

MMND ITRO 2018
PROGRAM

Tuesday 6th February 2018

MMND multidisciplinary (micro- nano-dosimetry, radiobiology, synchrotron
MRT and EBRT, Monte Carlo Modelling)

07:50-08:00	Introduction/Welcome Anatoly Rozenfeld/Tomas Kron /Michael Lerch
Physics in Heavy Ion Therapy (Microdosimetry) Session chairs: Anatoly Rozenfeld, CMRP Rui Qiu, Tsinghua University	
08:00-08:30	(Invited) Larry Pinsky Update on the status of MEDIPIX in space and an introduction to the Timepix 2 University of Houston, USA
08:30-08:45	Kenta Takada Evaluation of RBE-weighted doses for various radiotherapy beams based on a microdosimetric function implemented in PHITS University of Tsukuba, Japan
08:45-08:55	Davide Bortot Microdosimetry on nanometric scale with a new low-pressure avalanche-confinement TEPC Politecnico di Milano, Italy
08:55-09:05	Davide Mazzucconi A FPGA-based software for microdosimetric data processing Politecnico di Milano, Italy
09:05-09:15	Anatoly Rozenfeld Progress in Silicon microdosimetry and its applications CMRP UOW
09:15-09:25	Jeremy Davis Progress in diamond microdosimetry CMRP UOW
09:25-09:30	Ben James 3D Sensitive Volume Microdosimeter with Improved Tissue Equivalency: Charge Collection Study and its Application in ¹² C Ion Therapy CMRP UOW
09:30-09:35	Emily Debrot Mini Beam C 12 therapy: simulations and first experimental results with SOI micro dosimeters CMRP UOW
Radiobiology & Monte Carlo Simulations Session chairs: Michael Lerch, CMRP; Larry Pinsky, University of Houston	
09:35-10:00	(Invited) Roger Martin Topical radioprotection of radiation induced oral mucositis

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	Peter MacCallum CC
10:00–10:30	Morning Tea
10:30-10:45	Moeava Tehei <i>Progress in Radiobiology</i> CMRP UOW
10:45-11:00	Susanna Guatelli <i>Recent developments in Geant4 for medical physics applications</i> CMRP UOW
11:00-11:15	Dousatsu Sakata <i>Development of track structure models in GEANT 4 on nanometre scale gold</i> CMRP UOW
11:15-11:25	Hilary Byrne <i>Nanotheranostic Radio-Enhancement</i> University of Sydney
11:25-11:30	David Bolst <i>Modelling HIMAC biomedical beamline</i> CMRP UOW
11:30-11:50	(Invited) Rui Qiu <i>Latest development and applications of the Chinese reference phantoms</i> Tsinghua University, Beijing, China
Synchrotron Radiation <i>Session chairs: Enbang Li, CMRP; Yoshinori Sakurai, Kyoto University</i>	
11:50-12:05	Michael Lerch <i>Progress in MRT research towards clinical implementation</i> CMRP UOW
12:05-12:20	Olga Martin <i>Localised synchrotron radiation in mice induced persistent systemic genotoxic events mediated by the functional immune system</i> Peter MacCallum CC
12:20-12:25	Elette Engels <i>Towards image guided MRT</i> CMRP UOW
12:25-12:30	James Archer <i>Fibre optic dosimetry in synchrotron microbeam radiation therapy</i> CMRP UOW
12:30 – 13:30	Lunch

