.30 An elegant extension to the ESTRO dosimetry system
J Byrne, Newcastle upon Tyne
- 09.45 Evaluation of Elekta flat panel detector in portal imaging
A Mackenzie, London
- 10.00 Characterisation of open and wedged photon fields produced by a linear accelerator with MLC's
M Hosseini-Ashrafi, Portsmouth
- 10.15 How should we measure and use Collimator scatter factors
J Byrne, Newcastle upon Tyne

- 10.30 6 Day linac commissioning - Fact or fiction?
C Walker, Newcastle Upon Tyne
- 10.45 Experiences of a proactive Radiotherapy IRMER inspection
M Cocker, Inverness
- 11.00 Coffee Break

Nuclear Medicine

Chairs: Prof D Williams and Ms C Greaves

- 09.00 Invited Lecture: IR (ME) R Frequently asked questions
S Ebdon-Jackson, London
- 09.20 Options for shielding the hand during dispensing and administration of radiopharmaceuticals
C Martin, Glasgow
- 09.35 Precision of Multi-modality Imaging for Region of Interest Definition in Bone SPECT
C Greaves, Sheffield
- 09.50 Departmental Documents - an electronic Nuclear Medicine documentation resource
P Metherall, Sheffield
- 10.05 A study of extremity doses in nuclear medicine
M Whitby, Glasgow
- 10.20 Coffee Break
- 10.55 Invited Lecture: Subject I131 waste and the environmental impact
C Engelfield, Environment Agency
- 11.15 Liquid iodine radioactive waste - monitoring and modelling
P Hinton, Guildford
- 11.30 The Fate of Radioactive Waste in Sewers and the Impact on the Environment
P Marsden, London
- 11.45 Use of accumulation tanks for decay storing radioactive aqueous I-131 waste
A Moreton, London
- 12.45 Lunch

Magnetic Resonance 2

Chair: Dr John Foster

- 09.30 **Guest Lecture:** MR Imaging of carotid atheroma
M Graves, Cambridge

Magnetic Resonance 2 continued

- 10.00 Characterisation of complicated carotid plaque with magnetic resonance direct thrombus imaging
A Martel, Nottingham
- 10.15 A Volume-Selective 3D Turbo Spin Echo Sequence for Vessel Wall Imaging and Distensibility Measurement
L Crowe, London
- 10.30 The quantification of the pulmonary autograft size mismatch, and dilatation following the Ross proce
S Reid, Leeds
- 10.45 **Discussion**
What is the potential of vascular MRI in the prevention and management of cerebrovascular disease?
- 11.00 Coffee Break

Physiological Measurement 2

Chairs: Dr D Harrison and Dr A Taktak

- 09.30 Thermographic imaging and skin oxygen saturation measurements applied to amputation level viability
D Harrison, Durham
- 09.45 Oesophageal Pulse Oximetry: A New Monitoring Site
P Kyriacou, London
- 10.00 Obtaining an auditory evoked potential index for the assessment of depth of anaesthesia
A F Taktak, Liverpool
- 10.15 Assessment of the Physical Properties of Endoscopic Retrieval Systems
B Allan, Sunderland
- 10.30 Detecting changes in intracranial pressure using tympanic membrane displacement measurement
K Banister, Newcastle upon Tyne
- 10.45 Gender-related differences in multi-site photoplethysmographic pulse timing characteristics
J Allen, Newcastle upon Tyne
- 11.00 Coffee Break

Woolmer Lecture

- 12.00 Hip Joint Replacement
T Unsworth, Durham
- 12.45 Lunch

Diagnostic Radiology

Chairs: Dr K Robson and Dr J Kotre

- 14.00 Extremity doses to interventional radiologists
M Whitby, Glasgow
- 14.15 Establishment of Reference Dose Levels in Paediatric Diagnostic Imaging Examinations in Ireland
B Byrne, Dublin
- 14.30 The influence of linear tomography on effective dose
D Rawlings, Newcastle-upon-Tyne
- 14.45 The effects of sub-optimal viewing conditions on the detection of low contrast objects
K Robson, Newcastle upon Tyne
- 15.00 Systematic selection of technique factors in paediatric CT
J Kotre, Newcastle-upon-Tyne
- 15.15 The optimisation of standard protocols on a multislice CT scanner
I Negus, Plymouth
- 15.30 Tea Break
- 16.00 Determination of an image quality index from threshold contrast detail diagrams
I Pitkin, London
- 16.15 Evaluation of Trabecular Bone Direction from X-ray
H Defossez, Leeds
- 16.30 Comparison of methods for measuring the presampled modulation transfer function
N Wilcox, London

Rehabilitation and Bioengineering

Chair: Mr Robert Major

- 14.00 **Guest Lecture:** Developing smart home technology for people with dementia
R Orpwood, Bath

