Preliminary program NACP2020/21

Sunday 11-04-2021

11:00-12:00	**Social & Exhibition interactions (platform opens)**
12:00-12:15	**Opening and welcome** NACP2020/21 Organising Committee
12:15-13:15	**Session 1:** Applications of artificial intelligence to image formation, Marc Kachelriess, German Cancer Research Center
13:15-13:45	**Session 2: Exhibitor and sponsor presentations I** Short introduction of sponsors Gold sponsor presentation
13:45-14:30	**Social & Exhibition interactions**

14:30-15:10	**Session 3A+B: Artificial intelligence** Introduction to AI, Mads Nielsen, University of Copenhagen		**Session 3C: Diagnostic imaging** Phase contrast CT, Martin Bech, Lund University
15:10-16:30	**Session 3A: Auto-segmentation and -planning**	**Session 3B: Inter- and intra-fractional motion management**	**Session 3C: Diagnostic imaging (continued)**
	Knowledge-based planning improves plan quality for high-risk prostate cancer with four dose levels, Kristine Fjellanger, Haukeland University Hospital	Six degrees of freedom dynamic motion-including dose reconstruction in a commercial treatment planning system, Simon Skouboe, Aarhus University Hospital	Temporal trends in patient and operator X-ray exposure during coronary angiography and percutaneous coronary intervention, Cedric Davidsen, Haukeland Universitetssykehus
	Deep learning proposed tumour segmentation for radiotherapy of head and neck cancer: a multi-modality image comparison study, Jintao Ren, Aarhus University Hospital	Prediction of inter-fractional rectum shape changes in prostate cancer radiotherapy, Øyvind Rørtveit, University of Bergen	ViewDEX 3.0 - recent development of a software application for evaluation of medical images, Angelica Svalkvist, Sahlgrenska University Hospital
	Convolutional Neural Network for classification of track quality in proton Computed Tomography, Helge Egil Seime Pettersen, Haukeland University Hospital	A novel surrogate for motion management in external beam radiotherapy of breast cancer patients, Sidsel Marie Skov Damkjær, Herlev and Gentofte Hospital	Effects of acquired counts and number of projections, reconstruction iterations, and post-processing filtering on image noise and contrast in ^{99m}Tc- SPECT/CT, Samuli Arvola, Turku University Hospital
	Influence of functional MRI sequences on automatic segmentation of rectal cancer, Franziska Knuth, Norwegian University of Science and Technology	Tumour motion analysis from planning to end of treatment course for a large cohort of lung SBRT targets, Morten Nielsen, Odense University Hospital	Challenges with new technologies in radiography (daily practice), Jónína Guðjónsdóttir, University of Iceland
	Automatic VMAT treatment planning for left-sided breast cancer with lymph nodes, Kenni Højsgaard Engstrøm, Odense University Hospital	Dosimetric benefit of daily re-optimization based online adaptive radiotherapy of bladder cancer, Patrik Sibolt, Herlev Hospital	Calibration of medical displays - some practical implications of a fixed adaption assumption, Tormod Egeland, St. Olavs hospital
	Deep learning for automatic target volume delineation, Aurora Groendahl, Norwegian University of Life Sciences	Inter-fractional movement of surgical clips in breast cancer radiotherapy, Karina Lindberg Gottlieb, Odense University Hospital	Management of constancy controls - the Stavanger experience, Ellen Wasbø, Stavanger University Hospital
16:30-17:00	**Social & Exhibition interactions**		

Monday 12-04-2021

Time			
11:00-12:00	**Social & Exhibition interactions (platform opens)**		
12:00-12:15	**Open discussion: Previous days program and recommendations for the coming day**		
12:15-13:15	**Session 4:**		
	Functional imaging to personalize RT, Daniela Thorwarth, University of Tübingen		
13:15-13:35	**Exhibitor and sponsor presentations II**		
	Silver sponsor presentations		
13:35-14:05	**Social & Exhibition interactions**		

