CURRICULUM VITAE

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1. Norbert Joseph Pelc
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2. Education:

1974	B.S., Applied Mathematics, Engineering and Physics (w/ distinction) University of Wisconsin
1976	S.M., Medical Radiological Physics Harvard University
1979	Sc.D., Medical Radiological Physics Harvard University Dissertation: "A Generalized Filtered Backprojection Algorithm for Three Dimensional Reconstruction"

3. Publications and patents: see attached list

4. Employment and appointments:

Stanford University:

7/14- 6/17	Shriram Chair of Bioengineering
10/12-present	Boston Scientific Applied Biomedical Engineering Professor
7/12-6/17	Chair, Department of Bioengineering
6/04-7/19	Professor of Bioengineering
12/02-7/12	Associate Chair for Research, Department of Radiology
5/97-10/19	Professor (by courtesy) of Electrical Engineering
5/97-present	Professor of Radiology
1/90-5/97	Associate Professor (by courtesy) of Electrical Engineering
1/90-5/97	Associate Professor of Radiology

GE Medical Systems:

12/82-1/90	Senior Physicist - Applied Science Laboratory
2/81-12/82	Manager - Applied Science Laboratory
10/78-2/81	Senior Physicist - Applied Science Laboratory

Other appointments:

8/82-1/90	Assistant Clinical Professor - Department of Radiology Medical College of Wisconsin
1/88-6/88	Visiting Professor - Department of Biomedical Engineering Duke University
9/75-12/75	Special Teaching Assistant - Department of Mathematics and Physics Massachusetts College of Pharmacy

9/74-10/78	Research Assistant - Physics Research Laboratory Massachusetts General Hospital
1/73-6/74	Part-time Research Assistant - Bone Mineral Laboratory University of Wisconsin

5. Fellowships:

1/88-4/88	GE Medical Systems Research Fellowship Duke University Medical Center, Department of Radiology
9/77-10/78	NIH Traineeship in Medical Radiological Physics Harvard University, School of Public Health
9/74-9/77	NSF Graduate Fellow Harvard University, School of Public Health
9/73-5/74	Albert A. Radke Scholarship University of Wisconsin, Department of Physics
6/72-9/72	NSF Undergraduate Research Fellow University of Wisconsin, Department of Mathematics

6. Teaching:

2012-2017	RAD 223/BioE 223: Physics and Engineering of X-Ray Computed Tomography
1993-present	Doctoral Research Advisor Electrical Engineering, Biophysics, Physics, Applied Physics, Bioengineering Stanford University
1990-2012	Resident's physics course Dept of Radiology, Stanford University
1991-2007	Current Concepts in Magnetic Resonance sponsored by Stanford University Course director 1993-1996
1987-2007	Advanced Techniques in MRI sponsored by Duke University
1989-1990	member - Steering Committee Biophysics Graduate Program, Medical College of Wisconsin
1982-1990	Doctoral Research Advisor Biophysics Graduate Program, Medical College of Wisconsin
1978	Physics of Diagnostic Radiology New England Chapter - Roentgen Ray Society
1976-1978	Principles of Computerized Tomography Massachusetts Institute of Technology (22.85s)
1975-76	Bionucleonics Laboratory Massachusetts College of Pharmacy

1975-76 Undergraduate Physics Laboratory
Massachusetts College of Pharmacy

7. Honors:

Fellow, SPIE, 2016
Senior Member, SPIE
Honorary Doctor of Medicine, Friedrich Alexander University of Erlangen-Nuremberg, 2016
"Twenty five JMRI papers that have stood the test of time" for 2001 paper in JMRI, 2016
Outstanding Inventor Award, Stanford University, 2015.
Distinguished Investigator, Academy of Radiology Research, 2014.
Outstanding Researcher Award, Radiological Society of North America, 2013.
Edith H. Quimby Award, American Association of Physicists in Medicine, 2013.
Member, National Academy of Engineering, 2012
Fellow of the American Association of Physicists in Medicine
Fellow of the American Institute for Medical and Biological Engineering
Fellow of the International Society of Magnetic Resonance Imaging
Fellow of the Council on Cardiovascular Radiology, American Heart Association
Sylvia Sorkin Greenfield Award (2005)
ISMRM Young Investigator Award : (Madore, 1999), (Markl, 2003)
RSNA Trainee Research Prize (Fahrig, 2001), (Reeder, 2002), (Markl, 2002), (Reeder, 2004), (Gilat, 2005)
Cum Laude Citation (scientific exhibit), RSNA, 1997
ARRS President's Award: (Reeder, 2001)
AAMI Young Investigator Award: (Wen, 2004)
Moncada Award, Soc. Body Comput. Tomogr., 1992, 2007
Cum Laude Award, Soc. Body Comput. Tomogr., 1990, 1992, 2001
Winthrop Award, Soc. Body Comput. Tomogr., 1991
Magna Cum Laude Award, Soc. Body Comput. Tomogr., 1991
Lauterbur Award, Soc. Body Comput. Tomogr., 1990, 2005
Editor's Recognition Award, Radiology, 1991-1994
Phi Beta Kappa (1974)
Senior Honors (University of Wisconsin - 1974)
Elected member of Mathematical Association of America (1973)
Sophomore Honors (University of Wisconsin - 1972)
Phi Eta Sigma (1972)
Marshall Award (1970)

8. National Institutes of Health Service
   Radiology and Nuclear Medicine Study Section, 1993-1997
   NHLBI Board of Scientific Counselors (ad hoc member, 1999)
   NIBIB National Advisory Council (2003-2006)
   SBIB-P Study Section (2007, 2009)
   BMIT Study Section (outside opinion, 2008)
   ZRG1 SBIBS 50 Study Section (Feb 2008)
   ZRG1 RUS-F 50 Study Section (May 2008)
   Council of Councils (2013-2016)

9. Memberships and National Committees:

International Society of Magnetic Resonance in Medicine (ISMRM) (1988-present)
- Board of Trustees (1999-2002)
- SMRM Nominating Committee 1990
- SMRI Annual Meeting and Educational Coordination Council (1993-1994)
- SMRI Annual Meeting Scientific Program Co-chairman (1994)
- Annual Meeting Scientific Program Committee (1994-1997)
- Chairman - Study Group on MR Flow and Motion Quantitation (1998-1999)

American Association of Physicists in Medicine (AAPM) (1976-present)
- Task Group on Bone Mineral Measurement (1985-90)
- Task Group 169: Measurements of the 3D Image Noise-Power Spectrum in CT (2007-12)
- Working Group on the Multi-Dimensional Image Noise-Power Spectrum (2007-12)
- Imaging Physics Committee (2005-06)
- Science Council (2006-11)
- Committee on Strategic Planning (2010)
- AAPM Representative to ARR (2008-present)
- CT Committee (2015-present)

American Heart Association (AHA) (1993-2000)
- AHA Council on Cardiovascular Radiology (1993-1996)
- AHA Committee on New Imaging Modalities (1993-1996)

American Association for the Advancement of Science (AAAS) (1996-2001)

SPIE
- Medical Imaging Conference, Physics Program Committee (2007-2014)
- Medical Imaging Conference, Physics Conference Co-chair (2009-2012)
- Senior member (2016-present)

International Society for Strategic Studies in Radiology (2006-present)
- Membership and Nomination Committee (2014-present)
- Emeritus Member (2020-present)

Academy of Radiology Research (ARR)
- Board of Directors (2007-2016)
- Executive Committee (2014-2016)
- NIH Ranking Project Task Force (2018-present)

American Institute for Medical and Biological Engineering (AIMBE)
- Vice President at-Large (2014-6)
- Nominating Committee (2017-present)

International Society of Computed Tomography
- Program Board (2014-present)
- Strategic Planning Committee (2014-present)

National Academy of Engineering
- Search Executive of Bioengineering section (2013-2015)

Radiological Society of North America
- Third Vice President (2010)
- Committee on Scientific Affairs (2014-present)

10. Review activity:

Journals: JMRI, Radiology, Med Phys, Mag. Res. Med., Phys Med Biol, IEEE TMI

Abstracts to annual meetings: RSNA, ISMRM, SPIE Medical Imaging, International Conference on Image Formation in X-Ray Computed Tomography

Funding agencies:

National Institutes of Health
Medical Research Council of Canada
Veterans Administration
Whitaker Foundation Scientific Advisory Committee (1999-2003)

11. Editorial Boards:

Current:

J. Medical Imaging (2013-present)
Editor in Chief, J. Medical Imaging (2018)
Medical Physics Board of Associate Editors (2014-present)

Past:

Medical Physics (1995-2004)
JMRI
Magnetic Resonance Quarterly
Artech Publishing Engineering in Medicine & Biology book series

12. Major University Service

Member, Stanford Cancer Institute Executive Committee (2017-present)
Chair, Administrative Panel on Radiological Safety, 2015-present.
Chair, Department of Bioengineering, 2012-2017
Associate Chair for Research, Department of Radiology, 2002-2012
Chair, Institutional Animal Care and Use Committee (IACUC)

