

# ITART 2010 Meeting Program

## Monday, June 21, 2010

### Continental Breakfast

7:30 am - 8:15 am Maryland Ballroom Foyer

### Welcome and Introduction

8:15 am - 8:30 am Maryland Ballroom 1 - 3

### Imaging for Target Definition Symposium

8:30 am - 9:30 am Maryland Ballroom 1 - 3

- 8:30 am **How Do We Define the Treatment Target?**- B. van der Kogel \*
- 8:50 am **How Do We Image the Treatment Target?** - V. Gregoire\*
- 9:10 am **How Are We Going to Define Targets in 20 Years?** - S. Bentzen \*

### Discussion

9:30 am - 9:50 am

### Poster Viewing/Break

10:00 am - 10:30 am Maryland Ballroom Foyer

### Imaging for Target Definition

10:30 am - 11:40 am Maryland Ballroom 1 - 3

- 10:30 am **Effects of Image Acquisition Mode and Reconstruction Parameters On Target Volume and SUV Metrics Using PET-Threshold-Based Segmentation** - R. Jeraj, N. Jallow, C. Jaskowiak, P. Galavis \*, B. Paliwal
- 10:42 am **Dosimetry Impact of Accurate PET Segmentation for Radiotherapy Treatment Planning** - m. hatt, N. Albarghach, D. Visvikis, C. Cheze - Le Rest, A. LE MAITRE \*, O. Pradier, M. Bal
- 10:54 am **Advanced Image Registration for PET-Pathology Correlation Studies of Primary Prostate Carcinoma** - E. Schreibmann, T. Fox \*, A. Waller, D. Schuster
- 11:06 am **Characterizing Inter-Patient and Intra-Patient Variability in Hypoxia Imaging-Based Dose Painting Prescriptions** - S. Bentzen, S. Bowen \*, R. Jeraj
- 11:18 am **Using V/Q SPECT-CT to Classify Anatomic Normal Lung for Individualized Radiation Treatments of Primary Lung Tumors** - R. Ten Haken \*, S. Yuan, M. Gross, K. Frey, F. Kong

### General Discussion

11:40 am - 12:00 pm

### Lunch Break

12:00 pm - 1:00 pm Maryland Ballroom Foyer

### Imaging for Treatment Assessment

1:00 pm - 2:00 pm Maryland Ballroom 1 - 3

- 1:00 pm **What Can Anatomical Treatment Assessment Tell Us?** - D. Jaffray \*
- 1:20 pm **What Can Biological Treatment Assessment Tell Us?** - R. Wahl \*
- 1:40 pm **Imaging for Treatment Assessment: Are We Forgetting Normal Tissue?** - L. Marks \*, S. Das, M. Lawrence, J. Bailey

## Monday, June 21, 2010

### Discussion

2:00 pm - 2:20 pm

### Poster Viewing/Break

2:30 pm - 3:00 pm Maryland Ballroom Foyer

### Imaging for Treatment Assessment

3:10 pm - 5:00 pm Maryland Ballroom 1 - 3

- 3:10 pm **What Does Volume Regression Tell Us About Radiosensitivity of Tumors?** - J. Hou, M. Guerrero \*, W. D'Souza
- 3:22 pm **Response of Endogenous MRI Contrast Metrics (ADC, T2) During Radiotherapy for Prostate Cancer** - C. Ménard, W. Foltz \*, A. Wu, C. Catton, P. Chung, A. Bayley, R. Bristow, P. Warde, A. Simeonov, M. Haider
- 3:34 pm **Early Prediction of Outcome in Brain Metastases Patients Based On Vascular Alterations After Radiotherapy: A Prospective Perfusion MRI Study** - Y. Cao \*, F. Feng, C. Tsien, D. Gomez-Hassan, J. Hayman, L. Junck, T. Lawrence, P. Wang
- 3:46 pm **Texture Changes On Hartley-Transformed MRI Images as An Early Indicator of Treatment Response in Glioblastoma Multiforme** - H. Keller \*, D. Assefa, C. Ménard, N. Laperrriere, I. Yeung, A. Gladwish, J. Hoisak, E. Koh
- 3:58 pm **Intracranial Murine Tumour Investigation of Radiation and Anti-Angiogenic Agents Using Serial MRI** - D. Jaffray, C. Chung \*, W. Foltz, P. Lindsay, K. Burrell, P. Wildgoose, A. Kassner, A. Brade, M. Milosevic, G. Zadeh, C. Menard, K. Camphausen
- 4:10 pm **Quantification of Response During Radiotherapy Via PET/CT Imaging of Proliferation and Hypoxia** - R. Jeraj, S. Perlman, M. Nyflot \*, P. Harari
- 4:22 pm **A Novel Method to Assess the Potential of Pre-Treatment Ventilation-Based Functional Imaging in Predicting Radiation Pneumonitis** - Y. Vinogradskiy \*, M. Martel, S. Tucker, Z. Liao, R. Castillo, E. Castillo, T. Guerrero
- 4:34 pm **Poorly and Well Functional Lung Regions Change Differently After Radiation in Lung Cancer** - Y. Cao, R. Ten Haken, S. Yuan, F. Kong \*
- 4:46 pm **FDG-PET Based Local Dose Effect Relation for Oesophageal Toxicity in Lung Cancer Patients** - j. sonke \*, J. Nijkamp, M. Rossi, M. Kwint, W. Uytterlinde, M. van den Heuvel, J. Kneijens, E. Damen, M. van Herk, W. Vogel, J. Belderbos