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Space Dosimetry <i>Session chairs: Dale Prokopovich, ANSTO; Kenta Takada, University of Tsukuba</i>	
13:30–14:00	(Invited) Taku Inaniwa <i>Progress of the microdosimetric kinetic model in heavy-ion therapy</i> National Institute for Quantum and Radiological Science and Technology, Japan
14:00–14:15	Stuart George <i>High Precision Track Geometry Calculation in Hybrid-Pixel Detectors</i> University of Houston, USA
14:15–14:25	Stefania Peracchi <i>Simulation of cosmic radiation spectra for personal microdosimetry at the International Space Station altitude</i> CMRP UOW
Radiation Therapy <i>Session chairs: Tomas Kron, Peter McCullum CC; Wolfgang Tome, AECM</i>	
14:25–14:45	(Invited) Vladimir Feygelman <i>Preview of AAPM Working Group recommendations for TPS reference dose specification</i> Moffitt CC, USA
14:45-15:00	Nicholas Hardcastle <i>The liver INSPECTR trials: towards improved understanding of liver function following radiotherapy.</i> Peter MacCallum CC
15:00-15:30	Afternoon Tea
15:30-15:45	Yang Wang <i>Characterisation Evaluation for Different QA techniques Clinically Used for IMRT, VMAT and SBRT/SRS Treatment Plan dosimetry verification</i> ICON-Cancer Care
15:45-16:00	Prabhakar Ramachandran <i>A comprehensive phantom with multi-detector inserts for Pre-treatment quality assurance in stereotactic ablative radiotherapy</i> Peter MacCallum CC

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MRI-LINAC <i>Session chairs: Peter Metcalfe, CMRP; Grazia Gambarini , INFN</i>	
16:00 – 16:15	Taghreed Al-Sudani <i>Build up dose characteristics with eXaSkin bolus during 6MV radiotherapy: MOSkin dosimetry results</i> CMRP UOW
16:15 - 16:25	Trent Causer <i>Characterization of monolithic silicon strip detectors for MRI-Linac dosimetry</i> CMRP UOW
16:25- 16:35	Natalia Roberts <i>Modelling the X-ray source for the Australian MRI-linac</i> CMRP UOW
Boron Neutron Capture Therapy <i>Session chairs: Susanna Guatelli, CMRP; Richard Maughan, University of Pennsylvania</i>	
16:35–16:55	(Invited) Yoshinori Sakurai <i>Fundamental knowledge for microdosimetry in boron neutron capture therapy</i> Kyoto University, Japan
16:55–17:15	(Invited) Grazia Gambarini <i>BNCT Dosimetry: Peculiarities and Methods</i> University of Milan, Italy
17:15–17:25	James Vohradsky <i>Evaluation of silicon and diamond based microdosimetry for boron neutron capture therapy applications</i> CMRP UOW
17:25–17:35	Andrew Chacon <i>Neutron Capture Enhanced Particle Therapy: Opportunistic Dose Amplification via Capture of Thermal Neutrons Produced During Heavy Ion and Proton Therapy</i> CMRP UOW and ANSTO

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Wednesday 7th February 2018
Brachytherapy Day

07:50-08:00	Introduction and Welcome Anatoly Rozenfeld, Michael Zelefsky and Josh Yamada
What is New In Brachytherapy? <i>Session chairs: Josh Yamada, MSKCC; Michael Jackson , POWH</i>	
08:00-08:30	(Invited) Mira Keys 20 minutes + 10 min QA/Discussion Why Brachytherapy? Implication on long term outcomes University of British Columbia, Vancouver, BC, Canada
08:30-09:00	(Invited) Michael Zelefsky Improving Dosimetric Outcomes of Prostate Cancer with Real Time Imaged-Based Feedback Memorial Sloan Kettering Cancer Center, New York
09:00 – 09:40	(Invited) Antonio Damato Advances in brachytherapy physics (30 min+10 min Q/A Discussions) a. US/EM guidance b. Active MRI guidance Memorial Sloan Kettering Cancer Center, New York
09:40 – 10:00	(Invited) Mauro Carrara New Trends in dose calculations, delivery and in vivo verification in brachytherapy (20 min+5 min Q/A Discussions) Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy
10:00 – 10:30	Morning Tea
Physics Innovations <i>Session chairs: Anna Ralston, SG CCC; Mauro Carrara , National CC Milan</i>	
10:30 – 11:00	(Invited) Antonio Damato Directional brachytherapy- (20 min + 10 min discussion/QA) Memorial Sloan Kettering Cancer Center, New York
11:00 – 11:15	Anatoly Rozenfeld BrachyView: new technology for online source tracking in brachytherapy CMRP UOW
11:15 – 11:30	Yu Sun Use of Contemporary imaging methods in brachytherapy applications University of Sydney
11:30 – 11:40	Taylah Brennen Eye brachytherapy: new technology for fast QA of eye plaques CMRP UOW