Rehabilitation and Bioengineering continued

- 14.25 **Guest Lecture: Integrating Community Equipment**
M Broadhurst, Newcastle-upon-Tyne
- 14.45 A watched pot never boils dry: temperature sensing in the kitchen
C Gibbs, Bath
- 15.00 A test rig for metacarpophalangeal prostheses
T Joyce, Durham
- 15.15 Defining the neutral zone of intervertebral joints using a robotic testing facility
M Percy, Brisbane
- 15.30 Tea Break
- 16.00 Application of size correction algorithms to paediatric bone density data
D Rawlings, Newcastle-upon-Tyne
- 16.15 Practical experiences of providing a Computer Access Assessment Service in the Northern Region
A Macdonald, Newcastle upon Tyne
- 16.30 Orbital floor repairs - an extension of our existing cranioplasty service
V Sauret, London
- 14.10 Medical Imaging and rapid prototyping (RP)
M De Vleeschouwer, Leuven, Belgium
- 14.30 Anatomical RP models in maxillofacial surgery
C Evaghoras, London
- 14.50 Computer-assisted reconstruction of the midface
S C Hodder, Swansea
- 15.10 Custom-made craniofacial implants
R Bibb, Cardiff
- 15.30 Tea Break
- 16.00 Computer-guided and model-based dental implantology
S Goldner, London
- 16.20 Clinical experience with RP dental drilling guides
G Magee, Chester
- 16.40 Clinical Validation of placement of Zygoma Implants using stereolithographic drill guide
L Vrielink, Gent, Belgium
- 17.00 Virtual and Physical Modelling of the human anatomy: potential applications
P Diamantopoulos, Brighton
- 17.10 Open Discussion:
How can we introduce medical modelling into a clinical environment?

Workshop: Integration of Medical Imaging and Rapid Manufacturing

Chair: Dr P Diamantopoulos

- 14.00 Welcome and Introduction: Rapid manufacturing in clinical practice
P Diamantopoulos, Brighton

Posters

Bioengineering and Rehabilitation

- 1 The design of an automatic cooker knob for people with dementia
T Adlam, Bath
- 2 Tremor detection using Actigraph with Wavelet analysis.
J Han, Seoul
- 3 Objective Visual Acuity Test System Using Video Eye Tracking
I B Lee, Seoul
- 4 Design and testing of a new hip protector for the elderly
R J Minns, Newcastle-upon-Tyne
- 5 Investigations on the cutting performance of different biocompatible abrasives in abrasive waterjets
F Pude, Hannover
- 6 Practical switch design as a response to client feedback information
P Webb, Stockton-on-Tees

Clinical Engineering

- 7 Can't sit, won't sit (The Paediatric DMSA Imaging Chair)
R Beckwith, Newcastle Upon Tyne

Diagnostic Radiology

- 8 Mammography Doses in Ireland
A Gallagher, Dublin 8

Health Informatics and Computing

- 9 Integration of Presentation Style with Presentation Software
P Ganney, Hull
- 10 Archival Storage Media for Medical Data
P Maw, London
- 11 Considerations for Bedside PCs
P Ostro, London

Nuclear Medicine

- 12 MUGA LVEF calculation on 3 processing stations- inter system, intra operator and reproducibility
A Kennedy, Dublin 6
- 13 A Study of Nuclear Medicine Waiting Times
H Richardson, London
- 14 Electrical Interference - Can it really disrupt your PET service?
L Rahman, London
- 15 Eye doses to staff in a Nuclear Medicine Department
E Summers, Northwood

Physiological Measurement

- 16 Adaptive mains-interference and a near real-time FIR filter techniques for eeg recording in theatre
A Fisher, Liverpool
- 17 Acoustic Emission from Stenosed Blood Vessels
M Lunt, Dorchester
- 18 In vivo impedance characterization of acupuncture points in healthy and unhealthy individuals
E Prokhorov, Queretaro
- 19 A critical appraisal of visual acuity
S Walton, Bedfordshire.

Radiation Protection

- 20 To classify or not to classify? Evaluating finger doses to Radiographers working in PET at Mt Vernon
N Kadera, London
- 21 Do old hospital buildings use uranium ceramic wall tiles?
D Rawlings, Newcastle-upon-Tyne
- 22 Reference Doses and Operator Performance in a Cardiothoracic Tertiary Referral Centre - Work in progress
N Rowles, Plymouth
- 23 Distribution and magnitude of primary and secondary radiation in dental radiography
A J Watkins, Cambridge
- 24 Use of an electronic dosimeter in optimisation of finger doses
M Whitby, Glasgow
- 25 Computed tomography doses in children
J Pages, Brussel

Radiotherapy

- 26 Investigation of the Properties of the "Magic" Gel Dosimeter: Initial Results
M N Amin, Leicester
- 27 A Risk Assessment of Radiotherapy Treatment Rooms
R Barlow, London
- 28 Increase in skin dose due to the use of a carbon fibre couch panel for palliative radiotherapy treatment
P Barnes, Maidstone
- 29 An Implementation of Electronic data transfer from the CMS treatment planning system to the Varian VARIS System
W P Colley, Hull
- 30 An Independent Monitor Unit Calculator for Delivery of Radiotherapy by Multi-Leaf Collimator
P Ganney, Hull
- 31 Characterisation of the MLC performance for 6 MV photon fields produced by a linac using Monte Carlo simulation
M Hosseini-Ashrafi, Portsmouth
- 32 Characterisation of asymmetric photon fields produced by a linear accelerator with MLC's using MCNP
M Hosseini-Ashrafi, Portsmouth

- 33 Electron Profile Analysis: quicker and better? **N Preston, Portsmouth**

Ultrasound and Non-Ionising Radiation

- 34 Terahertz pulsed imaging in medicine: The optical properties of tissue
E Berry, Leeds

Ultrasound and Non-Ionising Radiation continued

- 35 Design and Development of an Ultrasound Imaging phantom for a new miniature intra-oral 20 MHz probe
M Brewin, London

- 36 Time-Gated Fluorescence Imaging of Tetrasulfonated Phthalocyanine Dyes in a Tissue Phantom
S Gundy, Galway
- 37 Quality Assurance in Thermographic Imaging Systems
S Kobylec, London
- 38 Arguments for setting up an ultrasound quality assurance service in a large Hospital Trust **J Moggridge, London**
- 39 Initial in vivo testing of a microwave applicator designed for the treatment of Barrett's oesophagus
J Reeves, London

Notes
