

# PRELIMINARY PROGRAM

*Monday, April 14*

7:00 AM

## **Registration & Breakfast**

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8:00 AM

### **Welcome and Introduction**

- Alec C. Kimmelman, MD, PhD, *Director, Laura and Isaac Perlmutter Cancer Center, Laura and Isaac Perlmutter Professor and Chairman, Department of Radiation Oncology, Associate Dean for Cancer Research, NYU Langone Health, New York, NY, United States*
  - Michael P. Recht, MD, *Louis Marx Professor and Chair, Department of Radiology, NYU Langone Health, New York, NY, United States*
  - Riccardo Lattanzi, PhD, *Director, Center for Biomedical Imaging, Department of Radiology, NYU Langone Health, New York, NY, United States*
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8:30 AM

### **Clinical Evidence and Trial Progress in MRgRT**

- Michael Chuong, MD, *Miami Cancer Institute, Miami, FL, United States*
  - Anna Bruynzeel, MD, PhD, *Amsterdam University Medical Centers, Amsterdam, The Netherlands*
  - David Byun, MD, *NYU Grossman School of Medicine, New York, NY, United States*
  - Stephen Rosenberg, MD, MS, *Moffitt Cancer Center, Tampa, Florida, United States*
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10:00 AM

### ***Proffered Papers 1 - Clinical Studies and Applications in MRgRT***

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| Time     | Title  | Speaker                 |
|----------|--|-------------------------|
| 10:00 AM | A Super-Resolution model for auto-segmentation of low-resolution Prostate MR-Linac data  | Rob Tijssen             |
| 10:10 AM | Simulation and Pre-Planning Omitted Radiation Therapy (SPORT): Advancing MR-Guided Adaptive Radiotherapy for Prostate Cancer             | Tsuicheng Chiu          |
| 10:20 AM | Liver Function Preservation after Feraheme-Enhanced MRI-Guided SBRT on 1.5T MR-Linac in Patients with HCC and Advanced Hepatic Cirrhosis | Parisa Shamsesfandabadi |

10:30 AM **Coffee Break**

11:00 AM **Sustainability in MRgRT: Strategies for Resource Management and Local Practices**

- Rob Tijssen, PhD, *Catharina Hospital, Eindhoven, The Netherlands*
- Daniel Hyer, PhD, *University of Iowa, Iowa City, IA, United States*

12:00 PM **Lunch**

1:00 PM ***Proffered Papers 2 - MRI for Treatment Planning***

| Time | Title | Speaker |
|------|-------|---------|
|------|-------|---------|

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|---------|---|----------------|
| 1:00 PM | Evaluating MR based ultra-hypofractionated focal boost to intraprostatic lesions for high-risk localized prostate cancer with histological reference          | Tufve Nyholm   |
| 1:10 PM | Longitudinal per fraction lesion segmentation and tracking via few-shot deep learning for MR-guided radiotherapy of prostate cancer patients                  | Josiah Simeth  |
| 1:20 PM | Identification of Radiotherapy Target Volumes in Glioblastoma using Advanced MRI and 18F-DOPA PET/CT  | Eyesha Younus  |
| 1:30 PM | A simplified online adaptive workflow for long-course MR-guided radiotherapy in esophageal cancer   | Koen Kuijer    |
| 1:40 PM | Investigating artefact-free online MR imaging during actively scanned proton therapy using a bi-directional whole-body in-beam MRI scanner                    | Emely Weichert |
| 1:50 PM | Initial clinical experience of stereotactic body radiotherapy (SBRT) for lung metastases with target intrafraction tracking and gating by means 1.5T MR-Linac | Michele Rigo   |

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### Improving Patient Throughput: Novel Workflows and Tools in MRgRT

2:00 PM

- Eric Paulson, PhD, *Medical College of Wisconsin, Milwaukee, WI, United States*
  - Harini Veeraraghavan, PhD, *Memorial Sloan Kettering Cancer Center, New York, NY, United States*
  - Kathryn Mittauer, PhD, *Miami Cancer Institute, Miami, FL, United States*
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3:00 PM

**Coffee Break**

***Young Investigator Award Finalist Presentations***

3:30 PM

| Time    | Title   | Speaker              |
|---------|---|----------------------|
| 3:30 PM | Patient-specific imaging modality agnostic virtual digit twins modeling temporally varying digestive motion   | Jorge Tapias Gomez   |
| 3:40 PM | Towards a clinically-relevant computational platform for systematically adapting radiation therapy for treating glioma  | Hugo J Miniere       |
| 3:50 PM | Highly-Accelerated, Time-Resolved 4D Golden-Angle Radial MRI with Self-Supervised Learning  | Haoyang Pei          |
| 4:00 PM | A Longitudinal Study of Functional Connectivity Changes of Patients with Diffuse Glioma After Chemoradiotherapy using Aberrancy Parcel Map Analysis of Resting-state Functional MRI | Tong Zhu             |
| 4:10 PM | Correlation of histopathological cell density and hypoxic fraction with time-dependent diffusion MRI in glioblastoma  | Minea Jokivuolle     |
| 4:20 PM | Deducing Cardiorespiratory Motion of Cardiac Substructures Using a Novel 5D-MRI Workflow for Radiotherapy   | Chase Ruff           |
| 4:30 PM | Distortion-Free Diffusion-Weighted Imaging of the Prostate Using TGSE-Based Golden-Angle PROPELLER Acquisition and Deep Learning Denoising  | Jingjia Chen         |
| 4:40 PM | Modality-AGnostic Image Cascade: Cross-Modality MAGIC for improved MR-Linac Cardiac Segmentation  | Nicholas Summerfield |
| 4:50 PM | Segmentation Regularized Registration   | Sudharsan            |

