

PROCEEDINGS OF SPIE

SPIEDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 10132

, "Front Matter: Volume 10132," Proc. SPIE 10132, Medical Imaging 2017: Physics of Medical Imaging, 1013201 (25 May 2017); doi: 10.1117/12.2276763

SPIE.

Event: SPIE Medical Imaging, 2017, Orlando, Florida, United States

Medical Imaging 2017

Physics of Medical Imaging

Thomas G. Flohr

Joseph Y. Lo

Taly Gilat Schmidt

Editors

13–16 February 2017

Orlando, Florida, United States

Sponsored by

SPIE

Co-sponsored by

Alpinion Medical Systems (United States)

Cooperating Organizations

AAPM—American Association of Physicists in Medicine (United States)

APS—American Physiological Society (United States)

IFCARs—International Foundation for Computer Assisted Radiology and Surgery (Germany)

Medical Image Perception Society (United States)

Radiological Society of North America (United States)

Society for Imaging Informatics in Medicine (United States)

World Molecular Imaging Society

The DICOM Standards Committee

Published by

SPIE

Volume 10132

Proceedings of SPIE 1605-7422, V. 10132

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Medical Imaging 2017: Physics of Medical Imaging, edited by Thomas G. Flohr,
Joseph Y. Lo, Taly Gilat Schmidt, Proc. of SPIE Vol. 10132, 1013201 · © 2017 SPIE
CCC code: 1605-7422/17/\$18 · doi: 10.1117/12.2276763

Proc. of SPIE Vol. 10132 1013201-1

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *Medical Imaging 2017: Physics of Medical Imaging*, edited by Thomas G. Flohr, Joseph Y. Lo, Taly Gilat Schmidt, Proceedings of SPIE Vol. 10132 (SPIE, Bellingham, WA, 2017) Seven-digit Article CID Number.

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510607095

ISBN: 9781510607101 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2017, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 1605-7422/17/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.



Paper Numbering: Proceedings of SPIE follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

- xvii Authors
- xxiii Conference Committee
- xxvii 2017 Medical Imaging Award Recipients

Part One

SESSION 1 TOMOSYNTHESIS AND MAMMOGRAPHY

- 10132 02 GPU-accelerated compressed-sensing (CS) image reconstruction in chest digital tomosynthesis (CDT) using CUDA programming [10132-1]
- 10132 03 Stationary intraoral tomosynthesis for dental imaging [10132-2]
- 10132 04 An atlas-based organ dose estimator for tomosynthesis and radiography [10132-3]
- 10132 05 Lesion characterization in spectral photon-counting tomosynthesis [10132-4]
- 10132 06 Pipeline for effective denoising of digital mammography and digital breast tomosynthesis (Runner Up Physics of Medical Imaging Student Paper Award) [10132-5]

SESSION 2 DETECTORS

- 10132 07 Signal and noise characteristics of a CdTe-based photon counting detector: cascaded systems analysis and experimental studies [10132-6]
- 10132 08 SWAD: transient conductivity and pulse-height spectrum [10132-7]
- 10132 09 Direct measurement of Lubberts effect in CsI:Tl scintillators using single x-ray photon imaging (First Place Robert F. Wagner All-Conference Best Student Paper Award; First Place Physics of Medical Imaging Student Paper Award) [10132-8]
- 10132 0A Exploration of strategies for implementation of screen-printed mercuric iodide converters in direct detection AMFPIS for digital breast tomosynthesis [10132-9]
- 10132 0B Temporal imaging for accurate time, space, and energy localization of photoelectric events in monolithic scintillators [10132-10]

SESSION 3	JOINT SESSION WITH MI101 AND MI105: TASK-BASED ASSESSMENT IN CT
10132 0D	Dependence of quantitative accuracy of CT perfusion imaging on system parameters [10132-12]
10132 0E	Joint optimization of fluence field modulation and regularization in task-driven computed tomography [10132-13]
10132 0F	Pushing the boundaries of diagnostic CT systems for high spatial resolution imaging tasks [10132-14]
10132 0G	Practical implementation of channelized hotelling observers: effect of ROI size [10132-15]
SESSION 4	CONE BEAM CT I: NEW TECHNOLOGIES AND CORRECTIONS
10132 0H	Task-driven orbit design and implementation on a robotic C-arm system for cone-beam CT [10132-16]
10132 0I	Geometric calibration using line fiducials for cone-beam CT with general, non-circular source-detector trajectories [10132-17]
10132 0J	Shading correction for cone-beam CT in radiotherapy: validation of dose calculation accuracy using clinical images [10132-18]
10132 0K	Development and clinical translation of a cone-beam CT scanner for high-quality imaging of intracranial hemorrhage [10132-19]
10132 0L	Lab-based x-ray nanoCT imaging [10132-20]
SESSION 5	CT: RECONSTRUCTION AND ALGORITHMS
10132 0M	High quality high spatial resolution functional classification in low dose dynamic CT perfusion using singular value decomposition (SVD) and k-means clustering [10132-21]
10132 0N	Statistical distributions of ultra-low dose CT sinograms and their fundamental limits [10132-22]
10132 0O	Polyenergetic known-component reconstruction without prior shape models [10132-23]
10132 0P	Practical interior tomography with small region piecewise model prior [10132-24]
10132 0Q	SparseCT: interrupted-beam acquisition and sparse reconstruction for radiation dose reduction [10132-25]
10132 0R	Localized and efficient cardiac CT reconstruction [10132-26]

SESSION 6 KEYNOTE AND RADIATION DOSE

- 10132 OS **Driving CT developments the last mile: case examples of successful and somewhat less successful translations into clinical practice (Keynote Paper)** [10132-27]
- 10132 OT **Dose comparison between CTDI and the AAPM Report No. 111 methodology in adult, adolescent, and child head phantom** [10132-28]
- 10132 OU **Skin dose mapping for non-uniform x-ray fields using a backscatter point spread function** [10132-29]

SESSION 7 PHOTON COUNTING I: INSTRUMENTATION

- 10132 OV **Effect of spatio-energy correlation in PCD due to charge sharing, scatter, and secondary photons** [10132-30]
- 10132 OW **Improving material separation of high-flux whole-body photon counting computed tomography by K-edge pre-filtration** [10132-31]
- 10132 OX **Nanoparticle imaging probes for molecular imaging with computed tomography and application to cancer imaging** [10132-32]
- 10132 OY **Ultra-high spatial resolution multi-energy CT using photon counting detector technology** [10132-33]

SESSION 8 CONE BEAM CT II: OPTIMIZATION AND RECONSTRUCTION

- 10132 OZ **Low signal correction scheme for low dose CBCT: the good, the bad, and the ugly** [10132-34]
- 10132 10 **High-resolution extremity cone-beam CT with a CMOS detector: task-based optimization of scintillator thickness** [10132-35]
- 10132 11 **Integration of prior CT into CBCT reconstruction for improved image quality via reconstruction of difference: first patient studies** [10132-36]
- 10132 12 **Brain perfusion imaging using a Reconstruction-of-Difference (RoD) approach for cone-beam computed tomography** [10132-37]
- 10132 13 **Deformable known component model-based reconstruction for coronary CT angiography** [10132-38]

SESSION 9 PHASE CONTRAST IMAGING

- 10132 14 **Improving image quality in laboratory x-ray phase-contrast imaging** [10132-39]
- 10132 16 **A resolution-enhancing image reconstruction method for few-view differential phase-contrast tomography** [10132-41]

- 10132 17 **A joint-reconstruction approach for single-shot edge illumination x-ray phase-contrast tomography** [10132-42]
10132 19 **Potential bias in signal estimation for grating-based x-ray multi-contrast imaging** [10132-44]

