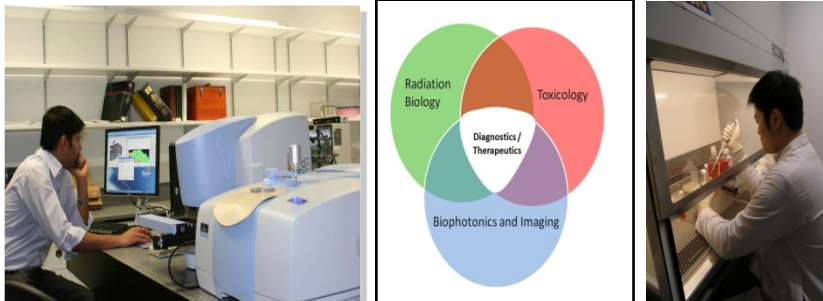
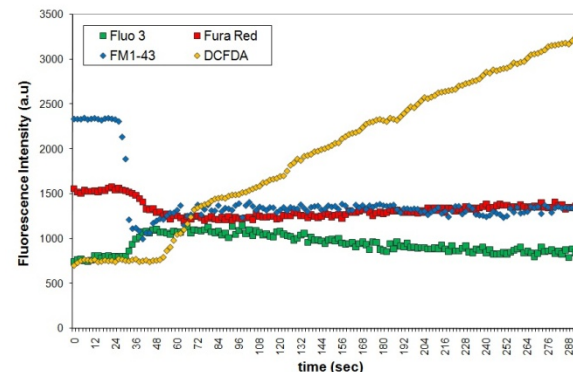
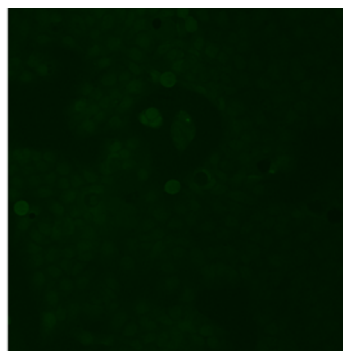
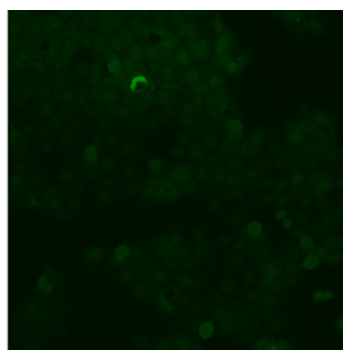
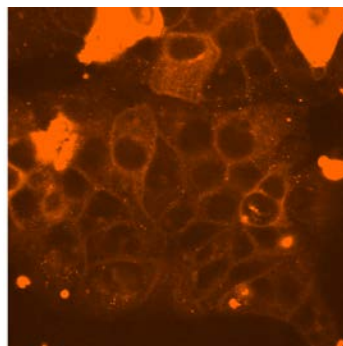
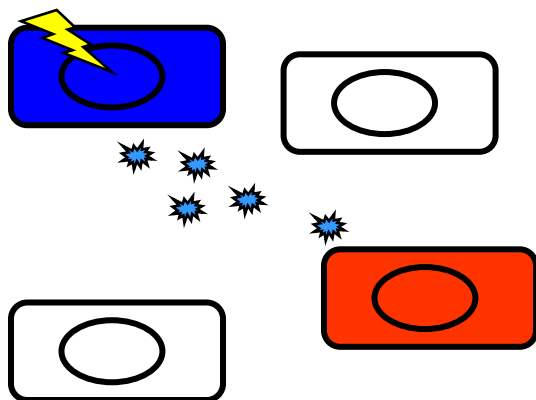


- In the last 5 years:
- Over 90 peer reviewed publications
 - Over €3.5 million in research funding
 - 20 PhD completions
 - 'One to Watch' Award, 2011
 - 1 License, 1 patent and 4 invention disclosures



