BiGART 2025 PROGRAMME

Tuesday June 17

08:00 Registration and breakfast

08:30 Welcome

- Karen-Lise Spindler, Birgitte Offersen, Jesper Grau Eriksen

Opening keynote lecture

- 08:35 **Matthias Guckenberger**, *Zürich, Switzerland, ESTRO president*: Clinical radiotherapy trials in the future

08:55 Session 1: Biology-guided and adaptive radiotherapy anno 2025
Chair: **Birgitte Offersen**, *Aarhus, Denmark*

Invited speakers

- 08:55 **Per Karlsson**, *Gothenburg, Sweden*: Gene expression profiles and breast cancer radiation therapy
- 09:15 **Trine Tramm**, *Aarhus, Denmark*: Tumor infiltrating lymphocytes and breast cancer radiation therapy

Oral presentations

- 09:35 **Jens Overgaard**, *Aarhus, Denmark*: Subsite variation of HPV-related p16-expression in oropharynx cancer: Evaluation of frequency and prognostic impact in 8557 DAHANCA patients
- 09:45 **Karina Lindberg Gotlieb**, *Odense, Denmark*: Clinical Study of VMAT vs. 3DCRT for Breast Cancer with Lymph Node Involvement: Better Coverage, Faster Treatment, and No Increased Contra-Lateral Organ Dose
- 09:55 **Anne Bisgaard**, *Odense, Denmark*: Tracking changes in diffusion MRI for short course radiotherapy in rectal cancer: a multi-center study
- 10:05 **Camilla Skinnerup Byskov**, *Aarhus, Denmark*: Adaptive Radiotherapy and Quality Assurance in the European randomised phase III PROTECT trial for oesophageal cancer patients

10:15 Coffee break

10:45 Session 2: Prediction of toxicity and morbidity
Chair: **Marianne Guren**, *Oslo, Norway*

Invited speakers

- 10:45 **Barbara Alicja Jereczek-Fossa**, *Milan, Italy*, ESTRO president-elect: Predicting and Preventing Toxicity in Pelvic Radiotherapy: AI, Microbiome, Radiomics, and More
- 11:05 **Marianne Guren**, *Oslo, Norway*: Personalizing radiotherapy to prevent pelvic toxicity
- 11:25 **Karen-Lise Spindler**, *Aarhus, Denmark*: Considering new organs at risk in pelvic radiotherapy

Oral presentations

- 11:40 **Johanne Steffensen**, *Aarhus Denmark*: Impact of radiotherapy on vaginal and sexual health in women with anal cancer: A prospective Danish cohort analysis
- 11:50 **Line Schack**, *Aarhus, Denmark*: Associations between SNPs and Radiation Induced Fibrosis in Breast Cancer Patients: Results from a Genome-Wide Association Study

12:10 Lunch

13:10 Session 3: Artificial intelligence in radiotherapy
Chair: **Christian Rønn Hansen***, Odense, Denmark*

Invited speakers

- 13:10 **Ye Zhang**, *Villigen, Switzerland*: Automation in Radiotherapy – where are we going?

Oral presentations

- 13:30 **Lise Thorsen**, *Aarhus Denmark*: In-depth analysis of failure rates and -modes in auto-segmentation of the esophagus in patients treated for lung cancer
- 13:40 **David G. Kovacs**, *Copenhagen, Denmark*: External Validation of an Automated Deep Learning-Based Delta 18F-FDG PET/CT Biomarker for Loco-Regional Control Probability Stratification
- 13:50 **Christian Rønn Hansen***, Odense, Denmark*: Exploring the performance of dose prediction with deep learning for head and neck cancer on a multi-centre clinical dataset
- 14:00 **Mathis Rasmussen**, *Aarhus Denmark*: First-in-world demonstration of benefit of AI assisted head and neck cancer target contouring in a prospective blinded randomized clinical trial

14:15 Coffee break

14:45 Session 4: Reirradiation – possibilities and pitfalls
Chair: **Lone Hoffman***, Aarhus, Denmark*

Invited speakers

- 14:45 **Søren M. Bentzen**, *Maryland, US*: Radiobiology of reirradiation
- 15:05 **Ane Appelt**, *Copenhagen, Denmark*: Dealing with dose accumulation
- 15:25 **Jean-Michel Hannoun-Levi**, *Nice, France*: Reirradiation, current status and future perspectives
- 15:45 **Anna Embring**, *Stockholm, Sweden*: Reirradiation in Paediatric CNS Tumours: Outcome After Implementing National Guidelines