SESSION 10 PHOTON COUNTING II: ALGORITHMS

- 10132 1A **Estimating basis line-integrals in spectral distortion-modeled photon counting CT: K-edge imaging using dictionary learning-based x-ray transmittance modeling** [10132-45]
10132 1B **Spectral CT metal artifact reduction with an optimization-based reconstruction algorithm** [10132-46]
10132 1C **A multi-step method for material decomposition in spectral computed tomography** [10132-47]
10132 1D **Resolution improvement in x-ray imaging with an energy-resolving detector** [10132-48]
10132 1E **Classification of breast microcalcifications using spectral mammography** [10132-49]

SESSION 11 NUCLEAR MEDICINE AND MAGNETIC RESONANCE IMAGING

- 10132 1F **MLAA-based RF surface coil attenuation estimation in hybrid PET/MR imaging** [10132-50]
10132 1G **Nonlinear PET parametric image reconstruction with MRI information using kernel method** [10132-51]
10132 1H **Fast and accurate Monte Carlo-based system response modeling for a digital whole-body PET** [10132-52]
10132 1I **Improved attenuation correction for respiratory gated PET/CT with extended-duration cine CT: a simulation study** [10132-53]
10132 1J **Estimating posterior image variance with sparsity-based object priors for MRI** [10132-54]

SESSION 12 NEW SYSTEMS AND TECHNOLOGIES

- 10132 1L **3D-printed focused collimator for intra-operative gamma-ray detection** [10132-56]
10132 1M **Blood-pool contrast agent for pre-clinical computed tomography** [10132-57]
10132 1N **Automated 3D coronary sinus catheter detection using a scanning-beam digital x-ray system** [10132-58]
10132 1O **An x-ray-based capsule for colorectal cancer screening incorporating single photon counting technology** [10132-59]

- 10132 1P **Simulation of a compact analyzer-based imaging system with a regular x-ray source** [10132-201]

SESSION 13 MODELING AND SIMULATIONS I: CT

- 10132 1Q **Airways, vasculature, and interstitial tissue: anatomically informed computational modeling of human lungs for virtual clinical trials** [10132-61]
- 10132 1R **A virtual clinical trial using projection-based nodule insertion to determine radiologist reader performance in lung cancer screening CT** [10132-62]
- 10132 1S **Inter-algorithm lesion volumetry comparison of real and 3D simulated lung lesions in CT** [10132-63]
- 10132 1T **Learning-based stochastic object models for use in optimizing imaging systems** [10132-64]
- 10132 1U **False dyssynchrony: problem with image-based cardiac functional analysis using x-ray computed tomography** [10132-65]
- 10132 1V **Reanimating patients: cardio-respiratory CT and MR motion phantoms based on clinical CT patient data** [10132-66]

SESSION 14 MODELING AND SIMULATIONS II: BREAST IMAGING

- 10132 1W **High-resolution, anthropomorphic, computational breast phantom: fusion of rule-based structures with patient-based anatomy** [10132-67]
- 10132 1X **Detectability of artificial lesions in anthropomorphic virtual breast phantoms of variable glandular fraction** [10132-68]
- 10132 1Y **Third generation anthropomorphic physical phantom for mammography and DBT: incorporating voxelized 3D printing and uniform chest wall QC region** [10132-69]
- 10132 1Z **A physical breast phantom for 2D and 3D x-ray imaging made through inkjet printing** [10132-70]
- 10132 20 **In silico imaging clinical trials for regulatory evaluation: initial considerations for VICTRE, a demonstration study** [10132-71]

SESSION 15 BREAST IMAGING: TOMOSYNTHESIS

- 10132 21 **Metal artifact reduction using a patch-based reconstruction for digital breast tomosynthesis** [10132-74]
- 10132 22 **Comparing the imaging performance of computed super resolution and magnification tomosynthesis** [10132-73]

- 10132 23 **An alternate design for the Defrise phantom to quantify resolution in digital breast tomosynthesis** [10132-72]
- 10132 24 **Metal and calcification artifact reduction for digital breast tomosynthesis** [10132-75]
- 10132 25 **Contrast enhanced imaging with a stationary digital breast tomosynthesis system** [10132-76]
- 10132 26 **Effects of detector blur and correlated noise on digital breast tomosynthesis reconstruction** [10132-77]

POSTER SESSION: CONE-BEAM CT

- 10132 27 **Cone-beam CT image contrast and attenuation-map linearity improvement (CALI) for brain stereotactic radiosurgery procedures** [10132-78]
- 10132 28 **Dual energy approach for cone beam artifacts correction** [10132-79]
- 10132 29 **A patch-based CBCT scatter artifact correction using prior CT** [10132-80]
- 10132 2A **Shading correction algorithm for cone-beam CT in radiotherapy: extensive clinical validation of image quality improvement** [10132-81]
- 10132 2B **A biomechanical modeling guided simultaneous motion estimation and image reconstruction technique (SMEIR-Bio) for 4D-CBCT reconstruction** [10132-82]
- 10132 2C **4D DSA reconstruction using tomosynthesis projections** [10132-83]
- 10132 2D **Estimating 3D local noise power spectrum from a few FDK-reconstructed cone-beam CT scans** [10132-84]
- 10132 2E **Motion vector field upsampling for improved 4D cone-beam CT motion compensation of the thorax** [10132-85]
- 10132 2F **Automated framework for estimation of lung tumor locations in kV-CBCT images for tumor-based patient positioning in stereotactic lung body radiotherapy** [10132-86]

POSTER SESSION: CTI: NEW TECHNOLOGIES AND CORRECTIONS

- 10132 2G **Comparative study of bowtie and patient scatter in diagnostic CT** [10132-88]
- 10132 2H **A deterministic integral spherical harmonics method for scatter simulation in computed tomography** [10132-89]
- 10132 2I **Optimal sinogram sampling with temporally offset pixels in continuous rotation CT (Runner Up Physics of Medical Imaging Student Paper Award)** [10132-90]
- 10132 2J **Beam hardening correction using length linearization** [10132-91]

- 10132 2K **Fast frame rate rodent cardiac x-ray imaging using scintillator lens coupled to CMOS camera** [10132-92]
- 10132 2L **Low-dose 4D myocardial perfusion with x-ray micro-CT** [10132-93]
- 10132 2M **An investigation of low-dose 3D scout scans for computed tomography** [10132-94]
- 10132 2N **Adaptability index: quantifying CT tube current modulation performance from dose and quality informatics** [10132-95]
- 10132 2O **Experimental evaluation of dual multiple aperture devices for fluence field modulated x-ray computed tomography** [10132-96]
- 10132 2P **Estimation of non-solid lung nodule volume with low-dose CT protocols: effect of reconstruction algorithm and measurement method** [10132-97]
- 10132 2Q **Novel method to calibrate CT scanners with a conic probe body** [10132-98]

POSTER SESSION: CTII: IMAGE RECONSTRUCTION AND ARTIFACT REDUCTION

- 10132 2R **ROI reconstruction for model-based iterative reconstruction (MBIR) via a coupled dictionary learning** [10132-99]
- 10132 2S **Accelerating separable footprint (SF) forward and back projection on GPU** [10132-100]
- 10132 2T **A new approach to solving the prior image constrained compressed sensing (PICCS) with applications in CT image reconstruction** [10132-101]
- 10132 2U **Computer simulation of low-dose CT with clinical lung image database: a preliminary study** [10132-102]
- 10132 2V **Reconstruction of four-dimensional computed tomography images during treatment time using electronic portal imaging device images based on a dynamic 2D/3D registration** [10132-103]

Part Two

- 10132 2W **Deep learning methods to guide CT image reconstruction and reduce metal artifacts** [10132-104]
- 10132 2X **Choosing anisotropic voxel dimensions in optimization-based image reconstruction for limited angle CT** [10132-105]
- 10132 2Y **A data-driven regularization strategy for statistical CT reconstruction** [10132-106]
- 10132 2Z **Image quality improvement in MDCT cardiac imaging via SMART-RECON method** [10132-107]