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|  | Training Improves Multi-Domain Generalization of Deformable Image Registration for MR-Guided Prostate Radiotherapy | Madhavan |
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### **Novel Imaging Biomarkers: Leveraging Quantitative MRI for Image-Guided Adaptive Radiotherapy**

5:00 PM

- Faisal Mahmood, PhD, *Odense University Hospital, Odense, Denmark*
- Michael Dubec, PhD, *University of Manchester, Manchester, United Kingdom*
- Angus Lau, PhD, *Sunnybrook Health Sciences Centre, Toronto, Canada*

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6:30 PM

**Reception (Location TBA)**

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# PRELIMINARY PROGRAM

*Tuesday, April 15*

7:30 AM **Breakfast**

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## **Embracing Motion: Recent Innovations in 4D MRI**

8:30 AM

- Martin Fast, PhD, *University Medical Center Utrecht, Utrecht, The Netherlands*
  - Chiara Paganelli, PhD, *Polytechnic University of Milan, Milan, Italy*
  - Jing Cai, PhD, *The Hong Kong Polytechnic University, Hong Kong, China*
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## ***Proffered Papers 3 - MRI-Based Motion Management and Assessment***

9:30 AM

| Time     | Title  | Speaker             |
|----------|--|---------------------|
| 9:30 AM  | Optimizing Motion Management in Spine SBRT on the MR-Linac: Enhancing Delivery Efficiency with Real-Time Cine Imaging and Baseline Shift Corrections | Eun Young Han       |
| 9:40 AM  | Characterization of a Cartesian Self-Gated 4D-MR Imaging Sequence for SBRT   | Stefan Dorsch       |
| 9:50 AM  | Longitudinal Acceleration of Time-Resolved 4D MRI Exploiting Multi-Fraction Temporal Correlations  | Jingjia Chen        |
| 10:00 AM | Optimizing gated MR-linac treatments using 4D-MRI for motion-compensated daily imaging   | Katrinus Keijnemans |
| 10:10 AM | Characterizing contractile motion along the stomach medial axis from   | Robert Jones        |

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|          | dynamic MRI  |        |
| 10:20 AM | Combination of Pseudo-Golden-Angle Radial Acquisition and Deep Learning Reconstruction for Motion-Resolved 4D MRI on a 1.5T MR-Linac | Can Wu |

10:30 AM

**Coffee Break**

***Proffered Papers 4 - Quantitative MRI Part 1***

11:00 AM

| Time     | Title   | Speaker               |
|----------|---|-----------------------|
| 11:00 AM | A multi-centre investigation of longitudinal changes in the apparent diffusion coefficient during short-course radiotherapy for patients with rectal cancer | Anne Bisgaard         |
| 11:10 AM | MR Multitasking-driven Abdominal Integrated Imaging (MT-AI2)  | Junzhou Chen          |
| 11:20 AM | Evaluation of a Novel Quantitative Multiparametric MR Sequence for Radiation Therapy Treatment Response Assessment  | Yuhao Yan             |
| 11:30 AM | Longitudinal ADC changes in the prostate and dominant lesion during hypo-fractionated SBRT on a 1.5 T MR linac: correlation with PSA response               | Sarah Morris          |
| 11:40 AM | Multi-Center Diffusion-Weighted MRI Validation for 0.35T MR-Linac   | Siamak Nejad-Davarani |
| 11:50 AM | Quantitative modelling of oxygen delivery in patients with head and neck cancer using oxygen-enhanced MRI   | Michael Dubec         |

12:00 PM

**Lunch**

1:00 PM

**Advancements in Imaging Sequences for MRgRT: New Techniques and Applications**

- Zhaoyang Fan, PhD, *University of Southern California, Los Angeles, CA, United States*
- Marielle Philippons, PhD, *University Medical Center Utrecht, Utrecht, The Netherlands*
- Yong Chen, PhD, *Case Western Reserve University, Cleveland, OH, United States*

***Proffered Papers 5 - Advanced and Specific Topics Part 1***

2:00 PM

| Time    | Title   | Speaker                       |
|---------|---|-------------------------------|
| 2:00 PM | C-SegDeform: a novel alternative to image registration in MR-guided adaptive radiotherapy of pancreatic cancer  | Mehdi Shojaei                 |
| 2:10 PM | Need for Speed: Timegain of AI-based delineations for MR-guided online adaptive radiotherapy of prostate cancer | Maximilian Konrad             |
| 2:20 PM | Accelerate Diffusion-Weighted MRI with Extended b-values via Implicit Neural Representation Learning            | Lianli Liu                    |
| 2:30 PM | A software framework for automated commissioning of AI Segmentation models for radiation therapy workflows      | Nico Cote                     |
| 2:40 PM | The impact of deep learning organ delineation uncertainty for prostate cancer radiotherapy                      | Christian Jamtheim Gustafsson |
| 2:50 PM | Radiomics Approaches for Survival Prediction and Risk Stratification in Glioma Using MRI                        | Walid Dandachly               |



