

## BIOGRAPHICAL SKETCH

NAME Paul E Kinahan, Ph.D.	POSITION TITLE Professor of Radiology, University of Washington		
eRA COMMONS USER NAME	Adjunct, Biomedical Engineering and Electrical Engineering, University of Washington.		
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of British Columbia	B.A.Sc	1985	Engineering Physics
University of British Columbia	M.A.Sc	1988	Engineering Physics
University of Pennsylvania	Ph.D.	1994	Bioengineering

### Positions, Awards, and Honors

1986-1988	BC Science Council G.R.E.A.T. Graduate Fellowship
1988	University of British Columbia Graduate Fellowship (declined)
1988	Canadian N.S.E.R.C. Postgraduate Fellowship (declined)
1990	Research and Education Fellowship Award, The Society of Nuclear Medicine
1990	NSS Scholarship Award, IEEE Nuclear and Plasma Sciences Society
1991	Phi Beta Delta (Honor Society of International Scholars)
1995	Finalist, Society of Nuclear Medicine Young Investigator Award
1994-2000	Assistant Professor of Radiology, School of Medicine, University of Pittsburgh.
1997	IEEE-NPSS Young Investigator Medical Imaging Science Award (joint)
2000-2001	Associate Professor of Radiology and Bioengineering, University of Pittsburgh
2001-2007	Associate Professor of Radiology, University of Washington
2002-2007	Adjunct Associate Professor of Bioengineering, University of Washington
2003	IEEE Senior Member
2006-2007	Adjunct Associate Professor of Electrical Engineering, University of Washington
2006-present	Director of PET/CT Physics, University of Washington Medical Center
2007-present	Professor of Radiology, University of Washington
2007-present	Adjunct Professor of Bioengineering and Electrical Engineering, University of Washington

### Federal Government and Other Advisory Committees

1997	Co-chair of the 4th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine
1998-2001	Elected Member of IEEE Nuclear Medicine Imaging Sciences Council
2000-2002	Program Chair of the 2002 International IEEE NPSS Medical Imaging Conference
2000-2005	Ad hoc reviewer for NIH Study Sections and several other grant reviews
2004-2007	Elected Member of IEEE Nuclear Medicine Imaging Sciences Council
2005-2009	Reviewer (Charter member) NIH Study Section: Biomedical Imaging Technology
2006-2008:	Visiting Scientist under contract, NCI Cancer Imaging Program
2006-2009	Chair of the IEEE NPSS NMISC Awards Committee
2006-present	Society of Nuclear Medicine Task Force for Standards Validation
2006-present	Chair of AAPM Task Group 145 Quantitative Imaging Initiative: Quantitative PET/CT Imaging

### Selected Publications

1. Kinahan PE and Rogers JG. Analytic 3D image reconstruction using all detected events. IEEE Transactions on Nuclear Science. vol. 36, 964-968, 1989.
2. Karp JS, Kinahan PE and Mankoff DA: Positron emission tomography with a large axial acceptance angle: Signal-to-noise considerations. IEEE Transactions on Medical Imaging, 10(3):249, 1991.
3. Karp JS, Kinahan PE, Muehllehner G and Countryman P: Effect of increased axial field of view on the performance of a volume PET scanner. IEEE Transactions on Medical Imaging 12(2):299, 1993.
4. Kinahan PE and Karp JS: Figures of Merit for comparing reconstruction algorithms with a volume-imaging PET scanner. Physics in Medicine and Biology, 39:631, 1994.