- 10132 30 **Projection-based motion estimation for cardiac functional analysis with high temporal resolution: a proof-of-concept study with digital phantom experiment** [10132-108]
- 10132 31 **Investigation into image quality difference between total variation and nonlinear sparsifying transform based compressed sensing** [10132-109]
- 10132 32 **Image-based metal artifact reduction in x-ray computed tomography utilizing local anatomical similarity** [10132-110]
- 10132 33 **Compressed sensing of sparsity-constrained total variation minimization for CT image reconstruction** [10132-111]
- 10132 34 **FBP embedded iterative method to efficiently solve the low-dose CT** [10132-112]

POSTER SESSION: PHOTON COUNTING: SPECTRAL CT, INSTRUMENTATION, AND ALGORITHMS

- 10132 35 **Discrimination of clinically significant calcium salts using MARS spectral CT** [10132-113]
- 10132 36 **Response functions of multi-pixel-type CdTe detector: toward development of precise material identification on diagnostic x-ray images by means of photon counting** [10132-116]
- 10132 37 **Dual energy CT kidney stone differentiation in photon counting computed tomography** [10132-117]
- 10132 38 **Statistical iterative material image reconstruction for spectral CT using a semi-empirical forward model** [10132-118]
- 10132 39 **Development of a novel method based on a photon counting technique with the aim of precise material identification in clinical x-ray diagnosis** [10132-119]
- 10132 3A **Material decomposition in an arbitrary number of dimensions using noise compensating projection** [10132-121]
- 10132 3B **Theoretical characterization of performance effectiveness of photon-counting technique for digital radiography applications** [10132-122]
- 10132 3C **Effects of dead time on quantitative dual-energy imaging using a position-sensitive spectroscopic detector** [10132-123]
- 10132 3D **X-ray spectral calibration from transmission measurements using Gaussian blur model** [10132-124]
- 10132 3F **A TV-constrained decomposition method for spectral CT** [10132-126]
- 10132 3G **A study of modeling x-ray transmittance for material decomposition without contrast agents** [10132-127]
- 10132 3H **A polychromatic adaption of the Beer-Lambert model for spectral decomposition** [10132-128]

- 10132 3I **Establishing a method to measure bone structure using spectral CT** [10132-129]
- 10132 3J **Renal stone characterization using high resolution imaging mode on a photon counting detector CT system** [10132-130]
- 10132 3K **A BVMF-B algorithm for nonconvex nonlinear regularized decomposition of spectral x-ray projection images** [10132-131]
- 10132 3L **Calibration methods influence quantitative material decomposition in photon-counting spectral CT** [10132-132]
- 10132 3M **Sensitivity analysis of pulse pileup model parameter in photon counting detectors** [10132-133]
- 10132 3N **Enhancement of weakly tagged fecal materials in dual-energy CT colonography using spectral-driven iterative reconstruction technique** [10132-134]
- 10132 3O **Detection of increased vasa vasorum in artery walls: improving CT number accuracy using image deconvolution** [10132-135]
- 10132 3Q **Lung nodule volume quantification and shape differentiation with an ultra-high resolution technique on a photon counting detector CT system** [10132-137]
- 10132 3R **Development of a photon counting detector response model using multiple transmission spectra** [10132-138]
- 10132 3S **Empirical neural network forward model for maximum likelihood material decomposition in spectral CT** [10132-139]
- 10132 3T **Impact of Compton scatter on material decomposition using a photon counting spectral detector** [10132-140]

POSTER SESSION: DETECTORS

- 10132 3U **Modeling blur in various detector geometries for MeV radiography** [10132-141]
- 10132 3V **High density scintillating glass proton imaging detector** [10132-142]
- 10132 3W **A CMOS-based high-resolution fluoroscope (HRF) detector prototype with 49.5 μ m pixels for use in endovascular image guided interventions (EIGI)** [10132-143]
- 10132 3X **2x2 oversampling in digital radiography imaging for CsI-based scintillator detectors** [10132-144]
- 10132 3Y **High spatial resolution performance of pixelated scintillators (Cum Laude Poster Award)** [10132-145]
- 10132 3Z **Comparison of high resolution x-ray detectors with conventional FPDs using experimental MTFs and apodized aperture pixel design for reduced aliasing** [10132-146]

10132 40 **1D pixelated MV portal imager with structured privacy film: a feasibility study** [10132-147]

POSTER SESSION: RADIATION DOSE

- 10132 41 **Dose conversion coefficients for partial-fan CBCT scans** [10132-148]
- 10132 42 **Organ and effective dose reduction for region-of-interest (ROI) CBCT and fluoroscopy** [10132-149]
- 10132 43 **Monte Carlo investigation of backscatter point spread function for x-ray imaging examinations** [10132-150]
- 10132 44 **Effects of sparse sampling in combination with iterative reconstruction on quantitative bone microstructure assessment** [10132-151]
- 10132 45 **Evaluation of methods to produce an image library for automatic patient model localization for dose mapping during fluoroscopically guided procedures** [10132-152]
- 10132 46 **Estimation of breast dose reduction potential for organ-based tube current modulated CT with wide dose reduction arc** [10132-153]

POSTER SESSION: MAMMOGRAPHY AND BREAST TOMOSYNTHESIS

- 10132 47 **Detection of microcalcifications and tumor tissue in mammography using a CdTe-series photon-counting detector** [10132-154]
- 10132 48 **Contrast-enhanced spectral mammography based on a photon-counting detector: quantitative accuracy and radiation dose** [10132-155]
- 10132 49 **An adaptive toolkit for image quality evaluation in system performance test of digital breast tomosynthesis** [10132-156]
- 10132 4A **Evaluation of effective detective quantum efficiency considering breast thickness and glandularity in prototype digital breast tomosynthesis system** [10132-157]
- 10132 4C **Geometric calibration for a next-generation digital breast tomosynthesis system** [10132-159]
- 10132 4D **Scatter reduction for grid-less mammography using the convolution-based image post-processing technique** [10132-160]
- 10132 4E **Comparison of effects of dose on image quality in digital breast tomosynthesis across multiple vendors** [10132-161]
- 10132 4F **Denoised ordered subset statistically penalized algebraic reconstruction technique (DOS-SPART) in digital breast tomosynthesis** [10132-162]
- 10132 4G **Scattered radiation in DBT geometries with flexible breast compression paddles: a Monte Carlo simulation study** [10132-163]

POSTER SESSION: NEW SYSTEMS AND TECHNOLOGIES

- 10132 4H **New high-resolution imaging technology: application of advanced radar technology for medical imaging** [10132-164]
- 10132 4I **Multi-grid finite element method used for enhancing the reconstruction accuracy in Cerenkov luminescence tomography** [10132-165]
- 10132 4J **Accelerated x-ray scatter projection imaging using multiple continuously moving pencil beams** [10132-166]
- 10132 4K **Coded aperture coherent scatter spectral imaging for assessment of breast cancers: an ex-vivo demonstration** [10132-167]
- 10132 4L **Mono-energy coronary angiography with a compact light source** [10132-168]
- 10132 4M **Full three-dimensional direction-dependent x-ray scattering tomography** [10132-169]
- 10132 4N **3D reconstruction of synapses with deep learning based on EM Images** [10132-170]
- 10132 4O **Estimating internal tissue temperature using microwave radiometry data and bioheat models** [10132-171]
- 10132 4P **Optically tracked, single-coil, scanning magnetic induction tomography** [10132-172]
- 10132 4Q **Quantitative 1D diffraction signatures during dual detector scatter VOI breast CBCT** [10132-173]
- 10132 4R **Infrared microscopy imaging applied to obtain the index finger pad's thermoregulation curves** [10132-174]
- 10132 4S **Reconstruction method for x-ray imaging capsule** [10132-175]

POSTER SESSION: NUCLEAR MEDICINE AND MAGNETIC RESONANCE IMAGING

- 10132 4W **Dynamic PET image reconstruction for parametric imaging using the HYPR kernel method** [10132-179]
- 10132 4X **Stability of gradient field corrections for quantitative diffusion MRI** [10132-180]
- 10132 4Z **Attenuation correction in SPECT images using attenuation map estimation with its emission data** [10132-182]
- 10132 51 **Evaluation of the clinical efficacy of the PeTrack motion tracking system for respiratory gating in cardiac PET imaging** [10132-184]

