Categories for 2022 AAPM 64th Annual Meeting

• Educational
  • Arthur Boyer Award for Innovation in Medical Physics Education

• Professional
  • Professional Practice/Leadership
  • Clinical Practice
  • Administration/Regulatory/Quality Management

• Scientific
  • Imaging Physics
    • Radiography/Fluoroscopy
      • Dual-Energy, Multi-Energy, or Spectral Imaging
      • Acquisition Imaging Physics and Novel Systems
      • Image Quality - Measurement & Modeling
      • Image Processing/Analysis/Segmentation/Registration/CAD
      • Clinical Applications
      • Dosimetry and Safety
      • Calibration and QA/QC
      • Quantitative Imaging
      • Virtual Tools and Phantoms
      • Radiomics / Imaging Genomics
      • Photon-counting Imaging
  • Multi-detector CT
    • Dual-Energy, Multi-Energy, or Spectral Imaging
    • Acquisition Imaging Physics and Novel Systems
    • Reconstruction
    • Image Quality - Measurement, Modeling, and Artifacts corrections
    • Image Processing/Analysis/Segmentation/Registration/CAD
    • Clinical Applications
    • Dosimetry
    • Radiation dose reduction
    • Protocol Management/Optimization
    • Calibration and QA/QC
    • Quantitative Imaging
    • Dynamic imaging (Time-resolved/4D imaging)
    • Virtual Tools and Phantoms
    • Radiomics / Imaging Genomics
    • Photon-counting Imaging
  • Cone-beam CT
    • Dual-Energy, Multi-Energy, or Spectral Imaging
    • Acquisition Imaging Physics and Novel Systems
    • Reconstruction
    • Image Quality - Measurement, Modeling, and Artifacts corrections
    • Image Processing/Analysis/Segmentation/Registration/CAD
    • Clinical Applications
    • Dental Imaging
    • Breast Imaging
    • Dosimetry
    • Calibration and QA/QC
    • Quantitative Imaging
    • Dynamic imaging (Time-resolved/4D imaging)
    • Virtual Tools and Phantoms
    • Radiomics / Imaging Genomics
    • Protocol Management/Optimization
    • Photon-counting Imaging
  • Mammography/Tomosynthesis
    • Dual-Energy, Multi-Energy, or Spectral Imaging
    • Acquisition Imaging Physics and Novel Systems
Reconstruction
• Image Quality - Measurement & Modeling & Artifacts correction
• Virtual Tools and Phantoms
• Image Processing/Analysis/Segmentation/Registration/CAD
• Clinical Applications
• Dosimetry
• Calibration and QA/QC
• Quantitative Imaging
• Time-resolved mammography/breast tomosynthesis
• Radiomics / Imaging Genomics
• Photon-counting Imaging

Nuclear Medicine, PET and PET/MR
• Acquisition Imaging Physics and Novel Systems
• Attenuation Correction and Reconstruction
• Image Quality - Measurement & Modeling & Artifacts correction
• Image Processing/Analysis/Segmentation/Registration/CAD
• Clinical Applications
• Dosimetry
• Calibration and QA/QC
• Quantitative Imaging
• Dynamic Imaging (Time-resolved/4D PET/SPECT/PET-MR)
• Virtual Tools and Phantoms
• Radiomics / Imaging Genomics
• Theranostics

MRI
• Acquisition Imaging Physics and Novel Systems
• Reconstruction
• Image Quality - Measurement & Modeling & Artifacts corrections
• Image Processing/Analysis/Segmentation/Registration/CAD
• Clinical Applications
• Safety
• Calibration and QA/QC
• Quantitative Imaging
• Dynamic imaging (Time-resolved/4D imaging)
• Virtual Tools and Phantoms
• Radiomics / Imaging Genomics

Ultrasound Imaging
• Acquisition Image Physics and Novel Systems
• Image Quality - Measurement & Modeling
• Image processing/analysis/segmentation/registration/CAD
• Photo-Acoustic Ultrasound
• Calibration, QA/QC, and Safety
• Image Registration for Diagnostic Radiology
• Emerging Ultrasound Imaging Technology
• Preclinical/Small Animal
• Contrast Agents
• Ultrasound Imaging of Therapy Response
• Molecular Imaging
• Quantitative Imaging
• Ultrasound Elastography
• Clinical Applications

Pre-Clinical (Small Animal) Imaging Systems
• Small-Animal Therapy-related Systems (Please submit under Therapy Track)
• CT
• MRI
• CBCT
• Nuclear Medicine, PET and PET/MR
• Multi-modality
• New and Emerging Modalities
• Optical
• Virtual Tools and Phantoms

