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THE LEVERHULME HOTEL

Port Sunlight Village, Wirral CH62 5EZ, UK

Programme (provisional)**DAY ZERO****Sunday 25 March**

Ice-breaker (plus registration) at the venue 4 -6 pm

DAY ONE**Monday 26 March**

08.45 – 09.25

REGISTRATION & COFFEE

09.30 – 09.40

WELCOME to CLATTERBRIDGE

Brian Haylock, Clinical Director of Radiotherapy, Clatterbridge Centre for Oncology

09.40 – 09.50

INTRODUCTION to the COURSE

Alan Nahum, Physics Department, Clatterbridge Centre for Oncology

09.50 – 10.30

INTRODUCTION to RADIOBIOLOGY

Catharine West, Academic Radiation Oncology, School of Cancer & Imaging Sciences, University of Manchester, Christie Hospital NHS Trust, Manchester, UK

10.35 – 11.10

QUANTITATIVE RADIOBIOLOGY: *from Target Theory to Treatment Planning.***J. Donald Chapman**, CRM Consulting Services Penticton, BC, V2A 8N1, CANADA

11.10 – 11.30

COFFEE

11.30 – 12.00

TUMOUR CELL KINETICS

Jack F Fowler, formerly Depts. of Human Oncology & Medical Physics, University of Wisconsin, Madison, WI, USA.

12.05 – 12.55

QUANTITATIVE RADIOBIOLOGY: *Effects of Physical and Chemical factors on Alpha and Beta.***J. Donald Chapman**

13.00 – 14.00

LUNCH

14.00 – 14.40

ISO-EFFECT CALCULATIONS in RADIOTHERAPY

Charles Deehan, Medical Physics Dept., Guys & St. Thomas' Fndn. Trust, London, UK

14.45 - 15.35

The RADIOBIOLOGY of BRACHYTHERAPY

Roger Dale, Imperial College, London, UK

15.40 – 16.00

TEA/COFFEE

16.00 – 16.50

USE of MOLECULAR IMAGING for TARGET DEFINITION and TREATMENT ASSESSMENT in RADIOTHERAPY

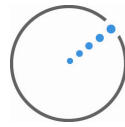
Robert Jeraj, Departments of Medical Physics, Human Oncology and Biomedical Engineering, University of Wisconsin, Madison, WI, USA

16.55 – 17.40

WHAT CELLULAR DAMAGE DOES RADIATION CAUSE?

Trevor McMillan, University of Lancaster, UK*Free evening (e.g. for the computer lab)*

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DAY TWO **Tuesday 27 March**

- 09.00 – 09.50 SOME CLINICAL ATTEMPTS to INCREASE THERAPEUTIC GAIN by MANIPULATING –
 α -INACTIVATION.
J. Donald Chapman
- 09.55 – 10.40 DNA DAMAGE and REPAIR as DETERMINANTS of RADIOSENSITIVITY
Trevor McMillan
- 10.40 – 11.00 **COFFEE**
- 11.00 – 11.40 OPTIMUM FRACTIONATION
Jack Fowler
- 11.45 – 12.35 CAN WE QUANTIFY CHEMO-RADIOTHERAPY?
Roger Dale
- 12.40 – 13.40 **LUNCH**
- 13.40 – 14.20 RADIOBIOLOGICAL CONSIDERATIONS: PROSTATE CANCER
Isabel Syndikus, Consultant Clinical Oncologist, Clatterbridge Centre for Oncology
- 14.25 – 15.05 HEAD & NECK TUMOURS: RADIOBIOLOGICAL CONSIDERATIONS
Chris Nutting, Head of Head & Neck Unit, Royal Marsden NHS Foundation Trust
- 15.10 – 15.55 RADIOBIOLOGICAL CONSIDERATIONS: LUNG CANCER
Pooja Jain, Consultant Clinical Oncologist, Clatterbridge Centre for Oncology
- 16.00 – 16.20 **TEA/COFFEE**
- 16.25 – 16.55 APPLICATIONS OF HYPOFRACTIONATION IN EARLY BREAST CANCER
John Yarnold, Institute of Cancer Research & Royal Marsden Hospital, Sutton, UK.
- 17.00 – 17.35 COMPENSATING for UNPLANNED 'GAPS' in RADIOTHERAPY TREATMENT
SCHEDULES - *Radiobiological Principles and Practice*
Charles Deehan