POSTER SESSION: OBSERVERS, MODELING, AND PHANTOMS

- 10132 52 **Comparison of detectability in step-and-shoot mode and continuous mode digital tomosynthesis systems** [10132-185]
- 10132 53 **Improvements in low contrast detectability with iterative reconstruction and the effect of slice thickness** [10132-186]
- 10132 54 **The effect of a finite focal spot size on location dependent detectability in a fan beam CT system** [10132-187]
- 10132 55 **In-vivo detectability index: development and validation of an automated methodology** [10132-188]
- 10132 56 **Using non-specialist observers in 4AFC human observer studies** [10132-189]
- 10132 57 **Optimization of the simulation parameters for improving realism in anthropomorphic breast phantoms** [10132-190]
- 10132 58 **Validation study of the thorax phantom Lungman for optimization purposes** [10132-191]
- 10132 59 **Method for decreasing CT simulation time of complex phantoms and systems through separation of material specific projection data** [10132-192]
- 10132 5A **Phantom system for intraluminal x-ray imaging of the human colon** [10132-193]
- 10132 5B **Validation of Cooper's ligament thickness in software breast phantoms** [10132-194]
- 10132 5C **Computer simulation of the breast subcutaneous and retromammary tissue for use in virtual clinical trials** [10132-195]
- 10132 5D **Improved virtual cardiac phantom with variable diastolic filling rates and coronary artery velocities** [10132-196]
- 10132 5E **Quantification of the uncertainty in coronary CTA plaque measurements using dynamic cardiac phantom and 3D-printed plaque models** [10132-197]
- 10132 5F **Accuracy and variability of texture-based radiomics features of lung lesions across CT imaging conditions** [10132-198]

POSTER SESSION: PHASE CONTRAST AND DARK FIELD IMAGING

- 10132 5G **Preclinical x-ray dark-field imaging: foreign body detection** [10132-199]
- 10132 5I **Weighted singular value decomposition (wSVD) to improve the radiation dose efficiency of grating-based x-ray phase contrast imaging with a photon counting detector** [10132-202]
- 10132 5K **High resolution laboratory grating-based x-ray phase-contrast CT** [10132-205]
- 10132 5L **First experiences with in-vivo x-ray dark-field imaging of lung cancer in mice** [10132-206]

10132 5M **Classification of the micromorphology of breast calcifications in x-ray dark-field mammography** [10132-207]

10132 5N **Phase unwrapping with differential phase image** [10132-208]

POSTER SESSION: RADIOGRAPHY: X-RAY IMAGING, FLUOROSCOPY, AND TOMOSYNTHESIS

10132 5O **Focal spot size reduction using asymmetric collimation to enable reduced anode angles with a conventional angiographic x-ray tube for use with high resolution detectors** [10132-209]

10132 5P **Experimental investigation of a HOPG crystal fan for x-ray fluorescence molecular imaging** [10132-210]

10132 5Q **Real time implementation of anti-scatter grid artifact elimination method for high resolution x-ray imaging CMOS detectors using Graphics Processing Units (GPUs)** [10132-211]

10132 5S **Development of a prototype chest digital tomosynthesis R/F system** [10132-213]

10132 5T **Localization of cardiac volume and patient features in inverse geometry x-ray fluoroscopy** [10132-214]

10132 5U **X-ray vector radiography of a human hand** [10132-215]

10132 5V **Performance evaluation of algebraic reconstruction technique (ART) for prototype chest digital tomosynthesis (CDT) system** [10132-216]

10132 5W **Dental non-linear image registration and collection method with 3D reconstruction and change detection** [10132-217]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

- Abadi, Ehsan, 1Q
Abdollahi, Ali, 4Z
Abdurakhimova, Dilbar, 3J, 3O
Acciavatti, Raymond J., 22, 23, 4C
Achterhold, Klaus, 4L, 5U
Agasthya, Greeshma, 04, 1Q, 46
Akgun, U., 3V
Alessio, Adam M., 0N, 1I
Allner, Sebastian, 0L
An, Hongyu, 1J
Anastasio, Mark A., 16, 17, 1J, 1T
Anderson, Adam W., 4X
Anderson, Michael R., 03
Anderson, N. G., 35, 3I
Antonuk, Larry E., 0A
Arimura, Hidetaka, 2F, 2V
Asahara, Takashi, 36, 39
Ashikaga, Hiroshi, 1U, 30
Aygun, N., 0K, 12
B., Swathi Lakshmi, 2K
Badal, Andreu, 1Z, 20
Badano, Aldo, 20
Badawi, Ramsey D., 4W
Badea, C. T., 0R, 2L, 2Y
Baek, Jongduk, 28, 52, 54
Bakic, Predrag R., 06, 21, 57, 5B, 5C
Barber, Rina Foygel, 1B, 3D
Barber, William C., 3R
Bar-Ilan, Omer, 1O, 4S
Bateman, C. J., 35
Baturin, Pavlo, 40
Baum, Thomas, 44
Becce, F., 35
Becker, Lewis C., 1U
Bednarek, Daniel R., 0U, 3W, 3Z, 42, 43,
45, 5O, 5Q
Belev, George, 4J
Berbeco, Ross, 40
Berggren, Karl, 05
Berman, Benjamin P., 2P
Berner, M., 0W
Birnbacher, Lorenz J. B., 14, 5K, 5M
Blaber, Justin, 4X
Bodart, Lindsay E., 1N
Bölükbas, Deniz Ali, 5L
Borges, Lucas R., 06, 21
Bosmans, Hilde, 1X, 49, 58
Boudry, John M., 2G
Bouman, Charles A., 2R
Boyce, Sarah, 03
Braig, Eva-Maria, 4L, 5G, 5M, 5U
Brankov, J. G., 1P
Braunagel, Margarita, 5L
Brehler, M., 10
Brehm, Marcus, 2E
Buehler, Marc, 2C
Butler, A. P. H., 3I
Byrd, Darrin W., 1I
Calliste, Jabari, 25
Cao, Q., 10
Cao, Ximiao, 2Z
Carter, Joshua E., 4K
Catana, Ciprian, 1G
Catenacci, Matthew, 1Y
Caudevilla, Oriol, 1P
Cederström, Björn, 05
Chabior, Michael, 5M
Chamberland, Marc J. P., 5I
Chan, Heang-Ping, 26
Chaudhari, R., 2X
Cheheltani, Rabee, 3A
Chen, Baiyu, 1R
Chen, Buxin, 3R
Chen, Chin-Tu, 3R
Chen, Guang-Hong, 07, 0D, 0F, 0Z, 19, 2Z, 4F, 5I
Chen, Kevin T., 1G
Chen, Xi, 4N
Chen, Xinyuan Claire, 1W, 1X
Chen, Yujia, 17, 1J
Choi, Seungyeon, 02, 4A, 5S, 5V
Choi, Shinkook, 28
Choi, Sunghoon, 02, 4A, 5S, 5V
Choi, Young-Wook, 4A
Choudhury, Kingshuk, 5F
Christensen, Soren, 59
Ciuffo, Luisa, 1U, 30
Clark, D. P., 0R, 2L, 2Y
Cole, Lisa E., 0X
Cormode, David, 3A
Cowden Dahl, Karen D., 0X
Cruje, Charmainne, 1M
Cruz-Bastida, Juan Pablo, 0F, 0Z
Curran, Walter J., 29
Curtis, Tyler E., 0X, 3L
Dance, David R., 56
Dang, H., 0K, 12
Danielsson, Mats, 05, 1D
Das, Mini, 1C, 3T

