Nanotechnology in Cancer: Engineering for Oncology Programme

Cambridge, UK

12 - 14 September 2019

Scientific Programme

Thursday 12th September 2019

12:00 REGISTRATION

12:30 WELCOME LUNCH

13:30 CONFERENCE WELCOME
Kostas Kostarelos (SPC Chair)

13:35 SESSION 1: EFFECTIVE TRANSPORT OF SIRNA, MRNA, CRISPR-CAS9
Chair: Kostas Kostarelos

13:35 EMBO KEYNOTE LECTURE
René Bernards
NKI, Netherlands
"A one-two punch model for cancer therapy"

14:20 **Michelle Bradbury**
MSKCC, USA
"Next-generation ultrasmall silica nanoparticle solutions for overcoming biological barriers to molecularly-targeted drug delivery"

14:50 **Aditi Mehta**
Ludwig Maximilians University of Munich, Germany
Proffered Paper 1: "Nano-Particles for in vivo genome editing mediated by CRISPR-cas9 for undruggable KRAS driven lung cancers"

15:05 EXHIBITOR INTRODUCTIONS
60-second intro pitches by each company

15:15 COFFEE BREAK & EXHIBITION

15:45 **Olivia Merkel**
LMU, Germany
"Correlating quantitative tumor accumulation and gene knockdown using SPECT/CT and bioluminescence imaging within an orthotopic ovarian cancer model"

16:15 **Twan Lammers**
University Hospital Aachen, Germany
"Smart cancer nanomedicine"

16:45 **Angela Pine**
University of Essex, UK
Proffered Paper 2: "The development of gene therapy by way of DNAzymes"

17:00 **Marianne Ashford**
AstraZeneca, UK
"Developing Nanomedicines to enable Innovative Cancer Therapy - Lipid Nanoparticles as a delivery system for nucleic acid-based drugs"

17:30 POSTER SPOTLIGHTS
Abstracts 1-3 will be presented in short 'flash talks' of 3 minutes each.

17:45 NETWORKING RECEPTION
including drinks and light food

18:15 POSTER DISCUSSION SESSION 1 & TRADE EXHIBITION
Until 19:45. Posters 1-25 will be presented.

Friday 13th September 2019

09:00 SESSION 2: DETECTION AND TREATMENT OF EARLY STAGE DISEASE
Chair: Caroline Dive

09:00 KEYNOTE LECTURE
Mark Dewhirst
Duke Cancer Institute, USA
"Development of a thermally triggered liposomal drug delivery platform: a bench to bedside story"

09:45 **Rachel Hu**
Cristal Therapeutics, Netherlands
"CriPec® platform and lead product CPC634: principles, nonclinical evaluation and clinical translation"

10:15 **Aria Ahmed-Cox**
Children's Cancer Institute Australia
Proffered Paper 3: "Seeing is believing: Quantitative analysis of nanoparticle uptake kinetics and cellular localisation in a three dimensional brain tumour model"

10:30 **Hanan Abumanhal-Masarweh**
Technion Institute of Technology, Israel
Proffered Paper 4: "Modulating the Tumour pH: Liposomal bi-carbonate enhance doxorubicin activity in breast cancer"

10:45 COFFEE BREAK & EXHIBITION

11:15 **Claire Wilhelm**
Paris Diderot University, France
"Optimal application windows for magnetic hyperthermia, photothermia, and magneto-photo-thermia with magnetic and plasmonic nanoparticles, in cancer treatment"

11:45 **Laura Chaves**
Speratum, Costa Rica
Proffered Paper 5: "A novel LGA-PEI self assembly nanotechnology for safe and effective therapeutic delivery of specialized microRNA-based mimics"

12:00 **Miguel Fuzeta**
University of Lisbon, Portugal
Proffered Paper 6: "Manufacturing Human Mesenchymal Stem/Stromal Cell (MSC)-Derived Extracellular Vesicles in Vertical-Wheel Bioreactors for Cancer Therapy"

12:15 POSTER SPOTLIGHTS
Abstracts 26-28 will be presented in short 'flash talks' of 3 minutes each.

12:30 LUNCH

13:15 POSTER DISCUSSION SESSION 2
Posters 26-50 will be presented.

14:45 SESSION 3: EXOSOMES, PROTEINS & NUCLEIC ACID MARKERS
Chair: Claire Wilhelm

14:45 KEYNOTE LECTURE
Molly Stevens
Imperial College London, UK
"Engineering the bio-material interface for cancer applications "

15:30 **Caroline Dive**
CRUK Manchester Institute, UK
"Liquid biopsies for early detection of lung cancer - nanotechnologists help required!"

16:00 **Marilena Hadjidemetriou**
University of Manchester, UK
Proffered Paper 7: "Nano-omics enrichment tools for cancer biomarker discovery"

16:15 COFFEE BREAK & EXHIBITION

16:45 **Enrico Iaccino**
Magna Græcia University, Italy
Proffered Paper 8: "In vivo phage display-based platform for tumour detection and tumour derived exosomes trapping"

17:00 **Kostas Kostarelos**
University of Manchester, UK
"Designing 3D and 2D Nanomaterials as Transporters for Cancer Therapeutics"

17:30 **Raymond Schiffelers**
UMC Utrecht, Netherlands
"RNA delivery with synthetic nanomedicines and extracellular vesicles"

19:30 CONFERENCE DINNER
Churchill College Dining Hall
Free tickets are available to all participants.

Saturday 14th September 2019

09:00 MEET THE EXPERT
Caroline Dive
CRUK Manchester Institute, UK
In this session our speaker will share from her personal and professional perspectives on the path to scientific leadership and women in science.

09:30 SESSION 4: MORE EFFECTIVE, TARGETED IMMUNOTHERAPY
Chair: Raymond Schiffelers

09:30 **Ronit Satchi-Fainaro**
Tel Aviv University, Israel
"Ibrutinib sensitizes melanoma to immune checkpoint modulators following immunisation with nano-vaccines by relieving immune-suppressing microenvironment"

10:00 **Helena Florindo**
University of Lisbon, Portugal

Proffered Paper 9: "Multi-targeting nano based platform as an effective immunotherapy against solid tumours"

10:15 **Rakesh Dixit**
Bionavigen, USA
"Safety and Pharmacokinetic Challenges to Nanomedicines"

10:45 COFFEE BREAK & EXHIBITION

11:15 **Raphaël Lévy**
University of Liverpool, UK
Proffered Paper 10: "Are We Building on the Shoulders of Giants or on a Nanobubble?"

11:30 **Shiladitya Sengupta**
Harvard Medical School, USA
"Cancer Immunology at the Nanoscale"

12:00 KEYNOTE LECTURE
Darrell Irvine
MIT, Boston, USA
"Using nanomaterials to engineer anti-cancer immunity"

12:45 CONFERENCE SUMMARY
Scientific Programme Committee

13:00 LUNCH & DEPART