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3:00 PM      **Coffee Break**

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**Dose Accumulation and Re-Irradiation: Tools, Guidelines, and Implementation**

- 3:30 PM
- Lando Bosma, PhD, *University Medical Center Utrecht, Utrecht, the Netherlands*
  - Jonas Willmann, *University Hospital Zürich, Zürich, Switzerland*
  - Andreas Smolders, *Paul Scherrer Institute, Villigen, Switzerland*
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**Proffered Papers 6 - Clinical Studies and Applications in MRgRT Part 2**

| Time    | Title    | Speaker  |                    |
|---------|----------|--|--------------------|
| 4:30 PM | 10:00 AM | Low-field (0.55T) respiratory-resolved and pulmonary functional MRI for lung radiotherapy  | Jessica Scholey    |
|         | 10:10 AM | Deliverability of biologically guided RT plans driven by quantitative MR imaging   | Annette Haworth    |
|         | 10:20 AM | Evaluating T1 and T2-weighted MR images for improved liver GTV delineation and subsequent ITV generation using a novel 4D multitasking MR sequence | Theodore Geoghegan |

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5:00 PM      **Industry Development Update**

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6:30 PM      **Poster Viewing**

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# PRELIMINARY PROGRAM

*Wednesday, April 16*

7:30 AM

**Breakfast**

## *Proffered Papers 7 - Quantitative MRI Part 2*

8:30 AM

| Time    | Title   | Speaker          |
|---------|---|------------------|
| 8:30 AM | Repeatability of longitudinal apparent diffusion coefficient measurements in esophageal tumors on a 1.5 T MR-linac                                    | Koen Kuijer      |
| 8:40 AM | Preliminary Results from Consensus Measurement Methods for Longitudinal relaxometry on the 1.5T Unity MR-linac: a multi-institution comparison        | Mike van Rijssel |
| 8:50 AM | Longitudinal Assessment of Diffusion-MRI Hypoxia Score in Patients with Prostate Cancer Receiving Definitive Radiotherapy                             | Ivan A. Rashid   |
| 9:00 AM | Early radiation induced changes to the microenvironment in cervical cancer patients   | Tiril Hillestad  |
| 9:10 AM | Longitudinal Diffusion-Weighted MRI for Treatment Response Assessment in Locally Advanced Rectal Cancer Patients Undergoing Short-Course Radiotherapy | Jonathan Pham    |
| 9:20 AM | Monitoring Concurrent Chemoradiation Treatment Response in Cervical Cancer Using Quantitative 3D T1ρ Mapping  | Sandeep Panwar   |
| 9:30 AM | Assessment of treatment response after prostate Stereotactic Body Radiation Therapy using quantitative  | Hayley Reynolds  |

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|  | MRI and radiomics: the SBRT SI-BiRT trial |  |
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***Proffered Papers 8 - Advanced and Special Topics Part 2***

9:40 AM

| Time     | Title   | Speaker        |
|----------|---|----------------|
| 9:40 AM  | Implementation of Quantitative MRI-Guided Adaptive Radiotherapy on MR-LINAC   | Jie Deng       |
| 9:50 AM  | Online adaptive MR-Guided radiotherapy on a 1.5 T MR-Linac: clinical experience and evaluation of the first 1000 patients in a monocentric analysis | Michele Rigo   |
| 10:00 AM | Bowel motion: Is it a concern for multi-isocenter treatments?   | Saskia Damen   |
| 10:10 AM | Synthetic 3D MRI generation from CBCT for deep-inspiration breath-hold (DIBH) abdominal treatments  | Paulo Quintero |
| 10:20 AM | Toward Personalized Automation in MR-Linac Workflows: Transforming Adaptive Radiotherapy with Advanced Monaco TPS Scripting                         | Sean Domal     |
| 10:30 AM | Comparative Plan Quality and Dosimetric Analysis of Two Commercially Available MR-Linac Systems in Prostate and Pancreas Cancers                    | Huiming Dong   |
| 10:40 AM | Investigating the dosimetric impact of intrafractional motion in prostate cancer patients during MR-guided adaptive radiotherapy                    | Stella Xing    |

10:50 PM

**Coffee Break**

### **Low Field vs. High Field MRI: A Comparative Perspective**

11:20 PM

- Priti Balchandani, PhD, *Icahn School of Medicine at Mount Sinai, New York, NY, United States*
- Jelle Varaart, PhD, *NYU Grossman School of Medicine, New York, NY, United States*

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12:20 PM

### **Awards & Closing Remarks**

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12:30 PM

### **Boxed Lunch & Adjourn**

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