- De Man, Bruno, 0N, 11
 De Marco, F., 14
 De Silva, T., 0I
 DeFilippo, Gino, 2P
 deKemp, Robert, 51
 Dhabaan, Anees, 29, 32
 Díaz, Oliver, 4D, 4G
 Dierolf, Martin, 0L, 4L, 5U
 Dietrich, O., 0W
 Ding, Zhaohua, 4X
 Dirks, Shane, 1R
 Divel, Sarah E., 59
 Dixit, Madhulika, 2K
 Dolly, Steven R., 1T
 Dong, A., 3V
 Dong, Jian, 31, 33
 Dong, Xue, 29, 32
 Drangova, Maria, 1M
 Ducros, Nicolas, 3K
 Dummett, Louise M., 3C
 Dunkerley, David A. P., 1N, 5T
 Dydula, Christopher, 4J
 Ebner, Lukas, 1S
 Eggli, Elena, 4L, 5U
 Ehn, Sebastian, 38, 3H, 5M
 Ehtiati, T., 0H
 Eickelberg, Oliver, 5L
 Elangovan, Premkumar, 56
 Eldeniz, Cihat, 1J
 Elder, Eric, 29, 32
 Elgali, Avner, 1O
 El-Mohri, Youcef, 0A
 Eom, Jisoo, 48
 Erhard, Klaus, 05
 Eriksson, Markus, 27
 Fagan, Dean, 5W
 Favazza, Christopher P., 0G
 Fayad, Zahi A., 3A
 Fehringen, Andreas, 44, 5K
 Feldkamp, Joe R., 4P
 Ferrero, Andrea, 0G, 0Y, 3J, 3Q
 Ferris, William S., 22, 4C
 Ferstl, Simone, 0L
 Fessler, Jeffrey A., 26, 2S
 Fingerle, Alexander, 5G
 Fishman, Elliot K., 1U
 Fletcher, J. G., 1R
 Flohr, T. G., 0W, 37
 Foi, Alessandro, 06
 Foos, D. H., 0K, 12
 Ford, Nancy L., 0T
 Fredenberg, Erik, 05
 Fredette, Nathaniel R., 1C, 3T
 Freitag, Martin T., 1F
 Fu, Lin, 0N
 Fu, Wanyi, 46
 Fujioka, Nobuyasu, 3Y
 Fukunaga, Junichi, 2F
 Fung, George S. K., 1U, 30
 Funk, Tobias, 5T
 Gaalaas, Laurence R., 03
 Gang, Grace J., 0E, 11, 2M, 2O
 Gao, Peng, 2U
 García, Eloy, 4G
 Garrett, John W., 0F, 4F
 Gavrielides, Marios A., 2P
 Ge, Yongshuai, 07, 19, 5I
 Gehm, Michael E., 1Y
 Gelbard, Nir, 1O
 Ghannraoui, Bahaa, 1E, 1Z
 Ghose, S. K., 09
 Gilat Schmidt, Taly, 1B
 Gillies, Elizabeth R., 1M
 Gjesteby, Lars, 2W
 Gleich, Bernhard, 4L, 5U
 Glick, Stephen J., 1E, 1W, 1X, 1Z, 20
 Goerres, J., 0I
 Golan, Oleg, 1O
 Goldan, Amir H., 08
 Gomes, Juliana, 2M
 Gomez-Cardona, Daniel, 0F, 0Z
 Gong, Kuang, 1G
 Gong, Xiaolin, 1W
 Gonzales, Brian, 03
 Goranson, K., 3V
 Gorwara, Ashok, 4H
 Graff, Christian G., 1W, 1X, 1Z, 20
 Grandl, Susanne, 5M
 Greenberg, Joel A., 4K
 Gromann, Lukas B., 5L
 Grouza, Vladimir, 27
 Guan, Hufeng, 16, 17
 Gubich, Dmitry, 5A
 Günther, Benedikt, 4L, 5U
 Guo, Hongbo, 4I
 Guo, Xiaoyue, 3F
 Gutiérrez, Pablo A., 4R
 Gutjahr, R., 0W, 0Y, 37, 3J, 3Q
 Ha, Wooseok, 3D
 Hagen, Charlotte K., 17
 Halawesh, Ahmed, 0Y, 3A, 3J, 3Q
 Han, Chulhee, 28
 Han, Hua, 4N
 Han, Minah, 52
 Harrawood, Brian, 1Q
 Hashemi, Sayed Masoud, 27
 Hassoon, Salah, 1O
 Hayashi, Hiroaki, 36, 39
 Hayes, John, 0Z
 He, Xiaowei, 4I
 Hellbach, Katharina, 5L
 Hellerhof, Karin, 5M
 Henning, A., 0Y, 37, 3J
 Henzler, Thomas, 0M
 Hertel, M., 0W
 Herzen, Julia, 14, 3H, 4L, 5G, 5K, 5L, 5M
 Heußen, Thorsten, 1F
 Higuchi, Takahiro, 1U
 Hikita, Izumi, 3Y
 Hirakawa, Masakazu, 2F

- Hironaka, Toru, 3N
 Hirose, Taka-aki, 2F, 2V
 Hoeschen, Christoph, 1Q, 2Q, 5P
 Holdsworth, David W., 1L, 1M
 Honda, H., 2V
 Hora, Megan J., 1R
 Howansky, Adrian, 09
 Hoye, Jocelyn, 04, 1S
 Hsieh, Jiang, 2Z
 Hsieh, Scott S., 0V, 53
 Hu, Qiyuan, 1R
 Hu, Zhenhua, 4I
 Huang, Xiaokun, 2B
 Huh, Yoonsuk, 3B
 Hunter, James F., 3U
 Huynh, Christopher, 27
 Hwang, Dosik, 2J
 Ihori, Akiko, 47
 Ikejimba, Lynda C., 1Z
 Ilfis, Alain, 0B
 Imran, Abdullah-Al-Zubaer, 57, 5B
 Inscoe, Christina R., 03, 25
 Ionita, C. N., 3W, 5O
 Irimata, Lisa E., 0X
 Jacobson, M. W., 0H, 0I
 Jang, Woojin, 02, 5S
 Jara, Anselmo, 4R
 Jerebko, Anna, 24
 Ji, Xu, 07, 19, 5I
 Jiang, Hao, 0A
 Jo, Byungdu, 5V
 Jo, JaeMoon, 3B
 Johns, Paul C., 4J
 Johnson, Tucker F., 1R
 Jorgensen, Steven M., 3O
 Joshi, K. D., 0J, 2A
 Jud, Christoph, 5U
 Kachelrieß, Marc, 0M, 1F, 1V, 2E
 Kalantari, Faraz, 4Z
 Kanazawa, Yuki, 36, 39
 Kang, Sooncheol, 48
 Kapadia, Anuj J., 04, 1Q, 46, 4K
 Kaplan, Max, 1O
 Kappler, Steffen, 0W, 0Y, 1A, 37, 3G, 3J, 3Q
 Katz, Batia, 5A
 Kawamoto, S., 2O
 Kelly, Patrick, 4O
 Ketcha, M., 0I
 Khan, Asmar, 4D
 Kidoh, Masafumi, 1U
 Kilian-Meneghin, Josh, 45
 Kim, Byeongjoon, 54
 Kim, Dohyeon, 5V
 Kim, Dong Sik, 3X
 Kim, Eun, 3X
 Kim, Hee-Jong, 3R
 Kim, Hee-Joung, 02, 4A, 5S, 5V
 Kim, Hyemi, 5V
 Kim, Jaehyuk, 3B
 Kim, Jongpil, 3B
 Kim, Jungha, 3B
 Kim, Jungmin, 3B
 Kim, Sewon, 2J
 Kim, Ye-seul, 4A
 Kimchy, Yoav, 1O, 4S, 5A
 Kimoto, Natsumi, 36, 39
 Kinahan, Paul E., 0N, 1I
 Kirkbride, T. E., 35
 Kirschke, Jan S., 44
 Klein, Ran, 5I
 Kleinszig, G., 0I
 Klotz, Ernst, 0M
 Knoll, Florian, 0Q
 Kodama, Haruhito, 3Y
 Kodera, Yoshie, 47
 Koesters, Thomas, 0Q
 Koliatsos, V. E., 0K, 12
 Koo, Chi Wan, 1R
 Kopp, Felix K., 44
 Koyama, Shuji, 47
 Krauss, B., 37
 Krishnamurthi, Ganapathy, 2K
 Kudo, Hiroyuki, 0P, 31, 33, 34, 5N
 Kulpe, Stephanie, 4L
 Kumar N., Ashwin, 2K
 Kuperavage, Adam J., 5B
 Landman, Bennett A., 4X
 Lansberg, Maarten G., 59
 Leary, C., 3I
 LeClair, Robert J., 4Q
 Lee, Changwoo, 28, 52
 Lee, Donghoon, 02, 4A, 5S, 5V
 Lee, Eunae, 3X
 Lee, Haenghwa, 02, 4A, 5S, 5V
 Lee, Junghoon, 1I
 Lee, Okkyun, 1A, 1U, 30, 3G
 Lee, Seungwan, 48
 Lee, Tzu-Cheng, 0N, 1I
 Lee, Young, 27
 Lee, Youngjin, 5V
 Lee, Yueh Z., 25
 Leibushor, Avi, 1O
 Lemieux, George, 5W
 Leng, Shuai, 0G, 0Y, 1R, 37, 3J, 3O, 3Q
 Leung, Crystal K., 4K
 Léveillé, Sébastien, 08
 Levin, David L., 1R
 Levinson, R., 2O
 Lewis, Cale E., 1C, 3T
 Lewkowicz, Shlomo, 5A
 Li, Celina L., 0T
 Li, Hua, 1T
 Li, Ke, 07, 0D, 0F, 0Z, 19, 4F, 5I
 Li, Qin, 2P
 Li, Yanzhao, 1H
 Li, Yinsheng, 2Z, 4F
 Lian, S., 5N
 Lifshitz, Ronen, 1O, 4S, 5A
 Lima, Joao A. C., 1U
 Lin, James, 2S