14:05-15:25	**Session 5A: PET/SPECT**	**Session 5B: MR-RT**	**Session 5C: Advanced CT**
	Quantitative PET: New horizons in molecular imaging, Lalith Sundar, Medical University of Vienna	Clinical translation of Hyperpolarized MR, Jan Henrik Ardenkjær-Larsen, Technical University of Denmark	Photon counting CT, Cynthia McCollough, Mayo Clinic, Rochester
	Repeatability of hypoxia dose painting by numbers based on 18F-EF5-PET/CT in head and neck cancer, Pauliina Wright, Turku University Hospital	Cone beam CT based image guidance and quality assessment for MRI-only radiotherapy of the pelvis, Jens Morgenthaler Edmund, Gentofte and Herlev Hospital	Assessment of image quality in abdominal CT using visual grading regression: potential dose reduction with a model-based iterative reconstruction, Michael Sandborg, Linköping University
	Effect of respiratory motion on SPECT-CT based dosimetry – a phantom study with two heterogeneous 3D-printed kidney models filled with Lu-177, Lauri Koivula, Helsinki University Hospital	Streamlining the use of PET/MRI in an MR-only radiotherapy workflow, Nina Bach-Gansmo, Norwegian University of Science and Technology	Profile-based kV and NI selection to evaluate Auto Prescription, Nicolas Sogge, Oslo University Hospital
	Cu-64 radiopharmaceuticals for detection and treatment of hypoxic tumors: preclinical studies, Maria Dahle, Norwegian University of Science and Technology	R2* MRI based dose painting by contours in rectal cancer, René M. Winter, Norwegian University of Science and Technology	Photon-counting CT for imaging of the wrist: first human ex-vivo results, Erik Tesselaar, Linköping University
			Preliminary assessment of noise properties of a prototype photon counting CT, Henrik Elgström, Linköping University

Time			
15:25-15:45	**Social & Exhibition interactions**		
15:45-16:30	**Session 6:**		
	Total body PET, Simon Cherry, UC Davis, CA		

16:30-17:30	**Session 7: Poster session I**		
	Walk in four groups with 2½ min presentation (recorded) + 2½ min discussion per poster followed by free poster viewing.		
	Group 1A: Imaging I	**Group 1B: QA and dosimetry**	**Group 1C:Dose planning and modelling**
	A validation of 4D MRI modelling of liver method , Henna Kavaluus, HYKS instituutti OY	Scintillator based ultra-fast in vivo dosimeter for pre-clinical studies with proton pencil beam scanning, Eleni Kanouta, Aarhus University Hospital	Comparing hybrid-IMRT and hybrid-VMAT with 3DCRT field-in-field for locoregional irradiation of left-sided breast cancer, Anja Einebærholm Aarberg, Haukeland University Hospital
	Repeatability of intravoxel incoherent motion MRI in the liver, Kine Mari Bakke, University of Oslo	The sensitivity of treatment plan quality pass rates on the setup accuracy of a dedicated electronic phantom on a linear accelerator, Kenni Højsgaard Engstrøm, Odense University Hospital	A computational tumor model for predicting immunogenic response after spatially fractionated radiotherapy, Delmon Arous, University of Oslo
	Prostate MRI in patients with hip implands: Phantom modeling and clinical application, Olga Panina, Moscow Health Care Department	Investigating the temporal and temperature stability of radiochromic silicone-based 3D dosimeters, Lia Valdetaro, Aarhus University	Implementation of quantitative metrics for radiotherapy treatment plan comparison in an Eclipse script, Laura Patricia Kaplan, Aarhus University Hospital
	The importance of stability checks in radiomics modeling, Alessio Romita, Maastro Clinic	IBA Razor Nano Chamber properties in small radiation therapy beams, Mari Partanen, Tampere University Hospital	Analytical Anisotropic Algorithm Calculation in Total Body Irradiation: a Comparison with Monte Carlo Calculation and Dosimetry, Aleksi Saikkonen, Turku University Hospital
	SQLite4Radiomics: Automated Feature Extraction Integration with ConQuest DICOM, Ivan Zhovannik, Maastro & Radboud University Medical Center	Interior anthropomorphic structures in deformable radiochromic 3D silicone dosimeters, Simon Vindbæk Jensen, Aarhus University Hospital	Quantitative dose metrics and normal tissue complication probability modeling in prostate cancer, Ingrid Elisabeth Tveten, Norwegian University of Science and Technology
		Neutron-based in-vivo range verification in proton therapy, Kristian Ytre-Hauge, University of Bergen	
	Group 1D: Adaptive and MR-RT		
	Predicting plan QA failures from plan information, experiences from the first 90 patients treated on Ethos, Nikolaj Jensen, Rigshospitalet, Copenhagen		
	Clinical Feasibility of Dosimetric Accuracy for MRI-only Radiotherapy Treatment Planning ofthe Brain, Iiro Ranta, Turku University Hospital		
	Calibrating Cone beam CT for daily clinical radiotherapy dose monitoring, Anne Ivalu Sander Holm, Aarhus Universitetshospital		
	Dose Accumulation Reproducibility on Magnetic Resonance Images of ~~Lung and~~ Liver, Isak Wahlstedt, Technical University of Denmark		
	Dosimetric potential of online adaptive radiotherapy for anal cancer patients, Lina Andersson, Herlev & Gentofte Hospital		
	Independent validation of synthetic CT generation in the adaptive radiotherapy process, Jens Petersen, Rigshospitalet, Copenhagen		