5. Matej S, Herman GT, Narayan TK, Furuie SS, Lewitt RM and Kinahan PE: Evaluation of task-oriented performance of several truly 3D PET reconstruction algorithms. *Physics in Medicine and Biology*, 39:355, 1994.
6. Sossi V, Stazyk M, Kinahan PE and Ruth T: The performance of the single-slice rebinning technique for imaging the human striatum as evaluated by phantom studies. *Physics in Medicine and Biology*, 39:369, 1994.
7. Kinahan PE, Matej S, Karp JS, Herman GT, Lewitt RM: A comparison of transform and iterative reconstruction techniques for a volume-imaging PET scanner with a large axial acceptance angle. *IEEE Transactions on Nuclear Science* 42(6):2281, 1995.
8. Defrise M, Kinahan PE, Townsend DW, Michel C, Sibomana M, and Newport D: Exact and approximate rebinning algorithms for 3D PET data. *IEEE Transactions on Medical Imaging* 16(2):145-158, 1997.
9. Karp JS, Freifelder R, Geagan MJ, Muehllehner G, Kinahan PE, Lewitt RM, and Shao L: Three-dimensional imaging characteristics of the HEAD PENN-PET scanner. *J Nucl Med* 38(4):636-643, 1997.
10. Kinahan PE, Fessler JA, and Karp JS: Statistical image reconstruction in PET with compensation for missing data. *IEEE Transactions on Nuclear Science* 44(4):1552-1557, 1997.
11. Beyer T, Kinahan PE, Townsend DW: Optimization of transmission and emission scan duration in whole-body 3D PET. *IEEE Transactions on Nuclear Science* 44(6):2400-2407 1997.
12. Comtat C, Kinahan PE, Defrise M, Michel C, and Townsend DW: Fast Reconstruction of 3D PET Data with Accurate Statistical Modeling. *IEEE Transactions on Nuclear Science* 45(3):1083-1089, 1998.
13. Kinahan PE, Townsend DW, Beyer T, Sashin D, and Mintun MA: Attenuation Correction for a Dual PET/CT Scanner. *Medical Physics* 25(10):2046-2053, 1998.
14. Kinahan PE and Noll DC: A direct comparison between whole-brain PET and BOLD fMRI measurements of single subject activation response. *NeuroImage* 9:430-438, 1999.
15. Meltzer CC, Kinahan PE, Greer PJ, Nichols TN, Comtat C, Cantwell MN, Lin MP, Price JC: Comparative evaluation of MR-based partial-volume correction schemes for PET. *J Nucl Med* 40:2053-2065, 1999.
16. Lui X, Defrise M, Michel C, Sibomana M, Comtat C, Kinahan PE, and Townsend DW: Exact rebinning methods for 3D PET. *IEEE Transactions on Medical Imaging* 18:657-664, 1999.
17. Beyer T, Townsend DW, Brun A, Kinahan PE, Charron M, Roddy R, Israel J, Jerin J, Young J, Byars L, Nutt R: A combined PET/CT scanner for clinical oncology. *J Nucl Med* 41:1369-1379, 2000.
18. Charron M, Beyer T, Bohnen NN, Kinahan PE, Jerin J, Nutt R, Meltzer CC, Villemagne V, and Townsend DW. Image analysis in oncology patients studied with a combined PET/CT scanner *Clinical Nuclear Medicine*. vol. 25, 905-910, 2000.
19. Kluetz PG, Meltzer CC, Villemagne V, Kinahan PE, Chander S, Martinelli MA, and Townsend DW: Combined PET/CT Imaging in oncology: Impact on patient management. *Clin Positron Emission Tomography* 3:223-230, 2001.
20. Bai C, Kinahan PE, D Brasse, Comtat C. Using Ordered-Subset Algorithms for Single Photon Transmission Tomography in PET. *IEEE Transactions on Nuclear Science*, vol. 49, pp. 74-81, 2002.
21. Lartzien C, Comtat C, Trebossen R, Kinahan PE, Ferreira N, and Bendriem B, Optimization of the injected dose based on Noise Equivalent Count (NEC) rates for 2D and 3D Whole-Body PET. *Journal of Nuclear Medicine*, vol. 43, pp. 1268-1278, 2002.
22. Lartzien, C, Kinahan PE Swensson R, Comtat C. Lin M, Villemagne V, and Trebossen R, Evaluating Image Reconstruction Methods for Tumor Detection in 3-D Whole-Body PET Oncology Imaging. *Journal of Nuclear Medicine*, vol. 44, pp. 276-290, 2003.
23. Beaulieu S, Kinahan PE, Tseng J, Dunnwald LK, Schubert EK, Pham P, Lewellen B, and Mankoff DA, SUV Varies with Time After Injection in 18F-FDG PET of Breast Cancer: Characterization and Method To Adjust for Time Differences. *Journal of Nuclear Medicine*, vol. 44, pp. 1044-1050, 2003.
24. Kinahan PE, Hasegawa BH, and Beyer T. X-ray Based Attenuation Correction for PET/CT Scanners. *Seminars in Nuclear Medicine* vol. 33, pp 166-179, 2003
25. Bai C, Kinahan PE, Brasse D, Comtat C, Townsend D, Meltzer CC, Villemagne V, Charron M, and Defrise M, Effects of attenuation on tumor detection in wholebody PET oncology imaging. *Journal of Nuclear Medicine*, vol. 44, pp. 1855-1861, 2003.
26. Lartzien C, Kinahan PE, and Comtat C, Volumetric Model and Human Observer Comparisons of Tumor Detection for Whole-Body PET. *Academic Radiology*, vol. 11, pp. 637-648, 2004.