- Liu, Muhan, 4I
 Liu, Tian, 29
 Liu, Tianshuai, 2U
 Liu, Wenlei, 2U
 Lo, Joseph Y., 1W, 1X, 1Y, 1Z, 4E
 Long, Yong, 2S
 Lou, Yang, 1J
 Lu, Hongbing, 2U
 Lu, Jianping, 03, 25
 Lu, Ming, 08
 Lu, Yujie, 2H
 Lubinsky, A. R., 09
 Machuca, Guillermo, 4R
 Mackenzie, Alistair, 56
 Maidment, Andrew D. A., 06, 21, 22, 23,
 4C, 57, 5B, 5C
 Maidment, Tristan D., 22, 4C
 Mainprize, James, 27
 Mani, Venkatesh, 3A
 Mannherz, William, 23
 Manwell, Spencer, 51
 Marchant, T. E., 0J, 2A
 Marimón, Elena, 4D
 Marin, Daniele, 5F
 Marschner, M., 14
 Marsden, Philip A., 4D
 Marshall, Nicholas W., 49, 58
 Martí, Joan, 4G
 Martí, Robert, 4G
 Mathews, Aswin J., 13, 2M, 2O
 Mayer, Johannes, 1V
 Mayr, Doris, 5M
 McCall, Shannon J., 4K
 McCollough, Cynthia H., 0G, 0Y, 1R, 37,
 3J, 3O, 3Q
 McGaffin, Madison G., 2S
 McGinnity, Tracie L., 0X
 McInally, W., 3V
 McMillan, Kyle, 1R
 McVeigh, E. R., 13
 Mechlem, Korbinian, 38, 3H, 4L
 Mei, Kai, 44
 Meinel, Felix G., 5L
 Meiners, Silke, 5L
 Mertelmeier, Thomas, 24
 Milman, Lena, 5A
 Mistretta, Charles A., 2C
 Modgil, Dimple, 3R
 Mol, Andre, 03
 Molchanov, Pavlo, 4H
 Montoya, J., 0Y, 3J, 3Q
 Moore, C. J., 0J, 2A
 Morinaga, Tomohiro, 3Y
 Mow, M., 0K, 12
 Mueller, K., 35
 Muenzel, Daniela, 4L, 5G, 5U
 Müller, Bernhard, 5P
 Müller, Mark, 0L
 Murai, Takahiro, 3Y
 Myers, Kyle J., 2D
 Myronakis, Marios, 4O
 Nait-Charif, Hammadi, 4D
 Naji, Maryam, 4Z
 Nakajima, Ai, 47
 Nakamoto, T., 2V
 Nakamura, Yasuhiko, 2F, 2V
 Nallathamby, Prakash D., 0X
 Näppi, Janne J., 3N
 Nasirudin, Radin A., 3N
 Nawi-Srur, Sivan, 5A
 Nemoto, Takuya, 0P
 Nicolas, Barbara, 3K
 Nikolov, Hristo N., 1L
 Nishide, Hiroko, 47
 Noël, Peter B., 14, 38, 3H, 44, 4L, 5G, 5K, 5U
 Nolan, Margaret, 23
 Nordström, Håkan, 27
 O'Donnell, Thomas, 3A
 Oh, Daejoong, 2J
 Ohga, S., 2V
 Oines, A., 45
 Okada, Masahiro, 36, 39, 47
 Okamura, Masaki, 3Y
 Oliver, Arnau, 4G
 Olivo, Alessandro, 17
 Otake, Yoshito, 1U, 30
 Otazo, Ricardo, 0Q
 Ouadah, S., 0H
 Ovadia, Alex, 1O
 Pan, Xiaochuan, 2X
 Pang, Shuo, 4M
 Pani, Silvia, 3C
 Park, Chan-Soo, 3T
 Park, Doohyun, 2J
 Park, Sujin, 3B
 Paysan, Pascal, 2E
 Pelc, Norbert J., 0V, 3M, 53, 59
 Persson, Mats, 1D, 2I
 Peterson, Z., 3J
 Petrick, Nicholas, 2P
 Petrov, Dimitar, 49
 Petschke, Adam, 3S
 Pfeiffer, Franz, 0L, 14, 38, 3H, 44, 4L,
 5G, 5K, 5L, 5M, 5U
 Pham, Mai Quyen, 3K
 Pierce, Larry A, 1I
 Pisana, Francesco, 0M
 Platin, Enrique, 03
 Pokrajac, David D., 57, 5B, 5C
 Pollmann, Steven I., 1L
 Polster, Christoph, 0W, 1A, 37, 3G
 Potter, A., 3V
 Prakash, Prakhar, 2G
 Pritchett, D., 3V
 Puett, Connor, 25
 Qi, Jinyi, 1G, 4W
 Quirk, Stephen, 4P
 Rahmes, Mark, 5W
 Raja, Aamir, 35, 3I
 Rajbhandary, Paurakh L., 0V