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11:40 – 11:50	<p>Anna Romanyukha <i>Gynaecological HDR BT applicator for treatment delivery and online QA verification of source dwell positions and times</i> CMRP UOW</p>
11:50 – 12:00	<p>Dean Cutajar <i>End to End (E2E) QA phantom for TRUS guide HDR brachytherapy</i> CMRP UOW and SG CCC</p>
12:00 – 12:20	<p>(Invited) Prabhakar Ramachandra <i>Brachytherapy utilising miniaturised X-ray tubes – An evolving technology</i> Peter MacCallum Cancer Centre</p>
12:20 – 12:30	<p>Adam Yeo <i>On line IGBT for prostate cancer ultrasound based real time solution</i> Peter MacCallum Cancer Centre</p>
12:30 – 13:30	Lunch
<p>Debate: SBRT vs Brachytherapy for localised prostate cancer <i>Session chairs: Michael Folkert , UT Southwestern Medical Center; Michael Jackson , POWH</i></p>	
13:30 – 14:00	<p>(Invited) Michael Zelefsky <i>20 minutes + 10 min QA/Discussion</i> Memorial Sloan Kettering Cancer Center, New York</p>
14:00 – 14:30	<p>(Invited) Mira Keyes <i>20 minutes + 10 min QA/Discussion</i> University of British Columbia, Vancouver, BC, Canada</p>
<p>Tumour Board: Challenging Cases <i>Session chairs: Josh Yamada, MSKCC</i></p>	
14:30 – 15:00	<p>Michael Zelefsky, Mira Keyes, Joe Bucci, Michael Folkert/other incl. local Doctors</p>
15:00 – 15:30	Afternoon Tea
<p>Skin Brachytherapy: <i>Session Chairs: Bryan Burmeister, Radiation Oncology Centres(ROS) Fraser Coast and Redland Australia</i></p>	
15:30 – 16:00	<p>(Invited) Chris Barker, <i>New Approaches to Skin Cancer Brachytherapy</i> MSKCC, New York</p>
<p>Partial Breast Brachytherapy <i>Session chairs: Mira Keys, University of British Columbia , Joseph Bucci , SG CCC</i></p>	
16:00 – 16.25	<p>(Invited) Sean Park <i>Same Day Operation and Intraoperative Catheter placement for Partial Breast Irradiation (SONIC-PBI)</i> Mayo Clinic, USA</p>

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16:25 – 16:50	<p>(Invited) Michael Folkert</p> <p>Ablative interstitial high-dose rate brachytherapy for localised visceral primary and metastatic lesions</p> <p>UT Southwestern Medical Center, USA</p>
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Thursday 8th February 2018
Particle Therapy Day

<p>Advanced Heavy Ion and Proton Therapy Technology</p> <p>Session chairs: Anatoly Rozenfeld, CMRP; Michael Jackson , POWH</p>	
08:00 – 8:25	<p>(Invited) Koji Noda</p> <p>Recent progress and future plan of heavy-ion-cancer radiotherapy with HIMAC</p> <p>National Institute for Quantum and Radiological Science and Technology, Japan</p>
08:25 – 8:50	<p>(Invited) Richard Maughan</p> <p>Recent Developments at the University of Pennsylvania's Roberts Proton Therapy Center</p> <p>Penn University, USA</p>
08:50 – 9:15	<p>(Invited) Zuofeng Li, IBA</p> <p>Image-Guided Adaptive Proton Therapy</p> <p>IBA: Proton Therapy Center, Florida University, USA</p>
09:15 – 9:40	<p>(Invited) Masumi Umezawa Hitachi</p> <p>Recent developments in Hitachi's Hybrid Therapy Solution</p> <p>Hitachi</p>
09:40 – 10:00	<p>(Invited) Mauro Carrara</p> <p>Italian medical physicists' and radiation oncologists' view on hadron therapy</p> <p>Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy</p>
10:00 – 10:30	Morning Tea
<p>QA in Proton Therapy and Treatment Optimization</p> <p>Session chairs: Carl Rossi , Scripps Proton Therapy Center; Tomas Kron , Peter MacCallum CC</p>	
10:30 – 10:45	<p>Irene Gudowska</p> <p>Out-of-field doses associated with proton therapy</p> <p>Stockholm University, Stockholm, Sweden</p>
10:45 – 11:00	<p>Tina Pfeiler</p> <p>4D Robust optimization in pencil beam scanning proton therapy for hepatocellular carcinoma</p> <p>The West German Proton Therapy Centre Essen, Germany</p>
11:00 – 11:15	<p>Jed Johnson</p> <p>Efficient patient-specific QA for spot-scanned proton therapy using nozzle-integrated detectors and fast Monte Carlo dose calculations</p> <p>Mayo Clinic, USA</p>