For more details: <http://www.dit.ie/resc>

Non-targeted effects of radiation

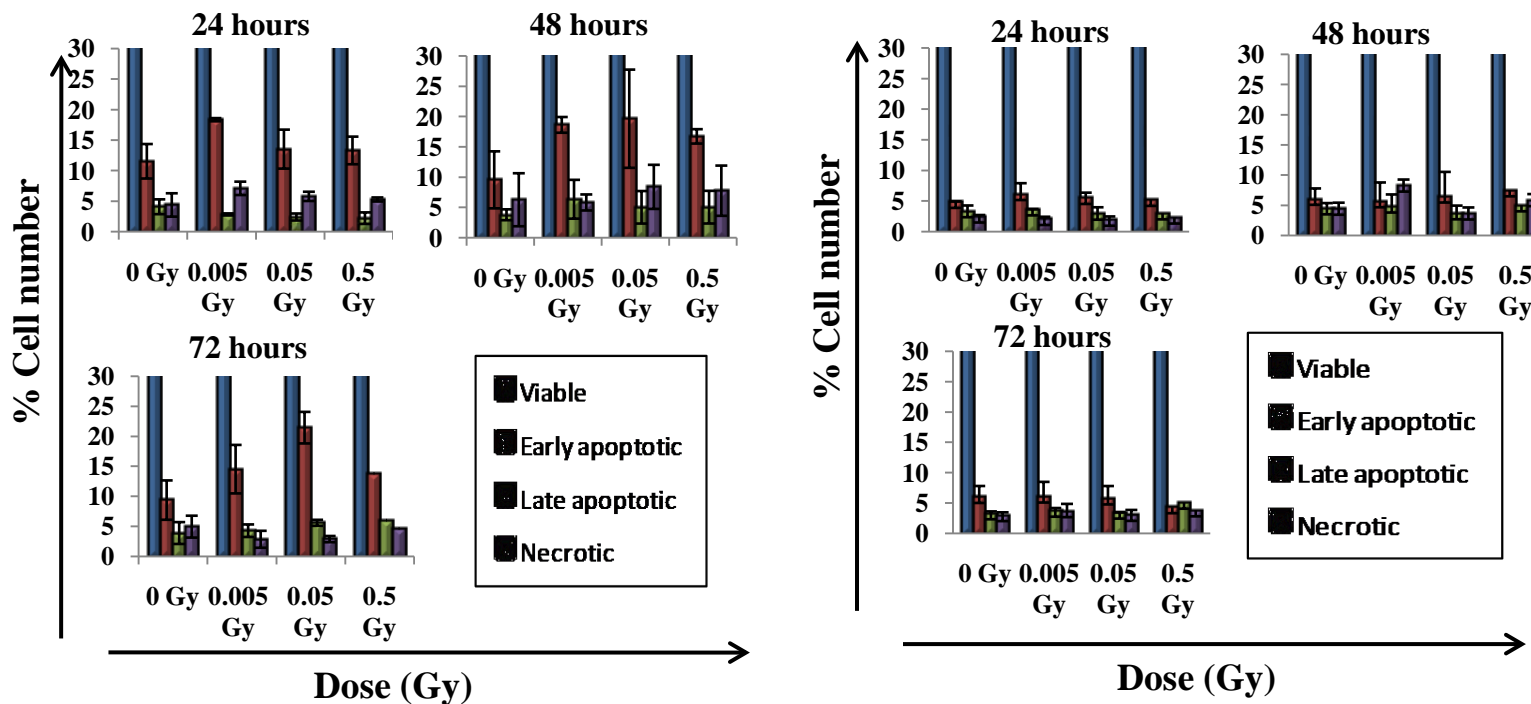
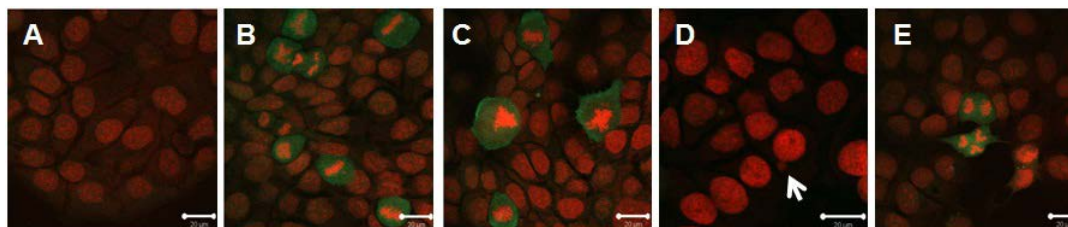


Lyng FM, Howe OL, McClean B. Reactive oxygen species-induced release of signalling factors in irradiated cells triggers membrane signalling and calcium influx in bystander cells. *Int J Radiat Biol.* 2011 87 (7) 683-695

RESC Personnel:
Dr Fiona Lyng, Dr Orla Howe

FP6 Integrated Project 2006-2010, Non-targeted Effects of Ionising Radiation (NOTE)