Time	
17:30	**Platform closes**

Tuesday 13-04-2021

Time	Content
11:00-12:00	**Social & Exhibition interactions (platform opens)**
12:00-12:15	**Open discussion: Previous days program and recommendations for the coming day**
12:15-13:15	**Session 8:**
	Why are new technologies not translated from research to clinic?, Søren Bentzen, University of Maryland
13:15-13:45	**Social & Exhibition interactions**

13:45-15:00	**Session 9A: Proton therapy**	**Session 9B: CT imaging**	**Session 9C: NACP award lectures**
	Expansion of proton therapy indications in the thorax, Antje Knopf, University of Groningen	Spectral CT, Anais Viry, Lausanne University Hospital	Elekta award lecture 2015: MRI-only RT planning, Lauri Koivula, Helsinki on behalf of Juha Korhonen, Kotka
	Intensity modulated proton therapy planning for pelvic re-irradiation of rectal cancer recurrences - Feasibility of sparing organs at risk, Heidi S. Rønde, Aarhus University Hospital	Evaluation of in-house phantom designs for technical assessment of multi-energy CT reconstructions, Kirsten Bolstad, Haukeland University Hospital	Varian award lecture 2020, Dosimetry at the cellular level: Measuring Ionizing irradiation induced free radicals, Eero Hippeläinen, Helsinki.
	Randomized clinical DAHANCA 35 trial Photon-proton dose plan comparison in the pilot phase, Christian Rønn Hansen, Odense University Hosptial	Qualitative and quantitative assessment of the commercial deep learning CT image reconstruction algorithm True Fidelity; a phantom study, Andreas Tefre Samnøy, Haukeland University Hospital	
	Radiation doses to neurovascular structures in proton therapy of pediatric brain tumors with different locations, Laura Toussaint, Aarhus University Hospital	Evaluation of spectral imaging with respect to iodine-concentration quantification and HU-values for monoenergetic reconstructions on six CT scanners, Nicolas Sogge, Oslo University Hospital	

15:00-15:30	**Social & Exhibition interactions**

15:30-16:45 Session 10: Poster session II

Walk in four groups with 2½ min presentation (recorded) + 2½ min discussion per poster followed by free poster viewing.

