

## **Ehsan Samei**

### **Refereed journal publications:**

- J1. Samei E, Davidian Z, Ejtehad R, Nahal A, Meshginfam P. A preliminary study on Halley's comet (in Persian). *Iranian Journal of Physics* 3(4): 390-394, 1986.
- J2. Poorang P, Davidian Z, Samei E, Shadanpour N, Nahal A, Hoda H. Halley: results of recent investigations (in Persian). *Iranian Journal of Physics* 4(3): 243-245, 1986.
- J3. Samei E, Kearfott KJ, Wang C-KC, Han S. Impact of variations in physical parameters on glow curves for planchet heating of TL dosimeters. *Nuclear Instruments and Methods in Physics Research A* 353: 415-419, 1994.
- J4. Kearfott KJ, Han S, McMahan KL, Samei E, Sensitivity of a mixed field dosimetry algorithm to uncertainties in thermoluminescent element readings. *Health Physics* 68(3): 340-349, 1995.
- J5. Samei E, Kearfott KJ, Wang C-KC. Numerical modeling of a new method for determination of shallow dose and deep dose in low-LET radiation fields. *Radiation Protection Dosimetry* 58(2): 103-114, 1995.
- J6. Samei E, Kearfott KJ. A limited bibliography of atomic energy commission-funded human radiation experiments. *Health Physics* 69(6): 885-891, 1995.
- J7. Samei E, Kearfott KJ, Gillespie TJ, Wang C-KC. An atlas of selected beta ray spectra and depth-dose distribution generated by a fast Monte Carlo-based sampling method. *Radiation Physics and Chemistry* 48(6): 719-725, 1996.
- J8. Samei E, Flynn MJ, Eyler WR. Simulation of subtle lung nodules in projection chest radiography. *Radiology* 202(1): 117-124, 1997.
- J9. Beute GH, Flynn MJ, Eyler WR, Samei E, Zylak CJ, Spizarny DL. Chest radiographic image quality: comparison of asymmetric film/screen, digital storage phosphor, and digital selenium drum systems - a preliminary study (*invited article*). *Radiographics* 18: 745-754, 1998.
- J10. Samei E, Flynn MJ, Reimann DA. A method for measuring the presampled MTF of digital radiographic systems using an edge test device. *Medical Physics* 25: 102-113, 1998.
- J11. Flynn MJ, Samei E. Experimental comparison of noise and resolution for 2k and 4k storage phosphor radiography systems. *Medical Physics* 26: 1612-1623, 1999.
- J12. Samei E, Flynn MJ, Eyler WR. Detection of subtle lung nodules: relative influence of quantum and anatomical noise on chest radiographs. *Radiology* 213: 727-734, 1999.
- J13. Kearfott KJ, Han S, Wagner EC, Samei E, Wang C-KC. Numerical simulation of a TLD pulsed laser-heating scheme for determination of shallow dose and deep dose in low-LET radiation fields. *Journal of Applied Radiation and Isotopes* 52(6): 1419-1429, 2000.
- J14. Ryan MT, Spicer KM, Frei-Lahr D, Samei E, Frey GD, Hargrove H, Bloodworth G. Health physics consequences of out-patient treatment of non-Hodgkin's lymphoma with <sup>131</sup>I-radiolabelled anti-B1 antibody. *Operational Health Physics* 79(5): S52-55, 2001.

- J15. Mah E, Samei E, Peck D. Evaluation of a quality control phantom for digital chest radiography systems. *Journal of Applied Clinical Medical Physics* 2(2): 90-101, 2001. This paper received the Award for Excellence for best diagnostic imaging paper published during 2001 in the *Journal of Applied Clinical Medical Physics*.
- J16. Samei E, Seibert JA, Willis CE, Flynn MJ, Mah E, Junck KL. Performance evaluation of computed radiography systems. *Medical Physics* 28(3): 361-371, 2001.
- J17. Samei E, Flynn MJ. An experimental comparison of detector performance for computed radiography systems. *Medical Physics* 29(4): 447-459, 2002.
- J18. Dobbins III JT, Samei E, Chotas HG, Warp RJ, Baydush AH, Floyd CE, Ravin CE. Optimization of x-ray spectra for chest radiography with a CsI/a:Si flat-panel detector. *Radiology* 226: 221-230, 2003.
- J19. Samei E, Hill J, Frey GD, Southgate W, Mah E, DeLong D. Evaluation of a flat panel digital radiographic system for low-dose portable imaging of neonates. *Medical Physics* 30: 601-607, 2003.
- J20. Samei E, Flynn MJ, An experimental comparison of detector performance for direct and indirect digital radiography systems. *Medical Physics* 30: 608-622, 2003.
- J21. Samei E, Flynn MJ, Peterson E, Eyler WR. Subtle lung nodules: influence of local anatomical variations on detection. *Radiology* 228: 76-84, 2003.
- J22. Samei E. Image quality in two phosphor-based flat panel digital radiographic detectors. *Medical Physics* 30(7): 1747-1757, 2003.
- J23. Saunders RS, Samei E. A method for modifying the image quality parameters of digital radiographic images. *Medical Physics* 30: 3006-3017, 2003.
- J24. Turner SR, Samei E, Hertzberg BS, DeLong DM, Vargas-Voracek R, Maynor CH, Singer A, Kliwer MA. Sonography of fetal choroid plexus cysts: detection depends on cyst size and gestational age. *Journal of Ultrasound in Medicine (JUM)* 22: 1219-1227, 2003.
- J25. Samei E, Seibert AJ, Anderiole K, Badano A, Crawford J, Reiner B, Flynn MJ, Chang P. General guidelines for purchasing and acceptance testing of PACS equipment (*invited article*). *Radiographics* 24: 313-334, 2004.
- J26. McKinley RL, Tornai MP, Samei E, Bradshaw ML. Simulation study of a quasi-monochromatic beam for x-ray computed mamotomography. *Medical Physics* 31(4): 800-813, 2004.
- J27. Saunders RS, Samei E, Hoeschen C. Impact of resolution and noise characteristics of digital radiographic detectors on the detectability of lung nodules. *Medical Physics* 31: 1603-1613, 2004 (Cross-referenced in *Virtual Journal of Biological Physics Research*, June 2004, <http://www.vjbio.org/>).
- J28. McKinley RL, Tornai MP, Samei E, Bradshaw ML. Development of an optimal x-ray beam for dual-mode emission and transmission mamotomography. *Nuclear Instruments and Methods in Physics Research A* 527: 102-109, 2004.
- J29. Jung H, Kim H-J, Kang W-S, Yoo SK, Fujioka K, Hasegawa M, Samei E. Assessment of flat panel LCD primary class display performance based on AAPM TG 18 acceptance protocol. *Medical Physics* 31(7): 2155-2164, 2004.

- J30. Neitzel U, Günther-Kohfahl S, Borasi G, Samei E. Determination of the detective quantum efficiency of a digital x-ray detector: comparison of three evaluations using a common image data set. *Medical Physics* 31(8): 2205-2211, 2004.
- J31. Samei E, Saunders RS, Lo JY, Dobbins III JT, Jesneck JL, Floyd Jr CE, Ravin CE. Fundamental imaging characteristics of a slot-scan digital chest radiographic system. *Medical Physics* 31(9): 2687-2698, 2004.
- J32. Samei E, Wright SL. Luminance and contrast performance of liquid crystal displays for mammographic applications (*invited article*). *Technology in Cancer Research and Treatment* 3(5): 429-436, 2004.
- J33. Samei E, Rowberg A, Avraham E, Cornelius C. Towards clinically-relevant standardization of image quality (*invited article*). *Journal of Digital Imaging* 17(4): 235-300, 2004.
- J34. Saunders RS, Samei E, Jesneck JL, Lo JY. Physical characterization of a prototype selenium-based full field digital mammography detector. *Medical Physics* 32: 588-599, 2005.
- J35. Samei E. Technological and psychophysical considerations for digital mammography displays (*invited article*). *Radiographics* 25(2): 491-501, 2005.
- J36. Samei E, Badano A, Chakraborty D, Compton K, Cornelius C, Corrigan K, Flynn MJ, Hemminger B, Hangiandreou N, Johnson J, Moxley-Stevens DM, Pavlicek W, Roehrig H, Rutz L, Shepard J, Uzenoff RA, Wang J, Willis CE. Assessment of display performance for medical imaging systems: Executive summary of AAPM TG18 report (*invited article*). *Medical Physics* 32(4):1205-1225, 2005.
- J37. Samei E, Lo JY, Yoshizumi TT, Dobbins III JT, Jesneck JL, Floyd Jr CE, McAdams HP, Ravin CE. Comparative scatter and dose performance of slot-scan and full-field digital chest radiographic systems. *Radiology* 235(3): 940-949, 2005.
- J38. Samei E, Dobbins III JT, Lo, JY, McKinley RL, Tornai, M, A framework for optimizing the radiographic technique in digital x-ray imaging, *Radiation Protection Dosimetry* 117(1-2): 220-229, 2005.
- J39. Ranger NT, Samei E, Dobbins III JT, Ravin CE. Measurement of the detective quantum efficiency in digital detectors consistent with the IEC 62220-1 standard: practical considerations regarding the choice of filter material. *Medical Physics* 37(7): 2305-2311, 2005.
- J40. Samei E, Buhr E, Granfors P, Vandenbroucke D, Wang X. Comparison of edge analysis techniques for the determination of the MTF of digital radiographic systems. *Physics in Medicine and Biology* 50: 3613-3625, 2005.
- J41. McKinley RL, Tornai MP, Samei E, Bradshaw ML. Initial study of quasi-monochromatic x-ray beam performance for x-ray computed mammatomography, *IEEE Transactions on Nuclear Science* 52(5): 1243-1250, 2005.
- J42. McKinley RL, Tornai MP, Brzymialkiewicz C, Samei E, Bowsher JE. Analysis of a novel offset cone-beam computed mammatomography imaging system for attenuation correction of SPECT in a proposed dual modality dedicated breast mammatomography system. *Physica Medica XXII* (Sup. I): 46-53, 2006.
- J43. Hoe CL, Samei E, Frush DP, Delong DM. Simulation of liver lesions for pediatric CT. *Radiology* 238: 699-705, 2006.

- J44. Saunders RS, Samei E. Resolution and noise measurements of selected commercial medical displays. *Medical Physics* 33(2): 308-319, 2006.
- J45. Samei E, Wright SL. Viewing angle performance of medical liquid crystal displays. *Medical Physics* 33(3): 645-654, 2006.
- J46. Boyce S, Samei E. Imaging properties of digital magnification radiography. *Medical Physics* 33(4): 984-996, 2006.
- J47. Samei E, Ranger NT, Dobbins III JT, Chen Y. Inter-comparison of methods for image quality characterization: 1. Modulation transfer function. *Medical Physics* 33(5): 1454-1465, 2006.
- J48. Dobbins III JT, Samei E, Ranger NT, Chen Y. Inter-comparison of methods for image quality characterization: 2. Noise power spectrum. *Medical Physics* 33(5): 1466-1475, 2006.
- J49. Borasi G, Samei E, Bertolini M, Nitrosi A, Tassoni D. Contrast-detail analysis of two indirect flat panel detectors for digital radiography. *Medical Physics* 33(6): 1707-1719, 2006. [Errata in *Medical Physics* 33: 3580, 2006.]
- J50. Samei E. The role of image perception in radiology (*guest editorial*). *Journal of American College of Radiology* 3(6): 400-401, 2006.
- J51. Saunders RS, Samei E, Baker JA. Simulation of mammographic lesions. *Academic Radiology* 13: 860-870, 2006.
- J52. Siegel E, Krupinski E, Samei E, Flynn MJ, Andriole K, Erickson B, Thomas J, Badano A, Seibert JA, Pisano E. Digital mammography image quality: image display. *Journal of American College of Radiology* 3(8): 615-627, 2006.
- J53. Fetterly KA, Samei E. A photographic technique for assessing the viewing angle performance of liquid crystal displays. *Journal of the Society for Information Display (JSID)* 14: 867-872, 2006.
- J54. Samei E, Cleland EW, Roehrig H. In-field assessment of display resolution and noise: performance evaluation of a commercial measurement system. *Journal of the Society for Information Display (JSID)* 14: 839-845, 2006.
- J55. Roehrig H, Gaskill J, Fan J, Martin C, Greivenkamp J, Samei E. In-field evaluation of the modulation transfer function and the signal-to-noise ratio of electronic-display devices. *Journal of the Society for Information Display (JSID)* 14: 847-860, 2006.
- J56. Badano A, Schnieder S, Samei E. Visual assessment of angular response in medical LCDs, *Journal of Digital Imaging* 19(3): 240-248, 2006.
- J57. Lin MD, Samei E, Badea CT, Johnson GA. Optimized radiographic spectra for small animal digital subtraction angiography. *Medical Physics* 33(11): 4249-4257, 2006.
- J58. Saunders RS, Samei E, Baker JA, DeLong DM, Scott Soo M, Walsh R, Pisano E, Kuzmiak CM, Pavic D. Comparison of LCD and CRT displays based on utility for mammographic tasks. *Academic Radiology* 13: 1317-1326, 2006.
- J59. McAdams HP, Samei E, Dobbins III JT, Tourassi G, Ravin CE. Recent advances in chest radiography (*invited article*). *Radiology* 241(3): 663-683, 2006.