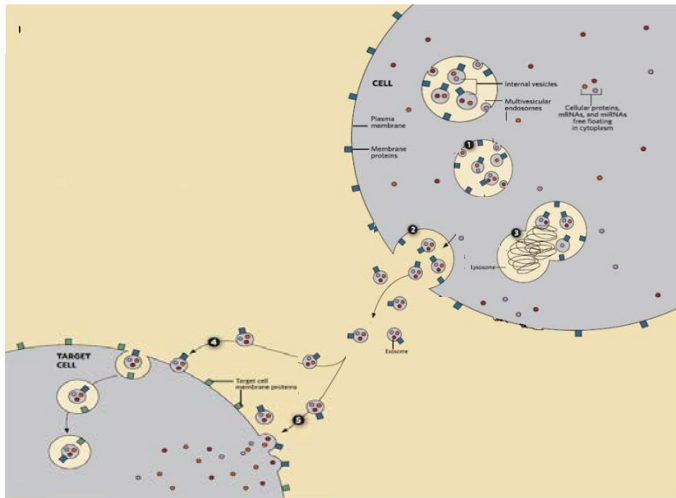
Non-targeted effects of radiation



RESC Personnel: Dr Fiona Lyng, Kishore Kumar Jella

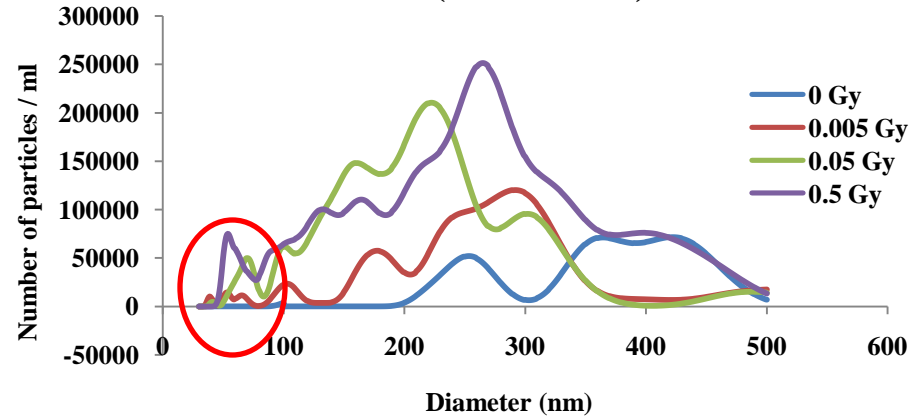
K. Kumar Jella, A. Garcia, B. McClean, H.J. Byrne, and F.M. Lyng
 Cell death pathways in directly irradiated cells and cells exposed to medium from irradiated cells, IJR 2012

Non-targeted effects of radiation – Role of exosomes?

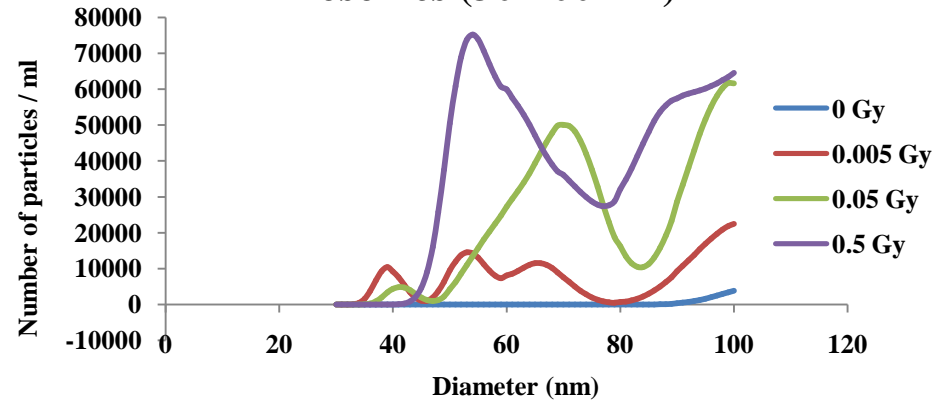


Thery, *F1000 Biology Reports* 2011

Vesicles (30-500 nm)



Exosomes (30-100 nm)



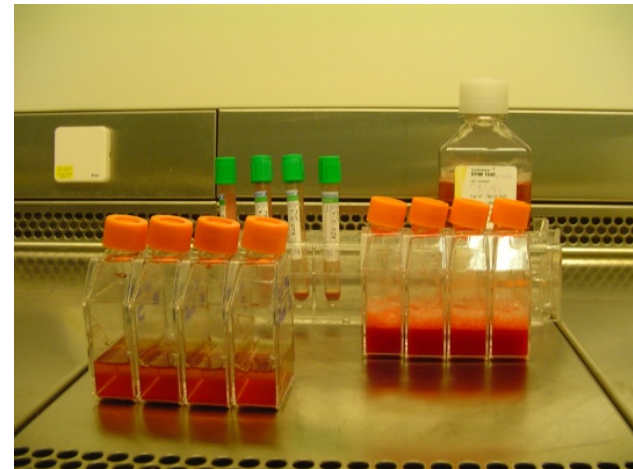
RESC Personnel: Dr Fiona Lyng, Kishore Kumar Jella

PRTL Cycle 4, National Biophotonics and Imaging Platform (NBIP)

Translational radiation research

Predictive testing of radiosensitivity in cancer patient blood samples

- Howe *et al*, 2009 (colorectal carcinoma)
- Howe *et al*, 2007 (prostate carcinoma and BPH); 2007 (breast carcinoma)
- Gueven *et al*, 2006 (AOA1); 2004 (AOA1 and AT).