Oral presentations

- 16:00 **Morten Nielsen**, *Odense, Denmark*: A comprehensive national audit of radiotherapy retreatment numbers, sites and indications
- 16:10 **Christina Glismand Truelsen**, *Aarhus, Denmark*: Acute Toxicity and Quality of Life in the ReRad II Trial on Dose-Escalated Proton Reirradiation for Locally Recurrent Rectal Cancer

16:20 Session 5: Pitch your study (upcoming prospective studies)
Chair: **Karen-Lise Garm Spindler**, *Aarhus, Denmark*

- 16:20 **Jean-Michel Hannoun-Levi**, *Nice, France*: The VENUS trial
- 16:27 **Einar Dale**, *Oslo, Norway*: RAdiotherapy with FDG-PET guided Dose-PAINTing compared with standard radiotherapy for primary head and neck cancer-3 (RADPAINT-3) – Randomized, multi-center phase II trial
- 16:34 **Ruta Zukauskaite**, *Odense, Denmark*: DAHANCA 41: A national randomised trial using 0 vs 5 millimetres high-dose CTV margin for primary radiotherapy of Head and Neck Squamous Cell Carcinomas
- 16:41 **Uffe Bernchou**, *Odense, Denmark*: ERADICATE: A randomised trial to test Early magnetic resonance imaging-guided RADIotherapy ablation of loCAlly advanced pancreaTic cancer
- 16:48 **Sara Linde**, *Aarhus, Denmark*: Pre-trial quality assurance and design of the NIELS trial: A phase III study of dose-escalated radiotherapy in patients with small cell lung cancer

17:00 Poster discussion and refreshments

18:00 End of meeting, day 1

19:00 Museum visit, Conference dinner and networking – ARoS art museum

Wednesday June 18

08:00 Session 6: Late effects in particle therapy of CNS tumors
Chair: **Morten Høyer**, *Aarhus, Denmark*

Invited speakers

- 08:00 **Armin Lühr**, *Dortmund, Germany*: Beyond dose in proton therapy
- 08:20 **Arturs Meijers**, *Villigen, Switzerland*: Dose rate as predictor for brain damage
- 08:40 **Hiske van der Weide**, *Groningen, the Netherlands*: Changes in the brain after proton therapy
- 09:00 **Anne Vestergaard**, *Aarhus, Denmark*: Brain image change analysis in a Danish proton treated cohort

Oral presentations

- 09:15 **Laura Toussaint**, *Aarhus, Denmark*: Impact of radiation dose on neurocognitive function and quality of life in longterm childhood brain tumor survivors
- 09:25 **Robin Hegering**, *Dortmund, Germany*: Spatial distribution of astrocytes as a late response to partial-brain proton irradiation in mice at different doses

9:40 Coffee break

10:10 Session 7: Emerging therapies
Chair: **Cai Grau**, *Aarhus, Denmark*

Invited speakers

- 10:10 **Brita Singers Sørensen**, *Aarhus Denmark*: FLASH – Which factors matter?
- 10:30 **Betina Børresen**, *Copenhagen/Lund, Denmark/Sweden*: The canine cancer patient in FLASH research

Oral presentations

- 10:50 **Niels Bassler**, *Aarhus, Denmark*: Proton Minibeam Radiotherapy - Preclinical Research at DCPT
- 11:05 **Eirik Malinen**, *Oslo, Norway*: Integrating 2D dosimetry and cell survival analysis to improve local effect predictions in spatially fractionated radiotherapy
- 11:20 **Jinyan Duan**, *Bristol, UK*: A Geant4 simulation of DNA Damage in BNCT with ongoing lithium ion studies
- 11:35 **Tanja Mälkiä**, *Helsinki, Finland*: A retrospective study of oral mucosa dose relation to grade 3 oral mucositis in locally recurrent inoperable head and neck carcinoma patients treated with reactor-based BNCT

12:00 Lunch

13:00 Session 8: Biology and clinical applications
Chair: **Brita Singers Sørensen**, *Aarhus, Denmark*