- J60. Saunders RS, Samei E. Improving demographic decision accuracy by incorporating observer ratings with interpretation time (*invited article*). *British Journal of Radiology* 79: 5117-5122, 2006.
- J61. Chawla A, Samei E. Ambient illumination revisited: A new adaptation-based approach for optimizing medical imaging reading environments. *Medical Physics* 34(1): 81-90, 2007.
- J62. Ruschin M, Timberg P, Båth M, Hemdal B, Svahn T, Saunders RS, Samei E, Andersson I, Mattsson S, Chakraborty D, Tingberg A. Dose dependence of mass and microcalcification detection in digital mammography: free response human observer studies. *Medical Physics* 34(2): 400-407, 2007.
- J63. Badea C, Samei E, Hedlund L, Johnson GA. Tomographic digital subtraction angiography for lung perfusion estimation in rodents. *Medical Physics* 34(5): 1546-1555, 2007.
- J64. Samei E, Saunders RS, Baker JA, DeLong DM. Digital mammography: impact of reduced dose on diagnostic performance. *Radiology* 243: 396-404, 2007.
- J65. Samei E, Stebbins SA, Dobbins III JT, McAdams HP, Lo JY. Multiprojection correlation imaging for improved detection of pulmonary nodules. *AJR* 188: 1239-1245, 2007.
- J66. Samei E, Poolla A, Ullissey MJ, Lewin J. Digital mammography: comparative performance of LCD and CRT displays. *Academic Radiology* 14(5): 539-546, 2007.
- J67. Ranger NT, Dobbins III JT, Samei E, Ravin CE. Assessment of detective quantum efficiency: Inter-comparison of the recent international standard with prior methods. *Radiology* 243(3): 785-795, 2007.
- J68. Chawla A, Samei E, Saunders RS, Abbey C, DeLong D. Effect of dose reduction on the detection of mammographic lesions: a mathematical observer analysis. *Medical Physics* 34(8): 3385-3398, 2007.
- J69. Saunders RS, Baker JA, DeLong DM, Johnson JP, Samei E. Does image quality matter? Impact of resolution and noise on mammographic task performance. *Medical Physics* 34(10): 3971-3981, 2007.
- J70. Fetterly KA, Flynn MJ, Blume H, Samei E. Introduction to grayscale calibration and related aspects of medical imaging grade liquid crystal displays. *Journal of Digital Imaging* 21(2): 193-207, 2008.
- J71. Schindera ST, Nelson RC, Paulson EK, Jaffe TA, Miller CM, DeLong DM, Kawaji K, Yoshizumi TT, Mukundan S, Samei E. Low tube voltage, high tube current multi-detector row CT for enhanced detection of hypervascular liver tumors: phantom study. *Radiology* 146(1): 125-132, 2008.
- J72. Chawla AS, Samei E, Lo JY, Baker JA. A mathematical model platform for optimizing a multi-projection breast imaging system. *Medical Physics* 35(4): 1337-1345, 2008.
- J73. Samei E, Ranger NT, DeLong DM. A comparative contrast-detail study of five medical displays. *Medical Physics* 35(4): 1358-1364. 2008.
- J74. Pollard BJ, Chawla AS, DeLong DM, Hashimoto N, Samei E. Object detectability at increased ambient lighting conditions. *Medical Physics* 35(6): 2204-2213, 2008.
- J75. Williams MB, Raghunathan P, More MJ, Seibert JA, Kwan A, Lo JY, Samei E, Ranger NT, Fajardo LL, McGruder A, McGruder SM, Maidment ADA, Yaffe MJ, Bloomquist A, Mawdsley G. Optimization of exposure parameters in full field digital mammography *Medical Physics* 35(6): 2414-2423, 2008.

- J76. Singh S, Tourassi GD, Baker JA, Samei E, Lo JY. Automated breast mass detection in 3D reconstructed tomosynthesis volumes: a featureless approach. *Medical Physics* 35 (8): 3626-3636, 2008.
- J77. Li X, Samei E, Segars WP, Sturgeon GM, Colsher JG, Frush DP. Patient-specific dose estimation for pediatric CT. *Medical Physics* 35(12) 5821-5828, 2008.
- J78. Saunders RS, Samei E. The effect of breast compression on mass conspicuity in digital mammography. *Medical Physics* (35(10): 4464-4473, 2008.
- J79. Samei E, Ranger NT, Mackenzie A, Honey ID, Dobbins III JT, Ravin CE. Detector or system? Extending the concept of DQE to characterize the performance of digital radiographic systems. *Radiology* 249(3): 926-937, 2008.
- J80. Pollard BJ, Samei E, Chawla AS, Baker JA, Ghate S, Kim C, Soo MS, Hashimoto N. The influence of ambient lighting on mass detection in mammograms. *Academic Radiology* 16(3): 299-304, 2009.
- J81. Chawla AS, Saunders RS, Singh S, Lo JY, Samei E. Towards optimized acquisition scheme for multiprojection correlation imaging of breast cancer. *Academic Radiology* 16(4): 456-463, 2009.
- J82. Castella C, Kinkel K, Eckstein MP, Abbey CK, Verdun FR, Saunders RS, Samei E, Bochud FO. Mass detection on mammograms: influence of signal shape uncertainty on human and model observers. *Journal of Optical Society of America* 26(2): 425-436, 2009.
- J83. Li X, Samei E. Comparison of patient size-based methods for estimating quantum noise in CT images of the lung. *Medical Physics* 36(2), 541-546, 2009.
- J84. Saunders RS, Samei E, Lo JY, Baker JA. Can breast compression be reduced for breast tomosynthesis? A Monte Carlo study on mass and microcalcification conspicuity in tomosynthesis. *Radiology* 251(3): 673-782, 2009.
- J85. Marin D, Nelson R, Samei E, Paulson EK, et al. Hypervascular liver tumors: low tube voltage, high tube current multidetector CT during late hepatic arterial phase for detection—initial clinical experience. *Radiology* 251(3): 771-779, 2009.
- J86. Li X, Samei E, DeLong DM, Jones RP, Gaca AM, Hollingsworth CL, Maxfield CM, Carrico CW, Frush D. Three-dimensional simulation of small lung nodules for pediatric CT. *British Journal of Radiology* 82: 401-411, 2009.
- J87. Chawla AS, Boyce S, Washington L, McAdams HP, Washington L, Samei E. Design and development of a new multi-projection x-ray system for chest imaging. *IEEE Transactions of Medical Imaging* 56(1): 36-45, 2009.
- J88. Shepard SJ, Wang J, Flynn M, Gingold E, Goldman L, Krugh K, Leong DL, Mah E, Ogden K, Peck D, Samei E, Wang J, Willis CE. An exposure indicator for digital radiography: AAPM Task Group 116 (executive summary). *Medical Physics* 36(7): 2898-2914, 2009.
- J89. Li X, Samei E, DeLong DM, Jones RP, Gaca AM, Hollingsworth CL, Maxfield CM, Colsher JG, Frush DP. Pediatric MDCT: towards assessing the diagnostic influence of dose reduction on the detection of small lung nodules. *Academic Radiology* 16(7): 872-880, 2009.

- J90. Samei E, Ranger NT, Mackenzie A, Honey ID, Dobbins III JT, Ravin CE. Effective DQE (eDQE) and speed of digital radiographic systems: an experimental methodology. *Medical Physics* 36(8): 3806–3817, 2009. This article was one of the top 10 most downloaded articles in the journal *Medical Physics*, August 2009.
- J91. Mahesh A, Samei E, Bisset III GS. Radiation dose in CT. RSNA/AAPM Educational module, RSNA Publications, 2009.
- J92. Samei E, Ranger NT, Bisset III GS, Maxfield C, Hollingsworth CL, Lo JY, Dobbins III JT, Wilson KL. Image quality and dose in digital radiography. RSNA/AAPM Educational module, RSNA Publications, 2009.
- J93. Samei E, Saunders RS, Badea CT, Ghaghada KB, Hedlund LW, Qi Y, Yuan H, Bentley RC, Mukundan, Jr S. Micro-CT imaging of breast tumors in rodents using a liposomal, nanoparticle contrast agent. *International Journal of Nanomedicine* 4: 277–282 2009.
- J94. Chawla AS, Lo JY, Baker JA, Samei E. Optimized image acquisition for breast tomosynthesis in projection and reconstruction space. *Medical Physics* 36(11): 4859-4869, 2009.
- J95. Marin D, Nelson R, Schindera ST, Richard S, Youngblood RS, Yoshizumi TT, Samei E. Low-tube-voltage, high--tube current multi-detector row CT of the abdomen: improved image quality and decreased radiation dose with an adaptive statistical iterative reconstruction algorithm – initial clinical experience. *Radiology* 254(1): 145-153, 2010.
- J96. Fleck MS, Samei E, Mitroff SR. Generalized ‘satisfaction of search’: Adverse influences on dual-target search. *Journal of Experimental Psychology: Human Perception & Performance* 16(1): 60-71, 2010.
- J97. Ranger NT, Lo JY, Samei E. A technique optimization protocol and the potential for dose reduction in digital mammography. *Medical Physics* 37(3): 962-969, 2010.
- J98. Shafer C, Samei E, Lo JY. The quantitative potential for breast tomosynthesis imaging. *Medical Physics* 37(3): 1004-1016, 2010.
- J99. Richard S, Samei E Quantitative imaging in breast tomosynthesis and CT: comparison of detection and estimation task performance. *Medical Physics* 37(6): 2627-2637, 2010. This article was selected as Editor’s Pick as a top article in the journal issue.
- J100. Marin D, Nelson R, Barnhart H, Schindera ST, Ho LM, Jaffe TA, Yoshizumi TT, Youngblood R, Samei E. Effect of a low tube voltage, high tube current multi-detector row CT technique on the detection of pancreatic tumors, image quality and radiation dose during the pancreatic parenchymal phase. *Radiology* 256(2): 450-459, 2010.
- J101. Kim S, Yoo S, Yin F-F, Samei E, Yoshizumi TT. Kilovoltage cone-beam CT: comparative dose and image quality evaluations in partial and full-angle scan protocol. *Medical Physics* 37:3648-3659, 2010.
- J102. Richard S, Samei E. Quantitative breast tomosynthesis: from detectability to estimability. *Medical Physics* 37(12): 6157-6165, 2010.
- J103. Tourassi G, Samei E, Baker JA. Medical image perception, performance evaluation, and CAD. RSNA/AAPM Educational module, RSNA Publications, 2010.
- J104. Samei E, McAdams P. Foundations of medical image quality: contrast, sharpness, and noise. RSNA/AAPM Educational module, RSNA Publications, 2010.