- Rajendran, Kishore, 3O
 Ramírez, Wagner, 4R
 Ramirez-Giraldo, Juan Carlos, 5E
 Ramyar, M., 3I
 Rana, R., 5Q
 Rank, Christopher M., 1F, 1V, 2E
 Rao, Qiang, 4N
 Rashed, Essam A., 33
 Raval, Amish N., 5T
 Reaungamornrat, S., 0I
 Reiser, Ingrid, 3R
 Reiser, Maximilian F., 5L, 5M
 Ria, F., 2N
 Richards, Taylor W., 5D, 5E
 Ritman, Erik L., 3O
 Ritschl, Ludwig, 24
 Robins, Marthonny, 1S
 Rodrigues de Magalhaes, Luc, 0B
 Rodríguez Pérez, Sunay, 58
 Roeder, Ryan K., 0X, 3L
 Rogers, Baxter P., 4X
 Rong, Junyan, 2U
 Rose, Sean D., 2X
 Rosenfield, Jonathan, 32
 Rosenthal, Shani, 1Z
 Rosentreter, Tanja, 5P
 Rubin, Daniel, 1O, 4S
 Rubin, Geoffrey, 5E
 Rudin, Stephen, 0U, 3W, 3Z, 42, 43, 45,
 5O, 5Q
 Rummery, Ernst J., 44, 4L, 5G, 5U
 Ruschin, Mark, 27
 Russ, M., 3W, 3Z, 5O
 Saeednejad, N., 2Q
 Sahgal, Arjun, 27
 Sai Varsha, M.K.N., 2K
 Samei, Ehsan, 04, 1Q, 1S, 1Y, 2N, 46,
 4E, 55, 5D, 5E, 5F
 Samuelson, Frank, 20
 Santana, Maira, 1W, 1X, 4E
 Sasaki, T., 2V
 Sato, Yoshinobu, 1U, 30
 Sauer, Ken D., 2R
 Sauer, Thomas J., 1W, 1X
 Sauppe, Sebastian, 1V, 2E
 Sawall, Stefan, 1V
 Scherer, Kai, 5L, 5M
 Schettino, Giuseppe, 3C
 Schlattl, Helmut, 41, 5P
 Schmidt, Bernhard, 0M, 37
 Schock, Jonathan, 5M
 Schönberg, Stefan, 0M
 Schultz, Kurt, 2P
 Sedlmair, M. U., 37
 Segars, W. Paul, 04, 1Q, 1X, 46, 5D, 5E
 Seghers, Dieter, 2E
 Seller, Paul, 3C
 Sellerer, Thorsten, 38, 3H
 Seo, Chang-Woo, 02, 5S
 Setlur Nagesh, S. V., 3W, 5O, 5Q
 Shan, Jing, 03
 Shankar, Alok, 0U, 3W, 3Z, 5O
 Shapiro, Yoel, 4S
 Sharma, Diksha, 20
 Sheadlock, Daniel, 40
 Shen, Zeyang, 1U, 30
 Sheng, C., 2X
 Shigeta, Kazuki, 3Y
 Shin, Choul Woo, 3X
 Shin, Jungwook, 02, 5S
 Shpigelman, Boaz, 1O
 Shunhavanich, Picha, 3M
 Sidky, Emil Y., 1B, 2X, 3D
 Siegelman, Jenifer, 2P
 Siewerdsen, J. H., 0E, 0H, 0I, 0K, 10, 12, 2O
 Sisniega, A., 0K, 10, 12
 Sjölin, Martin, 2I
 Slagowski, Jordan M., 1N, 2C, 5T
 Smirnov, Michael, 1O
 Smith, Andrew, 3R
 Smith, Taylor Brunton, 1S, 55
 Snoussi, Hichem, 0B
 Sodickson, Aaron D., 0Q, 0S
 Sodickson, Daniel K., 0Q
 Solomon, Justin, 1S, 1Y, 55, 5F
 Song, William Y., 27
 Soulioti, Danai Elena, 03
 Speidel, Michael A., 1N, 2C, 5T
 Spencer, Benjamin, 4W
 Spencer, James R., 4K
 Srivastava, Somesh, 2R
 Star-Lack, Josh, 4O
 Stavro, Jann, 08
 Stayman, J. Webster, 0E, 0H, 0K, 0O,
 10, 11, 12, 13, 2M, 2O
 Stierstorfer, K., 0W
 Stoupin, Stanislav, 1P
 Strother, Charles M., 2C
 Struelens, Lara, 58
 Sturgeon, Gregory M., 04, 1Q, 1W,
 1X, 1Y, 46, 5D, 5E
 Sun, Xiangyu, 1H
 Sun, Xuguang, 2Z
 Suzuki, Katsuhiko, 09
 Suzuki, Yuki, 1U, 30
 Szczukutowicz, Timothy P., 0F
 Sztrókay-Gaul, Aniko, 5M
 Tachibana, Rie, 3N
 Taguchi, Katsuyuki, 1A, 1U, 30, 3G
 Takahashi, Edwin A., 1R
 Tang, Xiangyang, 29
 Tang, Yuchao, 2T
 Tanino, Takahiro, 3Y
 Tavakoli, Meysam, 4Z
 Terashima, Koutarou, 2F
 Thakur, Yogesh, 0T
 Thibault, Jean-Baptiste, 2R
 Thompson, Richard, 2H
 Thune, Z. L., 3V
 Tian, Jie, 4I

- Tilley, S., 13
 Tillman, I. J., 3V
 Tischenko, O., 2Q
 Torkaman, Mahsa, 2D
 Torres, Sergio N., 4R
 Tse, Justin J., 1M
 Tucker, Andrew W., 03
 Tuohimaa, Tomi, 0L
 Turney, A., 3V
 Ueda, Ryosuke, 0P, 34
 Umez, Y., 2V
 Uneri, A., 0I
 Vargo-Gogola, Tracy, 0X
 Veale, Matthew C., 3C
 Vent, Trevor L., 22, 4C
 Verman, Boris, 1P
 Viafora, Laura A., 4R
 Vieira, Marcelo A. C., 06, 21
 Viermetz, Manuel P., 14, 5K
 Vijayan, Sarath, 0U, 3Z, 42, 43
 Vogt, S., 0I
 Wagner, Martin, 5T
 Wallis, Matthew, 05
 Wang, D., 3V
 Wang, Ge, 2W
 Wang, Guobao, 1G, 4W
 Wang, Jing, 2B
 Wang, Shuai, 1H
 Wang, X., 0K, 12
 Watson, Scott A., 3U
 Weiss, C., 0H
 Weiss, Noam, 4S
 Welch, E. Brian, 4X
 Wells, Kevin, 56
 Wen, Minhua, 2S
 Wicklein, Julia, 24
 Wiley, Benjamin J., 1Y
 Wilkinson, C. J., 3V
 Willer, Konstantin, 5M
 Willner, Marian, 5K
 Wilson, J. M., 2N
 Wilson, Matthew D., 3C
 Winch, Nicola M., 3U
 Wintermark, Max, 59
 Wolf, Johannes, 5M
 Wong, John, 11
 Woodfield, T. B. F., 3I
 Wu, Gongting, 03, 25
 Wurtele, David E., 22, 4C
 Xi, Yan, 2W
 Xiao, Chi, 4N
 Xiao, Peng, 1H
 Xie, Q., 3V
 Xie, Qingguo, 1H
 Xie, Qiwei, 4N
 Xie, Xiaobin, 2S
 Xing, Yuxiang, 3F
 Xing, Zhanfeng, 2Z
 Xiong, Zhenyu, 0U, 42, 43, 45
 Xu, J., 0K, 12
 Xu, Jingyu, 4O
 Xu, S., 0O, 13
 Xu, Tong, 5I
 Yamakawa, Tsutomu, 36, 39, 47
 Yamamoto, Shuichiro, 36, 39, 47
 Yamasaki, Masashi, 36, 39
 Yamazaki, Fukashi, 34
 Yang, Lingli, 1H
 Yang, Qingsong, 2W
 Yang, Xiaofeng, 29, 32
 Yaroshenko, Andre, 5L
 Ye, Dong Hye, 2R
 Yoon, Kyung Hun, 3B
 Yorkston, J., 10
 Yoshida, Hiroyuki, 3N
 Yoshidome, Satoshi, 2F
 Young, Kenneth C., 56
 Yu, Lifeng, 0G, 1R, 1T
 Yu, Zhou, 2H
 Yun, Seungman, 3B
 Zbijewski, W., 0K, 0O, 10, 12, 2O
 Zeng, Rongping, 1W, 1X, 20, 2D
 Zeufack Tadonkeng, Ghislain, 0B
 Zhan, Xiaohui, 2H
 Zhang, Bo, 1H
 Zhang, C., 0O
 Zhang, Dandan, 4N
 Zhang, Guozhi, 49
 Zhang, Hao, 11
 Zhang, Junping, 2W
 Zhang, Li, 3F
 Zhang, Ran, 07, 0Z, 19, 5I
 Zhang, Ruqiao, 0N, 1I
 Zhang, X., 0O, 13
 Zhang, Yakun, 04, 2N
 Zhang, You, 2B
 Zhang, Yuanke, 2U
 Zhang, Zeyu, 4I
 Zhao, Amy, 4E
 Zhao, Christine, 1Y
 Zhao, Qihua, 0A
 Zhao, Wei, 08, 09
 Zheng, Jiabei, 26
 Zheng, Yuese, 5F
 Zhou, Otto, 03, 25
 Zhou, W., 0Y, 3Q
 Zhou, Wei, 1P
 Zhou, Ye, 2W
 Zhu, Zheyuan, 4M
 Zimmerman, Kevin C., 3S
 Zimmerman, Stefan L., 1U
 Zong, Chunxiang, 2T
 Zou, Yu, 2H

