MANCHESTER 1824
The University of Manchester

The Christie
School of Oncology

The 13th International Workshop on Microbeam Probes of Cellular Radiation Response

Thursday 14th & Friday 15th September 2017
Education Centre (Dept 17), The Christie, Manchester, M20 4BX

Overview

This international conference will bring together world experts to discuss recent progress in the use of microbeams to investigate the radiation biology underpinning particle therapy and understand the cellular response to radiation

Further information

Visit	**www.christie.nhs.uk/SoO**
Register	**http://IWM2017.eventbrite.co.uk**
Email	**education.events@christie.nhs.uk**
Call	**0161 918 7409**
Tweet	**@TheChristieSoO #IWM2017**

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Introduction

This international conference will bring together world experts to discuss recent progress in the use of microbeams to investigate the radiation biology underpinning particle therapy and understand the cellular response to radiation

Course Organisers

Professor Karen Kirkby
Richard Rose Chair for Proton Therapy Physics, The Christie & University of Manchester

Dr Mike Merchant
Lecturer in Proton Therapy Physics
University of Manchester

Programme

- Radiation biology of particle therapy
- Cellular and tissue effects
- Particle therapy research facilities including microbeam facility design & X-ray and Laser microbeams
- Clinical translation from microprobe investigation

Topics to be covered

- Single cell microbeam (particle) facilities/design and developments
- Laser & X-ray microbeam facilities
- Particle therapy research beamlines Irradiation & imaging techniques
- Cellular and tissue effects
- Cellular response: communication and dynamics
- Diagnostics and analysis techniques
- Clinical translation for particle therapy developments

Learning Outcomes

- To increase knowledge about the latest research developments and techniques in the field of single cell irradiation and measurement of the single cell response to radiation
- To raise awareness and highlight the clinical relevance of microprobe techniques for understanding fundamental radiobiological parameters for particle therapy

Intended Audience

Academic researchers, medical physicists and clinicians

Fees

£210 (General admission)
£190 (Early bird - book before 14th July 2017)
£60 (Conference dinner)

Abstracts

We are inviting abstracts for attendees who would like to present a poster at the conference. Please submit your abstract to **education.events@christie.nhs.uk** by 23rd June 2017 to be considered.

Faculty

Dr Philippe Barberet
University of Bordeaux , France

Dr David Brenner
Columbia University Medical Center, USA

Professor Günther Dollinger
Die Universität der Bundeswehr München, Germany

Professor Karen Kirkby
University of Manchester & The Christie, UK

Professor Norman Kirkby
University of Manchester & The Christie, UK

Dr Mike Merchant
University of Manchester, UK

Professor Ranald Mackay
University of Manchester & The Christie, UK

Dr Jan Schuemann
Massachusetts General Hospital, Harvard Medical School & Francis H. Burr Proton Therapy Center, USA

Professor Frank Watt
National University of Singapore, Singapore

More to be confirmed……

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The 13th International Workshop on Microbeam Probes of Cellular Radiation Response (Thursday 14th Sep 2017)

08.15 **Registration & poster set up**

08.40 Welcome

Session 1 Recent research and developments in ion microbeams I

09.00 Overview of recent developments at RARAF
Dr David Brenner - Columbia University Medical Center, USA

09.30 Nanobeam for cellular radiation
Professor Frank Watt - National University of Singapore

10.00 Invited speaker (abstract)

10.30 **Coffee break**

Session 2 Recent research and developments in ion microbeams II

11.00 Recent progress in microbeam studies in Japan

11.30 Use of GSI microbeam to investigate DNA damage response

12.00 Invited speaker (abstract)

12.30 Invited speaker (abstract)

13.00 **Lunch & poster viewing**

Session 3 Particle therapy research beamlines

14.00 The Christie proton research facility
Dr Mike Merchant - University of Manchester

14.30 Single particle tracking with carbon therapy facility

15.00 Invited speaker (abstract)

15.30 **Coffee break**

Session 4 Laser and x-ray microbeams

16.00 Investigating Proton RBE

16.30 Poster talks

17.00 Poster viewing

18.00 **Close of day 1**

19.30 Conference dinner

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08.45 Registration

Session 5 Cell and tissue effects 1

09.00 Recent developments on the light ion microbeam at CENBG: from technical advances to biological studies
Dr Philippe Barberet - University of Bordeaux

09.30 Invited speaker (abstract)

10.00 Invited speaker (abstract)

10.30 Coffee break

Session 6 mathematical modelling

11.00 Using topas-nbio to investigate DNA damage
Dr Jan Schuemann - Massachusetts General Hospital, Harvard Medical School & Francis H. Burr Proton Therapy Center

11.30 Cell cycle modelling
Dr Norman Kirkby - University of Manchester

12.00 Poster talks

12.30 Lunch & poster viewing

Session 7 Cell and tissue effects 2

13.30 Targeting mitochondria and the nucleus
Dr Gunther Dollinger - Bundeswehr University Munich, Germany

14.00 Invited speaker (abstract)

14.30 Invited speaker (abstract)

15.00 Coffee break

Session 8 Cell and tissue effects 3

15.30 Invited speaker (abstract)

16.00 Invited speaker (abstract)

16.30 Session 9 Clinical translation in proton therapy research
Professor Ran Mackay - The Christie & University of Manchester

17.00 End of conference

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