- J105. Samei E, McAdams P. Evaluation and derivatives of medical image quality. RSNA/AAPM Educational module, RSNA Publications, 2010.
- J106. Peck D, Samei E. How to understand and communicate radiation risk. Image Wisely Alliance, ACR, 2010.
- J107. Li X, Samei E, Segars W, Sturgeon G, Colsher J, Toncheva G, Yoshizumi TT, Frush DP. Monte Carlo method for estimating patient-specific radiation dose and cancer risk in CT: development and validation. *Medical Physics* 38(1): 397-407, 2011.
- J108. Li X, Samei E, Segars W, Sturgeon G, Colsher J, Toncheva G, Yoshizumi TT, Frush DP. Monte Carlo method for estimating patient-specific radiation dose and cancer risk in CT: application to patients. *Medical Physics* 38(1): 408-419, 2011. This article was selected as Editor's Pick as a top article in the journal issue.
- J109. Chen B, Shorey J, Nolte L, Saunders RS, Thompson J, Richard S, Samei E. An anthropomorphic breast model for breast imaging simulation and optimization. *Academic Radiology* 18: 536-546, 2011. This article was selected as a featured paper as a top article in the journal issue.
- J110. Kim S, Song H, Samei E, Yin F-F, Yoshizumi TT. Computed tomography dose index and dose length product for cone-beam CT: Monte Carlo simulations of a commercial system. *Journal of Digital Imaging* 12(2): 84-95, 2011.
- J111. Webb L, Samei E, Lo JY, Baker JA, Ghate S, Kim C, Soo MS, Walsh R. Comparative performance of multi-view stereoscopic and mammographic display modalities for breast lesion detection. *Medical Physics* 38(4): 1972-1980, 2011. This article was selected as Editor's Pick as a top article in the journal issue.
- J112. Li X, Samei E, Segars W, Sturgeon G, Colsher J, Frush DP. Patient-specific dose and risk estimation in pediatric chest CT. *Radiology* 259(3): 862-874, 2011.
- J113. Samei E, Ranger NT, Dobbins III JT, Ravin CE. Effective Dose Efficiency (eDE): an application-specific metric of quality and dose for digital radiography. *Physics in Medicine and Biology* 56: 5099-5118, 2011. This article was selected Featured Article as a top article in the journal issue.
- J114. Samei E, Saunders RS. Beam optimization of dual energy contrast enhanced breast tomosynthesis. *Physics in Medicine and Biology* 56: 6359-6378, 2011.
- J115. D'Alessandro B, Madsen M, Samei E, Li X, Wooi-Tan J, Berbaum KS, Schartz K, Caldwell R, Zuckier. Synthetic PET and PET-CT images for use in perceptual studies (*invited article*). *Seminars of Nuclear Medicine* 41:437-448, 2011.
- J116. Samei E, Seibert AJ. The tenuous state of clinical medical physics in diagnostic imaging (editorial). *Medical Physics* 38(12): iii-iv, 2011.
- J117. Wang CE, Chea YW, Boll DT, Samei E, Neville AM, Dale BM, Merkle EM. Effect of Gadolinium chelate contrast agents on diffusion weighted MR imaging of the liver, spleen, pancreas and kidney at 3T. *European Journal of Radiology* 80: e1-e7, 2011.
- J118. Chen B, Richard S, Barnhart H, Colsher J, Amurao M, Samei E. Quantitative CT: technique dependency of volume assessment for pulmonary nodules. *Physics in Medicine and Biology* 57: 1335-1348, 2012.
- J119. Samei E, Majdi-Nasab N, Dobbins III JT, McAdams HP. Biplane correlation imaging: Feasibility study based on phantom and human dataset. *Journal of Digital Imaging* 25: 137-147, 2012.



- J120. Schnell EA, Samei E, Dobbins III JY. Plate-specific gain map correction for the improvement of detective quantum efficiency in computed radiography. *Medical Physics* 39(3): 1495-1504, 2012.
- J121. Samei E, Button T, Orton C. The 2014 initiative can have potentially unintended negative consequences for medical physics in diagnostic imaging and nuclear medicine. Point-Counterpoint Debate. *Medical Physics* 39(3): 1167-1169, 2012.
- J122. Pollard BJ, Samei E, Chawla AS, Heyneman L, Hurwitz LM, Martinez-Jimenez S, Washington L, McAdams HP, Hashimoto N. Can ambient lighting in chest radiology reading rooms be increased? *Journal of Digital Imaging* 25(4): 520-526, 2012.
- J123. Guo W, Li Q, Boyce SJ, McAdams TP, Shiraishi J, Doi K, Samei E. A computerized scheme for lung nodule detection in multi-projection chest radiography. *Medical Physics* 39(4), 2001-2012, 2012.
- J124. Husarik DB, Marin D, Richard S, Samei E, Chen B, Jaffe TA, Bashir MR, Nelson RC. Radiation dose reduction in abdominal CT using a model based iterative reconstruction algorithm: How low can we go? *Investigative Radiology* 47(2): 121-127, 2012.
- J125. McCollough CH, Chen GH, Kalender W, Leng S, Pelc N, Samei E, Taguchi K, Wang G, Yu L. Technical steps needed to achieve routine sub-mSv CT scanning: report from the summit on management of radiation dose in CT (*invited article*). *Radiology* 264(2): 567-580, 2012.
- J126. Zhang Y, Li X, Segars WP, Samei E. Organ dose, effective dose, and risk index in adult CT: comparison of four types of reference phantoms across different protocols. *Medical Physics* 39(6), 3404-3423, 2012.
- J127. Richard S, Yadava G, Murphy S, Samei E. Towards task-based assessment of CT performance: system and object MTF across different reconstruction algorithms. *Medical Physics* 39(7), 4115-4121, 2012. This article was selected as Editor's Pick as a top article in the journal issue.
- J128. Solomon J, Christianson O, Samei E. Quantitative comparison of noise texture across CT scanners from different manufacturers. *Medical Physics* 39(10): 6050-6055, 2012.
- J129. Li X, Samei E, Williams CH, Segars WP, Tward D, Miller MI, Ratnanather JT. Effects of protocol and obesity on dose conversion factors in adult body CT. *Medical Physics* 39(11): 6550-6571, 2012. This article received the Farrington Daniels Award for the best paper published in Medical Physics in 2012.
- J130. Lungren MP, Samei E, Barnhardt H, McAdams HP, Heyneman LE, Leder RA, Christensen JD, Christianson KL, Wylie JD, Tan JW, Li X, Hurwitz LM. Gray-scale inversion radiographic display in the detection of pulmonary nodules on chest radiographs. *Clinical Imaging* 36(5): 515-21, 2012.
- J131. MacCabe K, Krishnamurthy K, Chawla A, Marks D, Samei E, Brady D. Pencil beam coded aperture x-ray scatter imaging. *Optics Express* 20(15): 16310-16320, 2012.
- J132. Christianson O, Li X, Frush DP, Samei E. Automated patient-specific CT dose monitoring system: assessing variability in CT dose. *Medical Physics* 39(11): 7131-7139. 2012.
- J133. Lin Y, Samei E, Luo H, Dobbins III JT, McAdams HP, Wang X, Sehnert WJ, Barski L, Foos DH. A patient image-based technique to assess the image quality of clinical chest radiographs. *Medical Physics* 39(11): 7019-7031, 2012.

- J134. Samei E, Li X, Chen B, Reiman R. The effect of dose heterogeneity on risk estimation in x-ray imaging. *Radiation Protection Dosimetry* 155(1): 42-58, 2013.
- J135. Boyce SJ, McAdams HP, Ravin CE, Patz Jr EF, Washington L, Martinez S, Kowweek L, Samei E. Preliminary evaluation of bi-plane correlation (BCI) stereographic imaging for lung nodule detection. *Journal of Digital Imaging* 26(1): 109-14, 2013.
- J136. Copple C, Robertson ID, Thrall DE, Samei E. Evaluation of two objective methods to optimize kVp and personnel exposure using a digital indirect flat panel detector and simulated veterinary patients. *Veterinary Radiology & Ultrasound* 54(1): 9-16, 2013.
- J137. Samei E, Murphy S, Richard S, Christianson O. Assessment of multi-directional MTF for breast tomosynthesis. *Physics in Medicine and Biology* 58: 1649–1661, 2013.
- J138. Wilson JM, Christianson OI, Richard S, Samei E. A methodology for image quality evaluation of advanced CT systems. *Medical Physics* 40(3): 031908-01-09, 2013.
- J139. Solomon JB, Li X, Samei E. Relating noise to image quality indicators in CT examinations with tube current modulation. *AJR* 200: 592–600, 2013.
- J140. Segars WP, Bond J, Frush J, Hon S, Eckersley C, Williams CH, Feng J, Tward DJ, Ratnanather TJT, Miller MI, Frush D, Samei E. Population of anatomically variable 4D XCAT adult phantoms for imaging research and optimization. *Medical Physics* 40(4): 043701-1-11, 2013.
- J141. Chen B, Marin D, Richard S, Husarik D, Nelson R, Samei E. Precision of iodine quantification in hepatic CT: effects of reconstruction (FBP, ASIR, and MBIR) and imaging parameters. *AJR* 200(5): W475-82, 2013.
- J142. Samei E, Murphy S, Christianson O. DQE of wireless digital detectors: Comparative performance with differing filtration schemes. *Medical Physics* 40(8): 081910-1-9, 2013.
- J143. Chen B, Barnhart H, Richard S, Robins M, Colsher J, Samei E. Volumetric quantification of lung nodules in CT with iterative reconstruction (ASiR and MBIR) *Medical Physics* 40(11): 111902 - 111202-10, 2013. This article was selected as a featured paper as a top article in the journal issue.
- J144. Boyce SJ, Choudhury KR, Samei E. Effective DQE (eDQE) for monoscopic and stereoscopic chest radiography imaging systems with the incorporation of anatomical noise. *Medical Physics* 40: 091916, 2013.
- J145. Kiarashi N, Samei E. Digital breast tomosynthesis: a concise overview (*invited article*). *Imaging Med.* 5(5): 467-476, 2013.
- J146. Swanick CW, Gaca AM, Hollingsworth CL, Maxfield CM, Li X, Samei E, Paulson EK, McCarthy M, Frush DP. Comparison of conventional and simulated reduced-mA MDCT for evaluation of suspected appendicitis in the pediatric population. *AJR* 201(3): 651-8, 2013.
- J147. Hoang JK, Wang C, Frush D, Enterline D, Samei E, Toncheva G, Lowry C, Yoshizumi T. Estimation of radiation exposure for brain perfusion CT: standard protocol compared to deviations in protocol, *AJR* 201:W1-W5, 2013.
- J148. Tian X, Li X, Segars WP, Frush D, Paulson E, Samei E. Dose coefficients in pediatric and adult abdominopelvic CT based on 100 patient models. *Physics in Medicine and Biology* 58(24): 8755-6, 2013.