Invited speakers

- 13:00 **Randi Syljuåsen**, *Oslo, Norway*: Radiation-Induced DNA Damage and Immune Signaling: Mechanisms and Therapeutic Opportunities
- 13:20 **Pierre Blanchard**, *Paris, France*: ctDNA guided management of head & neck carcinoma

Oral presentations

- 13:40 **Anne Vittrup Jakobsen**, *Aarhus, Denmark*: The prognostic value of cell-free DNA kinetics during chemoradiotherapy in squamous cell carcinomas of the anus
- 13:50 **Cathrine Bang Overgaard**, *Aarhus, Denmark*: Highlighting proton RBE Complexities: RBE changes with biological endpoint, dose fractionation, and SOBP position in a murine leg model
- 14:00 **Inga Solgård Juvkam**, *Oslo Norway*: Regional atrophy, cellular plasticity, and regenerative potential in irradiated murine salivary glands
- 14:10 **Ingerid Skjei Knudtsen***, Trondheim, Norway*: [68Ga]Ga-PSMA-11 vs [18F]F-PSMA-1007 PET/MRI of recurrent prostate cancer: detection rates at different PSA-levels and implications for salvage radiotherapy

14:25 Session 9: Harnessing grand-scale data sets
Chair: **Stine Korreman**, *Aarhus, Denmark*

Oral presentations

- 14:25 **Azadeh Abravan***, Manchester, UK*: Seasons, socioeconomics, comorbidities, and stages: Unraveling the factors correlating with diagnostic intervals in cancer care
- 14:35 **Sarah Stougaard**, *Odense, Denmark*: Impact of GTV-CTV Margin and Other Predictors on Radiation-Induced Dysphagia in Head and Neck Cancer Patients
- 14:45 **Kristine Wiborg Høgsbjerg**, *Aarhus, Denmark*: Beyond the First Cut - A Comparison of Breast Induration in Breast Cancer Patients with and without Repeat Surgery Based on DBCG Data
- 14:55 **Anders W. Mølby Nielsen**, *Aarhus, Denmark*: Local recurrence with and without a tumour-bed boost: a post-hoc analysis of the DBCG IMN2 study
- 15:05 **Mette Skovhus Thomsen**, *Aarhus, Denmark*: Quality assessment of 2705 treatment plans in the randomised Danish Breast Cancer Group Skagen trial 1

15:30 Closing session – prizes and farewell

- Karen-Lise Spindler, Birgitte Offersen, Jesper Grau Eriksen

Poster discussion groups

1-8: Dosimetry and reirradiation

Chair: Jean-Michel Hannoun-Levi

Dosimetry

1. **Jenna Tarvonen**, *Helsinki, Finland*: Paraffin wax as a bolus material in accelerator-based boron neutron capture therapy
2. **Anna Mann Nielsen**, *Herlev, Denmark*: Dosimetric impact of esophageal inter-fraction motion in esophagus-sparing radiotherapy for metastatic spinal cord compression

Reirradiation

3. **Siri Grøndahl**, *Aarhus, Denmark*: Decision Support Model for referral of patients with glioma to proton therapy
4. **Maria Fuglsang Jensen**, *Aarhus, Denmark*: Proton versus photon treatment planning in the Scandinavian CURE Lung trial for reirradiation of thoracic tumours
5. **Lone Hoffmann**, *Aarhus, Denmark*: Intercentre reirradiation treatment planning consistency: Pre-trial QA in the CURE Lung trials for recurrent or new thoracic cancers
6. **Laura Kaplan**, *Næstved, Denmark*: Dose accumulation for reirradiation: a national study of inter-center variation across eight treatment sites
7. **Stine Overvad Fredslund**, *Aarhus, Denmark*: CURE Lung: CUratively intended thoracic REirradiation. An observational study of curative intended reirradiation of thoracic tumours including lung-cancer recurrences, solitary lung metastases, or new primary lung cancer in the thorax
8. **Laura P. Kaplan**, *Næstved, Denmark*: Clinical workflow for reirradiation: National consensus recommendations on imaging, treatment planning, dose accumulation, and treatment delivery