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11:15 – 11:30	<p>(Invited) Roberto Sacchi <i>Test of innovative silicon detectors for the monitoring of a therapeutic proton beam</i> University of Torino and INFN, Italy</p>
11:30 – 11:45	<p>Daniel Mundy <i>Development of the Dose Magnifying Glass for clinical proton range measurements</i> Mayo Clinic, USA</p>
11:45-12:10	<p>(Invited) Marco Silari <i>GEM detectors for use in particle therapy</i> CERN</p>
12:10-12:30	<p>(Invited) Benjamin Clasié <i>Installation of a compact comprehensive proton therapy unit via an elevator shaft into existing standard radiotherapy centre</i> MGH, USA</p>
12:30 – 13:30	Lunch
<p>Imaging with Protons and Ions <i>Session chairs: Marie-Claude Gregoire, ANSTO; Scott Penfold , RAH</i></p>	
13:30 – 13:55	<p>(Invited) Katia Parodi <i>Ionoacoustics for range monitoring of proton therapy</i> LMU Munich, Germany</p>
13:55 – 14:20	<p>(Invited) Taiga Yamaya <i>In-beam OpenPET imaging for RI beams</i> National Institute for Quantum and Radiological Science and Technology, Japan</p>
14:20 – 14:45	<p>(Invited) Katia Parodi <i>Prompt gamma range monitoring of proton therapy status and perspectives</i> LMU Munich, Germany</p>
14:45 – 15:00	<p>Melek Zarifi <i>In-vivo range verification in hadron therapy using prompt gamma rays: A Geant4 simulation study</i> CMRP UOW</p>
15:00 – 15:30	Afternoon Tea
15:30 – 15:45	<p>Brad Oborn <i>MRI guided proton therapy: current status of development</i> CMRP UOW</p>
15:45 – 16:00	<p>Mitsutaka Yamaguchi <i>Simulation study on imaging of a monochromatic carbon beam by measuring secondary electron bremsstrahlung</i> National Institute for Quantum and Radiological Science and Technology, Japan</p>

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16:00 – 16.20	<p>(Invited) Dieter Roehrich</p> <p><i>The Bergen proton CT project – proton tracking in a high-granularity digital tracking calorimeter</i></p> <p>University of Bergen, Norway</p>
<p>Australian Proton Therapy Project</p> <p><i>Session chairs: Koji Noda, National Institute for Quantum and Radiological Science and Technology; Verity Ahern . The Crown Princess Mary CC Westmead</i></p>	
16.20 – 16:40	<p>(Invited) Michael Penniment</p> <p>Australian Proton Therapy Project</p> <p>Royal Adelaide Hospital, South Australia</p>
16:40 – 16:55	<p>Scott Penfold</p> <p>Dual Energy yCBCT for adaptive proton therapy: A feasibility study</p> <p>Royal Adelaide Hospital, South Australia</p>
<p>Fundamental Physics of Ions Interaction and New Accelerator Technology in Particle Therapy</p> <p><i>Session chairs Igor Bray, Curtin University; Dale Prokopovich, ANSTO</i></p>	
16:55-17:10	<p>(Invited) A.S. Kadyrov</p> <p>Comprehensive approach to hadron interactions with matter</p> <p>Curtin University, Perth Western Australia</p>
17:10-17:25	<p>Edward Simpson</p> <p>Nuclear reaction cross sections for Hadron therapy</p> <p>ANU, Canberra ACT</p>
17:25-17:50	<p>(Invited - Special Closing) Suzie Sheehy</p> <p>Can novel accelerator technology improve proton/ion therapy?</p> <p>Oxford University, UK</p>
17:50-18:00	<p>Anatoly Rozenfeld</p> <p>Close and future meeting</p> <p>CMRP UOW</p>