### General Discussion

5:00 pm - 5:20 pm

### Poster Viewing/Break

5:30 pm - 6:00 pm Maryland Ballroom Foyer

### Dinner

6:30 pm - 8:30 pm

### Pienza Italian Market Restaurant

(located on the first floor of the Hotel)

## Tuesday, June 22, 2010

### Continental Breakfast

7:30 am - 8:30 am Maryland Ballroom Foyer

### Quantitative Imaging Symposium

- 8:30 am - 9:30 am Maryland Ballroom 1 - 3
- 8:30 am **How Important Is Quantification?** - M. Schnell \*
- 8:50 am **How Can We Improve Quantification?** - E. Jackson \*
- 9:10 am **What Can We Learn From Each Other?** - D. Sullivan \*

## Tuesday, June 22, 2010

### Discussion

9:30 am - 9:50 am

Maryland Ballroom 1 - 3

### Poster Viewing/Break

10:00 am - 10:30 am

Maryland Ballroom Foyer

### Quantitative Imaging

10:40 am - 12:20 pm

Maryland Ballroom 1 - 3

- 10:40 am **QARC QA of Imaging and Radiation Therapy Improves Protocol Compliance in Advanced Technology Cancer Clinical Trials** - M. Urie \*, K. Ulin, F. Laurie, R. Hanusik, S. Kessel, M. Jodoin, T. FitzGerald
- 10:52 am **Development of a Dynamic Perfusion Phantom for Validation of Dynamic Contrast Enhanced (DCE) Imaging** - A. Thomas \*, S. Hollister, J. Balter
- 11:04 am **Improvement of MRI T1 Estimation Using Adaptively Weighted Spatial Regularization** - Y. Cao, H. Wang \*
- 11:16 am **New PET/CT Quantification Strategies for Treatment Response Assessment of the Lung Lesion** - T. Pan \*, A. Riegel, D. Luo, O. Mawlawi, E. Rohren
- 11:28 am **Integrating PET/CT Image Features for Prediction of Radiotherapy Local Failure in Lung Cancer** - I. El Naqa \*, J. Seuntjens, M. Vaidya, J. Bradley, K. Creach
- 11:40 am **Prognostic Value of Total Glycolytic Volume in Esophagus Cancer : Impact of Automatic Tumor Volume Delineation On 18F-FDG PET Images** - m. hatt \*, N. Albarghach, D. Visvikis, C. Cheze - Le Rest
- 11:52 am **Effects of ROI Placement On Quantitative Intra-Treatment Tumour Response Assessment Using FDG-PET** - C. Caldwell, M. Sattarivand \*, I. Poon
- 12:04 pm **Impact of Different SUV Measures On PET-Based Treatment Response Assessment** - R. Jeraj, S. Perlman, M. Vanderhoek \*, G. Liu

### General Discussion

12:20 pm - 12:30 pm

Maryland Ballroom 1 - 3

### Lunch Break - Maryland Ballroom Lobby

12:30 pm - 1:30 pm

Maryland Ballroom Foyer

### Industry, Regulatory Issues Symposium

1:30 pm - 2:30 pm

Maryland Ballroom 1 - 3

- 1:30 pm **What Is Industry Perspective On Imaging?** - J. Evelhoch \*
- 1:50 pm **Tumor Imaging for Treatment and Response Evaluation-Regulatory Issues** - G. Sokol \*
- 2:10 pm **NCI Initiatives: Imaging As a Biomarker for Therapy Response** - L. Clarke \*

### Discussion

2:30 pm - 3:30 pm

Maryland Ballroom 1 - 3

### Conclusion

3:30 pm - 3:45 pm

Maryland Ballroom 1 - 3

## General Posters

### Imaging for Target Definition

- PO-ITD--01 Automatic Definition of the Gross Tumor Volume Using Features Derived From PET/CT Images** - C. Caldwell \*, H. Yu, K. Mah
- PO-ITD--02 Development of a Tissue Slicing-Imaging System for Correlating 3D Pathology Tumor Volume to in Vivo Imaging Studies in**