9-17: Artificial intelligence in radiotherapy

Chair: Stine Korreman

9. **Johan Martin Søbstad**, *Bergen, Norway*: Time efficiency, geometric accuracy, and clinical impact of AI-assisted contouring in head and neck cancer radiotherapy
10. **Henrik Dahl Nissen**, *Vejle, Denmark*: The Influence of AI-Assisted Delineation on Final Delineations of Targets and Organs at Risk Over Time
11. **Anders Traberg Hansen**, *Aarhus, Denmark*: Application of a Neural Network for Predicting Stereotactic Radiotherapy Field Orientations
12. **Jesper Kallehauge**, *Aarhus, Denmark*: Uncertainty-Aware Deep Learning-Based Auto-Segmentation of Glioblastoma Using Conformal Prediction
13. **Morten Sahlertz**, *Aarhus, Denmark*: Towards objective cosmetic outcome self-evaluation: machine-learning on photographic data from breast-conserving treatment
14. **Kristoffer Moos**, *Aarhus, Denmark*: Rethinking the Elective Target Volume in Patients with Oropharyngeal Cancer
15. **Maja Vestmø Maraldo**, *Copenhagen, Denmark*: Attitudes towards AI-generated risk prediction in patients with early breast cancer: an international multi-center survey

16. **Lise Thorsen**, *Aarhus, Denmark*: Monitoring the performance of AI segmentation of organ at risk in clinical practice at the Department of Oncology at Aarhus University Hospital
17. **Emilie Helgesen Karlsson**, *Odense, Denmark*: Diffusion MRI for Enhanced Tumour Delineation and Outcome Prediction in Pancreatic Cancer Using Artificial Intelligence

18-26: Biology and clinical applications
Chair: Pierre Blanchard

18. **Hild Milde Bekkevoll**, *Trondheim, Norway*: Mechanisms of Radiation-Induced Bone Damage: In Vitro Studies
19. **Stine Vestergaard Eriksen**, *Vejle, Denmark*: Natural killer cell activity in patients treated with curatively intended radiotherapy for prostate cancer: An observational study
20. **Jens Edmund**, *Herlev, Denmark*: Spatial correlation of FAZA PET and FDG PET for head and neck cancer: a search for a more accessible way to image hypoxia
21. **Folefac C. Asonganyi**, *Aarhus, Denmark*: Preclinical study of reirradiation with hyperthermia in recurrent murine tumors
22. **Emil Leth Villumsen**, *Aarhus, Denmark*: The CAM Model: A Novel Preclinical Platform for Proton Radiotherapy and Nuclear Imaging in Oncology
23. **Jacob Kinggaard Lilja-Fischer**, *Aarhus, Denmark*: Mutational profile of oropharyngeal cancer in relation to HPV, tobacco smoking and prognosis with validation in the DAHANCA 19 randomized trial
24. **Morten Busk**, *Aarhus, Denmark*: Dual-tracer autoradigraphy in orthotopic tumor models: Towards personalized PET-guided therapy
25. **Manish Kakar**, *Oslo, Norway*: Vision transformers may enable early detection of radiation-induced toxicity in submandibular glands from a murine model
26. **Bao Ngoc Huynh**, *Oslo, Norway*: Detecting Early Toxicity in a Murine Head and Neck Model Using Explainable CNNs

27-35: Clinical 1
Chair: Jens Overgaard

27. **Josef Khalid**, *Aarhus, Denmark*: Squamous cell carcinoma in the oral cavity – need for risk stratification of the neck?
28. **Maiken M. Hjelt**, *Aarhus, Denmark*: Trends in feeding tube insertion and weight loss over time in patients with Head and Neck Cancer undergoing curative (chemo)radiotherapy
29. **Sara Volf Jensen**, *Aarhus, Denmark*: Oral Hygiene Habits and Fluoride Levels after Head and Neck Radiotherapy: An Exploratory Clinical Study
30. **Eva Onjukka**, *Stockholm, Sweden*: The effect of evolving clinical practice in head and neck radiotherapy
31. **Anna Embring**, *Stockholm, Sweden*: Radiotherapy in children treated for neuroblastoma: comparative photon/proton treatment plans and side effects
32. **Eva Onjukka**, *Stockholm, Sweden*: How to account for temporal patterns of dysphagia scores in a real-world dataset
33. **Daniella Elisabet Østergaard**, *Copenhagen, Denmark*: Real-world experience of pediatric radiotherapy over two decades (to guide future treatments)