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Saturday 10th February 2018
ITRO Day 1

07:30 – 07:35	Introduction/Welcome Anatoly Rozenfeld/Josh Yamada
BrainLab Sponsored Stereotactic Session/CNS Session chairs: John Fiveash/Josh Yamada	
07:35– 08:00	(Invited) John Fiveash <i>What's new in CNS Radiosurgery? – Cranial Integrating surgery and radiosurgery in the treatment of brain metastases</i> University of Alabama Birmingham USA
08:00 – 08:25	(Invited) Josh Yamada <i>What's new in CNS Radiosurgery: Radiosurgery for benign spine conditions</i> MSKCC, NY USA
08:25 – 08:45	(Invited) John Fiveash <i>How many is too many for radiosurgery alone</i> University of Alabama Birmingham USA
08:45 – 09:05	(Invited) Josh Yamada <i>The Impact of Dose in the Management of Spine Metastases with Radiosurgery: Update of the MSKCC Experience</i> MSKCC, NY USA
09:05 – 09:25	(Invited) John Fiveash/Josh Yamada/Matthew Foote Interesting/Challenging Case discussions University of Alabama Birmingham/MSKCC, NY USA/Princess Alexandra Hospital Qld
09:25 – 09:40	Morning Tea/Exhibits
Skin Session chairs: Chris Barker/Jimmy Caudell	
09:40 – 10:30	Chris Barker/Jimmy Caudell <i>What's new in Skin Radiation Therapy (40 min with 10 min for questions/discussion)</i> MSKCC, NY/Moffitt Cancer Center, USA
10:30 – 10.45	Bryan Burmeister <i>(15 min including discussion/questions)</i> Radiation Oncology Centres (ROC), Fraser Coast and Redland Australia
10:45 – 11:00	Gerald Fogarty <i>(15 min including discussion/questions)</i> Genesis Cancer Care, Australia
11:00 – 11:15	Barker/Caudell/Local MDs <i>Interesting/Challenging Case discussions (15 min including discussion/questions)</i> MSKCC, NY/Moffitt Cancer Center, USA
11:15 – 11:30	Break/Exhibits

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GI <i>Session chairs: Laura Dawson/Michael Folkert</i>	
11:30 – 12:20	<p>Laura Dawson/Michael Folkert <i>What's new in GI RT</i> <i>(40 min with 10 min for questions/discussion)</i> Princess Margaret Cancer Centre, Canada/MSKCC, NY, USA</p>
12:20 – 12:37	<p>Laura Dawson <i>Topic of choice</i> <i>(12 min + 5 min discussion/questions)</i> Princess Margaret Cancer Centre, Canada</p>
12:37 – 12:54	<p>Michael Folkert <i>Topic of choice</i> <i>(12 min + 5 min discussion/questions)</i> MSKCC, NY, USA</p>
12:54 – 13:10	<p>Laura Dawson/Michael Folkert/Local MDs <i>Interesting/Challenging Case discussions</i> Princess Margaret Cancer Centre, Canada/MSKCC, NY, USA</p>
13:10 – 14:00	Lunch
Head and Neck <i>Session chairs: Jimmy Caudell/Madhur Garg</i>	
14:00 – 14:50	<p>Jimmy Caudell/Madhur Garg <i>What's new in HN RT</i> <i>(40 min + 10 min discussion/questions)</i> Moffit Cancer Center/Montefiore Medical Center, New York, USA</p>
14:50 – 15:07	<p>Jimmy Caudell <i>Conventional re-irradiation versus SBRT for locoregionally recurrent H&N Cancer.</i> <i>(12 min + 5min discussion/questions)</i> Moffit Cancer Center, USA</p>
15:07 – 15:24	<p>Madhur Garg <i>Topic of choice</i> <i>(12 min + 5min discussion/questions)</i> Montefiore Medical Center, New York, USA</p>
15:24 – 15:40	<p>Jimmy Caudell/Madhur Garg/Michael Jackson <i>Interesting/Challenging Case Discussions</i> Moffit Cancer Center/Montefiore Medical Center, New York, USA/POWH Australia</p>
15:40 – 15:55	Afternoon Tea/Exhibits