RESC Personnel: Dr Orla Howe
Collaboration: St Vincent's Hospital
St Luke's Hospital
St James' Hospital



Spectroscopic and Chemometric Approaches to Radiobiological Analyses

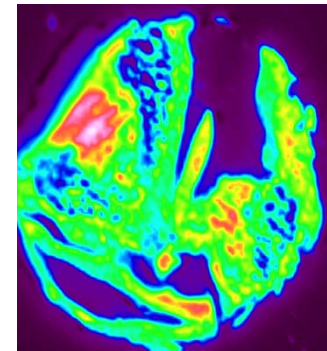
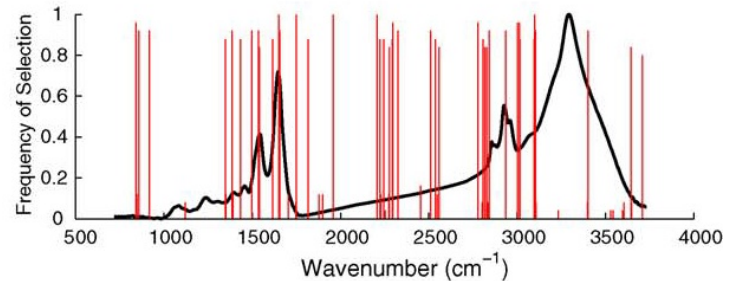
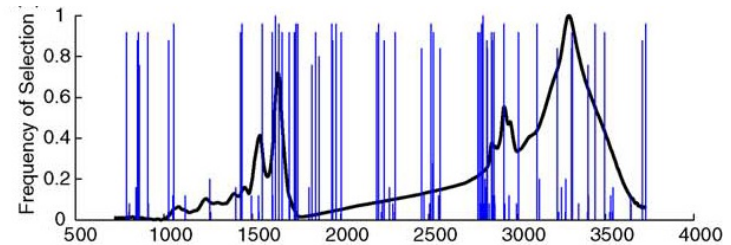
Dose prediction efficiencies of approximately ± 10 mGy at 96 h after irradiation

Potential applications in radiobiological dosimetry

- Meade AD, Byrne HJ, Lyng FM, Mutation Research Review 2010 704(1-3):108-114
- Meade AD, Clarke C, Byrne HJ, Lyng FM, Radiation Research 2010 173(2):225-37.

RESC Personnel:

Dr Aidan Meade, Dr Fiona Lyng



Identification of new biomarkers of patient radiosensitivity / treatment outcome

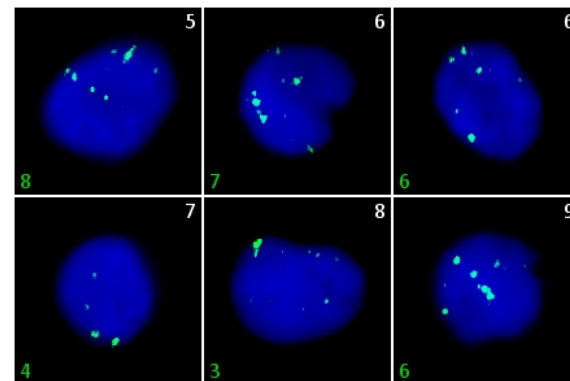
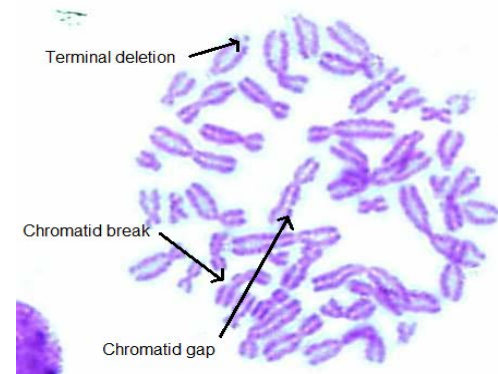
- G2 radiosensitivity assay
- DNA damage assays eg. γ H2AX
- Gene expression

RESC Personnel:

Dr Fiona Lyng, Dr Orla Howe, Dr Aidan Meade
Dr Isabel Vega Carrascal, Lisa White, Adrian Maguire

SFI Research Frontiers 2011

FP7 Network of Excellence DoReMi



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- Lisa White

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- Chris Walker
- Padraic Crean
- Dr Charles Gilham