PUBLICATIONS - Norbert J. Pelc

Journals articles:

1. G. Cornell, N.J. Pelc, and M.L. Wage: Simple groups of orders less than 1000. J. Undergrad. Math., 5, 2, 1973.
2. D.A. Chesler, S.J. Riederer, and N.J. Pelc: Noise due to photon counting statistics in computed x-ray tomography. J. Comput. Assist. Tomog., 1, 1, 64, 1977.
3. S.J. Riederer, N.J. Pelc, and D.A. Chesler: The noise power spectrum in computed x-ray tomography. Phys. Med. Biol., 23, 3, 446, 1978.
4. N.J. Pelc and D.A. Chesler: Utilization of cross-plane rays for three-dimensional reconstruction by filtered backprojection. J. Comput. Assist. Tomog., 3, 3, 385, 1979.
5. G.H. Glover and N.J. Pelc: Non-linear partial volume artifacts in x-ray computed tomography. Med. Phys., 7, 238, 1980.
6. L.A. Lehmann, W.R. Brody, A. Macovski, B. Struhl, F.A. DiBianca and N.J. Pelc: Source limitations in scanned projection radiography. Proc. SPIE, 233, 43-48, 1980.
7. S.J. Riederer, N.J. Pelc, J-P.J. Georges, G.S. Keyes, L.A. Lehmann, and A.H. Hall: Beam hardening, noise, and contrast considerations in selective iodine digital radiography. IEEE Trans. Nuc. Sci., 1981.
8. L.A. Lehmann, R.E. Alvarez, A. Macovski, N.J. Pelc, S.J. Riederer, A.L. Hall, and W.R. Brody: Generalized image combinations in dual kVp digital radiography. Med. Phys., 8, 5, 1981.
9. S.J. Riederer, F.A. DiBianca, J-P.J. Georges, G.A. Jensen, G.S. Keyes, N.J. Pelc, E.R. Steinike, and W.H. Wesbey: Performance characteristics of a digital fluorographic system. Proc. SPIE, 273, 88-95, 1981.
10. J-P.J. Georges, G.S. Keyes, N.J. Pelc, and S.J. Riederer: An understanding of digital radiography through image computer simulation. Proc. SPIE, 273,, 96-102 1981.
11. W.R. Brody, D.R. Enzmann, L-S Deutsch, A.L. Hall, and N.J. Pelc: Intravenous carotid arteriography using line-scanned digital radiography. Radiology, 139, 297-300, 1981.
12. W.R. Brody, A. Macovski, N.J. Pelc, L.A. Lehmann, R.A. Joseph, and L.S. Edelheit: Intravenous arteriography using scanned projection radiography. Radiology, 141, 509-514, 1981.
13. F.G. Sommer, W.R. Brody, D. Gross, A. Macovski, A.L. Hall, and N.J. Pelc: Excretory urography using dual-energy scanned projection radiography. Radiology, 141, 529-532, 1981.
14. W.R. Brody, D.M. Cassel, F.G. Sommer, L.A. Lehmann, A. Macovski, R.E. Alvarez, N.J. Pelc, S.J. Riederer, and A.L. Hall: Dual energy projection radiography: initial clinical experience. AJR 137, 201-205, 1981.
15. A.L. Hall, N.J. Pelc, S.J. Riederer, G.S. Keyes, W.R. Brody, L.A. Lehmann, A. Macovski, and R.E. Alvarez: Experimental system for dual energy scanned projection radiography. Proc. SPIE, 314, 1981.
16. S.W. Flax, G.H. Glover, and N.J. Pelc: Textural variations in B-mode ultrasonography: a stochastic model. Ultrasonic Imag., 3, 235-257, 1981.
17. G.H. Glover and N.J. Pelc: An algorithm for the reduction of metal clip artifacts in CT reconstructions. Med. Phys., 8, 6, 1981.
18. S.J. Riederer, B.F. Belanger, G.S. Keyes and N.J. Pelc: Iodine sensitivity of digital imaging systems. Proc. SPIE, 314, 1981.

19. W.R. Brody, D.R. Enzmann, D.C. Miller, D.F. Guthaner, N.J. Pelc, G.S. Keyes and S.J. Riederer: Intravenous arteriography using digital subtraction techniques. JAMA, 248, 671-674, 1982.
20. D.R. Enzmann, W.R. Brody, S. Riederer, G. Keyes, W. Collins and N. Pelc: Intracranial intravenous digital subtraction angiography. Neuroradiology, 23, 241-251, 1982.
21. S.J. Riederer, D.R. Enzmann, A.L. Hall, N.J. Pelc, and W.T. Djang: The application of matched filtering to x-ray exposure reduction in digital subtraction angiography: clinical results. Radiology, 146, 349-354, 1983.
22. S.W. Flax, G.H. Glover, N.J. Pelc, F.D. Gutmann and M. McLachlan: Spectral variations in tissues and phantoms. Ultrasound Med Biol, 2, 127-131, 1983.
23. D.R. Enzmann, W.R. Brody, W.T. Djang, S. Riederer, G. Keyes, W. Collins and N. Pelc: Intraarterial digital subtraction spinal angiography. AJNR, 4, 25-26, 1983.
24. S.W. Flax, N.J. Pelc, G.H. Glover, F.D. Gutmann and M. McLachlan: Spectral characterization and attenuation measurements in ultrasound. Ultrason Imaging, 5, 95-116, 1983.
25. S.J. Riederer, A.L. Hall, J.K. Maier, N.J. Pelc, and D.R. Enzmann: The technical characteristics of matched filtering in digital subtraction angiography. Med Phys, 10, 209-217, 1983.
26. G.T. Gullberg, R.H. Huesman, J.A. Malko, N.J. Pelc, and T.F. Budinger: An attenuated projector-backprojector for iterative SPECT reconstruction. Phys. Med. Biol., 30, 799-816, 1985.
27. G.H. Glover, C.E. Hayes, N.J. Pelc, W.A. Edelstein, O.M. Mueller, H.R. Hart, C.J. Hardy, M. O'Donnell, and W.D. Barber: Comparison of linear and circular polarization for magnetic resonance imaging. J. Mag. Res., 64, 2, 1985.
28. L. Axel, G.H. Glover, and N.J. Pelc: Chemical shift magnetic resonance imaging of two-line spectra by gradient reversal. Mag. Res. Med., 2, 428-436, 1985.
29. J.A. Utz, R.J. Herfkens, C.D. Johnson, A. Shimakawa, N.J. Pelc, G.H. Glover, G.A. Johnson and C.E. Spritzer: Two-second MR images: Comparison with spin-echo images in 29 patients. AJR, 148, 629-633, 1987.
30. J.A. Utz, R.J. Herfkens, J.A. Heinsimer, T. Bashore, R. Califf, G. Glover, N. Pelc and A. Shimakawa: Cine MR determination of left ventricular ejection fraction. AJR, 148, 839-43, 1987.
31. E.K. Fram, R.J. Herfkens, G.A. Johnson, G.H. Glover, J.P. Karis, A. Shimakawa, T.G. Perkins and N.J. Pelc: Rapid calculation of T1 using variable flip angle gradient refocused imaging. Magn Reson Imaging, 5, 201-8, 1987.
32. C.R. Crawford, J.G. Colsher and N.J. Pelc: High speed reprojection and its applications. Proc. SPIE, 914, 311, 1988.
33. J.R. MacFall, N.J. Pelc, and R. Vavrek: Correction for spatially dependent phase shifts for partial Fourier imaging. Mag. Res. Imag., 6, 143-155, 1988.
34. J.A. Utz, R.J. Herfkens, J.A. Heinsimer, A. Shimakawa, G.H. Glover and N.J. Pelc: Valvular regurgitation: dynamic MR imaging. Radiology, 168, 91-94, 1988.
35. J.N. Lee, S.J. Riederer, and N.J. Pelc: Flow compensated limited flip angle MR angiography. Mag. Res. Med., 12, 1-13, 1989.
36. F. Farzaneh, S.J. Riederer, and N.J. Pelc: Analysis of T_2 limitations and off-resonance effects on spatial resolution and artifacts in echo-planar imaging. Mag. Res. Med.14, 123-39, 1990.
37. P. Schmalbrock, C. Yuan, D.W. Charkeres, J. Kohli, and N.J. Pelc: Volume MR Angiography: Methods to achieve very short echo times. Radiology, 175, pp. 861-865, 1990.
38. C.E. Spritzer, N.J. Pelc, J.N. Lee, A.J. Evans, H.D. Sostman and S.J. Riederer: Preliminary experience with rapid MR blood flow imaging using a phase sensitive limited flip angle gradient refocussed pulse sequence. Radiology, 176, 255-262, 1990.