Group 2A: Imaging II	**Group 2B: RT clinical applications and practice**	**Group 2C: Proton therapy**
A call for software development collaboration across Scandinavian nuclear medicine departments, using a program for handling radiopharmaceuticals as an example, Mille Ankerstjerne Micheelsen, Sjællands Universitetshospital	Anonymized DICOM audit support for quality assurance of clinical radiotherapy trials using the DcmCollab Audit Tool, Simon Krogh, Odense University Hospital	Photon vs. proton therapy for brain cancer in adults – on the normal tissue dose and risk of secondary cancer, Camilla Skinnerup Byskov, Aarhus University Hospital
Simultaneous measurements of in-plane, z-axis and combined modulation transfer function (MTF) using a new 3D resolution phantom, Vera Tormodsrud, Oslo university hospital	Learning resources for strategic leadership in Medical Physics, Carmel J. Caruana, University of Malta	Case-control Study of Brainstem Toxicity Including Variable Relative Biological Effectiveness in Paediatric Proton Therapy, Andreas H Handeland, University of Bergen
An automated cyclotron process to produce [^{64}Cu][Cu(ATSM)] for PET imaging and internal radiotherapy, Tengzhi Liu, Norwegian University of Science and Technology	A new route for attracting physics students to Medical Physics and Radiation Protection, Carmel J. Caruana, University of Malta	Implementation of a double scattering nozzle for Monte Carlo recalculations of proton plans with variable relative biological effectiveness, Lars Fredrik Fjæra, University of Bergen
PET attenuation correction for radiotherapy hardware components in combined PET/MRI, Linnea Wivilson, Norwegian University of Science and Technology	Definite chemo-radiotherapy to an unselected population at a single institution of patients with inoperable, unresectable or recurrent esophageal cancer, Morten Nielsen, Odense University Hospital	The organ sparing potential of different biological optimization strategies in proton therapy, Helge Henjum, University of Bergen
A comparison of DECT reconstructions, to explore what kV provides optimal image quality for contouring lymph nodes in relation to c. mamma radiation treatment, Jacob Sandholdt , UCL Erhvervsakademi og Professionshøjskole	Gating window correction for users combining Varian RPM and TrueBeam for gated radiotherapy, Mads Brincker, Aalborg University Hospital	Adapting proton therapy to hypoxic tumors, Guillermo Garrido Hernandez, Norwegian University of Science and Technology
	Varian Identify at the University Hospital of North Norway (UNN), Mari-Ann Norum, University Hospital of North Norway	Reducing Uncertainty in Proton Therapy Treatment Planning using Dual Energy Computed Tomography, Annette Høisæter, University of Bergen
	Technical aspects of collecting a nationwide radiotherapy big data set (DBCG RT Nation), Lasse Refsgaard, Aarhus University Hospital	Voxel-based assessment of proton dose effects in paediatric brain cancer radiotherapy from multimodal imaging, Mikkel Skaarup, Rigshospitalet, Copenhagen

Group 2D: Segmentation and auto-planning
Does RapidPlan compromise plan quality?, Anders Traberg Hansen, Aarhus University Hospital
Segmentation of organs at risk in breast cancer radiotherapy based on deep learning of CT-images, Jeanette Bonden Isachsen, Norwegian University of Science and Technology
Planning target volume margins for MR-guided adaptive radiotherapy for prostate patients, Rasmus Lübeck Christiansen, Odense University Hospital
Automatic tumor segmentation in rectal cancer by machine learning of MR images, Ingvild Askim Adde, Norwegian University of Science and Technology
A national study on the inter-observer variability in delineation of organs at risk in the brain, Ebbe Laugaard Lorenzen, Odense University Hosptial

16:45-17:00	**Closing remarks**
	Marianne Leirdal Stokkan, past president of NACP
	Anders Tingberg, president of NACP
17:00-17:30	**Time to say goodbye**