

CURRICULUM VITAE

The Johns Hopkins University School of Medicine

(Signature)

(Typed Name) Benjamin M. W. Tsui, Ph.D.

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(Date of this version)

DEMOGRAPHIC AND PERSONAL INFORMATION**Current Appointments**

January 2004 – present Professor The Russell H. Morgan Department of Radiology and Radiological Sciences, School of Medicine, Johns Hopkins University, Baltimore, MD
 Joint appointments in Department of Electrical and Computer Engineering, Whiting School of Engineering; Department of Biomedical Engineering, School of Medicine and Whiting School of Engineering; and Department of Environmental Health Sciences, The Bloomberg School of Public Health; Johns Hopkins University, Baltimore, MD

Personal Data

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Education and Training

1970	B.Sc.	Chung Chi College, Chinese University of Hong Kong	Hong Kong	Physics
1972	A.M.	Dartmouth College	Hanover, NH	Physics
1977	Ph.D.	The University of Chicago	Chicago, IL	Medical Physics
1978-1979	Postdoctoral Training	The University of Chicago	Chicago, IL	Medical Physics

Professional Experience (*Academic Appointments*)

1978-1979	Research Associate	Department of Radiology, The Univ. of Chicago, Chicago, IL
1980-1982	Assistant Professor	Department of Radiology, The Univ. of Chicago, Chicago, IL
1982-1987	Research Associate Professor	Department of Radiology, Curriculum of Biomedical Engineering, The University of North Carolina at Chapel Hill, Chapel Hill, NC
1987-1991	Associate Professor (tenured in 1989)	Department of Radiology and Curriculum of Biomedical Engineering, The University of North Carolina at Chapel Hill, Chapel Hill, NC
1991-1992	Associate Professor (with tenure)	Department of Biomedical Engineering and Department of Radiology, The University of North Carolina at Chapel Hill, Chapel Hill, NC
1992-2002	Professor (with tenure)	Department of Biomedical Engineering and Department of Radiology, The University of North Carolina at Chapel Hill, Chapel Hill, NC
2000	Highest "Outstanding" rating	School of Medicine Post-tenure review, The University of North Carolina at Chapel Hill, Chapel Hill, NC
2000-2002	Professor (with tenure)	Graduate Curriculum in Applied Sciences, The University of North Carolina at Chapel Hill, Chapel Hill, NC
July 2002 – July 2004	Visiting Professor	Departments of Radiology, Electrical and Computer Engineering, Biomedical Engineering and Environmental Health Sciences, Johns Hopkins University, Baltimore, Maryland

July 2002- 2006	Professor	Adjunct appointments in Department of Biomedical Engineering and Department of Radiology, The University of North Carolina at Chapel Hill, Chapel Hill, NC
July 2004-	Professor	Departments of Radiology, Electrical and Computer Engineering, Biomedical Engineering and Environmental Health Sciences, Johns Hopkins University

PUBLICATIONS:

Original Research [OR]

A. Refereed Scientific Articles

1. Chuang LS, and **Tsui BMW**. Fabrication and Characteristics Study of a Surface Barrier Silicon Solid-State Particle Detector. *Am J Phys* 40:1679-1683, 1974.
2. Metz CE, **Tsui BMW**, and Beck RN. Theoretical Prediction of the Geometric Transfer Function for Focused Collimators. *J Nucl Med* 15:1078-1083, 1974.
3. **Tsui BMW**, Beck RN, Metz CE, Atkins FB, and Starr SJ. A Comparison of Optimum Detector Spatial Resolution in Nuclear Imaging Based on Statistical Theory and on Observer performance. *Phys Med Biol* 23:654-675, 1978.
4. **Tsui BMW**. A Correction to a Comparison of Optimum Detector Spatial Resolution in Nuclear Imaging Based on Statistical Theory and Observer Performance. *Phys Med Biol* 23:1203, 1978.
5. Atkins HL, Robertson JS, Croft BY, **Tsui BMW**, Suskind H, Ellis KH, Loken MK, and Treves S. Estimates of Radiation Absorbed Doses from Radioxenons in Lung Imaging. *J Nucl Med* 21:459-465, 1980.
6. **Tsui BMW**, Beck RN, Metz CE, and Doi K. Transfer Function Analysis of the Total Image Forming Process in Nuclear Medicine. *J Appl Photo Eng* 6:131-140, 1980.
7. **Tsui BMW**, Beck RN, Doi K, and Metz CE. Analysis of Recorded Image Noise in Nuclear Medicine. *Phys Med Biol* 26:883-902, 1981.
8. **Tsui BMW**, Metz CE, and Beck RN. Optimum Detector Spatial Resolution for Discriminating Between Tumor Uptake Distributions in Scintigraphy. *Phys Med Biol* 28(7): 775-788, 1983. PMID: 6611654.
9. **Tsui BMW**, Jaszczak RJ. Interactions of Collimation, Sampling and Filtering on SPECT Spatial Resolution. *IEEE on Nucl Sci NS-31* (1): 527-532, 1984.
10. Gullberg GT, Crawford CR, and **Tsui BMW**. Reconstruction Algorithm for Fan Beam with a Displayed Center-of-Rotation. *IEEE Trans in Med Imaging MI-5*: 23-29, 1986.
11. **Tsui BMW**, Gullberg GT, Edgerton ER, Gilland DR, Perry JR, and McCartney WH. The Design and Clinical Utility of a Fan Beam Collimator for a SPECT System. *J Nucl Med* 27:810-819, 1986.
12. Chang W, **Tsui BMW**, Tian C, Li S, Williams JJ, Rezaei K, Ehrhardt JC, and Kirchner PT. Design and Investigation of a Four-Quadrant Multiple Detector Ring System for Single Photon Emission Computed Tomography (SPECT). *SPIE* 671:200-205, 1986.
13. Saloner D, Moran PR, and **Tsui BMW**. Velocity Imaging by Rapid Cycle Tagging. *Med Phys* 14(2):167-171, 1987.
14. Moran PR, Saloner D, and **Tsui BMW**. NMR Velocity-Selective Excitation Composites for Flow and Motion Imaging and Suppression of Static Tissue Signals. *IEEE Trans on Med Imag Vol. MI-6*(2):141-147, 1987.
15. Gullberg GT, **Tsui BMW**, Crawford CR, and Edgerton ER. Estimation of Geometric Parameters in Fan Beam Tomography. *Phys Med Biol* 32(12): 1581-1594, 1987.
16. Crawford CR, Gullberg GT, and **Tsui BMW**. Reconstruction for Fan Beam with an Angular-Dependent Displaced Center-of-Rotation. *Med Phys* 15(1): 67-71, 1988.
17. Saloner D, Hinson WH, Moran PR, and **Tsui BMW**. MR Flow Imaging in Projection through a Stationary Surround. *J Comp Ass Tomogr* 12(1): 122-129, 1988.
18. **Tsui BMW**, Hu HB, Gilland DR, and Gullberg GT. Implementation of Simultaneous Attenuation and Detector Response Correction in SPECT. *IEEE Trans Nucl Sci, Vol NS-35* (1): 778-783, 1988.
19. Gilland DR⁺, **Tsui BMW**, Perry JR, McCartney WH, and Berg J. Optimum Filter Function for SPECT Imaging. *J Nucl Med*, 29:643-650, 1988.
20. Lathrop KA, **Tsui BM**, Chen CT and Harper PV. Multiparameter extrapolation of biodistribution data between species. *Health Phys* 57 Suppl 1:121-126, 1989.
21. **Tsui BMW**, Edgerton ER, Gullberg GT, Gilland DR, Perry JR, McCartney WH, and Berg J. Correction of Nonuniform Attenuation in Cardiac SPECT Imaging Using Iterative Reconstruction Algorithms. *J Nucl Med* 30:497-507, 1989.

22. Gullberg GT, Zeng GL, **Tsui BMW** and Hagius JT. An Iterative Reconstruction Algorithm for Single Photon Emission Computed Tomography with Cone Beam Geometry. *Int J of Imag Sys and Techn*, Vol. 1, 169-186, 1989.
23. Lathrop KA, **Tsui BMW**, Chen C-T and Harper PV. Multiparameter extrapolation of biodistribution data between species. *Health Physics*, Vol. 57, Sup. 1, pp 121-126, 1989.
24. Koral KF, Swailem FM, Buchbinder S, Clinthorne NH, Rogers WL and **Tsui BMW**. SPECT dual-energy-window Compton correction: Scatter multiplier required for tumor quantification. *J Nucl Med*, 31:90-98, 1990.
25. **Tsui BMW** and Gullberg GT. The geometric transfer function for cone and fan beam collimators. *Phys Med Biol* 35(1): 81-93, 1990.
26. Frey EC* and **Tsui BMW**. Parameterization of Scatter Response Function in SPECT Imaging Using Monte Carlo Simulation. *IEEE Trans Nucl Sci*, NS-37(3):1308-1315, 1990.
27. Gullberg GT, **Tsui BMW**, Crawford CR, Ballard JG and Hagius JT. Estimation of Geometrical Parameters and Collimator Evaluation for Cone Beam Tomography. *Med Phys*, 17(2): 264-272, 1990.
28. Frey EC* and **Tsui BMW**. Spatial properties of the scatter response function in SPECT. *IEEE Trans Nucl Sci*, NS-38 (2): 789-794, 1991.
29. Zeng GL, Gullberg GT, Terry JA and **Tsui BMW**. Three-dimensional iterative reconstruction algorithms with attenuation and geometric point response correction. *IEEE Trans Nucl Sci*, NS-38 (2): 693-702, 1991.
30. **Tsui BMW**, Zhao XD*, Frey EC and Gullberg GT. Comparison between ML-EM and WLS-CG Algorithms for SPECT image reconstruction. *IEEE Trans Nucl Sci*, NS-38 (6): 1766-1772, 1991.
31. Gilland DR⁺, **Tsui BMW**, Metz CE, Jaszczak RJ and Perry JR. An evaluation of maximum likelihood-EM reconstruction for SPECT by ROC analysis. *J Nucl Med*, 33:451-457, 1992.
32. Lalush DS* and **Tsui BMW**. Simulation evaluation of Gibbs prior distributions for use in maximum a posteriori SPECT reconstructions. *IEEE Trans Med Imag*, 11(2): 267-275, 1992.
33. Cao ZJ* and **Tsui BMW**. Performance characteristics of transmission imaging using sheet source with parallel-hole collimation. *Med Phys*, 19(5): 1205-1212, 1992.
34. Frey EC*, **Tsui BMW** and Perry JR. Simultaneous acquisition of emission and transmission data for improved TI-201 cardiac SPECT imaging using a Tc-99m transmission source. *J Nucl Med*, 33(12): 2238-2245, 1992.
35. Lalush DS* and **Tsui BMW**. Attenuation and detector response compensations used with Gibbs prior distributions for maximum a posteriori SPECT reconstruction. *IEEE Trans Nucl Sci*, 39:1454-1459, 1992.
36. Li J, Jaszczak RJ, Greer KL, Coleman RE, Cao ZJ and **Tsui BMW**. Direct cone beam SPECT reconstruction with camera tilt. *Phys Med Biol*, 38:241-258, 1993.
37. **Tsui BMW**, Zhao XD*, Cao ZJ and Frey EC. Reconstruction methods for quantitative brain SPECT. *IEEE Trans Nucl Sci*, Vol 40(2): 214-220, 1993.
38. Lalush DS* and **Tsui BMW**. A generalized Gibbs prior for maximum a posteriori reconstruction in SPECT. *Phys Med Biol* 38: 729-741, 1993.
39. Cao ZJ* and **Tsui BMW**. A fully three-dimensional reconstruction algorithm with non-stationary filter for improved single-orbit cone beam SPECT. *IEEE Trans Nucl Sci*, NS-40 (3): 280-287, 1993.
40. Frey EC and **Tsui BMW**. A practical method for incorporating scatter in a projector-backprojector for accurate scatter compensation in SPECT. *IEEE Trans Nucl Sci*, NS-40 (4): 1107-1116, 1993.
41. Cao ZJ* and **Tsui BMW**. Improved image quality for asymmetric double-focal cone-beam SPECT. *IEEE Trans Nucl Sci*, NS-40 (4): 1145-1148, 1993.
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48. Barrett HH, Wilson DW⁺ and **Tsui BMW**. Noise properties of the EM algorithm: I. Theory. *Phys Med Biol*, 39(5): 833-846, 1994.
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52. Beekman FJ, Frey EC, Kamphuis C, **Tsui BMW** and Viergever MA. A new phantom for fast determination of the scatter response of a gamma camera. *IEEE Trans Nucl Sci*, 41(4): 1481-1488, 1994.
53. Frey EC and **Tsui BMW**. Modeling the scatter response function in inhomogeneous scattering media for SPECT. *IEEE Trans Nucl Sci*, 41(4): 1585-1593, 1994.
54. Cao ZJ, Frey EC and **Tsui BMW**. A scatter model for parallel and converging beam SPECT based on the Klein-Nishina formula. *IEEE Trans Nucl Sci*, 41(4): 1594-1600, 1994.
55. LaCroix KJ⁺, **Tsui BMW**, Hasegawa BH and Brown JK. Investigation of the use of x-ray CT images for attenuation compensation in SPECT. *IEEE Trans Nucl Sci*, 41(6): 2793-2799, 1994.
56. Zhao XD^{*}, **Tsui BMW**, Gregoriou GK^{*}, Li J⁺, Lalush DS^{*} and Eisner RL. Evaluation of corrective reconstruction methods using a 3D cardiac-torso phantom and bulls-eye's plots. *IEEE Trans Nucl Sci*, 41(6): 2831-2837, 1994.
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60. Li J⁺, **Tsui BMW**, Welch A, Frey EC and Gullberg GT. Energy window optimization in simultaneous Technetium-99m TCT and Thallium-201 SPECT data acquisition. *IEEE Trans Nucl Sci*, 42(4): 1207-1213, 1995.
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62. LaCroix KJ⁺, **Tsui BMW** and Hasegawa BH. Comparison of 180° and 360° iterative reconstruction with non-uniform attenuation compensation for SPECT. *IEEE Trans Nucl Sci*, 42(4): 1276-1281, 1995.
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68. King MA, Xia W, deVries DJ, Pan T-S, Villegas BJ, Dahlberg S, **Tsui BMW**, Ljungberg MH and Morgan HT. A Monte Carlo Investigation of artifacts caused by liver uptake in SPECT perfusion imaging with Tc-99m labelled agents. *J Nucl Cardiol*, 3(1): 18-29, 1996.
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71. Pretorius PH, Xia W, King MA, **Tsui BMW**, Pan T-S and Villegas BJ. Evaluation of right and left ventricular volume and ejection fraction using a mathematical cardiac torso phantom for gated blood pool SPECT. *J Nucl Med*, 38:1528-1535, 1997.
72. De Vries DJ, King MA, Soares EJ, **Tsui BMW** and Metz CE. Evaluation of the effect of scatter correction on lesion detection in hepatic SPECT imaging. *IEEE Trans Nucl Sci*, 44(5): 1733-1740, 1997.
73. Kadrmaz DJ, Frey EC and **Tsui BMW**. Analysis of the reconstructibility and noise properties of scattered photons in Tc-99m SPECT. *Phys Med Biol*, 42:2493-2516, 1997.
74. Gregoriou GK*, **Tsui BMW** and Gullberg GT. Effect of truncated projections on defect detection in attenuation compensation fan-beam cardiac SPECT. *J Nucl Med*, 39:166-175, 1998.
75. LaCroix KJ+, **Tsui BMW** and Hasegawa BH. A comparison of 180° and 360° acquisition for attenuation compensated Tl-201 images acquired on multi-detector SPECT systems. *J Nucl Med*, 39:562-574, 1998.
76. Frey EC, **Tsui BMW** and Gullberg GT. Improved estimation of the detector response function for converging beam collimators. *Phys Med Biol*, 43:941-950, 1998.
77. Kadrmaz DJ, Frey EC, Karimi SS and **Tsui BMW**. Fast implementations of reconstruction-based scatter compensation in fully 3D SPECT image reconstruction. *Phys Med Biol*, 43: 857-874, 1998.
78. Lalush DS and **Tsui BMW**. Block-iterative techniques for fast 4D reconstruction using a priori motion models in gated cardiac SPECT. *Phys Med Biol*, 43:875-887, 1998.
79. Achtert A-D, King MA, Dahlberg ST, Pretorius, PH, LaCroix KJ and **Tsui, BMW**. An investigation of the estimation of EF and cardiac volumes by a quantitative gated SPECT software package in simulated gated SPECT perfusion images. *J Nucl Cardiol*, 5(2):144-152, 1998.
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85. Lewis DP+ **Tsui BMW** and Moran PR. Velocity Sensitivity of Slice Selective Excitation. *Mag. Res. Imag*, 16(8): 907-916, 1998.
86. Wollenweber SD*, **Tsui BMW**, Lalush DS, Frey EC and Gullberg GT. Evaluation of Myocardial Defect Detection Between Parallel-hole and Fan-beam SPECT Using the Hotelling Trace, *IEEE Trans Nucl Sci*, 45(4): 2205-2210, 1998.
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91. LaCroix KJ* and **Tsui BMW**. Investigation of 90° Dual-Camera Half-Fanbeam Collimation for Myocardial SPECT Imaging. *IEEE Trans Nucl Sci*, 46(6): 2085-2092, 1999.
92. LaCroix KJ*, **Tsui BMW**, Frey EC and Jaszczak RJ. An ROC evaluation of iterative reconstruction with attenuation compensation in Tc-99m-Sestamibi myocardial SPECT images. *J Nucl Med* 41(3): 502-513, 2000.
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95. DS Lalush and **Tsui BMW**. Fast Transmission CT Reconstruction for SPECT Using a Block-Iterative Algorithm. *IEEE Trans Nucl Sci*, 47(3): 1123-1129, 2000.