34. **Lars Ulrik Fokdal**, *Vejle, Denmark*: Survival prediction in cancer patients receiving whole brain radiotherapy for brain metastases
35. **Camilla Kronborg**, *Aarhus, Denmark*: Sexual Function-Related Organs at Risk in Rectal Cancer: Opportunities for Sparing in Radiotherapy Planning

36-44: Clinical 2

Chair: Cai Grau

36. **Mai Lykkegaard Ehmsen**, *Aarhus, Denmark*: Dosimetry audits as part of the radiotherapy quality assurance (RTQA) program in the PROTECT-trial
37. **Malthe Fiil**, *Aarhus, Denmark*: The value of magnetic resonance imaging in the response evaluation of primary radiotherapy for squamous cell carcinomas of the oral cavity, pharynx and larynx
38. **Hanna Rahbek Mortensen**, *Aarhus, Denmark*: Real world survival and morbidity after concurrent chemotherapy and radiotherapy in patients with gastroesophageal cancer
39. **Kristine Wiborg Høgsbjerg**, *Aarhus, Denmark*: Patient Perspectives on Participation in the DBCG Proton Trial: A Qualitative Research Study
40. **Sara Linde**, *Aarhus, Denmark*: Role of prophylactic cranial irradiation in patients with limited disease small cell lung cancer: a Danish single institution cohort
41. **Maja Bendtsen Sharma**, *Aarhus, Denmark*: Patient reported respiratory symptoms 10 years after loco-regional breast cancer radiotherapy: Look for other causes than radiotherapy
42. **Anne Wilhøft Kristensen**, *Aarhus, Denmark*: Factors Influencing Participation in a Proton Therapy Clinical Trial Among Patients with Pharyngeal and Laryngeal Cancer: A Cross-Sectional Study
43. **Oscar N. Brændstrup**, *Aarhus, Denmark*: Cosmetic outcome after kilovoltage therapy of facial basal cell carcinoma: A Danish national prospective study of 932 patients
44. **Katrine Smedegaard Storm**, *Herlev, Denmark*: Bowel delineation methods and predictors of acute and late diarrhea in radiotherapy for anal cancer

45-52: Adaptive radiotherapy 1

Chair: Ane Appelt

45. **Trine Omand Kirkegaard Sørensen**, *Aalborg, Denmark*: Reducing preposition variations and monitor intrafraction movement with surface-guided radiation therapy for breast cancer patients
46. **Simon Nyberg Thomsen**, *Aarhus, Denmark*: The necessity of managing intra-fractional motion in stereotactic radiotherapy for central lung lesions
47. **Kristine Wiborg Høgsbjerg**, *Aarhus, Denmark*: Increasing Stability of Chest Wall Position During Deep-Inspiration Breath-Hold Under Breast Cancer Radiotherapy
48. **Marjolein Heidotting**, *Aarhus, Denmark*: Post-treatment analysis of delivered dose in interstitial pulsed dose rate brachytherapy boosts of gynaecological cancers
49. **Per Poulsen**, *Aarhus, Denmark*: Position errors and drift motion of mediastinal lymph nodes during DIBH lung cancer radiotherapy
50. **Jolanta Hansen**, *Aarhus, Denmark*: Preliminary studies of VMAT vs. RAD dose planning for high-risk breast cancer

51. **Karolina Klucznik**, *Aarhus, Denmark*: First clinical motion-including prostate and bladder dose reconstruction in real-time during prostate SBRT delivery
52. **Fardous Reaz**, *Aarhus, Denmark*: An Assessment of the SIRMIO Beamline's Feasibility for pMBRT Experiments with Heterogeneous and Homogeneous Target Doses

53-59: Adaptive radiotherapy 2
Chair: Eirik Malinen

53. **Katia Parodi**, *Munich, Germany*: First in-vivo application of the SIRMIO platform for precision, image-guided small animal IMPT proton irradiation
54. **Ruta Zukauskaite**, *Odense, Denmark*: Burden of dysphagia after changes in high-dose CTV margins for head and neck cancer patients
55. **Christian Rønn Hansen**, *Odense, Denmark*: Impact of GTV-to-CTV margin reduction on late toxicity in bilateral oropharyngeal radiotherapy: A treatment planning study
56. **Faisal Mahmood**, *Odense, Denmark*: Impact of Low-Dose Contrast-Enhanced MRI for Glioblastoma Delineation in Adaptive Radiotherapy
57. **Eirik Malinen**, *Oslo, Norway*: Partial tumor boosting in definitive radiotherapy of soft tissue sarcoma
58. **Lisette Juul Sandt**, *Herlev, Denmark*: Simulation-free online adaptive radiotherapy for patients with metastatic spinal cord compression – a feasibility study
59. **Martin Nielsen**, *Aalborg, Denmark*: Correction of IGRT and Intra-fraction movement using ExacTrac Dynamic for Head and Neck Cancer Patients