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GU	
<i>Session chairs: Mira Keyes/ Michael Folkert</i>	
15:55 – 16:45	Mira Keyes/Michael Folkert <i>What's new in GU Radiation Therapy (40 min + 10 min discussion/questions)</i> University of British Columbia, Canada/MSKCC, NY, USA
16:45 – 17:02	Mira Keyes <i>Topic of choice (12 min + 5min discussion/questions)</i> University of British Columbia, Canada
17:02 - 17:19	Michael Folkert <i>Toxicity Reduction for SBRT and HDR Brachytherapy in Prostate Cancer - Spacers and Beyond (12 min + 5min discussion/questions)</i> MSKCC, NY, USA
17:19 – 17:35	Mira Keyes/Michael Folkert/Joseph Bucci <i>Interesting/Challenging Case discussions</i> University of British Columbia, Canada/MSKCC, NY, USA/STG CCC, Kogarah, Australia
17:35	Adjourn
19:30	ITRO Faculty Dinner

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Sunday 11th February 2018
ITRO Day 2

Particle Therapy <i>Session chairs: Verity Ahern/Michael Jackson</i>	
08:00– 08:25	(Invited) Carl Rossi <i>What's new in charged particle therapy</i> Scripps Proton Therapy Center, USA
08:25 – 08:50	(Invited) Hiroshi Tsuji <i>What's new in charged particle therapy</i> National Institute for Quantum and Radiological Science and Technology, Japan
08:50 – 09:05	(Invited) Carl Rossi <i>Topic of choice</i> Scripps Proton Therapy Center, USA
09:05 – 09:20	(Invited) Hiroshi Tsuji <i>Topic of choice</i> National Institute for Quantum and Radiological Science and Technology, Japan
09:20 – 09:35	(Invited) Hiroshi Tsuji/Carl Rossi/Verity Ahearn <i>Interesting/Challenging Case discussions</i> NIRS Japan/Scripps Proton Therapy Center, USA/Crown Princess Mary Cancer Centre Australia
09:35 – 09:50	Morning Tea/Exhibits
ITRO Physics/Applied Technology Session <i>Session chairs: Lois Holloway/ Anatoly Rozenfeld;</i>	
09:50–10:10	Wolfgang Tome <i>MRI-ONLY Radiation Therapy workflow for abdomen</i> AECM, USA
10:10–10:30	Vladimir Feygelman <i>Quality of Head and Neck plans-Where we are and does it matter</i> Moffitt CC, USA
10:30–10:50	Anatoly Rozenfeld <i>Innovations in QA for stereotactic radiotherapy: CMRP development and clinical implementation</i> CMRP UOW
10:50–11:10	Tomas Kron <i>SBRT in clinical trials: what QA is required and how can it be done?</i> Peter MacCallum CC
11:10-11:30	Paul Keall <i>MRI-Linac: overview of Australian program</i> RRL, University of Sydney

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11:30-11:50	Peter Metcalfe <i>Bespoke dosimeters for MRI linac</i> CMRP UOW
11:50 – 12:50	Lunch
Immunotherapy: A Primer <i>Session chairs: Chris Barker/Chandan Guha</i>	
12:50 – 13:15	Chandan Guha <i>RT and Immunotherapy</i> Montefiore Medical Center, NY, USA
13:15 – 14:00	Chris Barker <i>Combining Radiotherapy and Immunotherapy for Cutaneous Melanoma: Safety, Efficacy, Future Directions</i> MSKCC, NY, USA
	<i>RT Immunotherapy: toxicity and cautions:</i> MSKCC, NY, USA
14:00 – 14:20	Chris Barker/Chandan Guha <i>Interesting/Challenging Cases in RT Immunotherapy</i> MSKCC/Montefiore Medical Center, NY, USA
Special Topic: Regeneration and RT <i>Session chairs:</i>	
14:20 – 14:55	Chandan Guha <i>Regeneration and RT</i> Montefiore Medical Center, NY, USA
Closing Remarks / Adjourn Anatoly Rozenfeld/Josh Yamada	