Optical
• Acquisition Imaging Physics and Novel Systems
• Reconstruction
• Image Quality - Measurement & Modeling & Artifacts correction
• Image Processing/Analysis/Segmentation/Registration/CAD
• Clinical Applications
• Calibration and QA/QC
• Quantitative Imaging
• Virtual Tools and Phantoms
• Radiomics / Imaging Genomics
• New and Emerging Technology
  • X-Ray Phase-Contrast Imaging
  • X-Ray Fluorescence Imaging
  • X-ray imaging with distributed sources
  • Clinical Applications
  • Quantitative Imaging
  • Virtual tools and phantoms
  • Novel Contrast Agents and Nanoparticles for Imaging
  • Radiomics / Imaging Genomics

• Multi-Modality Imaging
  • Acquisition Image Physics and Novel Systems
  • Reconstruction
  • Dosimetry
  • Image Quality - Measurement & Modeling & Artifacts correction
  • Image Processing/Analysis/Segmentation/Registration/CAD
  • Clinical Applications
  • Calibration and QA/QC
  • Quantitative Imaging
  • Virtual Tools and Phantoms
  • Radiomics / Imaging Genomics

• Other Imaging Related Topics
  • Novel Applications
  • Low Resource/Global Technologies

• Multi-Disciplinary
  • Imaging in Treatment Planning, Image Guidance, and Adaptive Radiation Therapy
    • CT or Cone-Beam CT
    • Novel Imaging Modalities
    • Image Registration: Single-Modality
    • Image Registration: Multi-Modality
    • Segmentation: Novel Methods
    • Applications in Therapy Guidance
    • Molecular Imaging in Treatment Planning
    • Functional Imaging in Treatment Planning
    • Deformable Image Registration
    • Real-time Imaging and Tracking
    • Adaptive Radiation Therapy
    • Online Replanning
    • 4D Imaging
    • Surface Guided Imaging

• MRI in Radiation Therapy
  • MRI for Treatment Planning and Target Definition
  • In-Room MRI for Therapy Guidance
  • Real-time Imaging and Tracking
  • Pre-treatment Motion Assessment/Management
  • MRI Calibration and QA
  • MRSL, DCE and Other Novel Techniques for Planning
  • MRI for Assessment of Therapy Response
  • MRI QA for Therapy: MR-SIM and MR-IGRT
  • MRI for Adaptive Therapy

• Treatment Response Assessment
  • kV/MV Fluoroscopy / Projection Imaging
  • kV/MV CT or Cone-Beam CT
  • Nuclear Medicine, PET, and PET/MR
  • MRI
  • Novel Modality
  • Multi-Modality Imaging
  • Radiomics / Imaging Genomics (Please submit under Imaging Track)

• Imaging for Particle Therapy
  • kV/MV Fluoroscopy / Projection Imaging
  • kV/MV CT or Cone-Beam CT
  • Proton Radiography / Proton CT
  • Nuclear Medicine (PET, Prompt Gamma etc)
  • Novel Modality
  • MRI
  • Motion Management for Particle Therapy
  • Residual Range Detection