- J149. Mileto A, Nelson RC, Samei E, Jaffe TA, Paulson EK, Barina A, Choudhury KR, Wilson JM, Marin D. Impact of dual-energy multi-detector row CT with virtual monochromatic imaging on renal cyst pseudoenhancement: in vitro and in vivo study. *Radiology* May 15:132856, 2014.
- J150. Norris H, Zhang Y, Bond J, Sturgeon GM, Minhas A, Tward DJ, Ratnanather TJT, Miller MI, Frush D, Samei E, Segars WP. Set of 4D pediatric XCAT reference phantoms for multimodality research. *Medical Physics* 41(3): 033701, 2014.
- J151. Zhang Y, Li X, Segars WP, Samei E. Comparison of patient specific dose metrics between chest radiography, tomosynthesis, and CT for adult patients of wide ranging body habitus. *Medical Physics* 41(2): 023901, 2014.
- J152. Ikejimba LC, Kiarashi N, Ghate SV, Samei E, Lo JY. Task-based strategy for optimized contrast enhanced breast imaging: Analysis of six imaging techniques for mammography and tomosynthesis. *Medical Physics* 41(6): 061908-1-14, 2014.
- J153. Kiarashi N, Lo JY, Lin Y, Ikejimba LC, Ghate SV, Nolte LW, Dobbins III JT, Segars WP, Samei E. Development and application of a suite of 4D virtual breast phantoms for optimization and evaluation of breast imaging systems. *IEEE Transactions on Medical Imaging* PP (99), 2014.
- J154. Lin Y, Ramirez-Giraldo JC, Gauthier DJ, Stierstorfer K, Samei E. An angle-dependent estimation of CT x-ray spectrum from rotational transmission measurements. *Medical Physics* 41(6): 062104-1-12, 2014. This article was selected as a featured paper as a top article in the journal issue.
- J155. Lin Y, Samei E. A fast poly-energetic iterative FBP algorithm. *Physics in Medicine and Biology* 59(7): 1655-78, 2014.
- J156. Lin Y, Samei E. An efficient poly-energetic SART (pSART) reconstruction algorithm for quantitative myocardial CT perfusion, *Medical Physics* 41(6): 021911, 2014.
- J157. Lakshmanan MN, Kapadia AJ, Sahbaee P, Wolter SD, Harrawood BP, Brady D, Samei E. An X-ray scatter system for material identification in cluttered objects: A Monte Carlo simulation study. *Nuclear Instruments and Methods in Physics Research Section B* 335: 31-38, 2014.
- J158. Chen B, Christianson O, Wilson J, Samei E. Assessment of volumetric noise and resolution performance for linear and nonlinear CT reconstruction methods. *Medical Physics* 41, 071909, 2014.
- J159. Nelson J, Christianson O, Harkness B, Madsen M, Mah E, Thomas S, Zaidi H, Samei E. Nuclear medicine uniformity assessment using 2D noise power spectrum. *Journal of Nuclear Medicine* 55:169-174, 2014.
- J160. Li X, Segars WP, Samei E. The impact on CT dose of the variability in tube current modulation technology: a theoretical investigation. *Physics in Medicine and Biology* 59: 4525-4548, 2014.
- J161. Sahbaee P, Segars WP, Samei E. Patient-based estimation of organ dose for adult population across a wide range of protocols. *Medical Physics* 41: 072104, 2014.
- J162. Samei E, Christianson O. Dose index analytics - more than a low number (*invited article*). *Journal of American College of Radiology* 11(8): 832-4, 2014.
- J163. Tian X, Li X, Segars WP, Frush D, Paulson EK, Samei E. Organ dose estimation in pediatric chest and abdominopelvic CT based on 42 patient models. *Radiology* 270(2): 535-47, 2014.

- J164. Samei E, Richard S, Hurwitz L. Model-based CT performance assessment and optimization for iodinated and non-iodinated imaging tasks as a function of kVp and body size. *Medical Physics* 41(8): 081910i, 2014.
- J165. Solomon J, Samei E. Quantum noise properties of CT images with anatomical textured backgrounds across reconstruction algorithms: FBP and SAFIRE. *Medical Physics* 41(9): 091908, 2014.
- J166. Samei E, Tian X, Segars WP. Determining organ dose: the holy grail (*invited article*). *Pediatric Radiology* 44(3): 460-467, 2014.
- J167. Samei E. Pros and cons of organ shielding for CT imaging (*invited article*). *Pediatric Radiology* 44(3): 495-500, 2014.
- J168. Solomon J, Samei E. A generic framework to simulate realistic lung, liver and renal pathologies in CT imaging. *Physics in Medicine and Biology* 59: 6637-6657, 2014.
- J169. Samei E, Lin Y, Choudhury KR, McAdams HP. Automated characterization of perceptual quality of clinical chest radiographs: Validation and calibration to observer preference. *Medical Physics* 41: 111918, 2014.
- J170. Segars WP, Norris H, Rybicki K, Frush D, Samei E. Organ localization: toward prospective patient-specific organ dosimetry in computed tomography. *Medical Physics* 41: 121908, 2014.
- J171. Chen B, Ramirez Giraldo JC, Samei E. Evaluating iterative reconstruction performance in computed radiography. *Medical Physics* 41: 121913, 2014.
- J172. Samei E, Richard S. Assessment of the dose reduction potential of a model-based iterative reconstruction algorithm (MBIR) using a task-based performance metrology. *Medical Physics* 42(1): 314, 2015.
- J173. Christianson O, Chen J, Yang Z, Saiprasad G, Dima A, Filliben J, Peskin A, Trimble C, Siegel E, Samei E. An improved index of image quality for task-based performance of CT iterative reconstruction across three commercial implementations. *Radiology* 275(3): 725-734, 2015.
- J174. Frush DP, Samei E. CT Radiation dose monitoring: current state and new prospects (*invited article*). *Medscape Radiology*, March 2015.  
(<http://www.staging.medscape.org/viewarticle/839485>)
- J175. Solomon J, Mileto A, Ramirez Giraldo JC, Samei E. Diagnostic performance of an advanced modeled iterative reconstruction algorithm for low-contrast detectability on a third-generation dual-source MDCT scanner: potential for radiation dose reduction in a multireader study. *Radiology* 275(3): 735-745, 2015. Featured as an article of the month in the journal issue.
- J176. Wilson J, Samei E. Implementation of ACR dose index registry (*invited article*). *Journal of American College of Radiology* 12(3): 312-313, 2015.
- J177. Samei E, Saunders RS, Singh S, Lo JY. Effect of angular separation and correlation rule on breast tri-plane correlation imaging. *International Journal of Diagnostic Imaging* 2(2): 29-38, 2015.
- J178. Tian X, Li X, Segars WP, Frush DP, Samei E. Prospective optimization of organ dose in CT under tube current modulation. *Medical Physics* 42 (4): 1575-1585, 2015.

- J179. Samei E, Thompson J, Richard S, Chen B, Bowsher J. A case for wide-angle breast tomosynthesis. *Academic Radiology* 22(7):860-869, 2015.
- J180. Samei E, Christianson O, Zhang Y. Comment on "Comparison of patient specific dose metrics between chest radiography, tomosynthesis, and CT for adult patients of wide ranging body habitus" *Medical Physics* 42(4): 02094-2095, 2015.
- J181. Kiarashi N, Nolte AC, Sturgeon GM, Segars WP, Ghate SV, Nolte LW, Samei E, Lo JY, Development of realistic physical breast phantoms matched to virtual breast phantoms based on human subject data. *Medical Physics* 42: 4116, 2015. This article was selected as a featured paper as a top article in the journal issue.
- J182. Christianson O, Winslow J, Frush DP, Samei E. Automated technique to measure noise in clinical CT examinations. *AJR* 205: W93-W99, 2015.
- J183. Lakshmanan MN, Harrawood BP, Samei E, Kapadia AJ. Volumetric X-ray coherent scatter imaging of cancer in resected breast tissue: a Monte Carlo study using virtual anthropomorphic phantoms. *Physics in Medicine and Biology* 60(16): 6355-6370, 2015.
- J184. Segars WP, Norris H, Sturgeon GM, Zhang Y, Bond J, Minhas A, Tward DJ, Ratnanather TJJ, Miller MI, Frush DP, Samei E. The development of a population of 4D pediatric XCAT phantoms for imaging research and optimization. *Medical Physics* 42(8): 4719-4726, 2015.
- J185. Sechopoulos I, Ali ESM, Badal A, Badano A, Boone JM, Kyprianou IS, Mainegra-Hing, E, McMillan KL, McNitt-Gray MF, Rogers DWO, Samei E, Turner AC. Monte Carlo reference data sets for imaging research: Executive Summary of the Report of AAPM Research Committee Task Group 195. *Medical Physics* 42(10): 5679, 2015.
- J186. Zhang Y, Solomon J, Samei E. Size dependence of inherent image quality of a 2nd generation dual source CT scanner. *International Journal of Diagnostic Imaging* 3(1): 40-48, 2016.
- J187. Brinkley M, Frush D, Wilson JM, Christianson O, Ramirez Giraldo JC, Frush J, Choudhury KR, Samei E. Effects of automatic tube potential selection on radiation dose index, image quality and lesion detectability in pediatric abdominopelvic CT and CTA: a phantom study. *European Radiology* 26(1):157-66, 2016.
- J188. Tian X, Samei E. Accurate assessment and prediction of noise in clinical CT images. *Medical Physics* 43(1): 475-482, 2016. This article was selected as a featured paper as a top article in the journal issue.
- J189. Erickson DW, Wells JR, Sturgeon GM, Samei E, Dobbins JT III, Segars WP, Lo JY. Population of 224 realistic human subject-based computational breast phantoms. *Medical Physics* 43(1): 23-32, 2016.
- J190. Solomon J, Mileto A, Nelson R, Choudhury KR, Samei E. Quantitative features of liver lesions, lung nodules, and renal stones in multidetector-row CT examinations: Dependency on radiation dose and reconstruction algorithm. *Radiology* 150892, 2016. Recognized as a notable article reflected in the journal editorial and featured in the April 2016 webcast of Radiology.
- J191. Samei E. Cutting to the chase: with so much physics "stuff," what do radiologists really need to know? (invited article) *AJR* 206 (1): W9, 2016.

- J192. Lakshmanan MN, Greenberg JA, Samei E, Kapadia AJ. Design and implementation of coded aperture coherent scatter spectral imaging of cancerous and healthy breast tissue samples. *Journal of Medical Imaging* 3(1): 013505, 2016.
- J193. Ikejimba L, Lo JY, Chen Y, Oberhofer N, Kiarashi N, Samei E. A quantitative metrology for performance characterization of five breast tomosynthesis systems based on an anthropomorphic phantom. *Medical Physics* 43(4): 1627-1638, 2016.
- J194. Tian X, Yin Z, De Man B, Samei E. Estimation of radiation dose in CT based on projection data. *Journal of Digital Imaging* 1-7, 2016.
- J195. Sahbaee P, Segars WP, Marin D, Nelson R, Samei E. Determination of contrast media administration to achieve a targeted contrast enhancement in computed tomography. *Journal of Medical Imaging* 3(1): 013501-013501, 2016.
- J196. Nelson JS, Wells JR, Baker JA, Samei E. How does c-view image quality compare with conventional 2D FFDM? *Medical Physics* 43(5): 2538-2547, 2016. This article was selected as a featured paper as a top article in the journal issue.
- J197. Sturgeon GM, Kiarashi N, Lo JY, Samei E, Segars WP. Finite-element modeling of compression and gravity on a population of breast phantoms for multi-modality imaging simulation. *Medical Physics* 43 (5): 2207-2217, 2016.
- J198. Marin D, Gupta S, Fu W, Stinnett SS, Mileto A, Bellini D, Patel B, Samei E, Nelson RC. Effect of a noise-optimized second-generation monoenergetic algorithm on image noise and conspicuity of hypervascular liver tumors: an in vitro and in vivo study. *AJR* 206(6): 1222-1232, 2016.
- J199. Tian X, Segars WP, Dixon RL, Samei E. Convolution-based estimation of organ dose in tube current modulated CT. *Physics in Medicine and Biology* 61(10): 3935-3954, 2016.
- J200. Badano A, Wang J, Boynton P, Le Callet P, Cheng WC, Deroo D, Flynn MJ, Matsui T, Penczek J, Revie C, Samei E, Steven PM, Swiderski S, Van Hoey G, Yamaguchi M, Hasegawa M, Nagy BV. Gray tracking in medical color displays—A report of Task Group 196, *Medical Physics* 43(7): 4017-4022, 2016.
- J201. Lin Y, Samei E. Development and evaluation of a segmentation-free polyenergetic algorithm for dynamic perfusion computed tomography. *Journal of Medical Imaging* 3(3): 033503, 2016.
- J202. Sanders J, Hurwitz L, Samei E. Patient-specific quantification of image quality: An automated method for measuring spatial resolution in clinical CT images. *Medical Physics* 43(10): 5330-5338, 2016.
- J203. Kiarashi N, Nolte LW, Lo JY, Segars WP, Ghate SV, Solomon J, Samei E. Impact of breast structure on lesion detection in breast tomosynthesis, a simulation study. *Journal of Medical Imaging* 3(3): 035504, 2016.
- J204. Ikejimba LC, Glick SJ, Choudhury KR, Samei E, Lo JY. Assessing task performance in FFDM, DBT and synthetic mammography using uniform and anthropomorphic physical phantoms. *Medical Physics* 43 (10): 5593-5602, 2016.
- J205. Solomon J, Samei E. Correlation between human detection accuracy and observer model-based image quality metrics in CT. *Journal of Medical Imaging* 3(3): 035506, 2016.