Free evening (e.g. for the computer lab)

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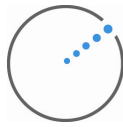


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- 09.00 – 09.20 INTRODUCTION to 'BIOLOGICAL' MODELS in RADIOTHERAPY
Alan Nahum
- 09.25 – 10.15 PREDICTING the INCIDENCE of NORMAL TISSUE COMPLICATIONS: MATHEMATICAL MODELS for NTCP
Colin Baker, Directorate of Medical Imaging & Radiotherapy, School of Health Sciences, University of Liverpool UK
- 10.20 – 11.00 MODELLING TUMOUR CONTROL PROBABILITY (TCP)
Alan Nahum
- 11.00 – 11.20 COFFEE
- 11.20 – 12.10 QUANTEC: DOSE-VOLUME PREDICTORS AND UPDATE OF THE PARAMETERS IN THE NTCP MODELS
Giovanna Gagliardi, Dept. of Hospital Physics, Karolinska University Hospital, Stockholm, Sweden
- 12.15 – 13.00 USING and INTERPRETING DOSE-VOLUME MODELS - STATISTICAL CONSIDERATIONS.
John Fenwick, Gray Institute, Oxford university.
- 13.00 – 14.00 LUNCH
- 14.00 – 14.45 APPLICATIONS of TCP MODELLING
Alan Nahum
- 14.50 – 15.35 USE of EUD, TCP, NTCP in OPTIMISING TREATMENT PLANS
Marco Schwarz, Agenzia Provinciale per la Protonterapia, Trento, Italy
- 15.40 – 16.00 COFFEE/TEA
- 16.00 – 16.50 RADIOBIOLOGICAL ASPECTS of HEAVY-PARTICLE THERAPY
Andrzej Kacperek, Douglas Cyclotron Unit, Clatterbridge Centre for Oncology
- 16.55 – 17.40 APPLICATIONS OF TCP MODELING TO TREATMENT PLANNING EVALUATION: *Selective Boosting of Tumor Subvolumes and The Impact of Cold Spots on TCP*
Wolfgang Tomé, Departments of Human Oncology and Medical Physics, University of Wisconsin, Madison, WI, USA

Free evening – opportunity to use ORBIT, LQ-SURVIVOR, BIOPLAN and BIOSUITE



RADIOBIOLOGY & RADIOBIOLOGICAL MODELLING IN RADIOTHERAPY, LEVERHULME HOTEL, 25 – 29 March 2012

DAY FOUR Thursday 29 March

09.00 – 12.00

COMPUTER LAB:

PRACTICAL EXERCISES and DEMONSTRATIONS using LQ-MODELLER, BIOPLAN, BIOSUITE and ORBIT.

Kjell Eriksson, RaySearch Laboratories, Stockholm; CMS GmbH; **Julian Uzan**, Physics Dept., Clatterbridge Centre for Oncology, **Alan Nahum**.

AND

POSTER SESSION – poster authors will be available to discuss their work.

12.10 – 13.00

INDIVIDUALISING PRESCRIPTION DOSE to LUNG TUMOURS BASED on NTCP
Marco Schwarz

13.00 – 14.00

LUNCH

14.05 – 14.45

The GENOMICS REVOLUTION and RADIOTHERAPY
Catharine West

14.50 – 15.30

INDUCTION of (SECOND) CANCERS by RADIOTHERAPY
Geoff Lawrence, Physics Department, Clatterbridge Centre for Oncology.

15.30 – 15.50

COFFEE/TEA

15.50 – 16.40

UK DOSE ESCALATION STUDIES AND FUTURE DIRECTIONS FOR NSCLC
RADIOTHERAPY– TARGETTING TUMOUR FUNCTION USING IMRT AND SCHEDULE
INDIVIDUALIZATION
John Fenwick

16.45 – 17.15

ACHIEVING CLINICAL ACCEPTANCE of RADIOBIOLOGICALLY-BASED TREATMENT
PLANS
Philip Mayles, Physics Department, Clatterbridge Centre for Oncology.

CLOSE OF THE COURSE