

QIBA and QI/ Imaging Biomarkers in the Literature

Articles are divided into two categories:

1. Articles that are generated by Quantitative Imaging Biomarkers Alliance (QIBA) research teams
2. Articles that reference QIBA

If available, links are provided to PubMed or journal landing pages.

I. QIBA-GENERATED ARTICLES

2014

Petrick N, Kim HJG, Clunie D, Borradaile K, Ford R, Zeng R, Gavrielides M, McNitt-Gray M, Lu ZQJ, Fenimore C, Zhao B, Buckler AJ. **Comparison of 1D, 2D, and 3D Nodule Sizing Methods by Radiologists for Spherical and Complex Nodules on Thoracic CT Phantom Images.** *Academic Radiology*. 2014; 21(1):30-40.

doi: <http://dx.doi.org/10.1016/j.acra.2013.09.020>. [Link to Science Direct](#); [PubMed Citation](#)

2013

Boss MA, Chenevert TL, Waterton JC, Morris DM, Hossein R, Jackson A, DeSouza N, Collins DJ, van Beers BE, Garteiser P, Doblaz S, Russek SE, Keenan KE, Jackson EF, and Zahlmann G. **Temperature-controlled Isotropic Diffusion Phantom with Wide Range of Apparent Diffusion Coefficients for Multicenter Assessment of Scanner Repeatability and Reproducibility.** *{Not yet published.}*

Chen B, Barnhart H, Richard S, et al. **Volumetric Quantification of Lung Nodules in CT with Iterative Reconstruction (ASIR and MBIR).** *Med. Phys.* 2013; November; 40 (11): 111902. [Link to journal landing page](#)

Garra B, Hall TJ, Milkowski A, et al. **RSNA/QIBA: Shear Wave Speed as a Biomarker for Liver Fibrosis Staging.** 2013-IEEE International Ultrasonics Symposium (IUS), Joint IEEE-International Symposium on the Applications of Ferroelectrics (ISAF), and Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials (PFM), Joint IEEE-International Frequency Control Symposium (IFCS), and European Frequency and Time Forum (EFTF); 2013; July 21-25; Prague, Czech Republic. [Link to conference proceedings paper](#)

Gavrielides MA, Li Q, Zeng R, et al. **Minimum Detectable Change in Lung Nodule Volume in a Phantom CT Study.** *Academic Radiology*. 2013; 20 (11):1364-1370. doi: 10.1016/j.acra.2013.08.019. [PubMed Citation](#)

Kinahan P, Pierce L, Elston B, Nelson D, Clunie D. **PET/CT Digital Reference Object.** [PET/CT DRO User Guide](#) *Not yet published. Publication of design methodology and results is planned for the future.*

Sullivan DC, Schwartz LH, Zhao B. **The Imaging Viewpoint: How Imaging Affects Determination of Progression-Free Survival.** *Clin Cancer Res*. 2013; 19(10); 2621–8. doi: 10.1158/1078-0432.CCR-12-2936. [PubMed Citation](#)

Zacà D, Jovicich J, Nadar SR, Voyvodic JT, and Pillai JJ. **Cerebrovascular Reactivity Mapping in Patients with Low Grade Gliomas Undergoing Presurgical Sensorimotor Mapping with BOLD fMRI.** *J Magn Reson Imaging*. 2013; doi: 10.1002/jmri.24406. [Link to journal landing page](#)

2012

Voyvodic JT. **Reproducibility of Single-Subject fMRI Language Mapping with AMPLE Normalization.** *J Magn Reson Imaging*. 2012; September; 36(3): 569–580. doi: 10.1002/jmri.23686. [PubMed Citation](#)

2011

Buckler AJ, Bresolin L, Dunnick NR, Sullivan DC, Aerts HJ, Bendriem B, Bendtsen C, Boellaard R, Boone JM, Cole PE, Conklin JJ, Dorfman GS, Douglas PS, Eidsaunet W, Elsinger C, Frank RA, Gatsonis C, Giger ML, Gupta SN, Gustafson D, Hoekstra OS, Jackson EF, Karam L, Kelloff GJ, Kinahan PE, McLennan G, Miller CG, Mozley PD, Muller KE, Patt R, Raunig D, Rosen M, Rupani H, Schwartz LH, Siegel BA, Sorensen AG, Wahl RL, Waterton JC, Wolf W, Zahlmann G, Zimmerman B. **Quantitative Imaging Test Approval and Biomarker Qualification: Interrelated but Distinct Activities.** *Radiology*. 2011 Jun; 259(3):875-84. Epub 2011 Feb 15. [PubMed Citation](#)

Buckler AJ, Bresolin L, Dunnick NR, Sullivan DC; Group. **A Collaborative Enterprise for Multi-stakeholder Participation in the Advancement of Quantitative Imaging.** *Radiology*. 2011 Mar; 258(3):906-14. [PubMed Citation](#)