Conference Committee

Symposium Chairs

Berkman Sahiner, U.S. Food and Drug Administration (United States)
Leonard Berliner, Weill Cornell Medical College (United States) and
New York Methodist Hospital (United States)

Conference Chairs

Thomas G. Flohr, Siemens Healthcare GmbH (Germany)
Joseph Y. Lo, Duke University Medical Center (United States)
Taly Gilat Schmidt, Marquette University (United States)

Conference Program Committee

Andreu Badal, U.S. Food and Drug Administration (United States)
Kirsten Boedeker, Toshiba Medical Research Institute USA, Inc.
(United States)
Hilde Bosmans, Katholieke Universiteit Leuven (Belgium)
Guang-Hong Chen, University of Wisconsin School of Medicine and
Public Health (United States)
Mini Das, University of Houston (United States)
Mats E. Danielsson, KTH Royal Institute of Technology (Sweden)
Maria Drangova, Robarts Research Institute (Canada)
Rebecca Fahrig, Siemens Healthcare GmbH (Germany) and Stanford
University School of Medicine (United States)
Stephen J. Glick, U.S. Food and Drug Administration (United States) and
University of Massachusetts Medical School (United States)
Michael Grass, Philips Research (Germany)
Christoph Hoeschen, Helmholtz Zentrum München GmbH (Germany)
Marc Kachelrieß, Deutsches Krebsforschungszentrum (Germany)
Karim S. Karim, University of Waterloo (Canada)
Hee-Joung Kim, Yonsei University (Korea, Republic of)
Despina Kontos, The University of Pennsylvania Health System
(United States)
Peter B. Noël, Klinikum rechts der Isar der Technischen Universität
München (Germany)
Jinyi Qi, University of California, Davis (United States)
John A. Rowlands, Thunder Bay Regional Research Institute (Canada)
John M. Sabol, GE Healthcare (United States)
Joseph W. Stayman, Johns Hopkins University (United States)
Anders Tingberg, Lund University (Sweden)
Yuxiang Xing, Tsinghua University (China)

John Yorkston, Carestream Health, Inc. (United States)
Lifeng Yu, Mayo Clinic (United States)
Wei Zhao, Stony Brook Medicine (United States)

Session Chairs

- 1 Tomosynthesis and Mammography
Hee-Joung Kim, Yonsei University (Korea, Republic of)
John M. Sabol, GE Healthcare (United States)
- 2 Detectors
Karim S. Karim, University of Waterloo (Canada)
- 3 Joint Session with MI101 and MI105: Task-based Assessment in CT
Ingrid S. Reiser, The University of Chicago (United States)
Despina Kontos, The University of Pennsylvania Health System (United States)
- 4 Cone Beam CT I: New Technologies and Corrections
Taly Gilat-Schmidt, Marquette University (United States)
Joseph W Stayman, Johns Hopkins University (United States)
- 5 CT: Reconstruction and Algorithms
Kirsten Boedecker, Toshiba Medical Research Institute USA, Inc. (United States)
Michael Kachelrieß, Deutsches Krebsforschungszentrum (Germany)
- 6 Keynote and Radiation Dose
Thomas G. Flohr, Siemens Healthcare GmbH (Germany)
Joseph Y. Lo, Duke University Medical Center (United States)
- 7 Photon Counting I: Instrumentation
Mats Danielsson, KTH Royal Institute of Technology (Sweden)
Lifeng Yu, Mayo Clinic (United States)
- 8 Cone Beam CT II: Optimization and Reconstruction
Maria Drangova, Robarts Research Institute (Canada)
Marc Kachelrieß, Deutsches Krebsforschungszentrum (Germany)
- 9 Phase Contrast Imaging
Guang-Hong Chen, University of Wisconsin School of Medicine and Public Health (United States)
Mini Das, University of Houston (United States)
- 10 Photon Counting II: Algorithms
Stephen J. Glick, U.S. Food and Drug Administration (United States)
Peter B. Noel, Klinikum rechts der Isar der Technischen Universität München (Germany)

- 11 Nuclear Medicine and Magnetic Resonance Imaging
Christoph Hoeschen, Otto-von-Guericke-Universität Magdeburg
(Germany)
Jinyi Qi, University of California, Davis (United States)
- 12 New Systems and Technologies
Rebecca Fahrig, Siemens Healthcare GmbH (Germany) and Stanford University School of Medicine (United States)
John Yorkston, Carestream Health, Inc. (United States)
- 13 Modeling and Simulations I: CT
Lifeng Yu, Mayo Clinic (United States)
Yuxiang Xing, Tsinghua University (China)
- 14 Modeling and Simulations II: Breast Imaging
Hilde Bosmans, Katholieke Universiteit Leuven (Belgium)
Anders Tingberg, Lund University (Sweden)
- 15 Breast Imaging: Tomosynthesis
Andreu Badal, U.S. Food and Drug Administration (United States)
Wei Zhao, Stony Brook Medicine (United States)

2017 Medical Imaging Award Recipients

Robert F. Wagner Best Student Paper Award

Robert F. Wagner was an active scientist in the SPIE Medical Imaging meeting, starting with the first meeting in 1972 and continuing throughout his career. He ensured that the BRH, and subsequently the CDRH, was a sponsor for the early and subsequent Medical Imaging meetings, helping to launch and ensure the historical success of the meeting. The Robert F. Wagner All-Conference Best Student Paper Award (established 2014) is acknowledgment of his many important contributions to the Medical Imaging meeting and his many important advances to the field of medical imaging.



This award is co-sponsored by:



The Medical Image Perception Society

SPIE.

2017 Recipients:

First Place: **Direct measurement of Lubberts effect in CsI:Tl scintillators using single x-ray photon imaging** (10132-8)

A. Howansky, A. R. Lubinsky, Stony Brook Univ. (United States); S. K. Ghose, Brookhaven National Lab. (United States); K. Suzuki, Hamamatsu Photonics K.K. (Japan); W. Zhao, Stony Brook Univ. (United States)

Second Place: **Evaluation of a high-resolution patient-specific model of the electrically stimulated cochlea** (10135-21)

Ahmet Cakir, Vanderbilt Univ. (United States); Robert T. Dwyer, Vanderbilt Univ. Medical Ctr. (United States); Jack H. Noble, Vanderbilt Univ. (United States)

Conference Awards

Physics of Medical Imaging Student Paper Awards sponsored by Carestream

1st Place: Paper 10132-8, "Direct measurement of Lubberts effect in CsI:Tl scintillators using single x-ray photon imaging." Adrian F. Howansky, Stony Brook Univ. (United States)

Runner Up: Paper 10132-90, "Optimal sinogram sampling with temporally offset pixels in continuous rotation CT," Martin Sjölin, KTH Royal Institute of Technology (Sweden)

Runner Up: Paper 10132-5, "Pipeline for effective denoising of digital mammography and digital breast tomosynthesis," Lucas R. Borges, Univ. de São Paulo (Brazil)

Physics of Medical Imaging Poster Presentation Awards sponsored by Siemens Healthineers

Cum Laude: Paper 10132-145, "High spatial resolution performance of pixelated scintillators," Kazuki Shigeta, Toray Industries, Inc. (Japan)

Honorable Mention: Paper 10132-191, "Validation study of the thorax phantom Lungman for optimization purposes," Sunay Rodríguez Pérez, SCK CEN (Belgium) and KU Luven (Belgium)