39. D.E. Enzmann and N.J. Pelc: Normal flow patterns of intracranial and spinal cerebrospinal fluid defined by phase-contrast cine MR imaging. Radiology, 178, pp 467-474, 1991
40. H. Munechika, D.C. Sullivan, L.W. Hedlund, C.A. Beam, H.D. Sostman, R.J. Herfkens, and N.J. Pelc: Evaluation of acute renal failure with magnetic resonance imaging using gradient-echo and Gd-DTPA. Invest Radiol, 26, 22, 1991.
41. J.S. Tsuruda, A. Shimakawa, N.J. Pelc, and D. Saloner: Dural sinus occlusion: evaluation with phase sensitive gradient echo MR imaging. AJNR, 12, 481-488, 1991.
42. C.L. Dumoulin, S.P. Souza, R.D. Darrow, N.J. Pelc, W.J. Adams and S.A. Ash: Simultaneous acquisition of phase-contrast angiograms and stationary-tissue images with Hadamard encoding of flow-induced phase shifts. JMRI, 1, 399-404, 1991.
43. N.J. Pelc, M.A. Bernstein, A. Shimakawa, and G.H. Glover: Encoding strategies for three direction phase contrast MRI. JMRI, 1, 405-413, 1991.
44. N.J. Pelc, R.J. Herfkens, A. Shimakawa and D.R. Enzmann: Phase contrast cine magnetic resonance imaging. Mag Res Quarterly, 7, 229-254, 1991.
45. M.P. Marks, N.J. Pelc, M.R. Ross, and D.R. Enzmann: Determination of cerebral blood flow with a phase-contrast cine MR imaging technique: Evaluation of normal subjects and patients with arteriovenous malformations. Radiology, 182, 467-476, 1992.
46. F.G. Sommer, B. Noorbehesht, N.J. Pelc, R. Jamison, A. Pinevich, L. Newton, and B. Myers: Renal blood flow measurement using phase-contrast cine MRI: Preliminary report. Invest. Radiol, 27, 465-470, 1992.
47. M.A. Bernstein, A. Shimakawa, and N.J. Pelc: Minimizing TE in moment-nulled or flow encoded Two- and Three- dimensional gradient-echo imaging. JMRI, 2, 583-588, 1992.
48. D.R. Enzmann and N.J. Pelc: Brain motion: measurement with phase-contrast MR Imaging. Radiology, 185, 653-660, 1992.
49. L.R. Pelc, N.J. Pelc, S.C. Rayhill, L.J. Castro, G.H. Glover, R.J. Herfkens, D.C. Miller, and R.B. Jeffrey: Arterial and venous blood flow: noninvasive quantitation with MR imaging. Radiology, 185, 809-812, 1992.
50. A.J. Evans, F. Iwai, T.A. Grist, H.D. Sostman, L.A. Hedlund, C.E. Spritzer, R. Negro-Vilar, C.A. Beam and N.J. Pelc: MR imaging of blood flow with a phase subtraction technique: *In-vitro* and *in-vivo* validation. Invest. Radiol. 28, 109-115, 1993.
51. R.N. Low, I.R. Francis, R.J. Herfkens, R.B. Jeffrey, G.M. Glazer, T.K.F. Foo, A. Shimakawa, and N.J. Pelc: Fast multiplanar spoiled gradient-recalled imaging of the liver: Pulse sequence optimization and comparison with Spin-Echo MR imaging. AJR 160, 501-509, 1993.
52. N. J. Pelc: Optimization of flip angle for T_1 dependent contrast in MRI. Magn. Reson. Med 29, 695-699, 1993.
53. M.R. Ross, N.J. Pelc, and D.R. Enzmann: Qualitative phase contrast MR angiography in the normal and abnormal Circle of Willis. AJNR 14, 19-25, 1993.
54. J.F. Debatin, J.A. Strong, H.D. Sostman, R. Negro-Vilar, J.M. Douglas, C.E. Spritzer, and N.J. Pelc: MR characterization of blood flow in native and grafted internal mammary arteries. JMRI 3, 443-450, 1993.
55. S.M. Song, S.A. Napel, G.H. Glover, and N.J. Pelc: Noise reduction of 3-D phase contrast MR velocity measurements. JMRI, 3, 587-596, 1993.
56. D.R. Enzmann, M.P. Marks, and N.J. Pelc: Comparison of cerebral artery blood flow measurements with gated cine and ungated phase-contrast techniques. JMRI, 3, 705-712 1993.
57. D.R. Enzmann and N.J. Pelc: Cerebrospinal fluid flow measured by phase contrast cine MR. AJNR, 14, 1301-1307, 1993.
58. J.M. Silverman, P.J. Julien, R.J. Herfkens and N.J. Pelc: Quantitative differential pulmonary perfusion: MR imaging versus radionuclide lung scanning. Radiology, 189, 699-701, 1993.

59. K.C.P. Li, W.S. Whitney, C.H. McDonnell, J.O. Fredrickson, N.J. Pelc, R.L. Dalman and R.B. Jeffrey: Chronic mesenteric ischemia: Evaluation with phase-contrast cine MR Imaging. Radiology 190, 175-179, 1994.
60. J.F. Debatin, R.H. Ting, H. Wegmüller, F.G. Sommer, J.O. Fredrickson, T.J. Brosnan, B.S. Bowman, B.D. Myers, R.J. Herfkens and N.J. Pelc: Renal arterial blood flow: Quantitation with phase-contrast MR imaging with and without breath-holding. Radiology, 190, 371-378, 1994.
61. P.M. Chappell, N.J. Pelc, T.K.F. Foo, G.H. Glover, S.P. Haros, and D.R. Enzmann. Comparison of lesion enhancement on spin-echo and gradient-echo images. AJNR, 15, 37-44, 1994.
62. D.R. Enzmann, M.R. Ross, M.P. Marks, and N.J. Pelc: Blood flow in major cerebral arteries measured by phase-contrast cine MR. AJNR, 15 123-129, 1994.
63. J.E. Jordan, N.J. Pelc, and D.R. Enzmann: Velocity and flow quantitation in the superior sagittal sinus with ungated and Cine (gated) phase contrast MR imaging. JMRI 4, 25-28, 1994.
64. A.M. Norbash, N.J. Pelc, A. Shimakawa and D.R. Enzmann: Shunt flow measurement and evaluation of valve oscillation with a spin-echo phase contrast MR sequence. Radiology 190, 560-564, 1994.
65. J.E. Drace and N.J. Pelc: Measurement of skeletal muscle motion *in-vivo* with phase contrast MR imaging. JMRI, 4, 157-163, 1994.
66. J.O. Fredrickson and N.J. Pelc: Time resolved MR imaging by automatic data segmentation. JMRI, 4, 189-196, 1994.
67. D.F. Schomer, M.P. Marks, G.K. Steinberg, I.M. Johnstone, D.B. Boothroyd, M.R. Ross, N.J. Pelc and D.R. Enzmann: The anatomy of the posterior communicating artery as a risk factor for ischemic cerebral infarction. N Engl J Med, 330, 1565-1570, 1994.
68. B.D. Myers, F.G. Sommer, K.C.P. Li, S. Tomlanovich, N.J. Pelc, C.H. McDonnell, E. Pagtalunan, L. Newton and R. Jamison: Determination of blood flow to the transplanted kiney: a novel application of phase-contrast cine magnetic resonance imaging. Transplantation, 57, 1445-1450, 1994.
69. J.E. Drace and N.J. Pelc: Elastic deformation in tendons and myotendinous tissue: Measurement by phase contrast MR imaging. Radiology, 191, 835-839, 1994.
70. M.A. Bernstein, M. Grgic, T.J. Brosnan, and N.J. Pelc: Reconstructions of phase contrast, phased array multicoil data. Mag. Res. Med., 32, 330-334, 1994.
71. G.D. Rubin, R.J. Herfkens, N.J. Pelc, T.K.F. Foo, S.A. Napel, A. Shimakawa, R.M. Steiner and C.J. Bergin: Single breath-hold pulmonary MR angiography: optimization and comparison of three imaging strategies. Invest. Radiol., 29, 766-772, 1994.
72. G.B. Pike, C.H. Meyer, T.J. Brosnan and N.J. Pelc: Magnetic resonance velocity imaging using a fast spiral phase contrast sequence. Mag. Res. Med. 32, 476-483, 1994.
73. N.J. Pelc, F.G. Sommer, K.C.P. Li, T.J. Brosnan, R.J. Herfkens, D.R. Enzmann: Quantitative Magnetic Resonance flow imaging. Magn Reson Quarterly 10, 125-147, 1994.
74. J.E. Drace and N.J. Pelc: Skeletal muscle contraction: Analysis with use of velocity distributions from phase-contrast MR imaging. Radiology 193, 423-429, 1994.
75. J.E. Drace and N.J. Pelc: Tracking the motion of skeletal muscle with velocity-encoded MR Imaging. JMRI 4, 773-778, 1994.
76. J.M. Silverman, P.J. Julien, R.J Herfkens, and N.J. Pelc: Magnetic resonance imaging evaluation of pulmonary vascular malformations. Chest 106, 1333-1338, 1994.
77. L.R. Pelc, J. Sayre, K. Yun, L.J. Castro, R.J. Herfkens, D.C. Miller and N.J. Pelc: Evaluation of myocardial motion tracking using cine phase contrast magnetic resonance imaging. Invest. Radiol. 29, 1038-1042, 1994.

78. A.T. Lee, G.B. Pike and N.J. Pelc: Three-point phase-contrast velocity measurements with increased velocity-to-noise ratio. Mag Res Med 33,122-126, 1995.
79. J.F. Debatin, R. Dalman, R.J. Herfkens, E.J. Harris, and N.J. Pelc: Phase contrast MRI assessment of pedal blood flow. Eur. Radiol. 5, 36-42, 1995.
80. J.O. Fredrickson, H. Wegmüller, R.J. Herfkens, and N.J. Pelc: Simultaneous temporal resolution of cardiac and respiratory motion. Radiology 195, 169-175, 1995.
81. S.M. Song, S.A. Napel, N.J. Pelc, and G.H. Glover: Phase unwrapping of MR images using Poisson equation. IEEE Trans Image Processing 4, 667-676, 1995.
82. N.J. Pelc, M. Drangova, L.R. Pelc, Y. Zhu, D.C. Noll, B.S. Bowman, and R.J. Herfkens: Tracking of cyclical motion using phase contrast cine MRI velocity data. JMRI 5, 339-345, 1995.
83. A. Lingamneni, P.A. Hardy, K.A. Powell, N.J. Pelc, and R.D. White: Validation of cine phase-contrast for motion analysis. JMRI 5, 331-338, 1995.
84. N.J. Pelc and T. Sumanaweera: Reply to T1 weighted signal contrast optimization by RF pulses (Letter). Mag Res Med 34, 134-135, 1995.
85. J-R Liao, F.G. Sommer, R.J. Herfkens, and N.J. Pelc: Cine spiral imaging. Mag Res Med 34, 490-493, 1995.
86. J-H Chai, N.Y Hong, N.J. Pelc and T.S. Sumanaweera: T1-weighted signal contrast optimization by rf pulse sequences (Letter). Mag Res Med 35, 133-4, 1995.
87. M. Drangova and N.J. Pelc: Artifacts and signal loss due to flow in the presence of B_o inhomogeneity. Mag Res Med 35, 126-130, 1996.
88. Y. Zhu Y, M. Drangova and N.J. Pelc: Fourier tracking of myocardial motion using Cine-PC data. Mag Res Med 35, 471-480, 1996.
89. J.O Fredrickson and N.J. Pelc: Temporal resolution improvement in dynamic imaging. Mag Res Med 35, 621-625, 1996.
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258. Isoda H, Hirano M, Takeda H, Yamashita S, Inagawa S, Kasugi T, Takehara Y, Nozaki A, Nagasawa K, Alley MT, Markl M, Pelc NJ and Sakahara H: Visualization of Hemodynamics in a Silicon Aneurysm Model Using Time-Resolved Three-Dimensional Phase-Contrast MRI, Proceedings of the ISMRM 13th Annual Meeting, p. 2815, 2005.
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280. Greve JM, Sho E, Tedesco MM, Draney Blomme MT, Wilson NM, Dalman RL, Pelc NJ, Taylor CA: Localized Quantification of Geometry, Hemodynamics, and Histology in a Rat Model of Abdominal Aortic Aneurysm. Proceedings of the ISMRM 14th Annual Meeting, p. 3147, 2007.
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285. Baek J and Pelc NJ. A new reconstruction method to improve SNR for an inverse geometry CT system. SPIE Medical Imaging Conference 6913-106, 2008.
286. Xie Y, Wang AS, and Pelc NJ. Lossy raw data compression in computed tomography with noise shaping to control image effects. SPIE Medical Imaging Conference 6913-109, Feb 17-21, 2008.
287. Wang AS, Xie Y, and Pelc NJ. Effect of the frequency content and spatial location of raw data errors on CT images. SPIE Medical Imaging Conference 6913-111, 2008.
288. Ganguly A and Pelc NJ. On the angular dependence of Bremsstrahlung x-ray emission. SPIE Medical Imaging Conference 6913-172, 2008.
289. Baek J and Pelc NJ: Analytical derivation of the noise power spectrum for a fan-beam CT system. 50th Annual Meeting of the AAPM, WE-C-332-02, Med Phys 35, 2939, 2008.
290. Wang A and Pelc NJ: Optimal multi-energy binning in photon counting detectors with energy discrimination capabilities. RSNA '08, p. 1061, 2008.
291. Baek J and Pelc NJ: Analytical construction of 3D NPS for a cone beam CT system. SPIE Medical Imaging Conference 7258-04, 2009.
292. Wang A and Pelc NJ: Optimal energy thresholds and weights for separating materials using photon counting x-ray detectors with energy discriminating capabilities. SPIE Medical Imaging Conference 7258-72, 2009.
293. Baek J and Pelc NJ: SNR efficient 3D reconstruction algorithm for multi-source inverse geometry CT system. SPIE Medical Imaging Conference 7258-74, 2009.
294. Wu PH, Lin CY, Cheng CC, Chung HW, Wu WC, Hargreaves BA and Pelc NJ: Balanced SSFP Cisternography in the Cerebellopontine (CP) Angle: Inconsistent Vessel Contrast and a Possible Remedy. Proceedings of the ISMRM 17th Annual Meeting, p. 2689, 2009.
295. Mazin S and Pelc NJ: Metal Artifact Reduction Algorithm for X-Ray CT Using a Three-Pass Approach. 51st Annual Meeting of the AAPM, SU-EE-A4-3, July 2009.
296. De Man B, Caiafa BA, Cao Y, Frutschy KJ, Harrison DD, Inzinna L, Longtin R, Neculaes B, Reynolds JL, Roy J, Short J, Uribe J, Waters W, Yin Z, Zhang X, Zou Y, Senzig R, Baek J, and Pelc NJ: Multi-source inverse-geometry CT: From system concept to research prototype, IEEE Nuclear Science Symposium 2009.
297. Frutschy K, Neculaes B, Inzinna L, Caiafa A, Reynolds J, Zou Y, Zhang X, Gunturi S, Cao Y, De Man B, McDevitt D, Roffers R, Lounsberry B and Pelc, NJ: High power distributed x-ray source. SPIE Medical Imaging Conference 7622-52, 2010.
298. Wang AS and Pelc NJ: Impact of photon counting detector spectral response on dual energy approaches. SPIE Medical Imaging Conference 7622-129, 2010.
299. Mazin S, Nanduri A, and Pelc NJ: Emission Guided Radiation Therapy System: A Feasibility Study. 2010 AAPM Annual Meeting, SU-GG-J-3, 2010.
300. Frutschy K, Neculaes B, Inzinna L, Mani V, Caiafa A, Reynolds J, Zou Y, Zhang X, Gunturi S, Cao Y, De Man B, Roffers R, Lounsberry B, and Pelc NJ: Distributed X-ray Source Development. 2010 AAPM Annual Meeting, MO-D-201B-2, 2010.
301. Uribe J, Reynolds JL, Inzinna LP, Longtin R, Harrison DD, De Man B, Neculaes, Caiafa BA, Waters W, Frutschy KJ, Senzig R, Baek J, and Pelc NJ: Multisource inverse-geometry CT — Prototype system integration, IEEE Nuclear Science Symposium, 2010.
302. Wang AS and Pelc NJ: Synthetic CT: Generating Images of Arbitrary CT Protocols Using a Dual Energy Scan. RSNA 2010 Annual Meeting. SSC14-09, 2010.

303. Neculaes BV, Inzinna L, Caiafa A, Reynolds J, Frutschy K, De Man B, Uribe J, Longtin R, Harrison D, and Pelc NJ: A High Power Distributed X-ray Source for Multisource Inverse Geometry CT. RSNA 2010 Annual Meeting. SSK16-03, 2010.
304. Uribe J, Reynolds J, Longtin R, Harrison D, Waters W, De Man B, Neculaes BV, Frutschy K, Inzinna L, Caiafa A, Baek J and Pelc NJ: First Imaging with Gantry-based Multisource Inverse Geometry CT scanner. RSNA 2010 Annual Meeting. SSK16-06, 2010.
305. Baek J and Pelc NJ: Use of sphere phantoms to measure the 3D MTF of FDK reconstructions. SPIE Medical Imaging Conference 7961-12, 2011.
306. Wang AS and Pelc NJ: Synthetic CT: simulating arbitrary low dose single and dual energy protocols. SPIE Medical Imaging Conference 7961-62, 2011.
307. Hsieh SS, Heanue JA, Funk T, Hinshaw WS and Pelc NJ: An inverse geometry CT system with stationary source arrays. SPIE Medical Imaging Conference 7961-67, 2011.
308. Golden C, Mazin SR, Boas FE, Tye G., Ghanouni P, Sofilos M, and Pelc NJ: A comparison of four algorithms for metal artifact reduction in CI imaging. SPIE Medical Imaging Conference 7961-105, 2011.
309. Yao Y, Wang A, and Pelc NJ: Efficacy of Fixed Filtration for Rapid KVp-Switching Dual Energy X-Ray Systems, Joint AAPM/COMP Meeting, TU-G-110-5, 2011.
310. Hsieh SS and Pelc NJ: Design for a Dynamic Bowtie Achieving a Piecewise-Linear Attenuation Profile, RSNA 2011 Annual Meeting, SSA20-02, 2011.
311. Wang A and Pelc NJ: A comparison of dual kV energy integrating and energy discriminating photon counting detectors for dual energy x-ray imaging, SPIE Medical Imaging Conference 8313-32, 2012.
312. Baek J, Uribe J, Harrison D, Reynolds J, Neculaes B, Inzinna L, Caiafa A, DeMan B, Pelc NJ: Initial results with a multisource inverse-geometry CT system, SPIE Medical Imaging Conference 8313-46, 2012.
313. Yao Y, Wang A and Pelc NJ: Efficacy of fixed filtration for rapid kVp-switching dual energy x-ray systems: experimental verification, SPIE Medical Imaging Conference 8313-51, 2012.
314. Wang A, Feng C and Pelc NJ: Image-based synthetic CT: simulating arbitrary low dose single and dual energy protocols from dual energy images, SPIE Medical Imaging Conference 8313-52, 2012.
315. Baek J and Pelc NJ: Data normalization method for a multisource inverse geometry CT system, SPIE Medical Imaging Conference 8313-83, 2012.
316. Hsieh SS and Pelc NJ: A volumetric reconstruction algorithm for stationary source inverse-geometry CT, SPIE Medical Imaging Conference 8313-132, 2012.
317. Grimmer R, Baek J, Pelc NJ and Kachelrieß, M: Frequency-combined extended 3D reconstruction for multiple circular cone-beam CT scans. 24th European Congress of Radiology, 2012.
318. Hsieh SS and Pelc NJ: Optimized control of a dynamic, pre-patient attenuator, SPIE Medical Imaging Conference 8668-60, 2013.
319. Yao Y, Megibow AJ and Pelc NJ: Liver imaging: image quality evaluation and comparison between single and dual energy protocols, SPIE Medical Imaging Conference 8668-65, 2013.
320. Hsieh SS, Cao G, Nett BE and Pelc NJ: Truncation artifact correction by support recovery, SPIE Medical Imaging Conference 8668-132, 2013.
321. Rajbhandary PL, Hsieh SS and Pelc NJ: A Fast and Noise-efficient Estimator for Material Decomposition in Multi-bin Photon Counting X-ray Detectors. RSNA Annual Meeting, 2013 (SSG14-05).
322. Heish SS and Pelc NJ: Algorithms for optimizing CT fluence control. SPIE Medical Imaging Conference 9033-20, 2014.

323. Rajbhandary PL, Hsieh SS and Pelc NJ: Segmented targeted least squares estimator for material decomposition in multi bin PCXDs. SPIE Medical Imaging Conference 9033-43, 2014.
324. Yao Y, Bornefalk H, Hsieh SS, Danielsson M and Pelc, NJ: Use of depth information from in-depth photon counting detectors for x-ray spectral imaging: a preliminary simulation study, SPIE Medical Imaging Conference 9033-121, 2014.
325. Hsieh SS and Pelc NJ: Enabling photon counting detectors with dynamic attenuators, SPIE Medical Imaging Conference 9033-126, 2014.
326. Y Yao and NJ Pelc: Utilization of in-depth photon counting detectors towards x-ray spectral imaging: The benefits from the depth information. Biomedical Imaging (ISBI), 2014 IEEE 11th International Symposium on Biomedical Imaging (ISBI), 1156-9, 2014.
327. Y Yao and NJ Pelc: To Explore the More Realistic Energy Responses of the In-Depth Photon Counting Detectors. AAPM Annual Meeting, (TU-F-18A-7), 2014.
328. Hsieh SS and Pelc NJ: Pulse detection logic for multibin photon counting detectors: beyond the simple comparator. SPIE Medical Imaging Conference 9412-34, 2015.
329. Yao Y and Pelc NJ: Multivariate Gaussian model based Cramér-Rao lower bound evaluation of the in-depth PCXD. SPIE Medical Imaging Conference 9412-37, 2015.
330. Shunhavanich P and Pelc NJ: Fluid-filled dynamic bowtie filter: a feasibility study. SPIE Medical Imaging Conference 9412-54, 2015.
331. Hsieh SS, Peng MV, May CA, Shunhavanich P and Pelc NJ: First results from a prototype dynamic attenuator system. SPIE Medical Imaging Conference 9412-56, 2015.
332. Rajbhandary PL and Pelc NJ: Statistical bias in material decomposition in low photon statistics region. SPIE Medical Imaging Conference 9412-183, 2015.
333. Pelc NJ, Yao Y, Hsieh SS, Bornefalk H, Danielsson M: Use of the depth information in edge-on photon counting detectors for improved spectral imaging. 3rd Workshop on Medical Applications of Spectroscopic X-ray Detectors. CERN, Geneva, Switzerland, Apr 20-23, 2015.
334. Divel SE, Segars WP, Christensen S, Wintermark M, Lansberg MG and Pelc NJ: Development of a realistic dynamic digital brain phantom for CT perfusion validation. SPIE Medical Imaging Conference 9783-32, 2016.
335. Hsieh SS and Pelc NJ: Limits to dose reduction from iterative reconstruction and the effect of through-slice blurring, SPIE Medical Imaging Conference 9783-46, 2016.
336. Shunhavanich P and Pelc NJ: Lossless compression of projection data from photon counting detectors. SPIE Medical Imaging Conference 9783-53, 2016.
337. Rajbhandary P and Pelc NJ: Conventional CT images from spectral measurements. SPIE Medical Imaging Conference 9783-61, 2016.
338. Divel SE, Segars PW, Christensen S, Wintermark M, Lansberg MG, and Pelc NJ: Use of Synthetic CT to Reduce Simulation Time of Complex Phantoms and Systems, CT Meeting 2016, 253-6, 2016.
339. Rajbhandary P and Pelc NJ: Comparison Weighted Energy Bin vs.Weighted Basis Material CT Images, CT Meeting 2016, 327-30, 2016.
340. Hsieh SS and Pelc NJ: Pixel Size Tradeoffs for CdTe Spectral Photon Counting Detectors, CT Meeting 2016, 387-90, 2016.
341. Rajbhandary PL, Hsieh SS, and Pelc NJ: Effect of spatio-energy correlation in PCD due to charge sharing, scatter and secondary photons. SPIE Medical Imaging Conference 10132-30, 2017.
342. Shunhavanich P and Pelc NJ: Sensitivity analysis of pulse pileup model parameter in photon counting detectors, SPIE Medical Imaging Conference 10132-133, 2017.

343. Hsieh SS and Pelc NJ: Improvements in low contrast detectability with iterative reconstruction and the effect of slice thickness, SPIE Medical Imaging Conference 10132-186, 2017.
344. Divel SE, Christensen S, Wintermark M, Lansberg MG and Pelc NJ: Method for decreasing CT simulation time of complex phantoms and systems through separation of material specific projection data, SPIE Medical Imaging Conference 10132-192, 2017.
345. Wang J, Pelc NJ, and Fleischmann D: Degradation of spatial resolution at reduced rotation time on a clinical CT scanner. AAPM 2017.
346. Shunhavanich P, Bennett NR, Hsieh SS and Pelc NJ: Implementation of a piecewise linear dynamic attenuator, SPIE Medical Imaging Conference 10573-28, 2018.
347. Rajbhandary PL, Persson M and Pelc NJ: Frequency dependent DQE of photon counting detector with spectral degradation and cross-talk, SPIE Medical Imaging Conference 10573-37, 2018.
348. Divel SE, Hsieh SS and Pelc NJ: Can image-domain filtering of FBP CT reconstructions match low-contrast performance of iterative reconstructions? SPIE Medical Imaging Conference 10573-39, 2018.
349. Persson M, Rajbhandary PL and Pelc NJ, Generalized linear-systems framework for performance assessment of energy-resolving photon-counting detectors, SPIE Medical Imaging Conference 10573-45, 2018.
350. Rajbhandary PL and Pelc NJ: Energy dependence of SNR and DQE for effective monoenergetic imaging in spectral CT, SPIE Medical Imaging Conference 10573-50, 2018.
351. Rajbhandary PL and Pelc NJ: Effect of electronic noise and lowest energy threshold selection in photon counting detectors, SPIE Medical Imaging Conference 10573-178, 2018.
352. Shunhavanich P and Pelc NJ: Performance evaluation of a piecewise-linear dynamic attenuator, 5th CT Meeting, 44-6, 2018.
353. Persson M and Pelc NJ: Reducing partial volume artifacts with spectral CT, 5th CT Meeting, 360-3, 2018.
354. Webb TD, Leung S, Ghanouni P, Dahl J, Pelc NJ and Pauly, BK, The relationship between Hounsfield Units and acoustic velocity in two human skulls. Int'l Soc Therapeutic Ultrasound, May 14-17, 2018, Nashville, TN.
355. Persson M and Pelc NJ: A Method of Calculating Lesion Detectability in Photon-Counting Spectral CT. RSNA Annual Meeting, SSM21-06, 2018.
356. Persson M and Pelc NJ: Simulation model for evaluating energy-resolving photon-counting CT detectors based on generalized linear-systems framework, SPIE Medical Imaging Conference 10948-66, 2019.
357. Divel SE and Pelc NJ: Image-domain insertion of spatially correlated, locally varying noise in CT images, SPIE Medical Imaging Conference 10948-72, 2019.
358. Persson M and Pelc NJ: Evaluating spectral CT performance of photon-counting CdTe and Si detectors with a linear-systems framework, 5th Workshop on Medical Applications of Spectroscopic X-ray Detectors, May 2019.
359. Persson M and Pelc NJ: Noise reduction in photon-counting CT using frequency-dependent optimal weighting. 15th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine, 2019.

INVITED LECTURES - Norbert J. Pelc

Lectures at major conferences:

1. Physics of Digital Radiography. American Association of Chief Residents in Radiology. New Orleans, 1981.
2. Motion Effects and their elimination. Invited lecture at the 29-th annual meeting of the American Association of Physicists in Medicine, Detroit, Med. Phys., 14, 500, 1987.
3. Phase contrast angiography and related techniques. 33-rd annual meeting of the American Association of Physicists in Medicine. Med. Phys., 18, 585, 1991.
4. Motion artifacts: Origins. 10-th Annual Meeting, Society of Magnetic Resonance in Medicine, 1991.
5. Short TR fast scanning techniques in MR. Western Neuroradiological Society, p. 57, 1991.
6. Fast MRI. 1992 Korean Radiological Society.
7. Spin preparation and manipulation techniques. 1992 AAPM Summer School entitled "The Physics of MRI"
8. Motion studies using phase contrast MRI. '92 Computers in Cardiology, Durham, NC.
9. Phase contrast applications. Plenary lecture at the Society of Magnetic Resonance Imaging, JMRI 3P, 29, 1993.
10. Imaging of cardiac dynamics. Plenary lecture at the SMRM 12th Annual Meeting. Proc SMRM 12th Annual Meeting, 214, 1993.
11. A walk through k-space. '93 RSNA refresher course. Radiology 189P, 68, 1993.
12. Assessment of regional and transmural myocardial function: Phase techniques. AHA Scientific Conference on the Application of Magnetic Resonance to the Cardiovascular System. Atlanta, 1993.
13. Basic Flow Phenomena. SMR Workshop on Cardiovascular MRI: Present and Future, p. 39, 1994.
14. Magnetic Resonance Angiography. Soc. Mag. Res. Tech., San Francisco, 1994.
15. Myocardial Mechanics: Phase Tracking. SMR Workshop on Cardiovascular MRI: Present and Future, p. 162, 1994.
16. A walk through k-space. '94 RSNA refresher course. Radiology 193P, 71, 1994.
17. Imaging myocardial dynamics with phase contrast MRI. MR '95 International Symposium - MR into it's second decade. January 25-29, 1995, Garmisch, Germany.
18. Phase Contrast and Flow Measurements. SMR mini-categorical course "Magnetic Resonance Angiography for Clinical Radiologists", August 22-25, 1995, Nice, France.
19. A Walk Through K-Space. '95 RSNA refresher course. Radiology 197P, 108, 1995.
20. Motion Effects in MRI. Workshop on MR Signal Processing. October 18-20, 1996, Urbana-Champagne.
21. Status of Coronary Flow Measurement Technology. NHLBI Working Group on MRI in Clinical Cardiology, October 28-29, 1996, Bethesda, MD.
22. Flow Quantification with Phase Contrast MRI. MR '97 International Symposium. January 22-26, 1997, Garmisch-Partenkirchen, Germany.
23. K-Space: The Final Frontier?. 1997 ISMRM, April 14, 1997, Vancouver, BC, Canada.
24. K-Space. 1998 ISMRM, April 20, 1998, Sydney, Australia.
25. Medical Imaging. Third National Biomedical Engineering Career Symposium, sponsored by the Whitaker Foundation, Baltimore, MD, June 1998.
26. The Role of the IACUC Chair. Public Responsibility in Medicine and Research (PRIM&R), March, 1999.

27. More is Usually More: The Future of High Field MRI. Plenary Lecture – ISMRM, May 1999.
28. Acquisition Parameters and Image Quality. ISMRM educational program entitled MR Physics and Techniques for Clinicians, May 1999.
29. Cardiovascular Magnetic Resonance Imaging. American Physical Society Meeting. Bulletin of the American Physical Society, 45, 174-175, 2000.
30. EBCT, Multidetector CT, and the Continuing Evolution. Screening CT: Concepts and Strategies. Newport Beach, CA, Sept 8-9, 2001.
31. CT Screening: Radiation Safety Issues. Screening CT: Concepts and Strategies. Newport Beach, CA, Sept 8-9, 2001.
32. Techniques for Cardiovascular MRI. The Cardiovascular System in Health and Disease: Fundamental Concepts for the Medical Device Industry, Stanford, CA, Sept 19-21, 2001.
33. Cardiovascular CT Imaging. The Cardiovascular System in Health and Disease: Fundamental Concepts for the Medical Device Industry, Stanford, CA, Sept 19-21, 2001.
34. Future Directions and Strategic Frontiers: Imaging Technologies, RSNA/ARR/AAPM Workshop on NIBIB - Update for Radiological Scientists, Nov. 9, 2001, Bethesda, MD
35. A truly hybrid x-ray/MR system for interventional guidance , 4th Interventional MRI Symposium, Leipzig, Germany , Sept. 27 2002
36. Hybrid x-ray/MR system and other hybrid imaging modalities , SPIE Annual Meeting, Feb. 16, 2003.
37. Phase contrast techniques for measuring velocity and flow, ISMRM Annual Meeting, July 2003.
38. Overview of MR Physics, ISMRM Annual Meeting, May 2005.
39. Hybrid X-ray/MR Systems: Technical Challenges and Implementations. ISMRM Annual Meeting, May 2007.
40. Overview of MR Physics, ISMRM course entitled "Clinical MRI: From Physical Principles to Practical Protocols", May 2006.
41. Imaging with Distributed Source Arrays, AAPM Annual Meeting, July 2007.
42. Dual-Energy CT: Technical Aspects, RSNA Annual Meeting, Nov. 2007.
43. Dual Energy CT: Physics Principles. 50th Annual Meeting of the AAPM, MO-B-351-1, Med Phys 35, 2861, 2008.
44. Advanced CT Source and Detector Technologies. 50th Annual Meeting of the AAPM, TH-D-342-3, Med Phys 35, 2993, 2008.
45. Volumetric CT Imaging. Membis Bioimaging Symposium, Memphis TN, Nov. 2008.
46. Recent Advances and Future Directions in MR Imaging. Membis Bioimaging Symposium, Memphis TN, Nov. 2008.
47. Critical Elements of a Successful Grant Proposal. ISMRM 17th Annual Meeting, 2009.
48. Advances in MR: State of the Art Today and Future Directions – MR Instrumentation. AAPM 52nd Annual Meeting, MO-D-201C-1, 2010.
49. Dual Energy CT Imaging for Density Measurements, AAPM Annual Meeting, 2011
50. Inverse Geometry CT, AAPM Annual Meeting, 2011
51. CT 2020, RSNA Annual Meeting, 2011
52. New Frontiers in CT: Functional and Spectral Imaging, European Congress of Radiology, A-473, 2012.
53. Recent and Future Directions in CT Imaging, in Frontiers in Bioengineering Research, Atlanta, Feb 25-26, 2013.

54. Potential Impact of Spectral X-ray Technology in Diagnostic Medical Imaging, 2nd Workshop of Medical Applications of Spectroscopic X-ray Detectors, CERN, Geneva, Switzerland, April 22-25, 2013.
55. Potential Impact of Spectral Detector Technology, Davis Biomedical Imaging Conference, 2014.
56. Promising Directions for CT Technology Development, International Symposium on Biomedical Imaging (ISBI), Beijing, Apr 29-May 2, 2014.
57. Research in Medical Imaging, Research in Academics and Industry. AAPM Annual Meeting, Austin TX, July 20-24, 2014. (TU-C-BRF-3).
58. Multi-Energt CT: Basic Concepts & Current Implementations. AAPM Annual Meeting, Austin TX, July 20-24, 2014 (WE-E-18C-2)
59. Technology Trends and Promising Directions for CT Development. Laughlin Lecture, Memorial Sloan Kettering Cancer Center, Sept. 11, 2014.
60. The impact of imaging research on medicine and society: translating research into products. SPIE Medical Imaging, Orlando FL, Feb 21-26, 2015.
61. Iterative Image Reconstruction. Refresher course RC512, RSNA Annual Meeting, Chicago IL, Nov. 29 - Dec. 4, 2015.
62. Overview of CT reconstruction and denoising strategies. AAPM Annual Meeting, Washington DC, July 31 – Aug 4, 2016.
63. Dual-Energy CT: Acquisition and Processing. AAPM Annual Meeting, Washington DC, July 31 – Aug 4, 2016.
64. Update on Current and Upcoming Technologies in CT. RSNA Annual Meeting, Chicago IL, Nov 26 - Dec 2, 2016.
65. Iterative Image Reconstruction. RSNA Annual Meeting, Chicago IL, Nov 26 - Dec 2, 2016.
66. Closed Gantry Systems - Advances in X-ray Sources and Detectors. RSNA Annual Meeting, Chicago IL, Nov 26 - Dec 2, 2016 (repeated in 2017).
67. Statistical and Iterative Reconstruction and Image Domain Denoising. RSNA Annual Meeting, Chicago IL, Nov 26 - Dec 2, 2016 (repeated in 2017).
68. Potential advantages and current limitations of CT photon counting detectors". 4th Workshop on Medical Applications of Spectroscopic X-ray Detectors. CERN, Geneva Switzerland, May 15-18, 2017.

Post-graduate lectures and visiting professorships (selected)

1. Sampling Aspects in MRI. Presented at "Advanced Techniques in MRI" sponsored by Duke University, Kiawah Is., SC, 1987.
2. Motion and flow effects in MRI. Presented at "Advanced Techniques in MRI" sponsored by Duke University, Kiawah Is., SC, 1987.
3. Flow techniques in Magnetic Resonance. Presented at "Advanced Techniques in MRI" sponsored by Duke University, Kiawah Is., SC, 1988.
4. Phase Contrast Physics. In "Current Concepts of Magnetic Resonance" sponsored by Stanford University and Duke University. Silverado, Oct. 1991.
5. Quantitative Phase Contrast MRI. Seoul National University Hospital.
6. Phase Contrast MR Imaging of Motion. Tian Tan Hospital, Beijing, China.
7. Vascular Imaging of the Body. In MRI: A State of the Art Clinical Review sponsored by Stanford University School of Medicine, San Francisco, May 1992.
8. The Fourier Transform and its Application in MRI. In "Concepts of Magnetic Resonance" sponsored by Duke University and Stanford University. Kiawah Is, 1992.

9. Basics of Phase Contrast MRA. In Vascular Imaging and Intervention sponsored by Stanford University School of Medicine, San Francisco, 1992.
10. Advanced Phase Contrast Techniques. In Vascular Imaging and Intervention sponsored by Stanford University School of Medicine, San Francisco, 1992.
11. New Techniques in Cardiac MRI. In Diagnostic Imaging Update sponsored by Stanford University School of Medicine, 1993.
12. MR Angiography Principles. 6th Annual MRI Symposium presented by Hoag Memorial Hospital Presbyterian.
13. Understanding K-space. Visiting Professor, Dept of Radiology, Hospital of the University of Pennsylvania, April 1993.
14. MR Imaging of Myocardial Motion. Palo Alto Medical Foundation, Feb 2, 1993
15. Phase contrast methods for flow and motion analysis. Symposium: Hemodynamics and Atherosclerosis, Stanford University, July 28, 1993.
16. Phase contrast imaging of motion. Radiology Grand Rounds, University of Chicago, May 10, 1994.
17. Vascular Imaging and Flow Quantitation. "MRI: Third Annual State of the Art Clinical Review", May 2-6, 1994, San Francisco.
18. Fast Imaging Principles. "MRI: Third Annual State of the Art Clinical Review", May 2-6, 1994, San Francisco.
19. K-space View of Spatial Encoding, "Current Concepts of Magnetic Resonance", October 19-23, 1994, Monterey.
20. Tradeoffs Between Spatial Resolution, FOV and SNR, "Current Concepts of Magnetic Resonance", October 19-23, 1994, Monterey.
21. Fast Gradient Echo Imaging, "Current Concepts of Magnetic Resonance", October 19-23, 1994, Monterey.
22. Pulse sequences and image contrast. "MR Technologist Symposium and Registry Review", February 11-12, 1995, Stanford, CA.
23. Special procedures I - Flow and MRA. "MR Technologist Symposium and Registry Review", February 11-12, 1995, Stanford, CA.
24. Fast imaging. "Concepts of Magnetic Resonance". June 19-23, 1995, Kiawah Is, S.C.
25. Motion studies with MR. "Concepts of Magnetic Resonance". June 19-23, 1995, Kiawah Is, S.C.
26. Resolution, FOV and SNR, "Current Concepts of Magnetic Resonance", October 22-26, 1995, Monterey.
27. Spatial Encoding. "Concepts of Magnetic Resonance". June 24-28, 1996, Kiawah Is, S.C.
28. Flow Quantification with Phase Contrast MRI. Invited lecture, University of Zurich, January 21, 1997.
29. Fast MR Imaging of Flow and Motion. July 10, 1997, Hamamatsu Medical College, Hamamatsu, Japan.
30. Rapid Cardiovascular MRI, Nihon Medical College, July 11, 1997, Tokyo, Japan.
31. Radiology Research at Stanford, Hong Kong College of Radiology, July 19, 1997, Hong Kong.
32. Advances in Body MRI, Tan Tock Seng Hospital, July 28, 1997, Singapore.
33. Magnetic Resonance Angiography, National University Hospital, July 29, 1997, Singapore.
34. Time-of-Flight Angiography Physics. "Current Concepts of Magnetic Resonance," October 6-10, 1997, Monterey, CA.
35. Special Techniques: MTC, FLAIR, DWI. "Concepts of Magnetic Resonance," June 23-27, 1997, Kiawah Island, SC..

36. K-Space View of MR Imaging. "Concepts of Magnetic Resonance", June 1999, Kiawah Island, SC.
37. Faster Imaging: Fast Spin Echo & Echo Planar. "Concepts of Magnetic Resonance", June 1999, Kiawah Island, SC.
38. Introduction to Nuclear Magnetic Resonance. "Current Concepts of Magnetic Resonance", October 1999, Monterey, CA.
39. MR Angiography Techniques. "Current Concepts of Magnetic Resonance", October 1999, Monterey, CA.
40. Cardiac Imaging Methods. "Current Concepts of Magnetic Resonance", October 1999, Monterey, CA.
41. Helical CT, "Concepts of Magnetic Resonance and Computed Tomography", June 2001, Kiawah Island, SC., June 2001.
42. EBCT, Multidetector CT, and the Continuing Evolution. "Screening CT: Concepts & Strategies", Sept. 8-9, 2001, Newport Beach, CA
43. CT Screening: Radiation Safety Issues. "Screening CT: Concepts & Strategies" , Sept. 8-9, 2001, Newport Beach, CA
44. Cardiovascular MR Imaging Techniques, "Cardiovascular System in Health and Disease: Fundamental Concepts for the Medical Device Industry", Stanford University, Sept. 19-21, 2001
45. Cardiovascular CT Techniques, " Cardiovascular System in Health and Disease: Fundamental Concepts for the Medical Device Industry", Stanford University, Sept. 19-21, 2001
46. Physical Principles of Helical CT, "Concepts of Magnetic Resonance and CT", June 2002, Kiawah Island, SC.
47. Future Directions for Volumetric CT, "7th Annual Symposium on Multidetector-Row CT", June 2005, San Francisco.
48. Recent Advances and Future Prospects for MR, "International Symposium on State-of-the-Art Imaging in Barcelola", July 2005, Barcelona.
49. Recent Advances and Future Prospects for CT, "International Symposium on State-of-the-Art Imaging in Barcelola", July 2005, Barcelona.
50. Hybrid Imaging for Therapeutic and Diagnostic Procedures, "Blueprint for Imaging in Biomedical Research (BIBR)", September 2005, Washington, DC.
51. New Concepts: Inverse Geometry CT", 8th Annual International Symposium on Multidetector-Row CT, San Francisco, June 14-17, 2006.
52. Higher Spatial Resolution:When Does it Help,When Does it Hurt?", 8th Annual International Symposium on Multidetector-Row CT, San Francisco, June 14-17, 2006.
53. "Volumetric Inverse Geometry CT (IGCT) With a Large Field-of-View", 9th Annual International Symposium on Multidetector-Row CT, San Francisco, June 13-16, 2007.
54. "Advanced Sampling Strategies for High Spatial Resolution and Reduced Aliasing Artifacts", 9th Annual International Symposium on Multidetector-Row CT, San Francisco, June 13-16, 2007.
55. "Principles, Advantages and Limitations of Dual Energy CT", 16th Annual Diagnostic Imaging Update, Kauai, March 17-21, 2008
56. "Recent Advances and Future Directions in MR Imaging", 16th Annual Diagnostic Imaging Update, Kauai, March 17-21, 2008
57. "Relative Sensitivity of Dual Energy CT", 10th Annual International Symposium on Multidetector-Row CT, Las Vegas, May 13-16, 2008.

58. “Improved Control of Dose vs. Image Quality Trade-Offs with a ‘Virtual Bowtie’ in Inverse Geometry CT”, 10th Annual International Symposium on Multidetector-Row CT, Las Vegas, May 13-16, 2008.
59. “Current Status and Future Prospects of Inverse Geometry CT”. 11th Annual International Symposium on Multidetector-Row CT, San Francisco, May 19-22, 2009.
60. “Impact of New CT Detector Technology”. 11th Annual International Symposium on Multidetector-Row CT, San Francisco, May 19-22, 2009.
61. “Advantages of Iterative Reconstruction: Has Its Time Come”?. 11th Annual International Symposium on Multidetector-Row CT, San Francisco, May 19-22, 2009.
62. “Initial Results with a Multi-Source Inverse Geometry CT System”. International Symposium on Multidetector-Row CT, San Francisco, May 18-21, 2010.
63. “Simulation of Single and Dual Energy Protocols Based on Clinical Data”. International Symposium on Multidetector-Row CT, San Francisco, May 18-21, 2010.
64. “Physical Basis of Dual Energy CT”. 1st Annual Dual Energy CT Symposium. New York University, Oct. 9, 2010.
65. "Technical Aspects of Spectral CT". Grand Rounds. University of Wisconsin – Madison. Oct. 21, 2010.
66. Recent Advances and Future Trends in CT Technology”, Pediatric Cardiac Imaging Symposium. Society of Pediatric Radiology, January 18-23, 2011.
67. CT 2020: Future Prospects in CT. Fourth Annual Hasegawa Lecture, UCSF, March 15, 2012.
68. Recent Progress and Future Directions in X-ray CT Technology, Lawrence Berkeley National Laboratory, Nov. 20, 2012.
69. Recent and Future Directions in CT Imaging, UC Irvine, Apr 5, 2013.
70. "Sources of Dose Inefficiency in Current CT Systems". International Symposium on Multidetector-Row CT, San Francisco, June 9-12, 2014.
71. "Concepts for a Very Dose Efficient, Next-next Generation CT System for Radiological Applications". International Symposium on Multidetector-Row CT, San Francisco, June 9-12, 2014.
72. "A Bound on Noise Reduction with Iterative Reconstruction". International Symposium on Multidetector-Row CT, San Francisco, June 9-12, 2014.
73. "Potential Impact of Spectral Photon Counting Detectors in Computed Tomography". Univ Coll Dublin, June 23, 2014.
74. "Promising Directions for CT Technology Development". KTH Royal Institute of Technology, Stockholm, Sweden, April 17, 2015.
75. "Spectral CT with a Dual Layer Detector". International Symposium on Multidetector-Row CT, San Francisco, June 7-10, 2015.
76. "Technology for Reduced Radiation Dose in CT". International Symposium on Multidetector-Row CT, San Francisco, June 7-10, 2015.
77. "Perspectives for Future Developments in CT Imaging", 29th Annual John Cameron Medical Physics Seminar, University of Wisconsin, Madison, May 2, 2016.
78. "Bone Beam Hardening Correction with Dual Energy CT", International Society of Computed Tomography, June 20, 2016.
79. "Iterative Algorithms: What Are They Really Doing?", International Society of Computed Tomography, June 20, 2016.
80. "Perspectives for Future Developments in CT Imaging", University of Chicago, June 27, 2016.

81. “Making Sense Of Iterative Reconstruction Techniques”, International Society for Computed Tomography, June 4-7, 2017.
82. “Point Of Care Cone Beam CT Systems”, International Society for Computed Tomography, June 4-7, 2017.
83. “Spatial Resolution - Have We Reached A Practical Limit?”, International Society for Computed Tomography, June 4-7, 2017.
84. “Commercial Partnerships, IP, and Technology Transfer”, Radiological Society of North America, 2017.
85. “Perspectives for Future Developments in CT Imaging”, Columbia University, April 27, 2018.

U.S. PATENTS ISSUED - Norbert J. Pelc

1. H.E. Daniels, F. Bernstein, T.W. Lambert, and N.J. Pelc: Multiple voltage x-ray switching system, U.S. Patent 4,361,901, filed Nov 18, 1980, issued Nov. 30, 1982.
2. N.J. Pelc and S.W. Flax: Method and Apparatus for generating time gain compensation control signal for use in ultrasonic scanner and the like, U.S. Patent 4,452,085, filed Apr. 19, 1982, issed June 5, 1984.
3. S.J. Riederer and N.J. Pelc: Matched filter for x-ray temporal subtraction, U.S. Patent 4,504,908, filed Mar. 15, 1982, issued Mar. 12, 1985.
4. J.M. Sandrik and N.J. Pelc: Film based dual energy radiography, U.S. Patent 4,513,078, filed Oct. 13, 1983, issued Apr. 23, 1985.
5. S.W. Flax and N.J. Pelc: Method and a means for determining ultrasonic wave attenuation in tissue using zero crossing detector functioning within a specified frequency band, U.S. Patent 4,515,163, filed Mar. 2, 1984, issued May 7, 1985.
6. N.J. Pelc: Film based dual energy radiography, U.S. Patent 4,526,862, filed Oct. 13, 1983, issued July 2, 1985.
7. G.H. Glover and N.J. Pelc: Method and apparatus for compensating CT images for truncated projections, U.S. Patent 4,550,371, filed Sept. 27, 1982, issued Oct. 29, 1985.
8. G.H. Glover, D.G. DallaPiazza, and N.J. Pelc: Sampled data CT system including analog filter and compensating digital filter, U.S. Patent 4,554,633, filed Sept. 30, 1982, issued Nov. 19, 1985.
9. N.J. Pelc and G.H. Glover: Method for reducing image artifacts due to projection measurement inconsistencies, U.S. Patent 4,580,219, filed May 2, 1983, issued Apr. 1, 1986.
10. N.J. Pelc: Method of projection reconstruction imaging with reduced sensitivity to motion-related artifacts, U.S. Patent 4,581,581, filed June 30, 1983, issued Apr. 8, 1986.
11. G.H. Glover and N.J. Pelc: Method and Apparatus for removing objects from CT images, U.S. Patent 4,590,558, filed Dec. 30, 1981, issued May 20, 1986.
12. G.H. Glover and N.J. Pelc: Method for correcting image distortion due to gradient nonuniformity, U.S. Patent 4,591,789, filed Dec. 23, 1983, issued May 27, 1986.
13. J.M. Sandrik and N.J. Pelc: Film based dual energy radiography, U.S. Patent 4,603,428, filed Jan. 4, 1985, issued July 29, 1986.
14. N.J. Pelc: Method for removing the effects of baseline error components in NMR imaging applications, U.S. Patent 4,612,504, filed Nov. 21, 1984, issued Sept. 16, 1986.
15. G.T. Gullberg and N.J. Pelc: Attenuation compensated emission reconstruction with simultaneous attenuation factor evaluation, U.S. Patent 4,633,398, filed Dec. 7, 1983, issued Dec. 30, 1986.
16. A.K. Collins, N.J. Pelc, and S.T. Wallenslager: Altering spatial characteristics of a digital image, U.S. Patent 4,653,013, filed Nov. 19, 1984, issued Mar. 24, 1987.
17. N.J. Pelc and G.H. Glover: Method of reducing image artifacts due to periodic signal variations in NMR imaging, U.S. Patent 4,663,591, filed Aug. 16, 1985, issued May 5, 1987.
18. G.H. Glover and N.J. Pelc: Rephasing of phase encoding gradients, U.S. Patent 4,665,365, filed Jan. 7, 1985, issued May 12, 1987.
19. G.H. Glover and N.J. Pelc: Method for magnetic field gradient eddy current compensation, U.S. Patent 4,698,591, filed Jan. 3, 1986, issued Oct. 6, 1987.
20. N.J. Pelc and G.H. Glover: Method of reducing image artifacts due to periodic signal variations in NMR imaging, U.S. Patent 4,706,026, filed Aug. 16, 1985, issued Nov. 10, 1987.

21. N.J. Pelc and G.H. Glover: Method for fast scan cine MRI imaging, U.S. Patent 4,710,717, filed Dec. 29, 1986, issued Dec. 1, 1987.
22. G.H. Glover and N.J. Pelc: Apparatus and method for evenly distributing events over a periodic phenomenon, U.S. Patent 4,720,678, filed Sep. 10, 1986, issued Jan. 19, 1988.
23. G.H. Glover, N.J. Pelc, and J.R. MacFall: Method for acquiring MR data with periodic variations, U.S. Patent 4,751,462, filed May 26, 1987, issued June 14, 1988.
24. N.J. