BIOGRAPHICAL SKETCH

NAME Paul E Kinahan, Ph.D.	POSITION TITLE Professor of Radiology, University of Washington Adjunct, Biomedical Engineering and Electrical Engineering, University of Washington.
eRA COMMONS USER NAME kinahan	

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-present Ad hoc reviewer for NIH Study Sections and several other grant reviews
2002-present Editorial Board, IEEE Transactions Nuclear Science, Nuclear Medicine Imaging Science
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
2007-2011 Executive Committee Society of Nuclear Medicine Computer and Instrumentation Council
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
2009-2012 Science Council, American Association of Physicists in Medicine
2009-2010 President, American Board of Science In Nuclear Medicine
2009-present Advisory panel, NCRI PET Research Network (UK)

Selected Publications (from 80+)

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. Lartizien 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. Lartizien, 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. Lartizien 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. 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.
30. 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.
31. Alessio A, Sauer K, Kinahan P, Analytical Reconstruction of Deconvolved FORE Rebinned PET Measurements, Physics in Med Biology, vol. 51 pp.77-93 2006.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. 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.
38. 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.
39. Schmitz RE, Harrison RL, Stearns CW, Lewellen TK, Kinahan PE, Simulation of Countrate Performance for a PET Scanner With Partial Collimation. IEEE Transactions on Medical Imaging vol 26(7):935 - 944, 2007.
40. 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.
41. 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.
42. 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
43. 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
44. 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
45. Raylman RR, Smith MF, Kinahan PE, Majewski S. Quantification of radiotracer uptake with a dedicated breast PET imaging system. Medical Physics, Vol. 35, No. 11, pp. 4989–4997, 2008

46. Lee K, Miyaoka RS, Lewellen TK, Alessio AM, Kinahan PE. Noise Characteristics of the FORE+OSEM(DB) Reconstruction Method for the MiCES PET Scanner. IEEE Transactions on Nuclear Science (accepted) 2009.
47. MacDonald LR, Edwards J, Lewellen TK, Haseley D, Rogers J, Kinahan PE, Clinical Imaging Characteristics of the Positron Emission Mammography PEM Flex Solo II. Journal of Nuclear Medicine (accepted) 2009.
48. Alessio AM, Kinahan PE, Manchanda V, Ghioni V, Aldape Parisi MT. Weight-Based, Low-Dose Pediatric Whole-Body PET/CT Protocols. Journal of Nuclear Medicine (accepted) 2009.
49. Kinahan PE, Doot RK, Wanner-Royball M, Bidaut LM, Armato III SG, Meyer CR, Mclennan G. PET/CT Assessment Of Response To Therapy: Tumor Change Measurement, Truth Data & Error. Translational Oncology (Accepted) 2009

Research Support:

Active

1 R01 CA126593-01 (PI: Lewellen) 8/15/07-7/31/12
NIH
University of Washington Emission Tomography Simulation Resource
Development of Simulation open source software for emission tomographs.
Role: Co-Investigator

R01 CA042593-19 (PI: Lewellen) 7/01/87-4/30/12
NIH
Tumor detection and quantitation with emission tomography
Investigation of scatter correction techniques and attenuation scan segmentation as well as development of advanced Monte Carlo simulation software package (placed in the public domain) to improve quantitative imaging of tumors. Role: Co-Investigator

R01 CA042045-19 (PI of subcontract: Kinahan) 5/20/2009- 5/20/2013
NIH/NCI
PEM-PET-CT Breast Imaging and Biopsy Device
The application proposes to develop a high resolution (~2 mm) PEM-PET-CT system dedicated to imaging FDG uptake and image guided biopsies in breasts, aiming at improving the accuracy of breast cancer diagnosis and the evaluation of treatment efficacy. Role: PI of Primary grant: RR Raylman WVU.

No Grant Number (PI: Kinahan) 9/01/06-9/25/10
SAIC RIDER
SAIC-Frederick Task Order 4 -- RIDER Project
Tasks include providing scientific input into the development and implementation of annotated image databases for the RIDER project, specifically for evaluation of the physical performance of informatics tools for measurement of drug response.

5 R01 CA074135-10 (PI: Kinahan) 4/01/03-3/31/10
NIH/NCI
Strategies for clinical oncology imaging with 3D PET
The goals of this proposal are to establish methods of quantitatively measuring image quality in 3D whole-body PET oncology scanning and to utilize these measures to optimize clinical PET imaging.

5R01CA115870-02 (PI: Kinahan) 9/13/06-7/31/11
NIH
Quantitative PET/CT Oncology Imaging
The improved quantification of tracer uptake will lead to improved patient outcomes through a direct impact on providing more accurate information for therapeutic choices.

A-07 (PI: Kinahan) 03/01/06-02/29/10
General Electric Healthcare
PET/CT Imaging Physics Research Program
Translational research and development in areas directly relevant to the joint interests of the GE Functional and Imaging Division and the UW Department of Radiology