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103. Segars WP* and **Tsui BMW**. Study of the Efficacy of Respiratory Gating in Myocardial SPECT Using the New 4D NCAT Phantom. *IEEE TNS Nucl Sci*, Vol. 49(3): 675-679, 2002.
104. Tsui, BMW. Interpreting Results from a Comparative Study of Lesion Detectability for 6 Different PET Systems, *J Nucl Med*, 43(11): 1555-1556, 2002. PMID 12411559.
105. Frey EC, Gilland KL* and **Tsui BMW**. Application of task-based measures of image quality to optimization and evaluation of three-dimensional reconstruction-based compensation methods in myocardial perfusion SPECT. *IEEE Transactions on Medical Imaging*, 21(9):1040-1050, 2002. PMID: 12564872.
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Case Reports [CR]

None

Book Chapters, Monographs [BC]

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215. Taek-Soo Lee*, Eric C. Frey, and **Benjamin M. W. Tsui**. Study of Mathematical Observer Models for the Task-Based Evaluation of Gated Myocardial Perfusion SPECT Images,
- *** *The following paper in the Proceedings of the Second CT Meeting, Salt Lake City, UT, USA, June 24-27 2012. ****
216. Fung GSK, Stierstorfer K, Taguchi K, Segars WP, Flohr TG, **Tsui BMW**. A Realistic CT/Human-Model Simulation Package
- *** *The following paper is in: Proceedings of the 2013 SPIE Medical Imaging Conference, Disney's Coronado Springs Resort, Lake Buena Vista, Florida, FL, February 12-17, 2011. ****
217. Wang J, Fung GSK, Feng T+ and **Tsui BMW**, A papillary muscle guided motion estimation method for gated cardiac imaging. Medical Imaging 2013: Physics of Medical Imaging, edited by Robert M. Nishikawa, Bruce R. Whiting, Christoph Hoeschen, Proc. of SPIE Vol. 8668, 86682G, 2013.
- *** *The following 2 papers in the Proceedings of the 2013 Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine, Granlibakken Resort, Lake Tahoe, CA, USA, June 16-21, 2013. ****
218. Lee T-S, Feng T+ and **Tsui BMW**. Application of Image-Based Registration Method for Simultaneous Compensation of Cardiac and Respiratory Motions in Dual Gated Myocardial Perfusion SPECT, pp 122-125.
219. Jingyan Xu and **Benjamin M. W. Tsui**. C-Arm CT Image Reconstruction From Sparse Projections.
- *** *The following 6 papers in the Conference Record of the 2013 IEEE Nuclear Science Symposium and Medical Imaging Conference, Seoul, Korea, October 27-November 2, 2013. ****
220. Feng T+ and Tsui BMW. Non-Rigid Respiratory Motion Correction for 4D Gated PET Sinogram Data, pp 1-5.
221. Rittenbach A+, Xu J, El-Sharkawy AM, Edelstein WA, Parnham K, Hugg J, and **Tsui BMW**. Continuing Evaluation of an MR Compatible SPECT Insert for Simultaneous SPECT-MR Imaging of Small Animals, pp 544-538.
222. Wang J+, Fung GSK, Feng T+, **Tsui BMW**. An Interventricular Sulcus Guided Cardiac Motion Estimation Method, pp 1-3.
223. Lee TS, Feng F+, Frey E, and **Tsui BMW**. Task-Based Evaluation of Motion Compensated Reconstructed Images Using 4D Channelized Hotelling Observer in Dual Gated SPECT, pp
224. Chartier L, Qi Y, Petasecca M, Ihnat P, Lerch M, Rosenfeld A, **Tsui BMW**, Performance uniformity evaluation of two SensL's SiPM modules, pp 978-991
225. Yan P, Mok GSP, Si C-H and **Tsui BMW**. A Dual-head Multi-pinhole Collimator Design for Stationary Clinical Myocardial Perfusion Imaging, pp
- *** *The following paper is in the Abstract Supplement of the Journal of Nuclear Medicine 56 of presentations at the 2014 Annual Meeting of the Society of Nuclear Medicine and Molecular Imaging (SNMMI), St. Louis, MO, June 7 – June 11, 2014. ****
226. Tao Feng+, Mark Ahlman, **Benjamin Tsui**, Liheng Guo, Mike Guttman, Elliot McVeigh and David Bluemke. Hybrid MR-guided and PET-guided motion correction of PET images in simultaneous PET/MR. Journal of Nuclear Medicine 55, Supplement 1 (2014): 646-646.
- *** *The following paper in the Proceedings of the Third CT Meeting, Salt Lake City, UT, USA, June 22-25 2014. ****
227. Xu J, Elshahaby FA, Fuld MK, Fung GSK, **Tsui BMW**. Application of Task-Based Measures of Image Quality to Evaluation of Image Reconstruction Methods in X-ray CT, pp 25-28.
228. Fung GSK, Stierstorfer k, Taguchi K, Segars WP, Bruder H, Fuld M, Flohr TG, **Tsui BMW**. Development of a Cardiac CT Simulation Platform: an Integration of 4D Anthropomorphic Phantom with Stent Models and an Accurate CT Projector. pp 376-379.
- *** *The following 3 papers in the Conference Record of the 2014 IEEE Nuclear Science Symposium and Medical Imaging Conference, Seattle, WA, November 8-15, 2014. ****
229. Feng T+, Ahlman MA, Guo L, Bluemke DA and **Tsui BMW**. Development and evaluation of two 4D image reconstruction methods with dual respiratory and cardiac motion compensation for gated myocardial perfusion PET.

230. Jizhe Wang J+, Lingzhi Hu L, Tao Feng T+, Jingyan Xu J, Lingxiong Shao L **Benjamin M. W. Tsui BMW**. Improved spatial and temporal resolution of gated myocardial perfusion PET using post reconstruction dual respiratory and cardiac motion compensation.
231. Yan P, Mok GSP, Chen L and **Tsui BMW**, Evaluation of Stationary and Semi-stationary Acquisitions in a Dual-head Multi-pinhole System for Myocardial Perfusion SPECT.
- *** *The following paper is in the Abstract Supplement of the Journal of Nuclear Medicine 56 of presentations at the 2015 Annual Meeting of the Society of Nuclear Medicine and Molecular Imaging (SNMMI), Baltimore, MD, June 6 – June 10, 2015. ****
232. Tao Feng+, Mark Ahlman, Christoph Kolbitsch, Liheng Guo, **Benjamin MW Tsui** and David Bluemke. Comparison of MR and PET derived respiratory motion estimates for dual respiratory and cardiac motion correction in cardiac PET." *Journal of Nuclear Medicine 56, Supplement 3 (2015): 204-204.*
- *** *The following x papers in the Proceedings of the 2015 Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine, Newport, RI, USA, May 31 - June 4 , 2015. ****
233. Feng T+ and **Tsui BMW**. Non-rigid 4D Respiratory and Cardiac Motion Correction on Projection Data before Image Reconstruction for Cardiac PET.
234. J. Xu J, A. Rittenbach A, A. Fabbri A, V. Cencelli, and **B. M. W. Tsui**, Pinhole SPECT Image Reconstruction using a Dense System Matrix.
- *** *The following 3 papers in the Conference Record of the 2015 IEEE Nuclear Science Symposium and Medical Imaging Conference, San Diego, CA, October 31 - November 7, 2015. ****
235. Tao Feng+. Mark A. Ahlman. Christoph Kolbitsch. George S.K. Fung. David A. Bluemke. **Benjamin M.W. Tsui**, Simulation Study on Factors Affecting the Detectability of Coronary Artery Plaques in NaF PET Imaging.
236. Lee T-S, Rittenbach A+, Feng T+ and **Tsui BMW**. Application of Post Reconstruction Dual Respiratory and Cardiac Motion Compensation for 4D High-Resolution Small Animal Myocardial SPECT.
237. Wang J+, Feng T+, **Tsui BMW**, Development and Evaluation of Data-driven Respiratory Gating Methods with Simulated Listmode PET Data.
- *** *The following papers are in the Conference Record of the 4th International Conference on Image Formation in X-Ray Computed Tomography, Bamberg, Germany, July 18 - 22 2016. ****
238. George S.K. Fung, Karl Stierstorfer, Matthew Fuld, Satomi Kawamoto, Elliot K. Fishman, **Benjamin M.W. Tsui**, and Katsuyuki Taguchi, Spectrum Optimization in Split-Filter Dual-Energy CT for Iodine Quantification and Virtual-Non-Contrast Imaging, Oral Presentation.
- *** *The following 3 papers are in the Conference Record of the 2016 IEEE Nuclear Science Symposium and Medical Imaging Conference, Strasbourg, France, October 29 – November 5, 2016. ****
239. Taek-Soo Lee, Andrew Rittenbach+, César Gutiérrez Fernández, Jesus Lopez-Longa, Juan M. Arco and **Benjamin M. W. Tsui**, Initial Valuation of a State-of-the-Art Commercial Preclinical PET/CT Scanner, Oral Presentation.
240. Jizhe Wang+, Tao Feng+, Jingyan Xu and **Benjamin M. W. Tsui**, An optical-flow motion estimation method with feature motion constraint for cardiac PET, Poster Presentation.
241. Jizhe Wang+, Tao Feng+, Jingyan Xu and **Benjamin M. W. Tsui**, Development and Evaluation of Two Interventricular Sulcus Extraction Methods for Cardiac PET, Poster Presentation.
- *** *The following 2 papers are in the Abstract Supplement of the Journal of Nuclear Medicine 56 of presentations at the 2016 Annual Meeting of the Society of Nuclear Medicine and Molecular Imaging (SNMMI), Denver, Colorado, USA, June 10-14, 2017. ****
242. J Xu, J Wang+, T-S Lee, TH Schindler, I Valenta-Schindler, SL Zimmerman, MR Abraham, **BMW Tsui**, Cardiac strain analysis using clinical myocardial perfusion PET images, Oral Presentation at the 2017 Annual Meeting of the Society of Nuclear Medicine, Denver, Colorado, USA, June 10-14, 2017 and Molecular Imaging.
243. T-S Lee, J Wang, J Xu, P Olivier, A Perkins, C-H Tung and **BMW Tsui**, Development and evaluation of robust data-driven respiratory motion extraction methods for clinical list-mode ¹⁸F-FDG PET, Poster Presentation at the 2017 Annual Meeting of the Society of Nuclear Medicine, Denver, Colorado, USA, June 10-14, 2017 and Molecular Imaging.
- *** *The following 2 papers are in the Proceeding of 2017 International Conference on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine will be held in Xi'an Shaanxi, China, June 18-23, 2017. ****
244. **Benjamin M. W. Tsui**, Taek-Soo Lee, and Jingyan Xu, Molecular Breast Tomosynthesis Imaging with Multi-Pinhole Collimator, Oral Presentation and Paper.

245. Jingyan Xu, Fr'ed'eric Noo, and **Benjamin M W Tsui**, Image Registration Using Convex Relaxation and the ADMM Algorithm, Oral Presentation and Paper.

⁺ *Graduate student under direct supervision*

^{*} *Postdoctoral Fellow/Research Associate under direct supervision*

Editor of Special Issue of Professional Journal

1. Zaidi H and **Tsui BMW**, Editors, Computational Anthropomorphic Anatomical Models, Special Issue of the Proceedings of the IEEE, 97(12), 2009. (NIHMSID#359706).

Newsletters and Letters to the Editor

1. **Tsui BMW**. Application of Iterative Reconstruction Methods in SPECT. Computer and Instrumentation Council Newsletter, The Society of Nuclear Medicine, Vol 8, No. 2, 1990.
2. Frey EC^{*} and **Tsui BMW**. Evaluation of Workstations for SPECT Reconstruction. Computer and Instrumentation Council Newsletter, The Society of Nuclear Medicine, Vol 9, No. 1, 1991.
3. Koral KF, Buchbinder S, Clinthorne NH, Rogers WL, Swailem FM and **Tsui BMW**. Influence of region of interest selection on the scatter multiplier required for quantification in dual-window Compton correction. Letter to the Editor, J Nucl Med 32:186-187, 1991.

Other Media (Audio/Visual Programs)

1. **Tsui BMW**. Collimator Design, Properties and Characteristics. Continuing Education Lectures, SNM 34th Annual Meeting Programs, Society of Nuclear Medicine, CEL 108, 1987.
2. **Tsui BMW**. Basic Principles of SPECT Imaging. Continuing Education Lecturers, SNM 34th Annual Meeting Programs, Society of Nuclear Medicine, CEL 99, 1987.
3. **Tsui BMW**. Physics of SPECT. In Cross-sectional Imaging: Emission Tomography, AAPM/RSNA 1994 Physics Tutorial for Residents, AAPM and RSNA, 1994.

**** A full list of publications and citations can be found in Google Scholar:
<https://scholar.google.com/citations?user=bTA7TasAAAAJ&hl=en> ****

FUNDING

EXTRAMURAL Funding

A. Principal Investigator

1. Research Contract, US Army Ballistics Research Laboratory, Design of an Electronic X-ray Detector System for the BRL Microsecond Computer Tomography Facility, BMW Tsui, Co-PI, 5/20/84-11/20/84, total direct costs \$69,793.
2. NIH program project grant, "Medical Image Presentation", 1P01CA47982, SM Pizer, Ph.D., Program Director, BMW Tsui, PI of Project 3, Multimodality 3D Display in SPECT, 7/01/88-6/30/91, total direct costs of Project 3 \$345,241.
3. NIH research grant, Evaluation of Corrective Image Reconstruction Methods in SPECT, 1RO1CA39463, BMW Tsui, PI, 12/01/86-11/30/89, total direct costs \$402,501.
4. NIH research grant, Improved Heart Imaging Using SPECT with Convergent Hole Collimators, RO1HL39792, GT Gullberg, U. of Utah, PI of entire project, BMW Tsui, PI of UNC subcontract, 7/1/88-6/30/91, total direct costs of subcontract \$159,451.
5. NIH research grant, Evaluation of Corrective Image Reconstruction Methods in SPECT, 2RO1CA39463, BMW Tsui, PI, 40% effort, 12/01/89-7/31/95, total direct costs \$1,160,300.
6. NIH research grant, Improved Heart Imaging Using SPECT with Convergent Hole Collimators, RO1HL39792, GT Gullberg, U. of Utah, PI of entire project, BMW Tsui, PI of UNC subcontract, 10% effort, 7/1/91-6/30/94, total direct costs of subcontract \$214,872.
7. NIH research grant, "Development of an Emission-Transmission CT System", BH Hasegawa, UCSF, PI of entire project, BMW Tsui, Principal Investigator of UNC-CH subcontract, 5% effort, 7/1/92-6/30/96, total direct cost of subcontract \$111,538.
8. NIH research grant, Evaluation of Corrective Image Reconstruction Methods in SPECT, 3RO1CA39463, BMW Tsui, PI, 40% effort, 8/01/95-7/31/98, total direct costs \$690,975.