• Image Guidance for Surgical and Other Interventions (not Radiation Therapy)
  • Surgical Planning
  • Interventional Imaging (All Modalities)
  • Tracking and Navigation
  • Robotics
  • Image-Guided Ablative Therapy (RF, Cryo, Thermal, etc.)
• OR Safety
• Quality Assurance and Imaging Dose
• Radiobiology and Small Animal Systems (Please submit under Therapy Track)
• Other Multi-Disciplinary Related Topics
  • Novel Applications
  • Novel Image Guidance Modalities
  • Low Resource/Global Technologies
  • Radiomics / Imaging Genomics (Please submit under Imaging Track)
• 3D Printing
• Science Council Session (Topic: Advancing Science to Expand Access to State-of-the-Art Applications in Medical Physics)
  • Advancing Science to Expand Access to State-of-the-Art Applications in Medical Physics
• Data Science/Radiomics/Computing
  • Quantitative Image Analysis (CAD, Computerized Assessment of Prognosis, etc.)
  • Autosegmentation
  • Autoplanning
  • Treatment Response
  • Robustness and Variability
  • Association with Genomics
  • Clinical Translation
  • Data Mining
  • Deep Learning
  • Feature Extraction
  • Data Harmonization
  • Statistical Models and Methods
  • Computational Models
  • Imaging Metrology and Standards
  • Machine Learning
• Cyber Security
• Quantitative Imaging
  • QI Phantoms - Physical or Synthetic (Digital Reference Object)
  • QI Data Acquisition Strategies
  • QI Phantoms
  • QI Data Analysis Strategies
  • QI Applications: Pre-Clinical and Clinical Trials
  • Metrology - Assessment of Bias and Variance in Data Acquisition or Analysis
  • Harmonization of Data Acquisition and Data Analysis Across Vendors and Centers
  • Applications of QI: Pre-Clinical and Clinical Trials
  • Applications of QI: Treatment Guidance
  • Applications of QI: Treatment Assessment
• Therapy Physics
  • Imaging for Planning (Please submit under Multi-Disciplinary Track)
  • Photon Therapy - SBRT/SRS
    • Image Guidance (Please submit under Multi-Disciplinary Track)
    • Imaging for Verification (Please submit under Multi-Disciplinary Track)
    • 4D Treatment Planning
    • Inverse Planning and Optimization Techniques
    • Planning and Dose Calculation Methods
    • Plan Evaluation Including Statistics and Robustness Analysis
    • Treatment Delivery Techniques and Novel Applications
    • Dose Measurement Tools and Equipment QA
    • Biological Modeling
  • Photon External Beam Therapy
    • Image Guidance (Please submit under Multi-Disciplinary Track)
    • Imaging for Verification (Please submit under Multi-Disciplinary Track)
    • Adaptive Radiation Therapy (Please submit under Multi-Disciplinary Track)
    • 4D Treatment Planning
    • Inverse Planning and Optimization Techniques
    • Planning and Dose Calculation Methods
    • Monte Carlo Dose Calculation
    • Biological Modeling
    • Plan Evaluation-Statistics and Robustness Analysis
    • Plan Evaluation-Comparison Studies
    • Treatment Delivery Techniques and Novel Applications
    • IMRT or VMAT Patient-specific QA: Film, EPID, Array
    • IMRT or VMAT Patient-specific QA: Novel Methods
    • EPID-based Portal Dosimetry Patient-specific QA
    • In vivo Dosimetry (non EPID-based)
    • QA of Linear Accelerators and Ancillary Systems
    • Novel Dosimeters (gel, chemical, etc)
    • Secondary Dose Calculation/Verification
    • FLASH Techniques
• Immobilization Technology
  • External Immobilization Methods
  • Internal Immobilization Methods (balloon etc.)
  • Motion Management (Please submit under Multi-Disciplinary Track)
• Electron Beam Therapy
  • Treatment Delivery Techniques and Novel Applications
  • Dose Calibration and Verification
  • Planning and Dose Calculation
  • FLASH Techniques
• Brachytherapy and Radiopharmaceuticals
  • HDR Techniques
  • LDR Techniques
  • Planning and Dose Calculation
  • Biological Modeling
  • Brachytherapy QA
• Particle Therapy (Protons and Heavy Ions)
  • Image Guidance (Please submit under Multi-Disciplinary Track)
  • Imaging for Range Verification (Please submit under Multi-Disciplinary Track)
  • 4D Treatment Planning
  • Proton Beam Delivery Techniques
  • Heavy Ion Beam Delivery Techniques
  • Planning and Optimization Techniques (including robustness analysis)
  • Plan Evaluation-Comparison Studies
  • Dose Measurement Tools and Equipment QA
  • Dose Calculation and Calculation Tools
  • Biological Effect and Modeling
  • Uncertainties and Range Verification
  • Motion Management in Particle Therapy
  • FLASH Techniques
• Outcome Modeling and Assessment
  • Imaging for Therapy Assessment (Please submit under Multi-Disciplinary Track)
  • Late Effects
  • Early Effects
• Patient Safety and Quality Improvement
  • Incident Learning
  • Risk Analysis
  • Statistical Process Control
  • Novel QA Systems and Approaches (for IMRT QA submit under Photon External Beam Therapy)
• Radiobiology and Small Animal Systems
  • Pre-Clinical Radiobiology and Imaging Studies
  • Novel Systems for Small Animal Experiments
  • Radiobiological Modeling
  • Clinical Studies
  • Nanoparticles in Imaging and/or Therapy
• Radiation Protection and Shielding
  • Brachytherapy
  • Photon Therapy
  • Particle Therapy
• Targeted Radionuclide Therapies
  • Novel Radionuclide Therapies
  • Image Guidance (Please submit under Multi-Disciplinary Track)
• Ultrasound in Radiation Therapy
  • Quality Assurance
  • Robotic US Guidance
  • US guidance in Brachytherapy
  • Monitoring of Therapy
  • Motion Tracking
  • Image Registration with US for Patient Positioning
  • Ultrasound Imaging of Therapy Response
  • Ultrasound Treatment Planning
• Therapeutic Ultrasound
  • High-Intensity Therapeutic Ultrasound Devices
  • Ultrasound Hyperthermia/Thermal Ablation
  • Low Intensity Pulsed Ultrasound
  • Advanced and Novel Delivery Systems
  • Small Animal Systems
  • Image Guidance and Assessment (US, MRI, CT)
  • Treatment Planning
  • Therapy Modeling & Control
  • Drug Delivery, Activation, & Enhancement
  • Clinical Therapy
  • Ultrasound Therapy Standards
• HIFU/Ultrasound with Radiation Therapy
• HIFU and Immunotherapy
• Motion Modeling
• Dosimetric Effects
• Delivered Dose
• Other Therapy Related Topics
  • Novel Applications
  • Low Resource/Global Technologies
• Specialty Track: The New Era of Radiopharmaceutical Therapy
  • Specialty Track: The New Era of Radiopharmaceutical Therapy