27. Alessio A, Kinahan PE, Cheng P, Vesselle H, and Karp JS, PET/CT Scanner Instrumentation, Challenges, and Solutions. *Radiologic Clinics of North America*, pp. (in press), 2004.
28. Lee K, Kinahan PE, Fessler JA, Miyaoka R, and Lewellen TK, Pragmatic Image Reconstruction for the MiCES Fully-3D Mouse Imaging PET Scanner. *Physics in Medicine and Biology*, vol. (in press), 2004.
29. Surti S, Karp JS, and Kinahan PE, PET Scanner Instrumentation. *Radiologic Clinics of North America*, vol. 32, pp. 1003-1016, 2004.
30. Schwartz DL, Ford E, Rajendran J, Yueh B, Coltrera M, Virgin J, Anzai Y, Haynor DR, Lewellen B, Mattes D, Kinahan PE, Meyer J, Phillips M, LeBlanc M, Krohn KA, Eary JF, and Laramore G, FDG-PET/CT Imaging for Staging and Radiotherapy Targeting in the Cervical Neck. *The International Journal of Radiation Oncology, Biology, Physics*, vol. 61, pp.129-136, 2005.
31. Brasse D, Kinahan PE, Lartizien C, Comtat C, Casey M, and Michel C, Correction Methods for Random Coincidences in Fully-3D Wholebody PET Imaging. *J. Nuclear Medicine*, vol. 46, pp. 859-867, 2005.
32. Alessio A, Sauer K, Kinahan P, Analytical Reconstruction of Deconvolved FORE Rebinning PET Measurements, *Physics in Med Biology*, vol. 51 pp.77-93 2006.
33. Janeiro L, Comtat C, Lartizien C, Kinahan PE, Defrise M, Michel C, Trebossen R, Almeida P. Numerical Observer Studies Comparing FORE+AWOSEM, FORE+NECOSEM and NEC Based Fully 3-D OSEM for 3-D Whole-Body PET Imaging. *IEEE Transactions on Nuclear Science*. 53(3):1194-1199, 2006.
34. Alessio A, Kinahan P, Lewellen TK, "Modeling and Incorporation of System Response Functions in 3D Whole Body PET," *IEEE Transactions on Medical Imaging*, 25(7):828-837 2006.
35. Kinahan PE, Alessio A, Fessler JA Dual Energy CT Attenuation Correction Methods for Quantitative Assessment of Response to Cancer Therapy with PET/CT Imaging. *Journal of Technology in Cancer Research and Treatment* 4(5):319-328, 2006.
36. Alessio, A, Kinahan P, "Improved Quantitation for PET/CT Image Reconstruction with System Modeling and Anatomical Priors," *Medical Physics* vol. 33(11): 4095-4103, 2006.
37. Ford EC, Kinahan PE, Hanlon L, Alessio A, Rajendran J, Schwartz D, Phillips M. Tumor delineation using FDG-PET and FMISO-PET in Head and Neck and Lung Cancers: Threshold Contouring and Lesion Volumes. *Medical Physics*, vol. 33(11):4280-4288, 2006.
38. Gifford HC, Kinahan PE, Lartizien C, and King MA, Evaluation of Multiclass Model Observers in PET LROC Studies. *IEEE Transactions on Nuclear Science*, vol 54(1):116-123. 2007.
39. Alessio AM, Kohlmyer S, Chen G, Branch K, Caldwell J, Kinahan P. Cine CT imaging for Attenuation Correction with Cardiac PET/CT. *Journal of Nuclear Medicine* vol 48(5): 794-80. 2007.
40. Schmitz RE, Harrison RL, Stearns CW, Lewellen TK, Kinahan PE, Simulation of Count-rate Performance for a PET Scanner With Partial Collimation. *IEEE Transactions on Medical Imaging* vol 26(7):935 - 944, 2007.
41. Alessio A, Sauer K, Kinahan P, Statistical Image Reconstruction from Correlated Data with Applications to PET. *Physics in Medicine and Biology* vol.52 pp:6133-6150, 2007.
42. Liu F, Cuevas C, Moss A, Dubinsky T, Kinahan PE. The Gas Bubble Motion Artifact. *American Journal of Roentgenology* Vol. 190 pp.294-299 2008.
43. Raylman RR, Majewski S, Smith MF, Proffitt J, Hammond W, Srinivasan A, McKisson J, Popov V, Weisenberger A, Judy CO, Kross B, Ramasubramanian S, Banta LE, Kinahan PE, Champley K. The positron emission mammography/tomography (PEM/PET) breast imaging and biopsy system: Design, construction and initial testing. *Physics in Medicine and Biology* vol.53(3), pp. 637-653, 2008.
44. Alessio A, Schmitz RE, MacDonald L, Wollenweber S, Stearns CW, Ross S, Ganin A, Lewellen TK, Kinahan PE. Image Reconstruction for a Partially Collimated Whole Body PET Scanner. *IEEE Transactions on Medical Imaging* Vol. 55(3), Part 1, pp:975 - 983, 2008
45. Champley K, Defrise M, Clackdoyle R, Raylman RR, Kinahan PE. Planogram Rebinning with the Frequency-Distance Relationship. *IEEE Transactions on Medical Imaging* vol.27, no.7, pp.925-933, July 2008
46. MacDonald LR, Schmitz RE, Alessio A, Wollenweber SD, Stearns CW, Ganin A, Harrison, RL, Lewellen TK, Kinahan PE. Count-Rate Performance of the Discovery STE PET Scanner Using Partial Collimation. *IEEE Transactions on Medical Imaging* vol. 53 pp.3723-3738, 2008
47. Raylman RR, Smith MF, Kinahan PE, Majewski S. Quantification of radiotracer uptake with a dedicated breast PET imaging system. *Medical Physics* (accepted) 2008