## General Posters

- a Mouse Model: Initial Results** - W. Lu \*, D. Ma, J. Hoefert, F. Yang, j. wen, P. Parikh, R. Laforest, T. Voller
- PO-ITD--03 Feasibility of Co-60 Cone Beam Computed Tomography for Image Guidance in Modern Co-60 Therapy** - N. Rawluk \*, J. Schreiner, J. Darko, A. Kerr
- PO-ITD--04 Intensity Modulated Proton Therapy with PET Guided Heterogeneous Target Prescription for Stage IIIB Non-Small Cell Lung Cancer** - X. Zhang \*, T. Pan, Y. Li, X. Li, M. Quan, N. Sahoo, J. Chang
- PO-ITD--05 Monitoring of HER2 Expression In Vivo by PET Imaging** - J. Capala \*, G. Kramer-Marek
- PO-ITD--06 Planning Target Volume Evaluation Using An Epid** - R. Caivano \*, p. pedicini, G. Califano, v. fusco, M. Cozzolino, S. Clemente
- PO-ITD--07 Use of Pre-Surgery MRI Images for Post-Surgery Brain Tumor Target Delineation Using Multiple-Intensity Deformable Image Registration** - D. Yang \*, D. Mansur, J. Esthappan, W. Lu

### Quantitative Imaging

- PO-QI--01 Stability of Quantitative Metrics Derived From DCE MRI and a Pharmacokinetic Model** - Y. Cao \*, D. Li, Z. Shen, D. Normolle
- PO-QI--02 Predictors of Survival for Patients with Non-Small Cell Lung Cancer and Synchronous Brain Metastases with FDG-PET/CT Staging** - N. Ohri \*, M. Werner-Wasik, Y. Xiao
- PO-QI--03 Quantitative Inaccuracies in PET Due to Acquisition Mode and Reconstruction Parameters** - R. Jeraj, N. Jallow \*, C. Jaskowiak, S. Perlman, S. Rice, M. McNall
- PO-QI--04 Change-Based Image Quantification for Cancer Diagnosis** - T. Sawyer \*, R. Robb, R. Foote, S. Yokoyama, J. Bourland
- PO-QI--05 A New Clinical Utility for Tumor Delineation Using SUV of PET Images in Treatment Planning** - T. Pan, D. Luo \*, O. Mawlawi, M. Martel, M. Vivic, P. Balter
- PO-QI--06 Quantitative PET Imaging of Heterogeneous Tumors: The Dosimetric Effect of Patient Set-Up On Image-Based Dose Painting Plans** - S. Bowen, R. Jeraj, K. McCall \*
- PO-QI--07 A Quantitative Approach for Lesion Detection and Classification in Breast DCE-MRI** - R. Sghedoni, G. Borasi \*, A. Botti, A. Nitrosi, M. Iori

### Imaging for Treatment Assessment

- PO-ITA--01 Metabolic Tumor Volume On PET Reduced More Than Gross Tumor Volume On CT During Radiotherapy in Patients with Non-Small Cell Lung Cancer** - Y. Cao, J. Hayman, R. Ten Haken, S. Yuan, F. Kong \*, P. Mahasittiwat, T. Ritter, C. Xie
- PO-ITA--02 Response of Exogenous Dynamic Contrast Enhanced (DCE) MRI During Radiotherapy for Prostate Cancer** - W. Foltz, C. Catton, P. Chung, A. Bayley, R. Bristow, P. Warde, A. Simeonov, M. Haider, M. Milosevic, C. Menard \*
- PO-ITA--03 A Mechanical Stress Model to Analyze Ventilation Changes in Normal Lung Tissue Following Radiation Therapy** - J. kim, I. Chetty, H. Zhong \*, C. Glide-Hurst
- PO-ITA--04 RECIST and Volumetric Measurement On Cone-Beam CT Images for Treatment Assessment of Head and Neck Cancer** - J. Hou \*, J. Hou, M. Guerrero, W. D'Souza, W. Chen
- PO-ITA--05 Metabolic Tumor Activity and Metabolic Tumor Volume at 3 Months After Radiotherapy in Patients with Lung Cancer** - R. Ten Haken, F. Kong, P. Mahasittiwat, J. Wang \*
- PO-ITA--06 Global and Regional Pulmonary Function Change During the Course of Radiotherapy in Patients with Non-Small Cell Lung Cancer** - J. Hayman, R. Ten Haken, S. Yuan \*, M. Gross, K. Frey, F. Kong, A. Eisbruch
- PO-ITA--07 In Vivo Measurement of Normal Tissue Radiosensitivity Using FLT-PET Imaging** - R. Jeraj, P. Scully \*, U. Simoncic
- PO-ITA--08 PET-Based Tumor Response Quantification for Clinical Trials Through Level Set Clustering** - E. Schreibmann \*, T. Fox, I. Crocker, W. Curran
- PO-ITA--09 Monitoring of Mouse Tumor Model Response to Varying Doses of Radiation Therapy with FDG-PET and CT** - J. Perez \*, M. Vilalta, E. Graves, G. Nelson