Buckler AJ, Boellaard R. **Standardization of Quantitative Imaging: The Time is Right, and 18F-FDG PET/CT is a Good Place to Start.** *J Nucl Med*. 2011 Feb; 52(2):171-2. Epub 2011 Jan 13. No abstract. [PubMed Citation](#)

McNitt-Gray MF, Kim HJ, Zhao B, Schwartz L, Clunie D, Borradaile K, Byrne K, Kaplan S, Barudin J, Sherman J, Slazak K, Petrick NP, Fenimore C, Lu J, Buckler, AJ, **Estimating the Minimum Detectable Change of Lung Lesions Using Patient Datasets Acquired Under a “No Change” Condition**, RSNA 2011.

Petrick NP, Kim HJ, Clunie D, Borradaile K, Ford R, Zeng R, Gavrielides MA, McNitt-Gray MF, Fenimore C, Lu J, Zhao B, Buckler AJ. **Evaluation of 1D, 2D and 3D Nodule Size Estimation by Radiologists for Spherical and Non-spherical Nodules Through CT Thoracic Phantom Imaging**, SPIE, February 2011.

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Buckler AJ, Mozley PD, Schwartz L, Petrick N, McNitt-Gray M, Fenimore C, O'Donnell K, Hayes W, Kim HJ, Clarke L, Sullivan D. **Volumetric CT in Lung Cancer: An Example for the Qualification of Imaging as a Biomarker.** *Acad Radiol*. 2010 Jan; 17(1):107-15. [PubMed Citation](#)

Buckler AJ, Mulshine JL, Gottlieb R, Zhao B, Mozley PD, Schwartz L. **The Use of Volumetric CT as an Imaging Biomarker in Lung Cancer.** *Acad Radiol*. 2010 Jan; 17(1):100-6. [PubMed Citation](#)

Buckler AJ, Schwartz LH, Petrick N, McNitt-Gray M, Zhao B, Fenimore C, Reeves AP, Mozley PD, Avila RS. **Data Sets for the Qualification of Volumetric CT as a Quantitative Imaging Biomarker in Lung Cancer.** *Opt Express*. 2010 Jul 5; 18(14):15267-82. (See also http://vjbo.osa.org/virtual_issue.cfm). [PubMed Citation](#)

Mozley PD, Schwartz LH, Bendtsen C, Zhao B, Petrick N, Buckler AJ. **Change in Lung Tumor Volume as a Biomarker of Treatment Response: A Critical Review of the Evidence.** *Ann Oncol*. 2010 Sep; 21(9):1751-5. Epub 2010 Mar 23. Review. Free article. [PubMed Citation](#)

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Paldino MJ, Barboriak DP. **Fundamentals of Quantitative Dynamic Contrast-Enhanced MR Imaging.** *Magn Reson Imaging Clin N Am*. 2009; 17:277–289. [PubMed Citation](#)

2008

Frank R; FDG-PET/CT Working Group. **Quantitative Imaging Biomarkers Alliance FDG-PET/CT Working Group Report.** *Mol Imaging Biol*. 2008 Nov-Dec; 10(6):305. [PubMed Citation](#)

II. ARTICLES THAT REFERENCE QIBA

2014

Krishnaraj A, Weinreb JC, Ellenbogen PH, Allen Jr B, Norbash A, Kazerooni EA. **The Future of Imaging Biomarkers in Radiologic Practice: Proceedings of the Thirteenth Annual ACR Forum.** *Journal of the American College of Radiology (JACR)*. 2014; 11(1):20-23. doi: <http://dx.doi.org/10.1016/j.jacr.2013.08.017> [PubMed Citation](#)

Litmanovich DE, Hartwick K, Silva M, Bankier AA. **Multidetector Computed Tomographic Imaging in Chronic Obstructive Pulmonary Disease: Emphysema and Airways Assessment.** *Radiologic Clinics of North America*. 2014; 52 (1):137–154. doi: <http://dx.doi.org/10.1016/j.rcl.2013.09.002> [PubMed Citation](#)

Moyer BR, Cheruvu NPS, Hu T, Eds. **Chapter 13: Regulatory Considerations Involved in Imaging.** In: *Pharmaco-Imaging in Drug and Biologics Development. Fundamentals and Applications Series: AAPS Advances in the Pharmaceutical Sciences Series*. Vol. 8. New York, NY: AAPS Press, Springer; 2014: 355-390. ISBN 978-1-4614-8247-5 | doi: 10.1007/978-1-4614-8247-5_13. [Link to publisher's landing page](#)

2013

Andriantsimiavona R, Grimm S, Hatzakis H. **Harnessing the Global Brain in Medical Imaging: 3DnetMedical, Network-Centric Innovation in the Cloud—Our Experience.** The Authors and Future Technology Press 2013; In Impact: *The Journal of Innovation Impact*. 13-009:5(1):96–103. [Public Access article link](#)