- J206. Solomon J, Ba A, Bochud F, Samei E. Comparison of low-contrast detectability between two CT reconstruction algorithms using voxel-based 3D printed textured phantoms. *Medical Physics* 43 (12): 6497-6506, 2016. This article was selected as a featured paper as a top article in the journal issue.
- J207. Bellini D, Ramirez Giraldo JC, Bibbey A, Solomon J, Kowec L, Farjat A, Mileto A, Samei E, Marin D. Dual-source single-energy MDCT to obtain multiple radiation exposure levels within the same patient: phantom development and clinical validation. *Radiology* 161233, 2016.
- J208. Fu W, Tian X, Sturgeon G, Agasthya G, Segars WP, Goodsitt MM, Kazerooni EA, Samei E. CT breast dose reduction with the use of breast positioning and organ-based tube current modulation. *Medical Physics* 44(2), 665-678, 2017.
- J209. Mileto A, Samei E. Hallway conversations in physics: Ten frequently asked questions about dual-energy CT. *AJR* 208:W24-27, 2017.
- J210. Solomon J, Marin D, Choudhury KR, Patel B, Samei E. Effect of radiation dose reduction and reconstruction algorithm on image noise, contrast, resolution, and detectability of subtle hypo-attenuating liver lesions multidetector CT: Filtered Back Projection versus a commercial model-based iterative reconstruction algorithm. *Radiology* 284(3): 777-787, 2017.
- J211. Lakshmanan MN, Greenberg JA, Samei E, Kapadia AJ. Accuracy assessment and characterization of x-ray coded aperture coherent scatter spectral imaging for breast cancer classification. *Journal of Medical Imaging* 4 (1): 013505-013505, 2017.
- J212. Sanders J, Tian X, Segars WP, Boone J, Samei E. Automated, patient-specific estimation of regional imparted energy and dose from TCM CT exams across 13 protocols. *Journal of Medical Imaging* 4(1): 013503-013503, 2017.
- J213. Ria F, Wilson J, Zhang Y, Samei E. Image noise and dose performance across a clinical population: patient size adaptation as a metric of CT performance. *Medical Physics* 44(6): 2141-2147, 2017.
- J214. Sahbaee P, Segars WP, Marin D, Nelson R, Samei E. The impact of contrast material on radiation dose in CT: Part I. Incorporation of contrast medium dynamics in anthropomorphic phantoms. *Radiology* 283 (3), 739-748, 2017. Recognized as a notable article reflected in the journal editorial and featured in the May 2017 webcast of Radiology.
- J215. Sahbaee P, Abadi E, Segars WP, Marin D, Nelson R, Samei E. The impact of contrast medium on radiation dose in CT: Part II. A systematic evaluation across 58 patient models. *Radiology* 152852, 2017. Recognized as a notable article reflected in the journal editorial and featured in the May 2017 webcast of Radiology.
- J216. Mileto A, Nelson RC, Larson DG, Samei E, Wilson JM, Christianson O, Marin D, Boll DT. Variability in radiation dose from repeat identical CT examinations: longitudinal analysis of 2851 patients undergoing 12,635 thoracoabdominal CT scans in an academic health system. *AJR* 28:1-12. 2017.
- J217. Zhang Y, Smitherman C, Samei E. Size specific optimization of CT protocols based on minimum detectability. *Medical Physics* 44 (4): 1301-1311, 2017.
- J218. Pawlicki T, Ayers RG, Brock KK, Clements JB, Curran BH, Dobbins JT, Samei E, Martin MC, Schober L. Proposed changes to the American Association of Physicists in Medicine governance (Editorial). *Journal of Applied Clinical Medical Physics* 18 (4): 4-6, 2017.

- J219. Hoyer J, Zhang Y, Agasthya G, Sturgeon G, Kapadia A, Segars WP, Samei E. Organ dose variability and trends in tomosynthesis and radiography. *Journal of Medical Imaging* 4(3): 031207-031207, 2017.
- J220. Robins M, Solomon JB, Sahbaee P, Sedlmair M, Choudhury KR, Pezeshk A, Sahiner B, Samei E. Techniques for virtual lung nodule insertion: volumetric and morphometric comparison of projection-based and image-based methods for quantitative CT. *Physics in Medicine and Biology*, 62 (18), 7280-7299, 2017.
- J221. Fu W, Marin D, Ramirez-Giraldo JC, Choudhury KR, Solomon JB, Schabel C, Patel BN, Samei E. Optimizing window settings for improved presentation of virtual monoenergetic images in dual-energy computed tomography. *Medical Physics* 44(11): 5686-5696, 2017.
- J222. Fu W, Sturgeon GM, Agasthya G, Segars WP, Kapadia AJ, Samei E. Breast dose reduction with organ-based, wide-angle tube current modulated CT. *Journal of Medical Imaging* 4(3): 031208-031208. 2017.
- J223. Abadi E, Sanders J, Samei E. Patient-specific quantification of image quality: an automated technique for measuring the distribution of organ Hounsfield units in clinical chest CT images. *Medical Physics* 44(9): 4736-4746, 2017.
- J224. Samei E, Li X, Frush DP. Size-based quality-informed framework for quantitative optimization of pediatric CT. *Journal of Medical Imaging* 4(3): 031209, 2017.
- J225. Samei E, Tian X, Segars WP, Frush DP. Radiation risk index for pediatric CT: A patient-derived metric. *Pediatric Radiology* 47(13): 1737-1744, 2017.
- J226. Winslow J, Zhang Y, Samei E. A method for characterizing and matching CT image quality across CT scanners from different manufacturers. *Medical Physics* 44(11): 5705-5717, 2017.
- J227. Järvinen H, Vassileva J, Samei E, Wallace A, Vano E, Rehani M. Patient dose monitoring and the use of diagnostic reference levels for the optimization of protection in medical imaging: current status and challenges worldwide. *Journal of Medical Imaging* 4 (3), 031214, 2017
- J228. Samei E, Hoeschen C. Visions of safety: Perspectives on radiation exposure and risk in medical imaging (Special Section Guest Editorial). *Journal of Medical Imaging* 4(3), 031201. 2017.
- J229. Ria F, Bergantin A, Vai A, Bonfanti P, Martinotti AS, Redaelli I, Invernizzi M, Pedrinelli G, Bernini G, Papa S, Samei E. Awareness of medical radiation exposure among patients: A patient survey as a first step for effective communication of ionizing radiation risks. *Physica Medica* 43, 57-62, 2017.
- J230. Abadi E, Sahbaee P, Samei E. Effect of iodine-based contrast material on radiation dose at CT. *Radiology* 285 (3), 1053-1054, 2017.
- J231. Samei E, Robins M, Chen B, Agasthya G. Estimability index for volume quantification of homogeneous spherical lesions in computed tomography. *Journal of Medical Imaging* 5 (3), 031404, 2017.
- J232. Smith TB, Solomon J, Samei E. Estimating detectability index in vivo: development and validation of an automated methodology. *Journal of Medical Imaging* 5 (3), 031403, 2017.
- J233. Jaffe TA, Tian X, Bashir MR, Marin D, Patel BN, Ho LM, Samei E. Clinically acceptable optimized dose reduction in computed tomographic imaging of necrotizing pancreatitis using a noise addition software tool. *Journal of Computer Assisted Tomography*, 2017.



- J234. Richards, Sturgeon GM, Ramirez-Giraldo JC, Rubin GD, Kowek LH, Segars WP, Samei E. Quantification of uncertainty in the assessment of coronary plaque in CCTA through a dynamic cardiac phantom and 3D-printed plaque model. *Journal of Medical Imaging* 5 (1), 013501, 2018.
- J235. Samei E, Ikejimba LC, Harrawood BP, Rong J, Cunningham IA, Flynn MJ. Report of AAPM Task Group 162: Software for planar image quality metrology. *Medical Physics*, 45(2), 2018.
- J236. Abadi E, Segars WP, Sturgeon GM, Roos JE, Ravin CE, Samei E. Modeling lung architecture in the XCAT series of phantoms: physiologically based airways, arteries and veins. *IEEE Transactions on Medical Imaging*, 37(3): 693-702, 2018.
- J237. Segars WP, Tsui BMW, Cai J, Yin FF, Fung GSK, Samei E. Application of the 4-D XCAT phantoms in biomedical imaging and beyond. *IEEE Transactions on Medical Imaging* 37(3), 680-692, 2018.
- J238. Segars WP, Veress AI, Sturgeon GM, Samei E. Incorporation of the Living Heart Model into the 4D XCAT Phantom for Cardiac Imaging Research *IEEE Transactions on Medical Imaging* 37(3), 680-692, 2018.
- J239. Euler A, Solomon J, Marin D, Nelson RC, Samei E. A third-generation adaptive statistical iterative reconstruction technique: phantom study of image noise, spatial resolution, lesion Detectability, and dose reduction potential. *American Journal of Roentgenology*, 1-8, 2018.
- J240. Ba A, Abbey C, Baek J, Han M, Bouwman RW, Balta C, Brankov J, Massanes F, Gifford HC, Hernandez-Giron I, Veldkamp WJH, Petrov D, Marshall N, Samuelson FW, Zeng R, Solomon JB, Samei E, Timberg P, Förnvik H, Reiser I, Yu L, Gong H, Bochud FO. Inter-laboratory comparison of Channelized Hotelling Observer computation. *Medical Physics* (online release 4/28/18, in print 2018).
- J241. Samei E, Jarvinen H, Kortensniemi M, Simantirakis G, Goh C, Wallace A, Vano E, Bejan A, Rehani MM, Vassileva J. Medical imaging dose optimization from ground up: expert opinion of an international summit. *Journal of Radiological Protection* 38(3): 967-989, 2018.
- J242. Samei E, Grist TM. Why physics in medicine? *Journal of American College of Radiology* (online release 5/18/18, in print 2018).
- J243. Jaffe TA, Wilson J, Zhang Y, Allen BC, Choudhury KR, Samei E. Automated early identification of an excessive air-in-oil x-ray tube artifact that mimics acute cerebral infarct. *Journal of Computer Assisted Tomography* (online release 7/14/18, in print 2018).

### **Refereed full-length proceedings papers:**

- P1. Samei E, Flynn MJ, Beute GH, Peterson E. Comparison of observer performance of real and simulated nodules in chest radiography. *Proc. SPIE Medical Imaging* 2712:60-70, 1996.
- P2. Badano A, Flynn MJ, Samei E, Kearfott KJ. Performance of low voltage phosphors in emissive flat panel displays for radiologic applications. *Proc. SPIE Medical Imaging* 2707:312-321, 1996.
- P3. Samei E, Flynn MJ. Physical measures of image quality in photostimulable phosphor radiographic systems. *Proc. SPIE Medical Imaging* 3032: 328-338, 1997.
- P4. Samei E, Flynn MJ, Eyler WR, Peterson E. The effect of local background anatomical patterns on the detection of subtle lung nodules in chest radiographs. *Proc. SPIE Medical Imaging* 3040: 44-54, 1998.