9. NIH research grant, Improved Heart Imaging Using SPECT with Convergent Hole Collimators, RO1HL39792, GT Gullberg, U. of Utah, PI of entire project, BMW Tsui, PI of UNC subcontract, 10% effort, 7/1/94-6/30/99, total direct costs of subcontract \$406,511.
10. NIH research grant, Improved Scintimammography for Breast Cancer Diagnosis, BMW Tsui, PI, 5% effort, 4/01/97-3/31/02, total direct cost \$799,707.
11. NIH research grant, Improved Heart Imaging Using SPECT with Convergent Hole Collimators, RO1HL39792, GT Gullberg, U. of Utah, PI of the entire project. BMW Tsui, PI of UNC subcontract, 10% effort, 4/1/99-3/31/02, total direct cost \$250,829.
12. NIH research grant, Evaluation of Corrective Image Reconstruction Methods in ECT, 4RO1CA39463, BMW Tsui, PI, 17% effort, 8/01/98-3/31/02, total direct costs \$936,290.
13. Research Contract, Siemens Medical Systems, Nuclear Medicine, BMW Tsui, PI, 3% effort, 11/1/98-6/30/02, total direct cost \$240,000.
14. Whitaker Foundation Special Opportunity Award, Biomedical Engineering for Functional Genomics, BMW Tsui, PI, 10% effort, 8/1/01-7/31/04, total direct cost \$1,395,618.
15. U.S. Army CDMRP Idea Development Award, Corrective In-111 Capromab Pendetide SPECT Image Reconstruction Methods for Improved Detection of Recurrent Prostate Cancer, BMW Tsui, PI, 5/19/03-5/18/06, 5% effort, \$367,486 total direct costs.
16. NIH research grant, Corrective Image Reconstruction Methods for ECT, 9 R01 EB 000168, BMW Tsui, PI, 4/1/02-8/31/07, 30% effort, \$1,788,574 total direct costs.
17. NIH research grant, Improved Heart SPECT Imaging with Convergent Collimators, 9 R01 EB 000121-14 GT Gullberg, U. of Utah, PI of the entire project. BMW Tsui, PI of Johns Hopkins University subcontract, 3% effort, 4/1/02-3/31/06, total direct costs \$499,820.
18. NIH research grant, Task-Based Optimization for Gated Myocardial SPECT, 1R01HL68075, BMW Tsui, Principal Investigator, 8/1/01-7/31/08, 10% effort, \$425,000 total direct costs.
19. NIH research grant, Mammo & Cardiac SPECT w/ rotating slant hole collimator, R01 EB01983, PI: BMW Tsui, 8/1/03-7/31/09, Total Direct: \$1,000,000.
20. Siemens Healthcare Research Contract, Iterative imaging reconstruction methods for x-ray CT, BMW Tsui, PI, 3% effort, 7/1/07-6//30/08, \$80,000 total direct costs.
21. NIH research grant, SPECT w/ rotating slant hole collimator, R01 EB01983, PI: BMW Tsui, 7/1/09-6/30/11, Total Direct: \$540,000.
22. NIH research grant, High Resolution SPECT for Molecular Imaging, R01 EB01558, BMW Tsui, PI, 9/30/04-8/31/09, Total Direct: \$1,546,513. [with no-cost extension].
23. GE Healthcare Technology Research Contract, Applications of In-111 SPECT Using GE Nuclear Medicine Systems, BMW Tsui, PI, 3% effort, 6/1/04-5/31/09, total costs, \$150,000.
24. Siemens Healthcare Research Contract, Computer simulation software for x-ray CT, BMW Tsui, PI, 3% effort, 1/1/07-12//30/09, \$40,000 total direct costs.
25. Siemens Research Contract, Simulation of SPECT imaging, BMW Tsui, PI, 9/1/11-8/31/12, Total Direct: \$50,000.
26. NIH research grant, SPECT w/ rotating slant hole collimator, R01 EB01983, PI: BMW Tsui, 7/1/09-6/30/13, Total Direct: \$540,000.
27. NIH research grant, Corrective Image Reconstruction Methods for ECT, R01 EB 000168, BMW Tsui, PI, 9/1/07-8/31/13, 25% effort, \$1,837,352 total direct costs. (with no-cost extensaion)
28. NIH research grant, Task-Based Optimization for Gated Myocardial ECT, R01HL68075, BMW Tsui, Principal Investigator, 9/1/09-8/31/13, 10% effort, \$550,000 total direct costs. (AARA funding.)
29. NIH research grant, High Resolution SPECT-MR for Molecular Imaging, BMW Tsui, PI, 9/1/09-8/31/13, Total Direct: \$950,000. (AARA funding.)
30. NIH research grant, Improved Heart SPECT Imaging with Convergent Collimators, R01 EB 000121, GT Gullberg, PI of entire project, BMW Tsui, PI of Johns Hopkins University subcontract, 3% effort, 4/1/07-3/31/13, total direct costs \$499,820.
31. Applied Physics Laboratory (APL) FY17 National Health IRAD award, Breast Cancer Multi-Modality/Exam Diagnosis (MMED) Using Upstream Data Fusion (UDF), BMW Tsui, Co-Investigator, 3/1/17-8/31/17, Total
32. NIH BRS Shared Instrumentation Grant, High Performance Multi-Modality Small Animal Imaging System, 1S10OD012258, BMW Tsui, PI, 6/15/13-6/14/14, Total Award: \$1,749,000.
33. Philips Research Contract, Cardiac and Respiratory Motion Correction, BMW Tsui, PI, 9/1/13-12/31/18, Total Direct: \$142,000.
34. American Heart Association (AHA) Grant-in-Aid Award #: 16GRNT30970038, BMW Tsui, PI, 7/1/16-12/31/18, Total Direct: \$140,000

B. Co-Investigator

1. NIH research grant, Interdisciplinary Small Animal Imaging for Oncology, R24 CA92871, MG Pomper, PI, 5% effort, 7/1/01-6/30/06, annual direct costs \$3,403,670.
2. NIH research grant, Comprehensive Validation of Cardiac SPECT Reconstruction, 1 R01 HL68575-01, JM Links, PI, 6% effort, 1/01/02-12/31/05, total direct costs \$385,592.
3. NIH research grant, Simulation Tools for Dynamic CT, R01 EB 001838, W. Paul Segars, Principal Investigator, 10% effort, 4/1/05-3/31/10, total direct costs, \$1,250,000.
4. DOE research grant, Patient Specific Dosimetry and Radiobiological Modeling of Targeted Radionuclide Dosimetry, G Sgouros, PI, 5% effort, total costs \$1,149,017, 1/1/05-12/31/07.
5. NIH research grant, Interdisciplinary Small Animal Imaging for Oncology, R24 CA92871, MG Pomper, PI, 5% effort for BMW Tsui, 7/1/06-6/30/11, annual direct costs \$1,403,670.
6. NIH research grant, Simultaneous Dual Isotope SPECT w/Cross-talk Correction, 8 R01 EB 00288-04, EC Frey, PI, 5% effort for BMW Tsui, 2/1/03-1/31/08, total direct cost \$1,125,000.
7. NIH research grant, Quantitative SPECT for Targeted Radionuclide Therapy, R01 CA 109234, EC Frey, PI, 5% effort for BMW Tsui, 4/1/05-3/31/10, total direct costs, \$1,614,605.
8. NIH research grant, Interdisciplinary Small Animal Imaging for Oncology, R24 CA92871, MG Pomper, PI, 5% effort for BMW Tsui, 3/1/07-2/29/12, annual direct costs \$1,403,670.
9. NIH research grant, Simultaneous Dual Isotope SPECT w/Cross-talk Correction, 8 R01 EB 00288-04, EC Frey, PI, 5% effort for BMW Tsui, 3/1/07-2/29/12, total direct cost \$1,125,000.
10. NIH research grant, Time Resolved Cardiac Computed Tomography with Patient Dose Reduction, R01 HL 087918, K Taguchi, PI, 3% effort for BMW Tsui, 08/01/08-05/31/12, total direct cost \$1,075,000.
11. Siemens Research Contract, Dual energy CT, GSK Fung, PI, 9/1/10-8/31/12, Total Direct: \$50,000.
12. Siemens Research Contract, Evaluation of iterative reconstruction for CT, J Xu, PI, 10/1/11-9/30/12, Total Direct: \$75,000.
13. NIH research grant, Investigation of ANG II/AT1 Receptors with PET, R01 DK 050183, Z Szabo, PI, 3% effort for BMW Tsui, 07/01/08-06/30/13, total direct cost \$1,350,000.
14. NIH research grant, Quantitative SPECT for Targeted Radionuclide Therapy, R01 CA 109234, EC Frey, PI, 5% effort for BMW Tsui, 9/1/10-8/31/16.
15. Siemens Research Contract, Dual energy CT, GSK Fung, PI, 9/1/12-8/31/14, Total Direct: \$100,000.
16. Siemens Research Contract, Dual energy CT, GSK Fung, PI, 9/1/14-8/31/16, Total Direct: \$100,000.

CLINICAL ACTIVITIES

None

EDUCATIONAL ACTIVITIES

Educational Focus

Teaching

Classroom instruction

A. Classroom Instruction at the University of North Carolina at Chapel Hill, Chapel Hill, NC

<u>Course #</u>	<u>Course Description</u>	<u>Semester/Year</u>	<u>Responsibility</u>
INTS 92H	Issues of the Nuclear Age	Spring/1997	Course lecturer
BME 100	Introduction to Biomedical Engineering	Fall/1989-2002	Course Lecturer
BME 141	Medical Imaging I	Fall/1982-1988 Fall/1989-2002	Course lecturer Course director & lecturer
BME 142	Medical Imaging II	Spring/1983-1989 Spring/1990-2002	Course lecturer Course director & lecturer
BME 231	Special Topics	Fall & Spring/1988-2000	Course director & lecturer
BME 252	Digital Nuclear Imaging	Fall /1991, 1993, 1995, 1997, 1999	Course director & lecturer
BME 253	Advanced Medical Image Processing	Spring/1992, 1994, 1996, 1998, 2000	Course director & lecturer

BME 256	Small Animal Imaging	Fall 2001	Course director & lecturer
BME 259/ COMP 254	Picture Processing and Pattern Recognition	Fall/1983	Course director & lecturer
BME 393	Master's Thesis	Fall & Spring/1983-2002	Course director
BME 394	Doctoral dissertation	Fall & Spring/1985-2002	Course director

B. Classroom Instruction at Johns Hopkins University

<u>Course #</u>	<u>Course Description</u>	<u>Semester/Year</u>	<u>Responsibility</u>
ECE 520.434/ BME 580.472	Modern Biomedical Imaging Instrumentation and Techniques	Spring, 2009-2017	Course director & lecturer

Clinical instruction

<u>Course #</u>	<u>Course Description</u>	<u>Semester/Year</u>	<u>Responsibility</u>
----	Nuclear Medicine Resident Lectures	Fall, 2006-2018	Three 1.5 hours lectures
----	Nuclear Medicine Technologists Lecture Series	Summer, 2008	Three 1.5 hours lectures
----	Radiology Resident Lecture series	Summer, 2007	Three 1.5 hours lectures
----	Nuclear Medicine Technologists Lecture Series	Summer, 2007	Three 1.5 hours lectures
----	Radiology Resident Lecture series	Summer, 2003-2006	Three 1.5 hours lectures

Mentoring

Pre-doctoral Advisees /Mentees

- Eric C. Edgerton, 1983-1986, M.S., UNC-CH; Currently: Group Leader, Northrop Grumman Corporation.
- David R. Gilland, M.S., Ph.D., 1989-1993, M.S., Ph.D., UNC-CH; Currently: Associate Professor, University of Florida.
- Tsong-Tseh Tsay, 1983-1986, M.S., UNC-CH; Currently: Software engineer, Beckman Corporation.
- Martha J. Bolz, 1984-1986, M.S., UNC-CH; Currently: Software engineer.
- John T. Hagius, 1985-1988, M.S. UNC-CH; Currently: Software engineer.
- Chandrasekhar Ramanathan, 1988-1990, M.S., UNC-CH; Currently: Research Scientist, Division of Health Sciences and Technology, MIT.
- J. Lynne Hendricks, 1988-1992, M.S., UNC-CH; Currently: Software engineer, Sonix Corporation.
- James A. Terry, 1988-1991, Ph.D., UNC-CH; Currently: Assistant Professor, Tulane University.
- David S. Lalush, 1989-1992, Ph.D., UNC-CH; Currently: Associate Professor, UNC-CH & NCSU.
- J. Glen Ballard, 1986 – 1992, M.S., Ph.D., UNC-CH; Currently: consultant.
- Donald W. Wilson, Ph.D., Dec 1989-Feb 1994, Ph.D., UNC-CH; Currently: Associate Professor, University of Arizona.
- Jia Li, M.S., January 1991 - August 1996, M.S., UNC-CH; Currently: Software Engineer, Northern Telecom Cooperation.
- Seemeen S. Karimi, Jan. 1996 - May 1997, UNC-CH; Currently: Software Engineer, Analogic Corporation.
- David P. Lewis, 1987 – 1997, M.S., Ph.D., UNC-CH; Currently: Research Scientist, The Nathan Kline Institute for Psychiatric Research.
- Karen LaCroix, Aug, 1992- Dec. 1997, M.S., Ph.D. UNC-CH; Currently: consultant.
- Pritasha Popli, August 1996-Aug 1998, M.S., UNC-CH; Currently: software engineer.
- Wen-Tung Wang, February 1996-Aug 1998, M.S., UNC-CH; Currently; BME Faculty, University of Virginia.
- Yu-Wen Yang, August 1996-Aug 1998, M.S., UNC-CH; Currently: Ph.D. student, National Yang Ming University, Taipei, Taiwan.
- Daniel E. Wessell, October 1995-June 1999, Ph.D., UNC-CH; Currently: Radiology Fellow, Washington University.
- Jiraporn Tocharoenchai, August 1996-April 2001, Ph.D., UNC-CH; Currently: Associate Professor, Mahidol University, Bangkok, Thailand.
- Jim Garrity, December 2001- May 2003, M.S., UNC-CH; Currently: graduate student at UNC-CH
- Zhiyu Zhu, October 2000 – June 2004 (unfinished).
- Bryan Yoder, August 2001- June 2004, M.S., UNC-CH; Currently: Postdoctoral Research Fellow, UNC-CH.

24. W. Paul Segars, Aug 1996-December 2000, Ph.D., UNC-CH; 2002-2004, Assistant Professor of Radiology, Biomedical Engineering and Environmental Health Sciences, Johns Hopkins University; Currently: Assistant Professor, Duke University.
25. Young Ik Cho, September 2003-June 2005, M.S., Johns Hopkins University; Currently: software engineer
26. Kg Fai Kwok, B.S., September 2005-present.
27. Chi Liu, September 2003-April 2008, Ph.D., Johns Hopkins University; Currently: Postdoctoral Research Fellow, U. of Washington.
28. Mengxi Zhang, September 2006 - June 2008, M.S., Johns Hopkins University; Currently: Software Engineer, Siemens Healthcare, China.
29. Zhihui Sun, September 2006 - June 2008, M.S., Johns Hopkins University; Currently: Software Engineer, GE Healthcare Healthcare, China.
30. Yuchuan Wang, August 1999-August 2004, Ph.D., UNC-CH; 2004-2008, Research Associate, Department of Radiology, The Johns Hopkins University; Currently: Instructor, Harvard University.
31. Seng Peng Mok, September 2003-January 2009. Ph.D., Johns Hopkins University; Currently: Research Assistant Professor, The Chinese University of Hong Kong.
32. Taek-Soo Lee, June 2001- April, 2009. Ph.D., Johns Hopkins University; Currently: Postdoctoral Research Fellow, Department of Radiology, Johns Hopkins University.
33. Wang, Xiaolan, B.S., September 2005- March 2011.
34. Song, Na, M.S., January 2005 – April 2011.
35. Xin Li, M.S., September 2008 – December 2009.
36. Mahmoud Ismail, M.S., June 2010 – Many 2011.
37. Jian Hua Yu, B.S., September 2005- September 2011.
38. Si Chen, M.S., September 2005- September 2011.
39. Alia Khaled, B.S., September 2008-2015.
40. Yifeng Dong, B.S., September 2011-2014.
41. Fatma Elzahraa Elshahaby, B.S., September 2011-2014.
42. Andrew Rittenback, B.S., September 2009-2015.
43. Tao Feng, B.S., September 2010 –2015.
44. Jizhe Wang, B.S., September 2011-2016.