## General Posters

- PO-ITA--10 Effect of Radiation On Hippocampal White Matter: A Prospective DTI Study** - Y. Cao, C. Tsien, L. Junck, T. Lawrence, C. Chapman \*, V. Nagesh, P. Sundgren, H. Buchtel, T. Chenevert
- PO-ITA--11 Observation of Reduction and Subsequent Recovery of Hepatic Perfusion in Patients Undergoing Focal Radiotherapy** - Y. Cao, T. Lawrence, H. Wang \*, T. Chenevert, A. Thomas, M. Feng, C. Pan, H. Hussain, R. Ten Haken, J. Balter
- PO-ITA--12 Assessment of Blood-Brain-Barrier (BTB) Permeability Change in Brain Metastases After Whole-Brain Radiation Therapy Using Dynamic Contrast-Enhanced Magnetic Resonance Imaging (DCE-MRI)** - Y. Cao \*, F. Feng, C. Tsien, D. Gomez-Hassan, J. Hayman, L. Junck, T. Lawrence, P. Wang
- PO-ITA--13 Image-Based Scoring of Radiation Injury in Lung for Dose-Effect Correlations: Analysis of Sources of Uncertainties** - S. Lee \*, G. Stroian, J. Seuntjens
- PO-ITA--14 A Novel Scatter Reduction and Correction Method to Improve CBCT Image Quality for Image Guided Radiotherapy (IGRT) and Adaptive Radiotherapy (ART)** - J. Jin \*, L. Ren, Q. Liu, J. kim, B. Movsas, I. Chetty
- PO-ITA--15 A Generic Respiratory Motion Model to Describe Tumor and Normal Tissues Motion for Radiotherapy Applications** - N. Albarghach, D. Visvikis, T. Pan, H. Fayad \*, C. Roux
- PO-ITA--16 Using Textural Features Derived From 18F-FDG PET Imaging for Predicting Cancer Treatment Outcomes** - N. Albarghach, D. Visvikis, C. Cheze - Le Rest, F. TIXIER \*, L. CORCOS
- PO-ITA--17 Reproducibility of Vaginal Dilator Placement in the Treatment of Squamous Cell Carcinoma of the Anal Canal** - s. beddar, T. Briere \*, P. Das, C. Crane
- PO-ITA--18 Simulating the Growth of GBM Using Patient-Specific DTI and FEC-PET Data** - P. Trépanier \*, F. Lacroix, P. Després
- PO-ITA--19 Change-Based Image Quantification for Tailoring Radiation Therapy and Chemotherapy to Individual Patients** - T. Sawyer \*, R. Robb, R. Foote, S. Yokoyama, J. Bourland
- PO-ITA--20 Assessing Skin Injuries with Thermal Effusivity Imaging – A Promising Application for Adaptive Radiation Therapy** - J. Chu \*, J. Sun, A. Templeton, A. Coon, R. Yao, K. Griem
- PO-ITA--21 Sensitivity of Tumor-Volume During Radiotherapy to Radiobiological Parameters** - A. Chvetsov \*
- PO-ITA--22 Lung In-Vivo Dosimetry by a Portal Ionization Chamber** - R. Caivano, p. pedicini, G. Califano, v. fusco, M. Cozzolino \*, S. Clemente, G. Castaldo, C. Chiumento
- PO-ITA--23 Objective Assessment of Solid Tumor Response to Therapy Based On Tumor Growth Kinetics** - E. Mehrara \*, E. Forssell-Aronsson, P. Bernhardt
- PO-ITA--24 Impact of Deformable-Registration-Based Contour Propagation On PET-Based Treatment Response Assessment** - R. Jeraj, S. Yip \*, M. Vanderhoek
- PO-ITA--25 Surface Base Dose Comparison for Photon Radiotherapy** - h. li \*, L. Dong, L. Zhang, R. Zhu
- PO-ITA--26 Initial Studies of Prompt Gamma Imaging During Proton Radiotherapy for the Assessment of Tumor and Healthy Tissue Response** - j. polf \*, s. peterson, s. beddar, d. robertson