- P5. Reimann DA, Jacobs HA, Samei E. Use Wiener filtering to measurement of the two-dimensional modulation transfer function. *Proc. SPIE Medical Imaging 3977*: 670-680, 2000.
- P6. Samei E. Acceptance testing of PACS (*invited article*). *SCAR University Course Syllabus*, BI Reiner, E Siegel (eds). Society for Computer Applications in Radiology, Great Falls, VA, 2000, pp. 91-96.
- P7. Samei E. Objective performance evaluation of medical image displays: a preliminary report of the AAPM TG18. *Proc. SPIE Medical Imaging 4295*: 159-163, 2001.
- P8. Flynn MJ, Couwenhoven M, Eyler WR, Whiting BR, Samei E, Foss DH, Slone R, Marom E. Optimal image processing for digital radiography. *Proc. SPIE Medical Imaging 4319*: 298-305, 2001.
- P9. Samei E, Flynn MJ. A method for in-field evaluation of the modulation transfer function of electronic display devices. *Proc. SPIE Medical Imaging 4319*: 599-607, 2001.
- P10. Samei E, Flynn MJ, Chotas HG, Dobbins III JT. DQE of direct and indirect digital radiographic systems. *Proc. SPIE Medical Imaging 4320*: 189-197, 2001. This paper received an Honorable Mention at the SPIE Medical Imaging Symposium.
- P11. Samei E. Acceptance testing of PACS (*invited article*). *SCAR University Course Syllabus*, BI Reiner, E Siegel (eds). Society for Computer Applications in Radiology, Great Falls, VA, 2001, pp. 109-114.
- P12. Samei E. Assessment of display performance for medical imaging (*invited article*). *SCAR University Course Syllabus*, BI Reiner, E Siegel (eds). Society for Computer Applications in Radiology, Great Falls, VA, 2002, pp. 71-82.
- P13. Vargas-Voracek R, Tourassi GD, Samei E, Floyd Jr CE. Fast search and localization algorithm based on human visual perception modeling: an application for fast localization of structures in mammograms. *Proc. SPIE Medical Imaging 5034*: 270-279, 2003.
- P14. Saunders RS, Samei E, Hoeschen C. Impact of resolution and noise characteristics of digital radiographic systems on the detectability of lung nodules. *Proc. SPIE Medical Imaging 5030*: 16-25, 2003.
- P15. McKinley RL, Tornai M, Samei E, Bradshaw ML. Optimizing beam quality for x-ray computed mamotomography. *Proc. SPIE Medical Imaging 5030*: 575-584, 2003.
- P16. Samei E, Shepard J, Fetterly KA, Roehrig H, Kim HJ, Flynn MJ. Clinical verification of TG18 methodology for display quality evaluation. *Proc. SPIE Medical Imaging 5029*: 484-492, 2003.
- P17. Samei E, Catarious DM, Baydush AH, Floyd Jr CE, Vargas-Voracek R. Bi-place correlation imaging for improved detection of lung nodules. *Proc. SPIE Medical Imaging 5030*: 284-297, 2003.
- P18. Bradshaw ML, McKinley RL, Tornai M, Samei E. Evaluation of x-ray design parameters for a dedicated x-ray mamotomograph given various breast compositions and lesion sizes. *Proc. IEEE Nuclear Science Symposium – Medical Imaging Conference (NSS MIC)*, 2003.
- P19. McKinley RL, Tornai M, Samei E, Bradshaw ML. Simulation study of a quasi-monochromatic beam for x-ray computed mamotomography. *Proc. IEEE Nuclear Science Symposium – Medical Imaging Conference (NSS MIC)*, 2003.

- P20. Samei E, Maidmant A. Display performance evaluation according to TG18 (*invited article*). *SCAR University Course Syllabus*, BI Reiner, E Siegel (eds). Society for Computer Applications in Radiology, Great Falls, VA 2003, pp. 64-70.
- P21. Saunders RS, Samei E. Characterization of breast masses for simulation purposes. *Proc. SPIE Medical Imaging* 5372: 242-250, 2004.
- P22. McKinley RL, Samei E, Tornai M, Floyd Jr CE. Measurements of a quasi-monochromatic beam for x-ray computed mammotomography. *Proc. SPIE Medical Imaging* 5368: 311-319, 2004.
- P23. Wright SL, Samei E. Liquid crystal displays for medical imaging: a discussion of color versus monochrome. *Proc. SPIE Medical Imaging* 5367: 444-455, 2004.
- P24. Samei E, Wright SL. The effect of viewing angle response on DICOM compliance of LCD displays. *Proc. SPIE Medical Imaging* 5371: 170-177, 2004.
- P25. Poolla A, Suri JS, Samei E, Pisano ED, Minyard T, Woodward R, Schleupen KR, Wright S, Coley S, Janer R. MTF and NPS study of high-resolution LCDs and CRTs for mammography. Society for Information Display (SID) International Symposium, Boston, MA, May 2005, *SID 05 Digest*, Volume XXXVI: 196-199, 2005.
- P26. Poolla A, Suri JS, Sun Y, Guo Y, Samei E, Pisano ED, Woodward R, Minyard T, Schleupen KR, Wright S, Coley S, Janer R. A study of CRT vs. LCD displays for breast lesion detection in full field digital mammography and ultrasound (FFDMUS) data sets via image-enhancement algorithms. Society for Information Display (SID) International Symposium, Boston, MA, May 2005, *SID 05 Digest*, Volume XXXVI: 368-371, 2005.
- P27. Saunders RS, Samei E, Johnson J, Baker JA. Effect of display resolution on the detection of mammographic lesions, SPIE International Symposium on Medical Imaging, San Diego, CA, February 2005, *Proc. SPIE Medical Imaging* 5749: 243-250, 2005.
- P28. Fetterly KA, Samei E. Photographic measurement of the angular response performance of clinical liquid crystal displays, SPIE International Symposium on Medical Imaging, San Diego, CA, February 2005, *Proc. SPIE Medical Imaging* 5744: 263-270, 2005.
- P29. Boyce S, Chawla A, Samei E. Physical Evaluation of a high frame rate, extended dynamic range flat panel imager for real-time cone beam computed tomography applications, SPIE International Symposium on Medical Imaging, San Diego, CA, February 2005, *Proc. SPIE Medical Imaging* 5745: 591-599, 2005.
- P30. Jesneck JL, Saunders RS, Samei E, Xia Q, Lo JY. Evaluation of a prototype amorphous selenium-based full field digital mammography detector, SPIE International Symposium on Medical Imaging, San Diego, CA, February 2005, *Proc. SPIE Medical Imaging* 5745: 478-485, 2005.
- P31. Tornai MP, McKinley RL, Brzymialkiewicz, C.N, Madhav P, Cutler SJ, Crotty DJ, Bowsher JE, Samei E, Floyd Jr CE. Design and development of a fully-3D dedicated x-ray computed mammotomography (CmT) system, SPIE International Symposium on Medical Imaging, San Diego, CA, February 2005, *Proc. SPIE Medical Imaging* 5745: 189-197, 2005.
- P32. Saunders RS, Samei E, Lo JY, Jesneck JL. The DQE performance of a selenium-based full-field digital mammography system. *Proc. 7<sup>th</sup> International Workshop on Digital Mammography*, UNC Biomedical Research Imaging Center, Chapel Hill, NC, 2005, pp. 3-10.

- P33. Lo JY, Samei E, Jesneck JL, Dobbins III JT, Baker JA, Singh S, Saunders RS, Floyd Jr CE. Radiographic technique optimization for an amorphous selenium FFDM system: phantom measurements and initial patient results. *Proc. 7<sup>th</sup> International Workshop on Digital Mammography*, UNC Biomedical Research Imaging Center, Chapel Hill, NC, 2005, pp. 31-36.
- P34. Tornai MP, McKinley RL, Samei E, Floyd CE, Bradshaw ML. Effects of uncompressed breast composition and thickness on image quality using a quasi-monochromatic beam for computed mammotomography. *Proc. 7<sup>th</sup> International Workshop on Digital Mammography*, UNC Biomedical Research Imaging Center, Chapel Hill, NC, 2005, pp. 46-55.
- P35. McKinley RL, Tornai MP, Archer CN, Samei E, Bowsher JE. Quasi-monochromatic beam measurements for dedicated cone-beam mammotomography of an uncompressed breast. *Proc. 7<sup>th</sup> International Workshop on Digital Mammography*, UNC Biomedical Research Imaging Center, Chapel Hill, NC, 2005, pp. 56-63.
- P36. Saunders RS, Samei E, Baker JA. Simulation of the appearance of breast masses for digital mammography systems. *Proc. 7<sup>th</sup> International Workshop on Digital Mammography*, UNC Biomedical Research Imaging Center, Chapel Hill, NC, 2005, pp. 162-169.
- P37. Boyce S, Samei E. Geometry optimization considerations for digital mammography. *Proc. 7<sup>th</sup> International Workshop on Digital Mammography*, UNC Biomedical Research Imaging Center, Chapel Hill, NC, 2005, pp. 352-358.
- P38. Huda W, Ogden KM, Scalzetti EM, Lavallee RL, Samei E. X-ray tube voltage (kV) and image quality in adult and pediatric CT. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6142: 900-910, 2006.
- P39. Madhav P, McKinley RL, Samei E, Bowsher JE, Tornai MP. A novel method to characterize the MTF in 3D for computed mammotomography. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6142: 697-706, 2006.
- P40. Timberg P, Ruschin M, Båth M, Hemdal B, Andersson I, Mattsson S, Chakraborty D, Saunders R, Samei E, Tingberg A. Potential for lower absorbed dose in digital mammography: A JAFROC experiment using clinical hybrid images with simulated dose reduction. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6146: 341-350, 2006.
- P41. Majdi Nasab N, Samei E, Dobbins JT. Biplane correlation imaging for lung nodule detection: initial human subject results. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6144: 646-653, 2006.
- P42. Majdi Nasab N, Samei E. The impact of angular separation on the performance of biplane correlation imaging for lung nodule detection. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6142: 445-453, 2006.
- P43. Chawla AS, Pollard B, Samei E, Hashimoto N. A method for reduction of eye fatigue by optimizing the ambient light conditions in medical imaging reading rooms. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6145: 10-21, 2006.
- P44. Cleland EW, Samei E. Performance evaluation of a commercial system for quantitative measurement of display resolution and noise. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6141: 256-262, 2006.

- P45. Chawla AS, Saunders RS, Samei E. Effect of dose reduction on the detection of mammographic lesions based on mathematical observer models. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6146: 141-152, 2006.
- P46. Saunders RS, Samei E. A Monte Carlo investigation on the impact of scattered radiation on image resolution and noise. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2006, *Proc. SPIE Medical Imaging* 6142: 1121-1127, 2006.
- P47. Chawla A, Samei E. Geometrical repeatability and motion blur analysis of a new multi-projection x-ray imaging system. *Proc. IEEE Nuclear Science Symposium – Medical Imaging Conference (NSS MIC)*, M14-234: 3170-3173, 2006.
- P48. Chen Y, Lo JY, Ranger NT, Samei E, Dobbins III JT. Methodology of NEQ (f) analysis for optimization and comparison of digital breast tomosynthesis reconstruction algorithms. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6510: 65101I1-9, 2007.
- P49. Chawla AS, Pollard B, Hashimoto N, Samei E. Effect of increased ambient lighting on detectability - a psychophysical study. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6516: 6516171-12, 2007.
- P50. Peppler WW, Hong W, Whiting BR, Flynn MJ, Samei E. Validation of software for QC assessment of MTF and NPS. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6510: 65104F1-7, 2007.
- P51. McKinley RL, Tornai MP, Floyd CE, Samei E. Contrast-detail comparison of computed mamotomography and digital mammography. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6510: 65101D1-10, 2007.
- P52. Johnson JP, Lo JY, Mertelmeier T, Nafziger JS, Timberg P, Samei E. Visual image quality metrics for breast tomosynthesis. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6515: 65150P1-10, 2007.
- P53. Chawla AS, Samei E. Mathematical model approaches towards combining information from multiple image projections of the same patient. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6510: 65101K1-11, 2007.
- P54. Saunders RS, Samei E, Majdi-Nasab N, Lo JY. Initial human subject results for breast bi-plane correlation imaging technique. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6514: 6514231-7, 2007.
- P55. Li X, Samei E, Yoshizumi TT, Nguyen G, Daigle L, Colsher JG, Frush DP. Experimental benchmarking of a Monte Carlo dose simulation code for pediatric CT. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2007, *Proc. SPIE Medical Imaging* 6510: 65102A1-10, 2007. This paper received a Cum Laude at the SPIE Medical Imaging Symposium.
- P56. Chawla A, Boyce S, Samei E. Design of a new multi-projection imaging system for chest radiography. *Proc. IEEE Nuclear Science Symposium – Medical Imaging Conference (NSS MIC)*, M13-205: 2996-2999, 2007.