Post-doctoral Advisees /Mentees

1. Eric C. Frey, Ph.D., Research Associate, 1989-1991; Posdoctoral Research Fellow, 1988-1989, UNC-CH; Currently: Professor, Johns Hopkins University.
2. Zong Jian Cao, Ph.D., Postdoctoral Research Fellow, 1990-1991, Research Associate, 1991-1993, Research Assistant Professor, 1993-1994, Department of Biomedical Engineering, UNC-CH; Currently: Professor, University of George.
3. George K. Gregoriou, Ph.D., Postdoctoral Research Fellow, 1993-1995, Department of Biomedical Engineering, UNC-CH; Currently: Professor, University of Cyprus.
4. David P. Lewis, Ph.D., Postdoctoral Research Fellow, Jan 1998-Aug 1998, Department of Biomedical Engineering, UNC-CH; Curently:
5. Scott D. Wollenweber, Ph.D., Postdoctoral Research Fellow, 1996-1997, Research Associate, 1997-1998, Department of Biomedical Engineering, UNC-CH; Currently: GE Healthcare.
6. Karen J. Gilland, Ph.D., Postdoctoral Research Fellow, 1998, Research Associate, January 1999-March 2000, Department of Biomedical Engineering, UNC-CH; Currently: consultant.
7. Daniel E. Wessell, Ph.D., Postdoctoral Research Fellow, 2000-2001, Department of Biomedical Engineering, UNC-CH; Currently:
8. William H. Baird, Ph.D., Postdoctoral Research Fellow, 1999-2001, Department of Biomedical Engineering, UNC-CH, Currently: Assistant Professor, UNC-Willington.
9. David S. Lalush, Ph.D., Postdoctoral Research Fellow, 1992-1993, Research Associate, 1994-1995, Research Assistant Professor, 1995-2001, Department of Biomedical Engineering, UNC; Currently: Associate Professor, NCSU & UNC-CH.
10. W. Paul Segars, Ph.D., Postdoctoral Research Fellow, 2001, Department of Biomedical Engineering, UNC-CH; Currently: Assiatant Professor, Duke University.
11. Yujin Qi, Ph.D., Postdoctoral Research Fellow, April 2000-June 2001; Research Associate, July 2001-August 2002, Department of Biomedical Engineering, University of North Carolina at Chapel Hill; Research Associate, 2002-2004, Department of Radiology, Johns Hopkins University; Currently: Research Scientist, Shanghai Institute of Physics, China.

12. Xi-De Zhao, B.S., Research Associate, Department of Radiology, the Johns Hopkins University, 2002-2006; Research Associate, Department of Biomedical Engineering, University of North Carolina at Chapel Hill, 1992-2002; Visiting Associate Professor, UfNC-CH (Tsinghua University, Beijing, The People's Republic of China, November), 1988-1992; Currently: retired.
13. Alisa Walz-Flannigan, Ph.D., Postdoctoral Research Fellow, 2005-2006, Department of Radiology, the Johns Hopkins University; Currently: Physicist, Mayo Clinics.
14. Mikhail Shilov, Ph.D., Postdoctoral Research Fellow, April 2005 – January 2007, Department of Radiology, the Johns Hopkins University; Currently: financial analyst
15. David Graaf, Ph.D., Postdoctoral Research Fellow, September 2005- March 2007, Department of Radiology, the Johns Hopkins University; Currently: Physicist, York Hospital.
16. Jing Tang, Ph.D., Research Associate, Department of Radiology, the Johns Hopkins University, January 2008 – December 2009; Postdoctoral Research Fellow, Department of Radiology, the Johns Hopkins University, July 2005 – December 2007; Currently: Research Scientist, Philips PET, Cleveland, OH.
17. Jingyan Xu, Ph.D., Research Associate, Department of Radiology, the Johns Hopkins University, 2004-December 2009; Postdoctoral Research Fellow, Department of Radiology, the Johns Hopkins University, 2003-2004.
18. Yuchuan Wang, Ph.D., Research Associate, Department of Radiology, the Johns Hopkins University, 2005-2008; Postdoctoral Research Fellow, Department of Radiology, the Johns Hopkins University, 2004-2005.
19. George Fung, Ph.D., Research Associate, Department of Radiology, the Johns Hopkins University, March 2008 – 2010.
20. MinJae Park, Ph.D., Postdoctoral Research Fellow, Department of Radiology, the Johns Hopkins University, April 2010 - 2012.
21. Michael MacDonald, M.D, Ph.D., July 2014 – June 2015.
22. Andrew Rittenback, B.S., September 2015-2016.
23. Taek-Soo Lee, Ph.D., Instructor, 2017-2018; Research Associate, 2011-17; Postdoctoral Research Fellow, Department of Radiology, Johns Hopkins University, May 2009 - 2011.

Internation Trainee

1. International Atomic Energy Agency Fellowship Training grant, Recent procedures of SPECT and PET for the assessment of myocardial viability and evaluation of perfusion and functional parameters. Trainee, Dr. Yueqin Tian, China, 1/1/03 – 6/30/03.

Thesis committees

A. Ph.D. Dissertations, Principal Advisor

1. An Investigation of Maximum Likelihood-EM Image Reconstruction in Single-Photon Emission Computed Tomography. David R. Gilland, Ph.D. Dissertation, 1989.
2. A Receiver Operating Characteristic Analysis of Parallel, Fan Beam and Cone Beam Collimator Designs for Cardiac Single Photon Emission Computed Tomography Imaging. James A. Terry, Ph.D. Dissertation, 1992.
3. The Application of a Gibbs Priors with a Generalized Potential Function to Maximum *a posteriori* SPECT Reconstruction. David S. Lalush, Ph.D. Dissertation, 1992.
4. Evaluation of Several Reconstruction and Compensation techniques for improved quantitative accuracy in single photon emission computed tomography. J. Glen Ballard, Ph.D. Dissertation, 1993.
5. Noise and resolution properties of FB and ML-EM reconstructed SPECT images. Donald W. Wilson, Ph.D. Dissertation, 1994.
6. Slice selective excitation of stationary and flowing material in MRI. David P. Lewis, Ph.D. Dissertation, 1997.
7. Evaluation of an attenuation compensation method with respect to defect detection in Tc-99m-MIBI myocardial SPECT images. Karen LaCroix, Ph.D. Dissertation, 1997.
8. Rotating slant-hole single photon emission computed tomography. Daniel E. Wessell, Ph.D. Dissertation, 1999.
9. Development and application of the new dynamic NURBS-based cardiac torso (NCAT) phantom. W. Paul Segars, Ph.D. Dissertation, 2000.
10. Characterization of a dual-camera coincidence imaging system. Chiraporn Tocharoenchai, Ph.D. dissertation, 2001.
11. Development and Applications of High-Sensitivity and High-Resolution Fully 3D SPECT using Two Different Collimator Designs. Yuchuan Wang, Ph.D. Dissertation, 2004.
12. Breast and Cardiac SPECT Using a Rotating Slant-Hole Collimator. Chi Liu, Ph.D. Dissertation, 2008.

13. Design and Development of a Multi-Pinhole Collimator for High-Resolution and High-Efficiency SPECT Imaging of Atherosclerotic Plaques in ApoE^{-/-} Mice. Seng Peng Mok, Ph.D. Dissertation, 2009.
14. Optimization & Evaluation of 4D MAP-RBI-EM Image Reconstruction Method For Gated Myocardial Perfusion SPECT. Taek-Soo Lee, Ph.D. Dissertation, 2009.
15. Development of 4D Image Reconstruction Method with Respiratory Motion Compensation for Oncological PET Imaging. Si Chen, Ph.D. Dissertation, 2011.
16. Image Reconstruction and Geometrical Modeling of Bone Cross Sections from Limited Angle Dual Energy Projection Data. Alia S. Khaled, Ph.D. Dissertation, 2014.
17. Development and Initial Evaluation of an MR Compatible Preclinical SPECT Insert for Simultaneous SPECT/MR Imaging. Andrew J. Rittenback, Ph.D. Dissertation, 2015.
18. 4D Image Reconstruction with Dual Respiratory and Cardiac Motion Correction for Cardiac PET. Tao Feng, Ph.D. Dissertation, 2015.
19. Development and Application of Feature-Guided Cardiac Motion Estimation Methods for 4D Cardiac PET. Jizhe Wang, Ph.D., 2016

B. Ph.D. Dissertations, Committee Member

1. The Effectiveness of Adaptive Contrast Enhancement. John B. Zimmerman, Ph.D. Dissertation, 1984.
2. A Finite Size Pencil Beam Model Used for Three Dimensional Dose Calculation. J. Daniel Borland, Ph.D. Dissertation, 1989.
3. Human vs. Vision Model Performance for two medical image estimation tasks. Derek Puff, Ph.D. Dissertation, 1995.
4. Model based automatic landmark identification in orthodontic cephalometric radiographs. David J. Rudolph, Ph.D. Dissertation, 1995.
5. Image geometry through multiscale statistics, Terry S-W Yoo, Ph.D. Dissertation, 1996.
6. Application of reconstruction-based scatter compensation to single- and dual-isotope SPECT imaging using multiple energy window projection data. Dan J. Kadrmaz, Ph.D. Dissertation, 1997.
7. Automated identification and measurement of cardiac ventricular volume using core atoms, George D. Stetten. M.D., M.S., Ph.D. Dissertation, 1999.
8. Improvements of Simultaneous Tl-201 and Tc-99m Dual Isotope Myocardial SPECT Imaging, Wen Tung Wang, M.S., Ph.D. Dissertation, 2001.
9. Application of augmented reality for laparoscopic surgery, Jeremy D. Ackerman, Ph.D. Dissertation, 2002.
10. Development and Applications of High-Sensitivity and High-Resolution Fully 3D SPECT Imaging Techniques Using Two Different Collimator Designs, Yuchuan Wang, 2004.
11. SPECT Brain Imaging of the Dopaminergic System in Parkinsonism Using 123I and 99mTc Labeled Agents. Yong Du, Ph.D. Dissertation, 2004.
12. Evaluation and Optimization of a Model-Based Crosstalk Compensation Method in Simultaneous Rest Tl-201 and Stress Tc-99m Dual-isotope Myocardial Perfusion SPECT, Xiyun Song, Ph.D. Dissertation, 2004.
13. Three Class ROC Analysis, Xin He, Ph.D. Dissertation, 2005.
14. Cardiospher-Derived Cells for Cardiac Regeneration, Connie Chang, Ph.D. Dissertation, Department of Biomedical Engineering, Johns Hopkins University, July 2012.

C. M.S. Thesis, Principal Advisor

1. Array processor applications in high-speed tomographic image reconstruction. Eric R. Edgerton, Master Thesis, 1985.
2. Determination of the optimum filter function for SPECT imaging. David R. Gilland, Master Thesis, 1985, (Principal Advisor)
3. Quantitative cardiac volume determination using SPECT. Tsong-Tseh Tsay, Master Thesis, 1986.
4. Quantitative evaluation of MRI systems performance using a phantom. Martha J. Bolz, M.S. Thesis, 1988.
5. A comparison of filtered backprojection and iterative maximum likelihood reconstruction algorithms in cone beam SPECT, John T. Hagius, M.S. Thesis, 1989.
6. Quantitation in SPECT: An evaluation of several reconstruction techniques. J. Glen Ballard, M.S. Thesis, 1989.
7. Application of a time transformation to slice selection for RF power reduction in MRI. David P. Lewis, M.S. Thesis, 1989.
8. Fast maximum likelihood estimation in SPECT image reconstruction, Chandrasekhar Ramanathan, M.S. Thesis, 1990.
9. Three-dimensional display methods for SPECT medical image presentation, J. Lynne Hendricks, M.S. Thesis, 1992.

10. An observer evaluation study of restoration filters for defect detection in cardiac SPECT. Jia Li, M.S. Thesis, 1994.
11. An investigation of the use of single-energy x-ray CT images for attenuation compensation in SPECT. Karen LaCroix, M.S. Thesis, 1994.
12. Comparison of short- and full-scan fan-beam myocardial SPECT images with and without non-uniform attenuation compensation. Pritasha Popli, M.S. Thesis, 1998.
13. An evaluation of non-uniform attenuation correction for Tc-99m HMPAO SPECT brain imaging using asymmetric fan beam collimators, Yu-Wen Yang, M.S. Thesis, 1998.
14. An evaluation of an Analytical Collimator-Detector Response Compensation Method in SPECT, Wen Tung Wang, M.S. Thesis, 1999.
15. Tumor SPECT imaging using medium and high-energy collimators. Sunita Sayeram, M.S. Thesis, 2001.
16. Development of a Dynamic Model for the Lung Lobes and Airway Tree in the 4D NCAT Phantom. Jim Garrity, M.S. Thesis, 2003.
17. Development of a High Resolution Detector for Small Animal SPECT Imaging. Bryan Yoder, M.S. Thesis, 2004.
18. Measurement of Point Spread Function for a Compact MR-Compatible Small Animal SPECT System. Jianhua Yu, M. S. Thesis, 2010.

D. M.S. Thesis, Committee Member

1. Evaluation of a Rotating Camera System for Single Photon Emission Computed Tomography. Nicholas Perdikaris, Master Thesis, 1984.
2. The study of context effects in medical image contrast enhancement assessment via a binocular ganzfeld, Derek Puff, Master Thesis, 1992.
3. Resolution recovery of SPECT images using fan beam collimator. Seemeen S. Karimi, Master Thesis, 1997.
4. A Monte Carlo Investigation of Dual-Planar Circular-Orbit Cone Beam Single-Photon Emission Computed Tomography, Andrew DiMeo, Master Thesis, 2000.
5. Validation and Evaluation of Model Based Scatter Response Compensation for Myocardial SPECT Imaging, Xiyun Song, Master Thesis, 2000.
6. Performance evaluation of a small field-of-view camera for myocardial perfusion SPECT using a channelized Hotelling observer, Master Thesis, Stacia Sawyer, 2001.

RESEARCH ACTIVITIES

Inventions, Patents, Copyrights

A. US Patent

1. US Patent #: 7786444; Title: "Multi-aperture single photon emission computed tomography"; Inventors: Douglas J. Wagenaar, Bradley E. Patt, Benjamin M. W. Tsui; Issue Date: 8/31/2010.

B. Software Licences

1. Quantitative SPECT Image Reconstruction Software Package, Johns Hopkins University Ref. # C4295, Inventors: EC Frey EC, BMW Tsui et al., Non-exclusive licensee agreement with GE Healthcare, 2004-present.
2. 4D Digital Mouse Whole Body (MOBY) Phantom, Johns Hopkins University Ref. # C04403, Inventors: WP Segars and BMW Tsui. 2005-present.
3. 4D Digital Rat Whole Body (ROBY) Phantom, Johns Hopkins University Ref. # C04404, Inventors: Segars WP and Tsui BMW. 2005-present.
4. The 4D Digital Extended Cardiac-Torso (XCAT) Phantom, Co-Licensors: BMW Tsui and WP Segars, Johns Hopkins University Ref. # 4405. 2005-present.
5. High Resolution Three-dimensional (3D) Iterative Pinhole Image Reconstruction Methods Software Package, Co-Licensors: BMW Tsui and Y Wang, Johns Hopkins University Ref. # 4336, Exclusive license agreement with Gamma Medica-Ideas, 2005-present.
6. The 4D NURB based Cardiac-Torso (NCAT) Phantom, Co-Licensors: BMW Tsui and WP Segars, Johns Hopkins University Ref. # 4520. 2005-present.
7. XCAT Phantom CT Projector. BMW Tsui and WP Segars, Johns Hopkins University Ref. # 11016, 2010-present.
8. 4D Extended Cardiac-Torso (XCAT) Phantom Version 2.0. BMW Tsui and WP Segars, Johns Hopkins University Ref. # 11017, 2010-present.

9. Three-dimensional (3D) iterative single pinhole (SPH) and multi-pinhole (MPH) single photon emission computed tomography (SPECT) and programming software with collimator-detector response correction (CDRC). BMW Tsui and Y Wang, Johns Hopkins University Ref. # 11044, Exclusive license agreement with Gamma Medica-Ideas, 2010-present.
10. Three-dimensional (3D) iterative single pinhole (SPH) and multi-pinhole (MPH) single photon emission computed tomography (SPECT) and programming software with computed tomography (CT) based attenuation correction (AC), or CT-AC. BMW Tsui and Y Wang, Johns Hopkins University Ref. # 11045, Exclusive license agreement with Gamma Medica-Ideas, 2010-present.
11. Three-dimensional (3D) iterative multi-pinhole (MPH) single-photon emission computed tomography (SPECT) image reconstruction methods and computer programming software. BMW Tsui and Y Wang, Johns Hopkins University Ref. # 11046, Exclusive license agreement with Gamma Medica-Ideas, 2010-present.
12. 4D Digital Mouse Whole Body (MOBY) Phantom Version 2.0. BMW Tsui and WP Segars, Johns Hopkins University Ref. # 11088, 2010-present.
13. 4D Digital Rat Whole Body (ROBY) Phantom Version 2.0. BMW Tsui and WP Segars, Johns Hopkins University Ref. # 11089, 2010-present.