Aronhime S, Calcagno C, Jajamovich GH, et al. **DCE-MRI of the Liver: Effect of Linear and Nonlinear Conversions on Hepatic Perfusion Quantification and Reproducibility.** *J Magn Reson Imaging*. 2013: 1522-2586. doi: 10.1002/jmri.24341. [Link to journal landing page](#)

Buckler AJ, Paik D, Ouellette M, Danagoulian J, et al. **A Novel Knowledge Representation Framework for the Statistical Validation of Quantitative Imaging Biomarkers.** *J Digit Imaging*. 2013; 26:614–629. DOI 10.1007/s10278-013-9598-3. [PubMed Citation](#)

Buckler AJ, Ouellette M, Danagoulian J, et al. **Quantitative Imaging Biomarker Ontology (QIBO) for Knowledge Representation of Biomedical Imaging Biomarkers.** *J Digit Imaging*. 2013; 26:630–641. doi: 10.1007/s10278-013-9599-2. [PubMed Citation](#)

Coxson HO. **Sources of Variation in Quantitative Computed Tomography of the Lung.** *J Thorac Imaging*. 2013 Sep; 28(5):272-9. doi: 10.1097/RTI.0b013e31829efbe9. [PubMed Citation](#)

Curran BH, Starkschall G, Siochi RAC, eds. *Informatics in Radiation Oncology*. Series: *Imaging in Medical Diagnosis and Therapy*; Florida: CRC Press, 2013; 329 pages.

Gómez-Cenzano P, Pino-Sorroche F. **Standardization and Quantification in FDG-PET/CT Imaging for Staging and Restaging of Malignant Disease.** *PET Clinics*. Available online 4 December 2013, ISSN 1556-8598. doi: <http://dx.doi.org/10.1016/j.cpet.2013.10.003>. [Link to Science Direct](#)

Heye T, Boll DT, Reiner CS, Bashir MR, Dale BM and Merkle EM. **Impact of Precontrast T10 Relaxation Times on Dynamic Contrast-enhanced MRI Pharmacokinetic Parameters: T10 Mapping Versus a Fixed T10 Reference Value.** *J Magn Reson Imaging*. 2013; Oct 29. doi: 10.1002/jmri.24262. [Link to journal landing page](#)

Jain R. **Measurements of Tumor Vascular Leakiness Using DCE in Brain Tumors: Clinical Applications.** *NMR in Biomedicine*. 2013; 26(8): 1042–1049. doi: 10.1002/nbm.2994. [PubMed Citation](#)

Kim N, Choi J, Yi J, et al. **An Engineering View on Megatrends in Radiology: Digitization to Quantitative Tools of Medicine.** *Korean J Radiol.* 2013; Mar-Apr; 14(2):139-153. doi: <http://dx.doi.org/10.3348/kjr.2013.14.2.139>
[PubMed Citation](#)

Kurland BF, Doot RK, Linden HM, Mankoff DA, Kinahan PE. **Multicenter Trials Using 18F-Fluorodeoxyglucose (FDG) PET to Predict Chemotherapy Response: Effects of Differential Measurement Error and Bias on Power Calculations for Unselected and Enrichment Designs.** *Clin Trials.* 2013; Oct 29; 10(5).
doi: 10.1177/1740774513506618. [Epub ahead of print] [PubMed Citation](#)

Ortuño JE, Ledesma-Carbayo MJ, Simões RV, et al. **DCE@urLAB: a Dynamic Contrast-enhanced MRI Pharmacokinetic Analysis Tool for Preclinical Data.** *BMC Bioinformatics.* 2013; 14:316. doi: 10.1186/1471-2105-14-316. [Public Access article link](#); [PubMed Citation](#)

Petrella, JR. **Neuroimaging and the Search for a Cure for Alzheimer Disease.** *Radiology.* 2013; (269)3:671-691.
doi: <http://dx.doi.org/10.1148/radiol.13122503>. [PubMed Citation](#)

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Taylor, Jonathan. **Meeting Report: Radiological Society of North America (RSNA) Annual Meeting 2012.** *SCOPE: Institute of Physics and Engineering in Medicine.* June 2013; 22(2): 42-44. [Public Access article link](#)

2011

Wang YXJ, Ng CK. **The Impact of Quantitative Imaging in Medicine and Surgery: Charting our Course for the Future.** *Quant Imaging Med Surg.* 2011; 1:1-3. doi: 10.3978/j.issn.2223-4292.2011.09.01

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Mulshine JL, Jablons DM. **Volume CT for Diagnosis of Nodules Found in Lung-Cancer Screening.** *N Engl J Med.* 2009 Dec 3; 361(23): 2281-2. [PubMed Citation](#)

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