- P57. Singh S, Tourassi GD, Chawla AS, Saunders RS, Samei E, Lo JY. Computer aided detection of breast masses in tomosynthesis reconstructed volumes using information-theoretic principles. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6915: 6915051-8, 2008.
- P58. Saunders RS, Samei E, Badea C, Yuan H, Ghaghada K, Qi Y, Hedlund LW, Mukundan S. Optimization of dual energy contrast enhanced breast tomosynthesis for improved mammographic lesion detection and diagnosis. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6913: 69130Y1-11, 2008.
- P59. Li X, Samei E, Jones RP, Colsher JG, Frush DP. Towards assessing the diagnostic influence of dose reduction in pediatric CT: a study based of simulated lung nodules. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6913: 69131L1-12, 2008.
- P60. Chawla AS, Samei E, Saunders RS, Jo JY. Optimized acquisition scheme for multi-projection correlation imaging of breast cancer. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6915: 6915281-8, 2008.
- P61. Badea C, Samei E, Ghaghada K, Saunders RS, Yuan H, Qi Y, Hedlund LW, Johnson GA, Mukundan S. Utility of a prototype liposomal contrast agent for x-ray imaging of breast cancer: a proof of concept micro-CT study in small animals. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6913: 6913031-9, 2008.
- P62. Castella C, Kinkel K, Eckstein MP, Abbey CK, Verdun FR, Saunders RS, Samei E, Bochud FO. Mass detection on mammograms: signal variations and performance changes for human and model observers. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6917: 69170k1-11, 2008.
- P63. Huda W, Ogden KM, Scalzetti EM, Lavallee RL, Roskopf ML, Groat GE, Samei E. Reconstruction filters and contrast detail curves in CT. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6917: 6917101-12, 2008.
- P64. Huda W, Ogden KM, Scalzetti EM, Lavallee RL, Roskopf ML, Samei E. Inter-reader variability in Alternate Forced Choice studies. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6917: 6917111-11, 2008.
- P65. Pollard B, Chawla AS, Samei E. The effect of increased ambient lighting on the detection accuracy in uniform and anatomical backgrounds. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6919: 69190R1-12, 2008.
- P66. Shafer CM, Samei E, Saunders RS, Zerhouni M, Lo JY. Toward quantification of breast tomosynthesis imaging. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2008, *Proc. SPIE Medical Imaging* 6913: 69134N1-8, 2008.
- P67. Samei E. Acquisition of digital chest images for pneumoconiosis classification: methods, procedures, and hardware. *Proc. NIOSH/ILO Scientific Workshop on Pneumoconioses*, Washington, DC, March 2008 (<http://www.cdc.gov/niosh/docs/2008-139/default.html>).
- P68. Samei E, Ravin CE. Assuring image quality for classification of digital chest radiographs. *Proc. NIOSH/ILO Scientific Workshop on Pneumoconioses*, Washington, DC, March 2008 (<http://www.cdc.gov/niosh/docs/2008-139/default.html>).

- P69. Chawla AS, Samei E, Lo JY, Mertelmeier T. Multi-projection correlation imaging as a new diagnostic tool for improved breast cancer detection. *Proc. International Workshop on Digital Mammography*, Tucson, AZ, Springer-Verlag, Berlin, 2008, pp. 635-642.
- P70. Pollard BJ, Chawla AS, Hashimoto N, Samei E. Breast mass detection under increased ambient lighting. *Proc. International Workshop on Digital Mammography*, Tucson, AZ, Springer-Verlag, Berlin, 2008, pp. 243-248.
- P71. Shafer C, Samei E, Mertelmeier T, Saunders RS, Zerhouni M, Lo JY. Assessment of low energies and slice depth in the quantification of breast tomosynthesis. *Proc. International Workshop on Digital Mammography*, Tucson, AZ, Springer-Verlag, Berlin, 2008, pp. 530-536.
- P72. Tourassi GD, Sharma AC, Singh S, Saunders RS, Lo JY, Samei E, Harrawood BP. Knowledge transfer across breast cancer screening modalities: A pilot study using an information-theoretic CAdE system for mass detection. *Proc. International Workshop on Digital Mammography*, Tucson, AZ, Springer-Verlag, Berlin, 2008, pp. 292-298.
- P73. Elojeimy S, Huda W, Ogden KM, Owen R, Samei E, Rumboldt Z. Contrast detail curves in head CT examinations. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7263: 726313, 2009.
- P74. Elojeimy S, Huda W, Ogden KM, Owen R, Samei E, Rumboldt Z. The effect of dose reductions on lesion detection in head CT. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7258: 72584Q, 2009.
- P75. Li X, Samei E, Segars WP, Sturgeon GM, Colsher JG, Frush DP. Patient-specific dose estimation for pediatric abdomen-pelvis CT. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7258: 725804, 2009.
- P76. Ranger NT, Mackenzie A, Honey ID, Dobbins JT III, Ravin CE, Samei E. Extension of DQE to include scatter, grid, magnification, and focal spot blur: a new experimental technique and metric. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7258: 72581A, 2009.
- P77. Chawla AS, Samei E, Lo JY. Optimized lesion detection in digital breast tomosynthesis. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7258: 72580P, 2009.
- P78. Segars WP, Sturgeon G, Li X, Cheng L, Ceritoglu C, Ratnanather JT, Miller MI, Tsuih BMW, Frush D, Samei E. Patient specific computerized phantoms to estimate dose in pediatric CT. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7258: 72580H, 2009.
- P79. Ertan F, Mackenzie A, Urbanczyk HJ, Ranger NT, Samei E. Use of effective detective quantum efficiency to optimise radiographic exposures for chest imaging with computed radiography. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2009, *Proc. SPIE Medical Imaging* 7258: 72585O, 2009.

- P80. Samei E, Li X, Chen B, Reiman R. The myth of mean dose as a surrogate for radiation risk? SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7622: 76220T, 2010.
- P81. Chen B, Richard S, Colsher J, Amuaro M, Samei E. Quantitative CT: technique dependency of volume assessment for pulmonary nodules. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7622: 76222W, 2010.
- P82. Richard S, Chen B, Samei E. Extending the detectability index to quantitative imaging performance: applications in tomosynthesis and CT. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7622: 76220Z, 2010.
- P83. Thompson J, Chen B, Richard S, Bowsher J, Samei E. Wide-angle breast tomosynthesis: initial comparative evaluation. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7622: 76220C, 2010.
- P84. Jacobs J, Marshall N, Bouwman R, van Engen R, Young K, Bosmans H, Thijssen M, Samei E. Towards an international consensus strategy for periodic quality control of digital breast tomosynthesis systems. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7622: 76220G, 2010.
- P85. Li X, Samei E, Segars WP, Sturgeon GM, Colsher JG, Frush DP. Patient-specific dose and risk estimation in pediatric chest CT: a study in 28 patients. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7622: 76221J, 2010.
- P86. Lin Y, Wang X, Sehnert WJ, Foos DH, Barski L, Samei E. Quantification of radiographic image quality based on patient anatomical contrast-to-noise ratio – a preliminary study with chest images. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2010, *Proc. SPIE Medical Imaging* 7627: 76271F, 2010.
- P87. Chen B, Samei E, Barnhart H, Marin D, Colsher J, Nelson R. Precision of Hepatic CT Image Quantifications: A Comparative Study of Conventional (FBP) and Iterative Reconstruction Algorithms (ASiR and MBiR). SPIE International Symposium on Medical Imaging, Orlando, FL, February 2011, *Proc. SPIE Medical Imaging* 7961: 79610L, 2011.
- P88. Richard S, Li X, Yadava G, Samei E. Predictive models for observer performance in CT: Applications in protocol optimization. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2011, *Proc. SPIE Medical Imaging* 7961: 79610H, 2011.
- P89. Richard S, Samei E. 3D task-based performance assessment metrics for optimization of performance and dose in breast tomosynthesis. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2011, *Proc. SPIE Medical Imaging* 7961: 79611A, 2011.
- P90. Li X, Samei E, Segars WP, Paulson EK, Frush DP. The feasibility of universal DLP-to-risk conversion coefficients for body CT protocols. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2011, *Proc. SPIE Medical Imaging* 7961: 79612A, 2011.
- P91. Chen B, Marin D, Samei E. A new iodinated liver phantom for the quantitative evaluation of advanced CT acquisition and reconstruction techniques. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2011, *Proc. SPIE Medical Imaging* 7961: 796161, 2011.



- P92. Lin Y, Samei E, Wang X, Sehnert JW, Dobbins JT III, Foos DH, Barski LL. Assessment of image quality from patient anatomical images. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2011, *Proc. SPIE Medical Imaging* 7961: 796160, 2011.
- P93. Guo W, Li Q, Boyce SJ, McAdams HP, Shiraishi J, Doi K, Samei E. Computerized scheme for lung nodule detection in multi-projection chest radiography, SPIE International Symposium on Medical Imaging, San Diego, CA, February 2011, *Proc. SPIE Medical Imaging* 8315: 83150T, 2012.
- P94. Li X, Segars WP, Frush DP, Samei E. Estimation of patient size-related, scanner-independent dose and risk conversion coefficients for abdominopelvic CT: a study based on 92 patients. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 83131R, 2012.
- P95. Chen B, Richard S, Samei E. Relevance of MTF and NPS in quantitative CT: towards developing a predictable model of quantitative performance. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 83132O, 2012.
- P96. Kiarashi N, Lin Y, Segars WP, Ghathe SV, Ikejimba L, Lo JY, Nolte LW, Samei E. Development of a dynamic 4D anthropomorphic breast phantom for contrast-based breast imaging. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 83130C, 2012.
- P97. Lin Y, Ghathe SV, Lo JY, Samei E. 3D Biopsy for tomosynthesis: simulation of prior information reconstruction for dose and artifact reduction. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 83131Y, 2012.
- P98. Chen B, Richard S, Christianson O, Zhou X, Samei E. CT Performance as a variable function of resolution, noise, and task property for iterative reconstructions. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 83131K, 2012.
- P99. Ikejimba L, Kiarashi N, Lin Y, Chen B, Ghathe SV, Zerhouni M, Lo JY, Samei E. Development of a task-based strategy for optimized contrast enhanced breast imaging: Analysis of six imaging techniques for mammography and tomosynthesis. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 831309, 2012.
- P100. Bond J, Frush J, Williams C, Ward DJ, Ratnanather JT, Miller MI, Samei E, Segars WP. Series of adult phantoms for imaging research and dosimetry. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2012, *Proc. SPIE Medical Imaging* 8313: 83130P, 2012.
- P101. Kiarashi N, Lin Y, Segars WP, Ghathe SV, Ikejimba L, Chen B, Lo JY, Nolte LW, Samei E. Application of a dynamic 4D anthropomorphic breast phantom in system optimization: dual-energy or temporal subtraction? Proceedings of the International Workshop on Breast Imaging, Philadelphia, PA, July 2012.
- P102. Li X, Segars WP, Samei E. Organ dose in chest CT: effect of modulation scheme on estimation accuracy. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 86682A, 2013.
- P103. Zhang Y, Li X, Segars WP, Samei E. Comparative dosimetry of radiography, tomosynthesis, and CT for chest imaging across 59 adult patients. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 866844, 2013.

- P104. Solomon J, Samei E. Are uniform phantoms sufficient to characterize the performance of iterative reconstruction in CT? SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 86684M, 2013.
- P105. Kiarashi N, Sturgeon GM, Nolte LW, Lo JY, Dobbins III JT, Segars WP, Samei E. Development of matched virtual and physical breast phantoms based on patient data. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 866805, 2013.
- P106. Tian X, Yin Z, DeMann B, Samei E. Projection-based dose metric: accuracy testing and applications for CT design. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 866829, 2013.
- P107. Kapadia AJ, Lakshmanan MN, Krishnamurthy K, Sahbaee P, Chawla A, Wolter S, Maccabe K, Brady D, Samei E. Monte-Carlo simulations of a coded-aperture x-ray scatter imaging system for molecular imaging. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 86680B, 2013.
- P108. Chen B, Samei E. Development of a phantom-based methodology for the assessment of quantification performance in CT. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 86681E, 2013.
- P109. Bond J, Frush D, Samei E, Segars WP. Simulation of anatomical texture in voxelized XCAT phantoms. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2013, *Proc. SPIE Medical Imaging* 8668: 86680N, 2013.
- P110. Lin Y, Choudhury KR, McAdams HP, Foos DH, Samei E. Validation of an image-based technique to assess the perceptual quality of clinical chest radiographs with an observer study. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033, 2014.
- P111. Tian X, Wilson J, Frush D, Samei E. Prospective optimization of CT under tube current modulation: II. Image quality. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033, 2014.
- P112. Tian X, Li X, Segars WP, Frush D, Samei E. Prospective optimization of CT under tube current modulation: II. Organ dose. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033, 2014.
- P113. Chen B, Wilson J, Samei E. A refined methodology for modeling volume quantification performance in CT. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033: 903325, 2014.
- P114. Lakshmanan MN, Kapadia AJ, Harrawood BP, Brady D, Samei E. X-ray coherent scatter imaging for surgical margin detection: a Monte Carlo study. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033: 903361, 2014.
- P115. Segars WP, Veress AI, Wells JR, Sturgeon JM, Kiarashi N, Lo JY, Samei E, Dobbins III JT. Population of 100 realistic, patient-based computerized breast phantoms for multi-modality imaging research. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033, 2014.

- P116. Norris H, Zhang Y, Frush J, Sturgeon GM, Minhas A, Tward DJ, Ratnanather JT, Miller MI, Frush D, Samei E, Segars WP. The development of a population of 4D pediatric XCAT phantoms for CT imaging research and optimization. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033: 90331V, 2014.
- P117. Solomon J, Bochud F, Samei E. Design of anthropomorphic textured phantoms for CT performance evaluation. SPIE International Symposium on Medical Imaging, San Diego, CA, February 2014, *Proc. SPIE Medical Imaging* 9033, 2014.
- P118. Kiarashi N, Nolte LW, Lo JY, Segars WP, Ghate SV, Samei E. The impact of breast structure on lesion detection in breast tomosynthesis. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9412, 2015.
- P119. Sahbaee P, Lin Y, Segars WP, Marin D, Nelson R, Samei E. Determination of contrast media administration to achieve a targeted contrast enhancement in CT. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9412, 2015.
- P120. Tian X, Segars WP, Dixon RL, Samei E. Convolution-based estimation of organ dose in tube current modulated CT using patient-specific models. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9412, 2015. This paper received a Cum Laude at the SPIE Medical Imaging Symposium.
- P121. Ikejimba L, Chen Y, Oberhofer N, Kiarashi N, Lo JY, Samei E. A quantitative metrology for performance characterization of breast tomosynthesis systems based on an anthropomorphic phantom. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9412, 2015. This paper received best paper award for the Physics of Medical Imaging Conference, and the Second Place for the SPIE Medical Imaging Symposium.
- P122. Lakshmanan MN, Greenberg JA, Samei E, Kapadia AJ. Experimental implementation of coded aperture coherent scatter spectral imaging of cancerous and healthy breast tissue samples. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9412, 2015.
- P123. Solomon J, Mileto A, Giraldo JCR, Samei E. A multireader diagnostic performance study of low-contrast detectability on a third-generation dual-source CT scanner: filtered back projection versus advanced modeled iterative reconstruction. SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9416, 2015.
- P124. Solomon J, Samei E. What observer models best reflect low-contrast detectability in CT? SPIE International Symposium on Medical Imaging, Orlando, FL, February 2015, *Proc. SPIE Medical Imaging* 9416, 2015.
- P125. Solomon J, Ba A, Diao A, Lo JY, Bier E, Bochud F, Gehm M, Samei E. Design, fabrication, and implementation of voxel-based 3D printed textured phantoms for task-based image quality assessment in CT. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P126. Lakshmanan MN, Greenberg JA, Samei E, Kapadia AJ. Coded aperture coherent scatter imaging for breast cancer detection: a Monte Carlo evaluation. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P127. Fu W, Tian X, Segars WP, Goodsitt M, Kazerooni E, Samei E. Evaluation of the dose reduction potential using a breast positioning technique for organ-based tube current modulated CT examinations. SPIE

International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.

- P128. Sahbaee P, Abadi E, Agasthya G, Zhang Y, Becchetti, M, SegarsWP, Samei E. A technique for multi-dimensional optimization of radiation dose, contrast dose, and image quality in CT imaging. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P129. Sahbaee P, Robins M, Solomon J, Samei E. Development of a Hausdorff distance based 3D quantification technique to evaluate the CT imaging system impact on depiction of lesion morphology. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P130. Kapadia AJ, Morris RE, Lakshmanan MN, Albanese K, Samei E, Greenberg JA. Coded aperture x-ray diffraction imaging for lung cancer detection. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P131. Fu W, Tian X, Sahbaee P, Zhang Y, Segars WP, Samei E. Estimation of organ dose under tube current modulated CT for 58 patients across diverse protocols. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P132. Zheng Y, Solomon J, Marin D, Samei E. Synthesis of realistic lung nodule texture using a clustered lumpy background. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P133. Ikejimba L, Glick SJ, Samei E, Lo JY. Comparison of model and human observer performance in FFDM, DBT, and synthetic mammography. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P134. Sanders J, Tian X, Segars WP, Boone JM, Samei E. An automated technique for estimating patient-specific regional imparted energy in TCM CT exams. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P135. Becchetti M, Justin Solomon J, Segars WP, Samei E. Synthesized interstitial lung texture for use in anthropomorphic computational phantoms. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P136. Sikaria D, Musinsky S, Sturgeon GM, Solomon J, Diao A, Gehm ME, Samei E, Glick SJ, Lo JY. Second generation anthropomorphic physical phantom for mammography and DBT: Incorporating voxelized 3D printing and inkjet printing of iodinated lesion inserts. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P137. Robins M, Solomon J, Kalpathy-Cramer J, Sahbaee P, Samei E. Development and comparison of projection and image space 3D nodule insertion techniques. SPIE International Symposium on Medical Imaging, San Diego, CA, February-March 2016, *Proc. SPIE Medical Imaging* 9783, 2016.
- P138. Ria F, Wilson JM, Zhang Y, Samei E. Adaptability index: quantifying CT tube current modulation performance from dose and quality informatics. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101322N, 2017.

- P139. Zhao A, Santana M, Samei E, Lo JY. Comparison of effects of dose on image quality in digital breast tomosynthesis across multiple vendors. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101324E, 2017.
- P140. Smith TB, Solomon JB, Samei E. In vivo detectability index: development and validation of an automated methodology. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 1013255, 2017.
- P141. Sturgeon GM, Richards TW, Samei E, Segars WP. Improved virtual cardiac phantom with variable diastolic filling rates and coronary artery velocities. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101325D, 2017.
- P142. Zhao C, Solomon JB, Sturgeon GM, Gehm ME, Catenacci M, Wiley BJ, Samei E, Lo JY. Third generation anthropomorphic physical phantom for mammography and DBT: Incorporating voxelized 3D printing and uniform chest wall QC region. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101321Y, 2017.
- P143. Solomon JB, Rubin GD, Smith TB, Harrawood B, Choudhury KR, Samei E. Development of local complexity metrics to quantify the effect of anatomical noise on detectability of lung nodules in chest CT imaging. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging*, 10136: 101360X, 2017.
- P144. Richards TW, Sturgeon GM, Ramirez-Giraldo JC, Rubin GD, Segars WP, Samei E. Quantification of the uncertainty in coronary CTA plaque measurements using dynamic cardiac phantom and 3D-printed plaque models. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101325E, 2017.
- P145. Abadi E, Sturgeon GM, Agasthya G, Harrawood B, Kapadia A, Segars WP, Samei E. Airways, vasculature, and interstitial tissue: anatomically-informed computational modeling of human lungs for virtual clinical trials. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101321Q, 2017.
- P146. Zheng Y, Solomon JB, Marin D, Samei E. Accuracy and variability of texture-based radiomics features of lung lesions across CT imaging conditions. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101325F, 2017.
- P147. Fu W, Sturgeon GM, Agasthya G, Segars WP, Samei E. Estimation of breast dose reduction potential for organ-based tube current modulated CT with wide dose reduction arc. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 1013246, 2017.
- P148. Hoyer J, Zhang Y, Agasthya G, Sturgeon GM, Segars EP, Samei E. An atlas-based organ dose estimator for tomosynthesis and radiography. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 1013204, 2017.
- P149. Robins M, Solomon J, Hoyer J, Smith TB, Ebner L, Samei E. Inter-algorithm tumor volumetry comparison of real and 3D simulated lesions in CT. SPIE International Symposium on Medical Imaging, Orlando, FA, February 2017, *Proc. SPIE Medical Imaging* 10132: 101321S, 2017.
- P150. Robins M, Solomon J, Hoyer J, Abadi E, Marin E, Samei E. How reliable are texture measurements? SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105733W, 2018.

- P151. Hoyer J, Solomon JB, Sauer T, Robins M, Samei E. Bias and variability in morphology features of lung lesions across CT imaging conditions. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105731Z, 2018.
- P152. Richards TW, Segars WP, Samei E. Variability of stenosis characterization: impact of coronary vessel motion in cardiac CT. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105733Z, 2018.
- P153. Abadi E, Segars WP, Harrawood B, Kapadia A, Samei E. Virtual clinical trial in action: textured XCAT phantoms and scanner-specific CT simulator to characterize noise across CT reconstruction algorithms. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 1057317, 2018.
- P154. Rossman A, Catenacci M, Li AM, Sauer TJ, Solomon JB, Gehm ME, Wiley BJ, Samei E, Lo JY. 3D printed anthropomorphic physical phantom for mammography and DBT with high contrast custom materials, lesions and uniform chest wall region. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105730C, 2018.
- P155. Sharma S, Kapadia A, Abadi E, Fu W, Segars WP, Samei E. A rapid GPU-based Monte-Carlo simulation tool for individualized dose estimations in CT. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105733V, 2018.
- P156. Abadi E, Harrawood B, Kapadia A, Segars WP, Samei E. Development of a fast, voxel-based, and scanner-specific CT simulator for image-quality-based virtual clinical trials. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105733U, 2018.
- P157. Robins M, Solomon JB, Samei E. Can a 3D task transfer function accurately represent the signal transfer properties of low-contrast lesions in non-linear CT systems? SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 1057343, 2018.
- P158. Sauer TJ, Abadi E, Solomon J, Hoyer JM, Samei E. Realistic lesion simulation: application of hyperelastic deformation to lesion-local environment in lung CT. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 105731U, 2018.
- P159. Fu W, Segars WP, Abadi E, Sharma S, Kapadia AJ, Samei E. From patient-informed to patient-specific organ dose estimation in clinical computed tomography. SPIE International Symposium on Medical Imaging, Houston, TX, February 2018, *Proc. SPIE Medical Imaging* 10573: 1057315, 2018.