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

A. University Committee Memberships

- Member, Advisory Committee for the development of a joint UNC-Chapel Hill-NC State University Department of Biomedical Engineering, 2001-2002
- Member, Faculty Advisory Committee, Office of Licensing and Technology Development, Johns Hopkins University, 2005-2015

B. School of Medicine Committee Memberships

- Member, Faculty Advisory Committee, Office of Research Administration, School of Medicine, Johns Hopkins University, 2008-2009
- Member, Post-Tenure Review Committee, School of Medicine, UNC-CH, 2001-2002
- Member, Research Advisory Committee (RAC), School of Medicine, UNC-CH, 2001-2002
- Member, Dean's Advisory Committee, School of Medicine, UNC-CH, 2001-2002

C. Departmental Committee Memberships

- Member, Computer Committee, Department of BME, UNC-CH, 1990-1999
- Director of Research and Chair, Research Committee, Department of BME, UNC-CH, 1991 – October 2001
- Member, Advisory Committee, Department of BME, UNC-CH, 1992-2002
- Member, Appointment and Promotion Committee, Department of BME, UNC-CH, 1992-2002
- Member, Full Professor Committee, Department of BME, UNC-CH, 1992-2002
- Member, Full Professor Committee, Department of Radiology, UNC-CH, 1992-2002
- Director, Medical Imaging Research Laboratory, Department of BME, UNC-CH, 1988-2002
- Director, Imaging Track, Department of BME, UNC-CH, 1989-2002
- Vice Chair, Department of Biomedical Engineering (BME), UNC-CH, January 1999 - October 2001
- Interim Chair, Department of Biomedical Engineering (BME), UNC-CH, November 2001 – June 2002
- Chair, Ad Hoc Radiology Office of Research Administration and Training Review Committee. The Russell H. Morgan Department of Radiology, Johns Hopkins University, 2005-2007
- Co-Executive, Radiology Office of Research Administration (RORA), The Russell H. Morgan Department of Radiology, Johns Hopkins University, February 2015 – October 2015
- Member, Executive Committee, The Russell H. Morgan Department of Radiology, Johns Hopkins University, 2002-2016.
- Chair, Oversight Committee, Radiology Office of Research Administration. The Russell H. Morgan Department of Radiology, Johns Hopkins University, 2008-2017.
- Technical Director, Small Animal Imaging Resource Program (SAIRP), Johns Hopkins Medical Institutes, July 2002-2017
- Member, Oversight Committee, Molecular Imaging Center, Johns Hopkins Medical Institutes, 2003-present
- Director, Division of Medical Imaging Physics, The Russell H. Morgan Department of Radiology and Radiological Sciences, Johns Hopkins University, July 2002 – 2017
- Member, Promotions Committee, The Russell H. Morgan Department of Radiology, Johns Hopkins University, 2004-present

Member, Research Chiefs-of-Staff, The Russell H. Morgan Department of Radiology and Radiological Sciences, Johns Hopkins University, February 2016 – present

Editorial Activities

Editorial Board appointments

- A. Member, Editorial Board, Journal of Nuclear Cardiology, 2000-2010.
- B. Deputy Editor-in-Chief, Annals of Nuclear Medicine and Sciences, The Society of Nuclear Medicine, Republic of China, 1999-present.
- C. Member, Main Editorial Board, Physics in Medicine & Biology, 1996-2002.
- D. Member, Advisory Editorial Board, Annals of Nuclear Medicine and Sciences, The Society of Nuclear Medicine, Republic of China, 1995-1999.
- E. Associate Conference Editor, IEEE Nuclear Science Symposium and Medical Imaging Conference, 1994-1996.
- F. Guest Editor, IEEE Nuclear Science Symposium and Medical Imaging Conference, 1993-1994.

Journal peer review activities

Reviewer: IEEE Transactions in Medical Imaging, IEEE Transactions in Nuclear Science, Journal of Nuclear Medicine, Medical Physics, Physics in Medicine and Biology, Journal of Nuclear Cardiology, Investigative Radiology, Radiology, Journal of Optical Society of America, Science: 1986 to present

Other peer review activities

None

Advisory Committees, Review Groups/Study Sections

A. NIH Workshops

Invited Participant, NIBIB Bioengineering and Biomedical Imaging Training Workshop, Bethesda, MD, August 26-27, 2002.

Invited Participant, NIBIB Workshop on Defining the State-of-the-Art in Biomedical Imaging: Research Needs for the Future, Jackson, MS, March 16-18, 2003.

B. Other Governmental/Society Workshops

Invited Participant, The Radiological Society of North America (RSNA) Workshop on "Toward Quantitative Imaging (TQI)", RSNA Headquarters, Oak Brook, IL, July 10-11, 2008

C. Scientific Grant Review Committees: NIH Study Sections

Member, Scientific Review Committee, NIH ZCA1 TCRB-9 M2 R: Oncology Co-Clinical Imaging Research Resources to Encourage Consensus on Quantitative Imaging Methods and Precision Medicine. March 30, 2017

Member, Phase 1 Scientific Review Committee, NIH ZRG1 RFA RM13-007: New Innovator Award, April 2016

Member, Phase 1 Scientific Review Committee, NIH Director's New Innovator Award for 2014-2015, January 2015

Member, Scientific Review Committee, NIH Transformative Research Award, March 2015

Member, Phase 1 Scientific Review Committee, NIH Director's New Innovator Award for 2013-2014, January 2014

Member, NIDDKD Zdk1 GRB-G Study Section, February 2014.

External Reviewer, NIH Council ZDK1 GRB-G M5 1, February 2014.

External Reviewer, NIH BMIT Study Section, August 2014

Member, Special Emphasis Panel for PAR12-145, NCI Exploratory/Developmental Research Grant Program (NCI Omnibus R21); PAR12-144, NCI Small Grants Program for Cancer Research (NCI Omnibus R03), June 26-27, 2013.

Member, NIH Director's New Innovator Award Review Panel, Phase 1 Mail Review of DP2 Applications, January, 2013.

Member, Scientific Review Committee, NCI Cancer Screening & Biomarker R21/R03 Omnibus, ZCA1 RPRB-7 (01) S Study Section, June 2013.

External Reviewer, NIH BMIT study Section, June 2012.

Member, NIH Special Emphasis Panel/Scientific Review Group 2012/01 ZRG1 DTCS-U (81) S, August 2011.

Member, NIH Director's Early Independence Award review panel, March 2011.

Member, NIH Special Emphasis Panel/Scientific Review Group 2010/05 ZGM1 NDIA-O (01) X, Director's Award, 01/21/2010.

Member, NIH Bioengineering Research Partnerships and Imaging Member Conflicts, XRG1 SBIB-V (50), 02/16/2010.

Member, NIH Special Emphasis Panel/Scientific Review Group 2009/10 ZRG1 SBIB-V (58) R – RFA 0D-09-003 Challenge Grants Pannel#23, 07/20-21/2009-07/21/2009.

Member, NIH study Section, NIBIB 2008/10 Zeb1 OSR-E (01) S Career Development Awards (Ks) and Institutional Training Grants (T32) Review Committee, July 16, 2008.

Member, NIH Study Section, ZRG1 SBIB-U 50R: Medical Imaging BRP, Washington, DC, May 30, 2007.

Member, NIH Study Section, ZRG1 SBIB-J 51 S: Development of Methods of In Vivo Imaging and bioengineering Research, , Washington, DC, March 12-13, 2007.

Member, NIH Study Section, ZRG1 SBMI-S (10) 10: Bioengineering Imaging and Imaging Technology, Washington, DC, June 6, 2006.

Member, NIH Study Section, Special Emphasis Panel for RFA-CA-05—24: Centers of Cancer Nanotechnology Excellence, Washington, DC, July 19-22, 2005.

Member, NIH Study Section, ZRG1 SBIB-D 02M: Bioengineering Imaging and Imaging Technology, Washington, DC, July 7, 2005.

Member, NIH Study Section, ZRG1 SBIB-L 91S: Cone-Beam CT, Washington, DC, April 5, 2005.

Member, NIH Study Section, ZRG1 SBIB-J 50R: PAR-04-023: Bioengineering Research Partnerships, San Diego, CA, February 11, 2005.

Member, NIH Study Section, ZRG1 SBIB-J (90) (S), Special Emphasis Panel/Initial Review Group, Tyson Corner, VA, November 15-16, 2004.

Member, NIH Study Section, ZRG1-SRB (50) Bioengineering Partnership grant applications, LaJolla, CA, February 12, 2003.

Member, NIH Study Section, SSS-9, SSS-9(35), SSS-9(40), SSS-9(41) SSS-9(10) and SSS-9(11) grant applications, March 6-8, 2002.

Member, NIH Study Section, Development of Novel Technologies for In Vivo Imaging, October 1-2, 2001.

Member, NIH Diagnostic Imaging Study Section, Surgery, Radiology and Bioengineering Initial Review Group, October 17-19, 1999.

Member, Special Emphasis Panel for NIH RFA AI-99-005: “Immunological Phenotyping of Mouse Mutants”, August 5, 1999.

Member, NIH Multidisciplinary Sciences Special Emphasis Panel, ZRG7 DMG (1), June 1997.

Member, NIH NCI Special Review Committee for R13 CA73729, January, 1996.

Member, NIH Study Section on Diagnostic Radiology, February 8-9, 1996.

Member, NIH Special Study Section - 9, March 20-22, 1994.

Chairperson, NIH Multidisciplinary Special Emphasis Panel, ZRG7 SSS-X, December 15, 1993.

Member, NIH Special Study Section - 9, June 30 - July 2, 1993.

Member, NIH reverse site visit team for Washington University Resource Grant application, February, 1993.

Member, Diagnostic Radiology Study Section, Division of Research Grants, National Institute of Health (NIH), 1988-1992.

Member, NIH site visit team for University of Arizona program project grant application, May, 1991.

Member, NIH reverse site visit team for University of Michigan program project grant application, April, 1991.

Member, NIH *Ad Hoc* SRC Review Committee for RFA 90-CA-21 applications, NIH, April, 1991.

Member, NIH site visit team for University of Arizona program project grant application, March, 1990.

Member, NIH site visit team for University of Michigan program project grant application, July, 1990.

Reviewer, NIH NCI Outstanding Investigator Grant (OIG) application, October 1989.

Member, NIH Special Study Section on Diagnostic and Therapeutic Radiology, NIH, December, 1987.

Member, NIH Special Study Section on Ultrasound and Magnetic Resonance Imaging, NIH, April, 1987.

Member, NIH site visit team for University of Southern California program project grant application, March, 1987.

D. Scientific Grant Review Committees: Other US Government Grant Funding Agencies

Member, DOE Grant Review Panel, Livermore, CA, August 2014

Member, US Department of Energy, Office of Science, BER Life and Medical Sciences Division, DOE 10-265, Radiochemistry and Instrumentation Research Panel Review Committee, Washington, DC, May 27, 2010.

Member, US Department of Energy, Office of Science, BER Life and Medical Sciences Division, DOE 08-11/NM Imaging Instrumentation Review Committee, Washington, DC, June 6, 2008.

Reviewer, US Department of Energy, Office of Science, SBIR/STTR Phase II Grant Application, June 15, 2008

Member, Scientific Review Committee BC-RON, 2001 Breast Cancer Research Program (BCRP), Department of Defense Congressionally Directed Medical Research Programs (CDMRP), August 15-17, 2001.

Member, Review Panel, National Science Foundation (NSF) Faculty Early Career Development (CAREER) Program, January 9-10, 2001.

Member, Scientific Review Committee BC-RON, 2000 Breast Cancer Research Program (BCRP), Department of Defense Congressionally Directed Medical Research Programs (CDMRP), August 16-18, 2000.

Member, 1998 Breast Cancer Research Program (BCRP), Department of Defense United States Army Medical Research and Material Command (USAMRMC), September 18-20, 1998.

Member, 1997 Breast Cancer Research Program (BCRP), Department of Defense United States Army Medical Research and Material Command (USAMRMC), September 5-7, 1997.

Member, review panel for assessment of projects in the Nuclear Medicine Program of the Department of Energy Office of Health and Environmental Research, April 1992.

Reviewer, grant application, Physical and Technological Research Division, Office of Health and Environmental Research, Department of Energy, July, 1988.

E. Scientific Grant Review Committees: US State Government Grant Funding Agencies

Member, Study Section, Technologies for Earlier Detection, Breast Cancer Research Program, University of California for the State of California, March 27, 1998.

Member, Study Section, Technologies for Earlier Detection, Breast Cancer Research Program, University of California for the State of California, March 31 - April 1, 1996.

Member, Study Section, Technologies for Earlier Detection, Breast Cancer Research Program, University of California for the State of California, May 22-23, 1995.

E. Scientific Grant Review Committees: Private Foundation Grant Funding Agencies

Reviewer, New GRC proposed conference, Gordon Research Conferences, August 2012.

Guest Member, Scientific Advisory Committee, Whitaker Foundation, April 24-25, 1994.

G. Scientific Grant Review Committees: Foreign Government Grant Funding Agencies

External Reviewer, Discovery Grants Program, National Sciences and Engineering, Research Council of Canada, January 2016

External Reviewer, The Research Council of Norway, Centres of Research-based Innovation Scheme, February 2014

Member, Expert Committee, Canada Foundation for Innovation (CFI), June 2014.

Reviewer, 2013 Multi-Year Research Grant (MYRG), University of Macau, March 2013.

Reviewer, 2012 Multi-Year Research Grant (MYRG), University of Macau, March 2012.

Member, External Review Panel, Cancer Research Program, Ontario Institute for Cancer Research (OICR), Smarter Imaging Program Imaging Translational Platform, Princess Margaret Hospital, University Health Network, March 6-7, 2012.

Reviewer, Leaders Opportunity Fund, Canada Foundation for Innovation, March 2012.

Member, Expert Committee #253, Leading Edge Fund, Canadian Research Foundation, Toronto, Canada, June 8, 2006.

Member, National Health Research Institutes Grant Review Committee, August 22-26, 2006, Taipei, Taiwan, ROC.

Member, National Health Research Institutes Grant Review Committee, August 12-14, 2003, Taipei, Taiwan, ROC.

Member, National Health Research Institutes Grant Review Committee, September 5-7, 2002, Taipei, Taiwan, ROC.

Member, National Health Research Institutes Grant Review Committee, September 4-6, 2001, Taipei, Taiwan, ROC

Member, Medical Biotechnology Committee, National Health Research Institutes, Department of Health, The Republic of China, 1994-1998.

Reviewer, grant application, British Columbia Health Care Research Foundation, Canada, 1989, 1994.

H. National Committees

Member, Committee for "Emerging Dynamic Biomedical Imaging", National Academy of Science (NAS) and the Institute of Medicine (IOM) of the National Research Council (NRC), 1993-1995.

I. International/Foreign Committees

Member, Assessment Committee on Research in Applied Physics, 2010-2015 at Delft University of Technology, Delft, The Netherlands, November 23-25, 2016.

Member, International Advisory Committee for the B. Eng. In Medical Engineering of Hong Kong University, March 12, 2007-2016.

Member, Advisory Committee, Positron Emission Tomography (PET) Imaging Center, Tri-Service General Hospital, Taipei, Taiwan, June 2001 to December 2001.

Invited participant, National Development Seminar, The Republic of China, July 17-22, 1995.

J. Advisory Boards

Member, Scientific Advisory Board, Elmet Technologies, 2011-present.

Member, Medical Advisory Board, Nuclear Business, General Electric Medical Systems, 1992-1993.

Professional Societies

A. Administrative Appointments

Member, Ad Hoc Committee on Quantitative Imaging, American Association of Physicists in Medicine (AAPM), June 2009 – present

Member, Committee on Quantitative Imaging, Radiological Society of North America (RSNA), June 2008 – present
President, Chinese American Society of Nuclear Medicine, 1995-1997

President-Elect, Chinese American Society of Nuclear Medicine, 1993-1994

Treasurer, Southeastern Chapter of the Society of Nuclear Medicine, 1997-1999

Member, Society of Nuclear Medicine's Computer and Instrumentation Council 1991 Focus Group on Quantitative Imaging, 1991- 1994

Member, Executive Committee, Computer and Instrumentation Council, Society of Nuclear Medicine (SNM), 1991-1993

Member, Board of Directors, Brain Imaging Council, Society of Nuclear Medicine (SNM), 1988-1992

Member, Certification Examination, Certification Board of Nuclear Cardiology, American Society of Nuclear Cardiology, 2008-2009.