60-65: Particle Therapy 1
Chair: Morten Høyer

60. **Sarah Eckholdt Jensen**, *Aarhus, Denmark*: Dosimetric Impact of Respiratory and Anatomical Changes in Proton vs. Photon Therapy: Insights from the European PROTECT Trial on Locally Advanced Esophageal Cancer
61. **Stine Elleberg Petersen**, *Aarhus, Denmark*: Shortening proton therapy treatment time of high-risk prostate cancer patients using laxatives and CBCT guidance
62. **Liliana Stolarczyk**, *Aarhus, Denmark*: Measurement-less patient-specific QA in proton therapy: DCPT experience
63. **Lasse Bassermann**, *Aarhus, Denmark*: Quantification of proton stopping-power ratios for photon-counting computed tomography
64. **Maria Christiane Warncke Heisel**, *Aarhus, Denmark*: The impact of anatomical variations and RBE uncertainties on proton therapy dose delivery within a randomized clinical trial for high-risk prostate cancer
65. **Fardous Reaz**, *Aarhus, Denmark*: Micro-dosimetric measurement of secondary particles generated in bolus and collimator for passive scattering systems in carbon ion therapy

66-71: Particle Therapy 2
Chair: Armin Lühr

66. **Kyriakos Fotiou**, *Aarhus, Denmark*: Quantifying specific proton range uncertainty for pediatric cancer patients
67. **Ivanka Sojat Tarp**, *Aarhus, Denmark*: Evaluating stopping-power ratio accuracy for proton therapy planning of brain cancer patients applying two dual-energy CT approaches, including metal implant considerations
68. **Anne Vestergaard**, *Aarhus, Denmark*: Proton treatment planning guidelines to reduce radiation-induced image changes in gliomas
69. **Heidi S. Rønde**, *Aarhus, Denmark*: Clinical implementation of Intensity Modulated Proton Therapy (IMPT) for testicular seminoma – result for treatment of the first 30 patients
70. **Ludvig Muren**, *Aarhus, Denmark*: Linear energy transfer inclusive normal tissue complication probability modelling for late rectal and urinary morbidity following proton therapy
71. **Anne Haahr Andresen**, *Aarhus, Denmark*: 3D Swin Transformer for Patient-Specific Proton Dose Prediction of Brain Cancer Patients

72-79: FLASH & imaging
Chair: Brita Singers Sørensen

<u>FLASH</u>

72. **Priyanshu M. Sinha**, *Aarhus, Denmark*: Determining the effects of hyperthermia on the tumor and acute normal tissue response of electron FLASH radiotherapy
73. **Line Kristensen**, *Aarhus, Denmark*: Fractionation reduces FLASH-sparing in an acute skin murine model
74. **Line Kristensen**, *Aarhus, Denmark*: Mild hypoxia reduces FLASH skin-sparing in a murine model
75. **Anna Holtz Hansen**, *Aarhus, Denmark*: How is the FLASH effect influenced by oxygen deprivation in a murine model?

<u>Imaging</u>

76. **Cecilie Valet Henneberg**, *Herlev, Denmark*: A Quantitative Approach to Image Quality Assessment for Delineation in Radiotherapy
77. **Mathias Dreyer Teller**, *Herlev, Denmark*: A prospective observational study on the clinical utility of photon-counting and dual-energy CT for prostate cancer delineation
78. **Hella Maria Brøgger Sand**, *Aalborg, Denmark*: Accurate Dose Calculation in Combined Single- and Dual-Energy CT Workflows in Radiotherapy
79. **Johanna Austrheim Hundvin**, *Bergen, Norway*: Influence of b-value combination in quantitative diffusion weighted MRI of rectal cancer