B. Membership

Fellow, Institute of Electrical and Electronic Engineers (IEEE), 2005-present

Fellow and Chartered Physicist, Institute of Physics (IOP), 1999-present

Fellow, American Institute for Medical and Biological Engineers (AIMBE), 1997-present

Member, Basic and Translational Sciences Committee, Academy of Radiology Research, 2002-present

Member, International Commission on Radiation Units and Measurements (ICRU) Report Committee on Assessment of Image Quality in Nuclear Medicine, 2001-present

Senior Member, Institute of Electrical and Electronic Engineers (IEEE), 1985-2004

Member, Academy of Molecular Imaging (AMI), 2002-present

Member, Society of Nuclear Medicine (SNM), 1978-present

Member, American Association of Physicists in Medicine (AAPM), 1976-present

Member, Biomedical Engineering Society (BMES), 1990-present

Member, Society of Magnetic Resonance in Medicine (SMRM), 1985-present

Member, American Society of Nuclear Cardiology (ASNC), 1995-present

Member, Instrumentation and Computer Council, Society of Nuclear Medicine (SNM), 1989-present

Member, Southeastern Chapter, Society of Nuclear Medicine (SNM), 1991-present

Member, Chinese American Society of Nuclear Medicine, 1985-present

Member, Association of University Radiologists (AUR), 1980-1992

Member, World Molecular Imaging Society (WMIS), 2006-present

Conference Organizer

A. National

Moderator, SPECT Image Reconstruction Techniques, Continuing Education Course, in Society of Nuclear Medicine 35th Annual Meeting, San Francisco, California, June 14-17, 1988.

Member, Program Committee, Technology for Health, 1991 Annual Fall Meeting of the Biomedical Engineering

Member, Program Committee, 1991 Southeastern Chapter of the Society of Nuclear Medicine Meeting, Hollywood, Florida, October 11-13, 1991.

Sub-chairman, Scientific Program Committee, 40th Annual Society of Nuclear Medicine, Toronto, Canada, June 10-13, 1993.

Sub-Chair, Program Committee, Annual Meeting of the Society of Nuclear Medicine, 2000-2002.

Member, Scientific Program Committee, Annual Society of Nuclear Medicine Meeting, 1992, 1994-1995, 1998-2007.

B. International

Chair, Medical Engineering – Medical Imaging of the Brain, in Second SCBA (Society of Chinese Bioscientists in America) International Symposium and Workshop, Univ. of California, Berkeley, California, June 27-30, 1988.
 Chair, Cardiovascular Imaging Track, 20th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Hong Kong, 1998.
 Co-Chair, Imaging and Imaging Processing Track, 1999 Joint BMES-EMBS Conference, Atlanta, GA, Oct 13-16, 1999.
 Program Chairman, Medical Imaging Conference, IEEE Nuclear Science Symposium and Medical Imaging Conference, San Diego, CA, November 3-10, 2001.
 Member, Program Committee, 2002 IEEE International Symposium on Biomedical Imaging: Macro to Nano, Washington, D.C., 7 – 10 July 2002.
 Member, Program Committee, International Meeting on Fully Three-dimensional Image Reconstruction for Radiology and Nuclear Medicine, 1995-2007.
 Member, Program Committee, Medical Imaging Conference, IEEE Nuclear Science Symposium, 1991-2007.
 General Chair, IEEE Nuclear Science Symposium and Medical Imaging Conference, Honolulu, HI, October 16-23, 2007.
 Co-Conference Chair, The Fully Three-Dimensional Image Reconstruction for Radiology and Nuclear medicine, Beijing, China, September, 2009.
 Conference Chair, CP-2017, 6th International Workshop on Computational Human Phantoms and Applications, Annapolis, MD, USA, August 27-30, 2017.

Session Chair

Too many to list

Consultantships

Member, Scientific Advisory Board, Medical Diagnostics, GE Healthcare, May 17-18, 2010.
 Member, Technology Advisory Board, Elmet Technologies, 2011-2017
 Consultant, Hybridyne Imaging Technologies, 2009-2017

RECOGNITION *(in chronological order, earliest first by start date under each subcategory)*

Awards, Honors

2017	Alumni Award, Department of Radiology, University of Chicago
2015	Edward J. Hoffman Memorial Award, Society of Nuclear Medicine and Molecular Imaging (SNMMI)
2009	Edward J. Hoffman Imaging Scientist Award, Nuclear and Plasma Society, Institutes of Electrical and Electronics Engineers (IEEE)
2005-present	Fellow, Institutes of Electrical and Electronics Engineers (IEEE)
1999-present	Fellow and Chartered Physicist, Institute of Physics (IOP)
1997-present	Fellow, American Institute for Medical and Biological Engineering (AIMBE)
1977	Kodak Scientific Research Award
1973-1977	University of Chicago Fellowship
1970-1972	Dartmouth College Fellowship
1966-1970	Hong Kong Government Fellowship, Hong Kong
1965-1966	Scholastic Achievement Award, St. Paul Co-educational College, Hong Kong

Invited Talks

A. External Examiner

1. External Examiner of Ph.D. Dissertation, “Fusion of Anatomical and Functional Medical Images” by Babak Assai Ardekani, University of Technology, Sydney, Australia, 1995.
2. External Examiner of Ph.D. Dissertation, "Analytical Calculations of Photon Distributions in SPECT Projections" by Roger Glenn Wells, Department of Physics and Astronomy, University of British Columbia, Vancouver, Canada, August 25, 1997.
3. External Examiner of Ph.D. Dissertation, “Attenuation Correction in Cone-Beam Geometry Using Transmission Scans in SPECT” by Valerie La, Institut National Polytechnique de Grenoble, Grenoble, France, September 23, 1997.
4. External Examiner of Ph.D. Dissertation, “Scatter and Attenuation Correction Techniques for Absolute Quantification of Radionuclide distributions with SPECT” by Hanlie Naude, The University of The Orange Free State, South Africa, July, 1998.

5. External Examiner of Ph.D. Thesis, "Evaluation of Left Ventricular Function in Patients with Atrial Fibrillation Before and After Radio Frequency Ablation by Radionuclide Imaging" by *Shaban Abdel El-hameed El-Said*, Cairo University, Egypt, April, 2008.
6. External Examiner of Ph.D. Theses, "Development and Evaluation of a SPECT Attenuation Correction Method using an Open Transmission Source and Scatter Correction." By Johannes Abraham van Staden, Faculty of Health Science, Department of Medical Physics at the University of the Free State, Bloemfontein, South Africa, October, 2011.
7. External Examiner of Ph.D. Theses, "Quantitative Multiplexed Multi-pinhole Small-Animal SPECT" by Jared H. Strydhorst, Faculty of Graduate and Postdoctoral Arrairs, Carleton University, Ottawa, Ontario, Canada, 2014.

B. Invited/Visiting Lectureships/Professorships

1. Invited Course Lecturer, Commission Training in Nuclear Medicine Imaging, sponsored by the Hospital Authority, Hong Kong, November 23-28, 1998.
2. Distinguished Visiting Scientist, sponsored by the Medical Research Council, South Africa, hosted by the Department of Medical Physics, The Orange Free State University, Bloemfentein, South Africa, May 11-30, 1999.
3. Invited Lecturer, VIII Argentina Congress of Medical Physics, Mendoza, Argentina, November 25-28, 1999.
4. Visiting Professor, Yang Ming National University, Taipei, Taiwan, March 10-14, 2002.
5. Visiting Professor, Tri-Service General Hospital, Taipei, Taiwan, December 2-6, 2002.
6. Visiting Professor, Institute of Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, March 7-14, 2003.
7. William Mong Distinguished Visiting Professor, University of Hong Kong, September 20-24, 2004.
8. Visiting Professor, Tri-Service General Hospital, Taipei, Taiwan, November 12-16, 2007.
9. Siu Lien Ling Wong Visiting Fellow 2007/2008, Chung Chi College, The Chinese University of Hong Kong, January 21 – February 1, 2008.
10. Japan Association for the Advancement of Medical Equipment (JAAME) Visisting Fellow, Department of Investigative Radiology, National Cardiovascular Center Research Institute, Osaka, Japan, February 28-March 11, 2008.
11. External Lecturer, International Atomic Energy Agency (IAEA) regional (African) training course for Medical Physicists on Nuclear Medicine Imaging Processing, Analysis and Quantification, South Africa, hosted by the Department of Medical Physics, The Orange Free State University, Bloemfentein, South Africa, June 1-5, 2009.
12. Japan Association for the Advancement of Medical Equipment (JAAME) Visisting Fellow, Department of Investigative Radiology, National Cardiovascular Center Research Institute, Osaka, Japan, January 24 - February 4, 2011.
13. Invited Course Lecturer, Commission Training in Nuclear Medicine Imaging, sponsored by the Hospital Authority, Hong Kong, January 9 - 11, 2014.
14. Invited Consultant, Insitute of Nuclear Energy Research (INER), Longtan, Taoyuan, Taiwan, January 15-18, 2014.
15. Invited Consultant, Insitute of Nuclear Energy Research (INER), Longtan, Taoyuan, Taiwan, July 26-29, 2015.
16. Invited Consultant, Insitute of Nuclear Energy Research (INER), Longtan, Taoyuan, Taiwan, August 30 – September 2, 2016.

C. Invited Lectures at Scientific Meetings

1. The Problem of Collimator Selection Based on Theoretical Models and Observer Performance. Speaker in the World Federation of Nuclear Medicine and Biology, Second International Congress, Washington, DC, 1978.
2. Magnetic Resonance Imaging. Speaker at the IEEE Eastern North Carolina Section's Meeting, North Carolina State University, Raleigh, NC, September 9, 1987.
3. Collimation in SPECT Imaging of the Brain. Speaker in the Symposium on Brain Imaging sponsored by General Electric Company and Medi-Physics, Orlando, Florida, September 15, 1987.
4. Recent Advances in SPECT Instrumentation and Image Processing Techniques. Lecture at the Society of Nuclear Medicine Southeastern Chapter Meeting, Orlando, Florida, September 16-17, 1987.
5. Current Status of SPECT Imaging Instrumentation and Techniques. Speaker in UNC Radiology Symposium, Hilton Head, South Carolina, April 1987.
6. Magnetic Resonance Imaging. Speaker in UNC Radiology Symposium, Hilton Head, South Carolina, April 1987.
7. The Fundamentals of SPECT. Speaker at the Teaching Lesson of the 4th Asian and Oceania Congress of Nuclear Medicine. Taipei, Taiwan, Republic of China, November 1-4, 1988.

8. Recent Advances in SPECT Image Reconstruction and 3D Display. Invited speaker at the Scientific Meeting of NorthEastern Chapter of the American Association of Physicists in Medicine (AAPM), Worcester, Massachusetts, February 15, 1989.
9. Recent Advances Image Processing and 3D Display in SPECT. Invited Lecturer at The High Country Nuclear Medicine Conference, Vail, Colorado, March 13-17, 1989.
10. Recent advances in SPECT instrumentation, image processing and clinical applications. Invited lecture at the 20th Annual Scientific Meeting of the Australian and New Zealand Society of Nuclear Medicine, Christchurch, New Zealand, August 21-23, 1989.
11. Recent advances in SPECT instrumentation, image processing and clinical applications. Invited lecture at the Australian Chapter of the Australian and New Zealand Society of Nuclear Medicine, Sydney, Australia, August 24, 1989.
12. Iterative Reconstruction Methods for Quantitative SPECT. Invited speaker at the Society of Nuclear Medicine's "New Horizons in SPECT in SPECT, PET and Computers" Symposium at the 1991 Mid-Winter Meeting, Tampa, Florida, February 4-5, 1991.
13. Reconstruction and Filtering Methods for Quantitative Cardiac SPECT Imaging. Invited speaker at the 2nd International Symposium on Computer Applications in Nuclear Medicine and Cardiac Magnetic Resonance Imaging, Rotterdam, March 20-22, 1991.
14. Recent Advances in Emission Computed Tomography. Invited speaker at the 1991 Annual Fall Meeting of the Biomedical Engineering Society, Charlottesville, VA, October 12-14, 1991.
15. Three-Dimensional Display of SPECT images. Invited speaker at the 4th Mid-Atlantic AVS Users Group Meeting, Washington, D.C., January 15, 1992.
16. Clinical Role of Quantitative SPECT. Invited speaker at the Society of Nuclear Medicine Computer & Instrumentation Syposium, *Nuclear Medicine Computers and Instrumentation: Towards the 21st Century*, Dallas/Fort Worth, TX, February 10-11, 1992.
17. Applying Iterative Algorithms to SPECT Reconstruction: Issues of Properties and Compensation. Invited speaker, "2nd Midwest Workshop on Iterative Image Reconstruction", The University of Minnesota, Minneapolis, September 11&12, 1992.
18. Recent Advances in SPECT. Invited speaker at "the Physics of Medical Imaging, PET, SPECT X-ray" sponsored by the UCLA Department of Physics & the Center for Advanced Accelerators, Los Angeles, CA, January 20, 1993.
19. Quantitative SPECT Reconstruction Methods: Current Research and Clinical Applications. Invited speaker, New England Chapter of the AAPM meeting, Roxbury V.A. Medical Center, West Roxbury, Massachusetts, February 23, 1993.
20. Recent Advances in SPECT Instrumentation and Reconstruction Methods. World Chinese Conference of Nuclear Medicine, Wuxi, China, August 8-11, 1993.
21. Recent Advances in SPECT Instrumentation and Reconstruction Methods. Invited Speaker, The 1st Medical Engineering Week of the World, The 3rd International Symposium-Biomedical Engineering in the 21st Century & The 1st IEEE/EMBS Region 10 International Conference & Clinical Engineering Symposium, Taipei, Taiwan, ROC, September 25-29, 1994.
22. Emission Computed Tomography. Invited Speaker, The 1st Medical Engineering Week of the World, The 3rd International Symposium-Biomedical Engineering in the 21st Century & The 1st IEEE/EMBS Region 10 International Conference & Clinical Engineering Symposium, Taipei, Taiwan, ROC, September 25-29, 1994.
23. Attenuation Correction for Cardiac SPECT. Invited Speaker, Nuclear Cardiology Symposium and Workshop, Milwaukee, WI, October 19-21, 1994.
24. SPECT Imaging. Invited Speaker, The First IEEE International Conference on Image Processing, Austin, Texas, November 13-16, 1994.
25. Comparison of Reconstruction Algorithms. Invited Speaker, State-of-the-Art Reviews, the 6th World Congress of the World Federation of Nuclear Medicine & Biology, Sydney, Australia, October 23-28, 1994.
26. Quantitative SPECT Reconstruction Methods. Invited Speaker, Session on "Medical Imaging", 1995 Annual Fall Meeting of the Biomedical Engineering Society, Boston, October 6-8, 1995.
27. Attenuation and Scatter Compensation Methods in Cardiac SPECT. Invited Speaker, Cardiovascular Science & Technology Conference in the 42nd Annual Conference of the American Society for Artificial Internal Organs, Washington, D.C., May 2-4, 1996.
28. Attenuation and Scatter Compensation Methods for Improved Myocardial SPECT. Invited Speaker, The 2nd Medical Engineering Week of the World, Taipei, Taiwan, ROC, May 27-30, 1996.
29. Instrumentation and Imaging Configuration Considerations for Scintimammography. Invited Speaker, The 2nd Medical Engineering Week of the World, Taipei, Taiwan, ROC, May 27-30, 1996.

30. Attenuation and scatter corrections: Update and pitfalls. Invited Speaker, The 37th Annual Meeting of the Southeastern Chapter of the Society of Nuclear Medicine, Atlanta, GA, October 18-20, 1996.
31. The Role of Simulation Techniques in the Future of Nuclear Medicine. Invited Lecture at the Symposium on Future Directions in Nuclear Medicine Physics and Engineering, University of Chicago, Chicago, IL, March 19-21, 1999.
32. Attenuation Correction: Scatter Correction and Iterative Reconstruction. Invited Lecture in the Session on *Technical Advances in SPECT Systems* at the 4th International Conference of Nuclear Cardiology, Athens, Greece, April 18-21, 1999.
33. Renaissance Perspectives in Nuclear Cardiology. July 11-18, 1999, Siena, Italy.
34. Iterative Reconstruction Algorithms. Invited Lecture in the VIII Argentina Congress on Medical Physics, Mendoza, Argentina, November 25-28, 1999
35. Collimators for SPECT. Invited Lecture in the VIII Argentina Congress on Medical Physics, Mendoza, Argentina, November 25-28, 1999.
36. Correction of Attenuation and Scatter in SPECT. Invited Lecture in the VIII Argentina Congress on Medical Physics, Mendoza, Argentina, November 25-28, 1999.
37. Attenuation and scatter correction. Invited Lectur, Nuclear Cardiology Today – 2000 and Beyond. May 25-27, 2000, Cesena, Italy.
38. Computer Generated Phantoms. Invited speaker, Integrated Research Team Meeting of the Telemedicine and Advanced Technology Research Center (TATRC), U.S. Army Medical Research and Material Command (USAMRMC), September 20-22, 2000, Frederick, MD.
39. Rotating Slant Hole SPECT Mammography. Invited speaker, Functional Breast Imaging with Advanced Detectors, April 18-21, 2001, Rome, Italy.
40. Attenuation Correction. Invited Lecture in the Session on Advances in Nuclear Cardiology: Advances in Nuclear Instrumentation at the 5th International Conference of Nuclear Cardiology, Vienna, Austria, May 2-5, 2001.
41. Corrections: Attenuation, Resolution Recovery, Scatter. Invited Lecture for the 8th Congress of the World Federation of Nuclear Medicine and Biology, Santiago, Chile, September 29-October 4, 2002.
42. Simulation Studies, Invited presentation at the 8th Congress of the World Federation of Nuclear Medicine and Biology September 27 -October 4, 2002.
43. Image Degrading Factors and their Compensation in Myocardial SPECT, Invited presentation at the International Symposium on Cardiovascular Nuclear Medicine, Beijing, China, May 27-31, 2002.
44. Micro-SPECT, Invited presentation at the International Symposium on Biomedical Imaging, Washington, D.C., July 7-9, 2002.
45. Micro-SPECT, Invited presentation at the 6th Nuclear Cardiology Invitational Conference, Reno/Tahoe, NV, July 21-24, 2002.
46. Research Needs for Data/Image Reconstruction, Invited presentation at the NIBIB/MMC Workshop on Defining the State-of-the-Art in Biomedical Imaging: Research Needs for the Future, University of Mississippi Medical Center, Jackson, MS, March 16-18, 2003.
47. Pinhole Single and Multi-Detector SPECT, Invited presentation at the 6th International Conference in Nuclear Cardiology, Florence, Italy, April 26 - May 1, 2003.
48. Small Animal SPECT Development, Invited presentation at the Molecular Imaging Symposium, London, Ontario, Canada, July 20-21, 2003.
49. Iterative Image Reconstruction in Nuclear Medicine, Invited presentation at the 14th ACRT (Asian Conference of Radiographers and Radiological Meeting, Bangkok, Thailand, August 19-22, 2003.
50. PET Systems and Best Buy, Invited presentation at the 14th ACRT (Asian Conference of Radiographers and Radiological Meeting, Bangkok, Thailand, August 19-22, 2003.
51. Implementation and Applications of Quantitative SPECT, Invited presentation at the World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, August 24-29, 2003.
52. Image Reconstruction and Filtering, Invited presentation at the 8th Annual Symposium and Scientific Session of the Society of Nuclear Cardiology (ASNC), Indianapolis, IN, September 10 - 13, 2003.
53. Attenuation, Collimator-Detector Response and Motion Correction. Invited presentation at the 7th International Conference of Nuclear Cardiology, Lisbon, Portugal, May 8-11, 2005.
54. Meeting Highlights --- Image Generation Track, Invited Presentation at the 53rd Annual Meeting of the Society of Nuclear Medicine, Toronto, Canada, June 3-7, 2005.
55. Small Animal Imaging in Nanomedicine. Invited Speaker at the First Annual Meeting of the American Academy of Nanomedicine (AANM), Baltimore, MD, August 15-16, 2005.

56. Advances in Molecular SPECT Instrumentation and Image Reconstruction Methods. Invited Speaker at The 2005 Molecular Imaging International Symposium, Taipei, Taiwan, November 11, 2005.
57. Quantitative SPECT Imaging of Prostate Cancer, Invited presentation at the Topical Symposium on Advanced molecular imaging techniques in the detection, diagnosis therapy and follow-up of prostate cancer, Rome, Italy, December 6-7, 2005.
58. Quantitative SPECT and PET Imaging Techniques and Use of Computer Models of Human Anatomy and Physiological Functions. Invited speaker at the Workshop on Heart Modeling: Image Acquisition, Segmentation, Modeling and Analysis, Institute for Pure and Applied Mathematics (IPAM), University of California, Los Angeles, February 6 - 10, 2006.
59. High-Resolution Multi-modality Molecular Imaging Techniques. Plenary Speaker at the IX Mexican Symposium on Medical Physics, Guadalajara, Jalisco, Mexico, March 19-21, 2006.
60. Simulation Tools for Biomedical Imaging Assessment, Invited Presentation at the Symposium on Exploring the frontiers of Dynamic Nuclear Medicine Imaging for Medical and Molecular Applications, Banff International Research Station, Banff, Canada, March 25-30, 2006.
61. Design Considerations and Initial Results of a Multi-Pinhole SPECT System for Imaging Atherosclerotic Plaques in Mice. Invited Presentation at the Symposium on Exploring the frontiers of Dynamic Nuclear Medicine Imaging for Medical and Molecular Applications, Banff International Research Station, Banff, Canada, March 25-30, 2006.
62. Recent Advances in Small Animal SPECT and PET Imaging Techniques and Systems, World Congress on Medical Physics and Biomedical Engineering 2006(WC 2006), Seoul, Korea, August 27 – September 1, 2006.
63. Molecular Imaging of Atherosclerotic Plaques in Small Animals Using High-Resolution Micro-SPECT/CT and Micro-PET/CT Techniques, 2nd Symposium on Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, September 24, 2007.
64. SPECT Imaging of Cardiovascular Diseases: Instrumentation and Image Reconstruction Methods, Conference on Imagers for Vascular Disease Imaging (Brain and Heart), Rome, Italy, November 13-14, 2006.
65. Medical Imaging Techniques and Their Impact on Health Care, International Conference on Medical Electronics, Federation House, New Delhi, December 8-9, 2006.
66. Recent Advances in Emission Computed Tomography, International Conference on Medical Electronics, Federation House, New Delhi, December 8-9, 2006.
67. New Reconstruction Algorithms. Invited lecture in the Session on Advances in Small Animal Imaging in the Advances in Nuclear Cardiology track at the International Conference of Nuclear Cardiology (ICNC8), Prague, Czech Republic, 29 April – 2 May, 2007.
67. Hybrid Systems. Invited lecture in the Session on How to Perform SPECT and SPET/CT studies? In the Essential Nuclear Medicine for Cardiologist track at the International Conference of Nuclear Cardiology (ICNC8), Prague, Czech Republic, 29 April – 2 May, 2007.
68. New Challenges from Hybrid Imaging. Invited lecture in the Session on Radiation Safety and Regulatory Aspects in Nuclear Cardiology and Cardiac CT in the Essential Nuclear Medicine for Cardiologist track at the International Conference of Nuclear Cardiology (ICNC8), Prague, Czech Republic, 29 April – 2 May, 2007.
69. Advances in Simulation Tools and Their Applications to CT, PET/CT and SPECT/CT. Invited lecture at the 49th Annual Meeting of the American Association of Physicists in Medicine, Minneapolis, Minnesota, July 22-26, 2007.
70. Molecular Imaging in Oncology Studies. Invited lecture at the 13th Taiwan Joint Cancer Conference, Taipei, Taiwan, May 3-4, 2008.
71. Invited lecture at Imaging the Vascular Wall: Technical – Instrumentation Challenges, Invitational Conference of the Nuclear Cardiology Foundation, Annapolis, MD, June 28-July 1, 2008.
72. Physics based image reconstruction methods and their evaluation, Invited lecture at The 2008 Chicago Nuclear Medicine Forum -- A Celebration of 50-Plus Years of Nuclear Medicine Research at The University of Chicago, July 25-26, 2008.
73. Image analysis: Reconstruction software, Invited lecture at the Small Animal and Molecular Imaging Workshop at the University of Virginia, Charlottesville, VA, October 30-31, 2008.
74. Challenges for Imaging stem cells with SPECT Techniques: Reconstruction techniques, Invited lecture at Stem cells Research: The role of imaging techniques, La Timone hospital, Marseille, France, December 8-9, 2008.
75. Nuclear Molecular Imaging and Its Applications, Invited lecture at the 340th Xiangshan Science Conference, Xianshan Hotel, Beijing, China, December 18-20, 2008.
76. MicroSPECT Imaging and SPECT/CT, Invited Lecture at the Symposium on Multimodality Cardiovascular Molecular Imaging, National Institutes of Health, Bethesda, MD, April 30 – May 1, 2009.

77. Nuclear Medicine Techniques: SPECT/ microSPECT/CT, Invited Lecture at the Molecular Neuroimaging Symposium, National Institutes of Health, Bethesda, MD, May 3-7, 2010.
78. Advances in Instrumentation and Techniques for Quantitative Myocardial Perfusion SPECT. Invited lecture at the Symposium on Advances in Cardiovascular Imaging. 52nd Annual Meeting of the American Association of Physicists in Medicine, Pennsylvania Convention Center, Philadelphia, PA, July 18-22, 2010.
79. Multimodality Molecular Imaging Techniques, **Invited Keynote Lecture** at the International Symposium on Medical Physics for the 20th Anniversary of Korean Society of Medical Physics (KSMP) and the 41st Annual Meeting of KSMP in conjunction with the Symposium of Korean Council of Nuclear Medicine Imaging and Instrumentation and the 8th Annual Meeting of the Korean Society of Medical Physics for RADIOSURGERY, Seoul, Korea, September 15-17, 2010.
80. Quantitative 3D and 4D Image Reconstruction Methods for Emission Computed Tomography, Invited lecture at the International Symposium on Medical Physics for the 20th Anniversary of Korean Society of Medical Physics (KSMP) and the 41st Annual Meeting of KSMP in conjunction with the Symposium of Korean Council of Nuclear Medicine Imaging and Instrumentation and the 8th Annual Meeting of the Korean Society of Medical Physics for RADIOSURGERY, Seoul, Korea, September 15-17, 2010.
81. Recent Advances in Nuclear Medicine. Invited lecture, Department of Radiological Technology, Faculty of Medical Technology, Mahidol University, Bangkok, Thailand, November 15, 2010.
82. The Development of Simultaneous SPECT/MR Instrumentation and Techniques. Invited lecture at the 2nd International Symposium on Integrated PET-MRI, Toyonaka, Osaka, Japan, January 28-29, 2011.
83. Recent Advances in Instrumentation and Quantitative Image Reconstruction Methods in ECT. Invited lectures at the National Institute of Radiological Sciences, Chiba, Japan, February 1, 2011.
84. Quantitative 3D and 4D image reconstruction methods for emission computed tomography (ECT). Plenary presentation at the BSEC (Biomedical Science and Engineering Center) 2011 Conference: Image Informatics and Analytics in Biomedicine, Knoxville, Tennessee, March 15-17, 2011.
85. Four-dimensional image reconstruction methods and their applications in emission computed tomography. Invited lecture at the Workshop on Nuclear Medicine: Physics, Engineering and Practice, Kharkov, Ukraine, September 19-21, 2011.
86. Development and initial results of a stationary SPECT system for simultaneous SPECT-MR imaging of small animals. Invited lecture at The 14th KAST International Symposium on Nuclear Medicine and Molecular Imaging, Seoul, Korea, May 2, 2012.
87. Technologies and Applications of Simultaneous SPECT/MR Imaging of Small Animals. Invited lecture at the PET/MR and SPECT/MR: New Paradigms for Combined Modalities in Molecular Imaging, Isola d'Elba, Italy, May 26-30, 2012
88. Reconstruction Techniques (SPECT). Invited lecture at the Adjunct Workshop: "The latest enabling technological breakthroughs in compact radiation sensors, electronics and software for PET and SPECT" of the First Mediterranean Thematic Workshop: Advanced Molecular Brain Imaging with Compact High Performance MRI Compatible PET and SPECT Imagers - Potential for a Paradigm Shift. Giardini di Naxos (Taormina, Sicily) - August 30-31, 2012.
89. Dedicated innovative SPECT detectors for brain imaging. Invited lecture at the First Mediterranean Thematic Workshop: Advanced Molecular Brain Imaging with Compact High Performance MRI Compatible PET and SPECT Imagers - Potential for a Paradigm Shift. Giardini di Naxos (Taormina, Sicily) - September 1-2, 2012.
90. Instrumentation and Image Reconstruction Methods for SPECT/MR Imaging. Invited presentation at the International Workshop on Mini-Micro-Nano Dosimetry (MMND) and Its Application and Modern Technologies in Prostate Cancer Treatment (IPCT), Wollongong, Australia, December 6-9, 2012.
91. The Development and Application of a Small Animal Simultaneous SPECT/MR Imaging System, Invited lecture at the NIRS Workshop on PET Imaging Physics and Applications, Yokohama, Japan, November 4 to November 5, 2013.
92. The development and application of quantitative 3D to 4D image reconstruction methods for emission computed tomography. **Plenary presentation** at the 7th Cairo International Biomedical Engineering Conference, Giza, Egypt, December 11-13, 2014.
93. Updates of the 4D XCAT Phantom series for Biomedical Imaging and Radiation Dosimetry, Invited lecture at the 5th International Workshop on Computational Human Phantoms, Seoul, Korea, July 19-22, 2015.
94. Advances in Instrumentation and Image Reconstruction Methods in Molecular Imaging: *From Small Animal to Human*, Invited lecture at the Institute of Nuclear Energy Research, Taiwan, July 23, 2015.
95. Advances in 4D Gated Cardiac PET Imaging for Image quality Improvement and Cardiac Motion and Contractility Estimation', Invited lecture at the International Symposium 2015 on Perspective on Nuclear Medicine for Molecular Diagnosis and Integrated Therapy. Sapporo, Hokkaido, Japan, July 31 to August 1,

2015.

96. Recent Advances in Multi-modality Molecular Imaging of Small Animals, Invited lecture at the 58th Annual Meeting of the American Association of Physicists (AAPM), Washington, DC, USA, July 31 – August 4, 2016. *Med Phys* 43:3847-3848, 2016.
97. Model-Based Reconstruction Methods for SPECT, PET and CT, **Invited Keynote Lecture** at the 2017 Engineering & Physical Sciences in Medicine Conference (EPSMC), Hobart, Australia, October 29 - November 1, 2017.
98. Development and Applications of Realistic 4D Digital Human Phantoms - *for biomedical imaging, treatment planning and dosimetry*, **Invited Keynote lecture** at the 2017 Engineering & Physical Sciences in Medicine Conference (EPSMC), Hobart, Australia, October 29 - November 1, 2017.
99. Quantitative Cardiac Motion Estimation from Improved 4D Cardiac-Gated Myocardial Perfusion PET Images with Respiratory and Cardiac Motion Compensation, **Invited Keynote Lecture** at the Beijing International Nuclear Medicine and Molecular Imaging Summit Forum, Beijing, China, August 14, 2018.
100. Quantitative Cardiac Motion Estimation from Improved 4D Cardiac-Gated Myocardial Perfusion PET Images with Respiratory and Cardiac Motion Compensation, **Invited Keynote Lecture** at the 3rd China-American Nuclear Medicine Academic Forum and First International Conference on Ultra-Sensitive Brain PET Imaging, Linyi, China, August 19, 2018.

D. Invited Lectures at Continued Education Courses

1. Basic Principles of SPECT Imaging. Lecture in Continued Education Course, Soc of Nuclear Medicine 34th Annual Meeting, Toronto, Canada, June 1987.
2. Collimator Design, Properties and Characteristics. Lecture in Continued Education Course, Society of Nuclear Medicine 34th Annual Meeting, Toronto, Canada, June 1987.
3. Basic Principles of SPECT Imaging. Lecturer at the Eastern Carolina Continuing Education Center, New Bern, NC, Nov 18, 1987.
4. Image Reconstruction Techniques (with special reference to SPECT). Invited lecture at summer course on “Modern Applications of Nuclear Medicine”, Department of Hospital Physics, Karolinska Hospital, Stockholm, Sweden, August 16, 1994.
5. Physics of SPECT. In “Cross-Sectional Imaging: Emission Tomography”, Physics Tutorial for Residents, the 80th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 27- December 2, 1994.
6. Recent Developments in SPECT. In “Clinical Relevant Developments in Planar, SPECT and PET Imaging Devices”, Continuing Education Lectures, Society of Nuclear Medicine’s 42 Annual Meeting, Minneapolis, Minnesota, June 11-15, 1995.
7. Attenuation and Scatter Compensation in Cardiac SPECT, The High Country Nuclear Medicine Conference, The Education & Research Foundation of The Society of Nuclear Medicine, Vail, Colorado, March 8-13, 1996.
8. Emerging Attenuation, Scatter and Detector Response Compensation Methods, in “SPECT -- Principles, Instrumentation and Major Factors Affecting Clinical Image Quality”, Categorical Seminar at the Society of Nuclear Medicine’s 43 Annual Meeting, Denver, Colorado, June 1-6, 1996.
9. Basics science development for attenuation compensation in Cardiac SPECT, The High Country Nuclear Medicine Conference, The Education & Research Foundation of The Society of Nuclear Medicine, Vail, Colorado, February 28 - March 5, 1997.
10. Factors influencing myocardial perfusion quantitation. in “Basic aspects of quantitation of myocardial perfusion”, Categorical Seminar at the Society of Nuclear Medicine’s 44th Annual Meeting, San Antonio, Texas, June 1-5, 1997.
11. Attenuation and Scatter Correction in Myocardial SPECT. Invited lecture at the Annual Spring Meeting of the North Carolina Nuclear Medicine Technologists, Greensboro, NC, March 7-8, 1999.
12. Attenuation Compensation in SPECT: Implementation and Pitfalls, Lecture in the Continuing Education Course: *Absolute Quantitation in Cardiac PET, SPECT and Endothelial Dysfunction*, at the 46th Annual Meeting of the Society of Nuclear Medicine, Los Angeles, CA, June 6-10, 1999.
13. Siemens Approach to DHCI, Lecture in the Continuing Education Course: *Basic Principles and Technical Considerations of Dual Head Gamma Camera Coincidence Imaging (DHGCCCI)*, 46th Annual Meeting of the Society of Nuclear Medicine, June 6-10, 1999.
14. Siemens Approach to Coincidence Imaging, Lecture in the Continuing Education Course: *Basic Principles and Technical Considerations of Multi-Head Gamma Coincidence Imaging*, 47th Annual Meeting of the Society of Nuclear Medicine, June 3-7, 2000.

15. Image Reconstruction and Attenuation Correction Methods for Cardiac SPECT, Invited presentation at the Society of Nuclear Medicine (SNM) 2003 Mid-Winter Educational Symposium, Hollywood, FL, January 24-26, 2003.
16. Overview of Technology Relevant to Vascular Imaging. Invited CME presentation at the 53rd Annual Meeting of the Society of Nuclear Medicine, Toronto, Canada, June 3-7, 2005.
17. Nuclear Medicine Imaging. Invited Presentation in the Refresher Course No. RC417, at the Radiological Society of North America 91st Scientific Assembly and Annual Meeting, McCormick Place, Chicago, IL, November 27 – December 2, 2005.
18. Nuclear Medicine Imaging. Invited Presentation in the Refresher Course No. RC417, at the Radiological Society of North America 91st Scientific Assembly and Annual Meeting, McCormick Place, Chicago, IL, November 25 – December 1, 2006.
19. Positron Emission Tomography and Single-Photon Emission Tomography. Invited lecture in the Continuing Education Course on Rodent Imaging Overview for the Toxicologist, at the 46th Annual Meeting of the Society of Toxicology (SOT), Charlotte, NC, March 25-29, 2007.
20. Quantitative Data from SPECT/CT. Invited lecture at the Johns Hopkins Medicine Continuing Medical Education course on Nuclear Oncology: From Genotype to Phenotype to Targeted Therapy, Johns Hopkins University School of Medicine, Baltimore, MD, March 14-15, 2008.
21. Quantitative SPECT/CT. Invited lecture at the SNM Categorical Seminar on Quantitative SPECT and PET for Molecular Imaging, Society of Nuclear Medicine Annual Meeting, New Orleans, LA, June 14-18, 2008.
22. Advances in SPECT/CT. Invited lecture at the SNM Continuing Education Course on SPECT and PET Quantitation, Society of Nuclear Medicine Annual Meeting, New Orleans, LA, June 14-18, 2008.
23. Recent Development of PET/MR and SPECT/MR, Hope or Hype? Invited lecture at the Johns Hopkins Medicine Continuing Medical Education course on Advances in Whole Body Fusion Imaging: PET/CT and SPECT/CT, Johns Hopkins University School of Medicine, Baltimore, MD, March 13-14, 2009.
24. Small Animal PET and SPECT Instrumentation, Imaging Techniques and Applications. Invited lecture at the SNM Continuing Education Course on Small Animal Imaging, 2010 Society of Nuclear Medicine Annual Meeting, Salt Lake City, UT, June 5-9, 2010.
25. SPECT/CT: Physics. Invited lecture at the SNM Continuing Education Course on Advanced PET/CT/MR and SPECT/CT Scanners: Need or Extravaganza?, 2010 Society of Nuclear Medicine Annual Meeting, Salt Lake City, UT, June 5-9, 2010.
26. SPECT/CT/MR: Physics, Invited lecture at the Continuing Education Course on "Advanced PET/CT/MR and SPECT/CT Scanners: Hype or Hope?" at the 2011 Mid-Winter Meeting of the Society of Nuclear Medicine, Palm Springs, CA, January, 20-23, 2011.
27. SPECT instrumentation and physics. Invited lecture at the "In Vivo Preclinical Imaging: An Introductory Workshop", Johns Hopkins University, March 20-21, 2012.
28. Resolution modeling in SPECT imaging, Invited lecture at the Continuing Education Course on "Resolution Modeling" at the 2012 Annual of the Society of Nuclear Medicine, Miami, FL, June 9-12, 2012.

E. Invited Lectures at Industry Sponsored Meetings

1. Attenuation Correction, GE Users Group Meeting, 40th Annual Society of Nuclear Medicine Meeting, Toronto, Canada, June 8, 1993.
2. Attenuation Compensation in Cardiac SPECT, GE Users Group Meeting, 41th Annual Society of Nuclear Medicine Meeting, Orlando, FL, June 5, 1994.
3. Attenuation Compensation in Cardiac SPECT, GE Users Group Meeting, European Association of Nuclear Medicine Annual Meeting, Dusseldorf, Germany, August 21, 1994.
3. Attenuation and Scatter Compensation Methods in Myocardial SPECT, GE Users Group Meeting, Toronto, Canada, May 4, 1996.
4. Siemens Centers of Excellence Meeting, 1998-2000.
5. Quantitative SPECT, Medium and High Energy SPECT and Ultra High-Resolution Pinhole Small Animal SPECT, Nuclear Medicine Group, Siemens Medical Systems, February 8, 2001.
6. Rapid Imaging Approaches, Advanced Technology + Physics, Breakfast Symposium, DigiRad Corporation, 2010 Society of Nuclear Medicine Annual Meeting, Salt Lake City, UT, June 7, 2010.

F. Invited Lectures in Departmental Seminars at Universities/Institutes in the USA

1. Applications of Monte Carlo Simulations to Medical Physics. Seminar speaker at the University of Massachusetts Medical Center, Worcester, Massachusetts, January 16, 1987.
2. High Resolution SPECT Imaging of the Brain. Seminar speaker at Medical College of Wisconsin, March 5, 1987.

3. SPECT Imaging Research at UNC. Seminar speaker at the Department of Radiology, Henry Ford Hospital, Detroit, Michigan, September 16, 1987.
4. SPECT Imaging of the Brain Using Fan Beam Collimator. Seminar Speaker at the Department of Nuclear Medicine, The Cleveland Clinic Foundation, Cleveland, Ohio, October 26, 1987.
5. Recent Advances SPECT Imaging. Seminar speaker at the Department of Radiology, Memorial Sloan Kettering Hospital, New York, NY, April 4, 1988.
6. Recent Advances in SPECT Imaging. Seminar speaker at the Department of Radiology, University of Utah, Salt Lake City, Utah, April 6, 1988.
7. Recent Advances in SPECT Image Processing and Presentation. Seminar speaker at the Medical Department, Brookhaven National Laboratory, Upton, New York, June 1, 1988.
8. SPECT Imaging. Seminar speaker at the Department of Physics, Eastern Carolina University, April 12, 1991.
9. Quantitative SPECT Imaging. Invited speaker in the Medical Physics Seminar Series, Department of Nuclear Medicine, the University of Massachusetts Medical Center, Worcester, Massachusetts, March 30, 1992.
10. The Importance and Implementation of Attenuation Compensation in Cardiac SPECT. Invited speaker, Departmental Seminar Series, Department of Nuclear Medicine, the University of Massachusetts Medical Center, Worcester, Massachusetts, February 22, 1993.
11. The Importance and Implementation of Attenuation Compensation in Cardiac SPECT. Invited speaker, Seminar Series, The Joint Program in Nuclear Medicine, Harvard Medical School Department of Radiology, Boston, Massachusetts, February 24, 1993.
24. Recent Advances in SPECT. Invited speaker, Department of Radiology, Tulane University Medical Center, New Orleans, Louisiana, April 26, 1993.
18. An Implementation of Attenuation Compensation Method for Cardiac SPECT. Seminar Speaker, Department of Nuclear Medicine, the University of Massachusetts Medical Center, Worcester, Massachusetts, February 9, 1995.
22. Attenuation and scatter compensation in cardiac SPECT. Seminar Speaker, Memorial Sloane-Kettering Cancer Center, New York, NY, July 1, 1997.
23. Attenuation and scatter compensation in cardiac SPECT. Seminar Speaker, The Brooklyn Hospital, Brooklyn, NY, July 1, 1997.
24. Quantitative functional nuclear imaging: From human to small animals. Seminar Speaker, Department of Biomedical Engineering, Johns Hopkins University, MD, March 19, 2001.
25. Oncological SPECT imaging: From human to small animals. Seminar Speaker, Division of Nuclear Medicine, Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, September 24, 2001.
26. Quantitative SPECT: From Human to Small Animals, Invited presentation at a Seminar of the Medical Image Processing Group, Department of Radiology, University of Pennsylvania, Philadelphia, October 6, 2003.
27. Imaging Research in the Division of Medical Imaging Physics, Invited Speaker at the Department of Radiation Oncology, Johns Hopkins University, March 28, 2005.
28. Medical Image Assessment Using Simulation Techniques, Invited Speaker at the Center for Devices and Radiological Health, U.S. Food and Drug Administration, Rockville, MD, August 4, 2005.
29. Medical Imaging Assessment Using Simulation Tools and Mathematical Observers. Invited presentation at the Siemens Corporate Research, Princeton, NJ, April 25, 2006.
30. Simulation Tools and Their Applications to SPECT/CT and PET/CT, Seminar Speaker, Department of Imaging Physics, The University of Texas M. D. Anderson Cancer Center, Houston, Texas, January 9, 2007.
31. Single-Photon Emission Computed Tomography, Speaker at seminar for neuroradiology residents, Department of Radiology, Johns Hopkins University, March 25, 2008.
32. Hybrid Molecular Imaging Techniques, Invited seminar speaker, Department of Nuclear, Plasma and Radiological Engineering, University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, March 16, 2010.
33. Hybrid Molecular Imaging Techniques, Invited seminar speaker, Department of Radiology, Stanford University, April 1, 2010.
34. Hybrid Molecular Imaging Techniques, Invited seminar speaker, Department of Radiology, University of California, San Francisco, April 1, 2010.
35. Current Research Projects in the Division of Medical Imaging Physics, Invited seminar speaker, Department of Radiology, University of California, San Francisco, April 1, 2010.
36. Quantitative 4D Image Reconstruction Methods for Emission Computed Tomography. Invited seminar speaker, Department of Radiology, the National Institute of Health, Bethesda, MD, September 17, 2012.
37. Development and Initial Applications of a Second Generation SPECT/MR Insert for Simultaneous SPECT/MR Imaging of Small Animals. Department of Radiology, Yale University, New Haven, CT, July 18, 2013.

38. Quantitative 4D image reconstruction methods with motion compensation in SPECT/CT, PET/CT and PET/MR, Invited lecture at the Department of Radiology, Weill Cornell Medical Center, New York City, NY, February 14, 2016.

G. Invited Lectures in Universities outside the USA

1. The Fundamentals of SPECT Imaging; II. Recent Advances in SPECT Imaging. Guest Lecturer at the Department of Engineering Physics, Tsinghua University, Beijing, The People's Republic of China, October 17-19, 1988.
2. Medical Imaging. Seminar speaker at the Graduate School, Academia Sinica, Beijing, The People's Republic of China, October 19, 1988.
3. I. MR Imaging; II. SPECT Imaging. Guest lecturer at the Wuhan Institute of Physics, Academia Sinica, Wuhan, The People's Republic of China, October 21-22, 1988.
4. Quantitative SPECT Image Reconstruction. Seminar speaker, Department of Radiation Physics, Karolinska Institutet, Stockholm University, Stockholm, Sweden, August 17, 1994.
5. Attenuation Compensation in Cardiac SPECT, Seminar speaker, Department of Nuclear Medicine, Middlesex Hospital, London, United Kingdom, August 25, 1994.
6. Recent Advances in Instrumentation and Semi-Conductor detector in SPECT. Seminar Speaker, Institute of Nuclear Energy Research, Atomic Energy Council, Lung-tan, Republic of China, August 17, 1995.
7. Attenuation Compensation in SPECT. Seminar Speaker, Tri-Service General Hospital, Taipei, Republic of China, August 17, 1995.
8. Application of Attenuation and Scatter Compensation to Myocardial SPECT. Seminar Speaker, St. Joseph Hospital, Western Ontario University, London, Canada, May 6, 1996.
9. Oncological SPECT imaging: From human to small animals. Seminar Speaker, Department of Nuclear Medicine, University Medical Center, Utrecht, The Netherlands, November 22, 2001.
10. Recent Development and applications of Molecular CT and ECT Imaging Instrumentation and Techniques at JHU, National Yang Ming University, Taipei, Republic of China, November 10, 2005.
11. Recent Development and applications of Molecular CT and ECT Imaging Instrumentation and Techniques at JHU, Institute of Nuclear Energy Research, Atomic Energy Council, Lung-tan, Republic of China, November 11, 2005.
12. Quantitative image reconstruction methods for Emission Computed Tomography and their evaluation using simulation techniques, Invited Colloquia Speaker at the Instituto de Fisica, Universidad Nacional Autonoma de Mexico (UNAM), Mexico City, Mexico, March 16, 2006.
13. Advances in Small Animal SPECT and Its Applications to Molecular Imaging of Atherosclerotic Plaques in Mice. Seminar Speaker, Lawson Health Research Institute, Robarts Research Institute, Western Ontario University, London, Canada, May 1, 2006.
14. Development and Implementation of Multiple Pinhole SPECT for High Performance Small Animal Molecular Imaging, National Yang Ming University, Taipei, Taiwan, September 22, 2006.
15. Simulation Tools and Their Application to Biomedical Imaging Research, National Yang Ming University, Taipei, Taiwan, September 26, 2006.
16. Advances in Small Animal SPECT and Its Application to Molecular Imaging of Atherosclerotic Plaques in Mice, Medical Radiological Science, Taipei, Taiwan, September 27, 2006.
17. Simulation Tools and Their Applications to SPECT/CT and PET/CT, Seminar Speaker, Department of Imaging Physics, Mahidol University, Bangkok, Thailand, September 27, 2006.
18. Recent Advances in Nuclear Medicine, Department of Radiological Technology, Faculty of Medical Technology, Mahidol University, Bangkok, Thailand, November 15, 2010.
19. Highlights of Research Projects in Division of Medical Imaging Physics, Invited lecture at the Suzhou Institute of Biomedical Engineering Technology (SIBET), Suzhou, Jiangsu, China, May 14, 2014
20. Research in Medical Imaging Physics, Invited lecture at the Department of Physics, Nanjing University, September 5, 2014.
21. Advances in Instrumentation and Image Reconstruction Methods in Molecular Imaging: *From Small Animal to Human*. Invited lecture at the Department of Biomedical Engineering, Peking University, Beijing, China, July 25, 2015.
22. Advances in 4D Gated Cardiac PET Imaging for Image quality Improvement and Cardiac Motion and Contractility Estimation, Invited lecture at the Department of Electrical and Electronic Engineering, University of Macau, China, November 19, 2015.

23. The Development and Applications of Quantitative 3D to 4D Image Reconstruction Methods for Emission Computed Tomography. Invited lecture at the Chang Gung University College of Medicine, Tao-Yuan City, Taiwan, September 2, 2016.
24. Development and Recent Updates of the 4D XCAT Phantom Series for Biomedical Imaging and Radiation Dosimetry, Invited lecture at the Chang Gung University College of Medicine, Tao-Yuan City, Taiwan, September 2, 2016.
25. A Personal Journey of Biomedical Imaging Research, Invited lecture at “The current and future for tomographic image reconstruction” Workshop Tsinghua University, Beijing, China, June 18, 2017

H. Other Invited Lectures

1. Member, report writing panel. The 5th Nuclear Cardiology Invitational Program of the American Society of Nuclear Cardiology, Bar Harbor, ME, July 15-18, 2000.
2. Modeling & Simulation in Medicine: Towards an Integrated Framework, National Library of Medicine, July 20-21, 2000.
3. Functional imaging: From human to small animals. Invited Speaker, North Carolina State University sponsored scientific meeting for North Carolina area Universities, July 2001.

OTHER PROFESSIONAL ACCOMPLISHMENTS (*Optional*)

Posters and Oral/Podium Presentations

Over 380 abstracts that were both presented as posters or orally at national and international scientific meetings from 1974 to 2018, and published.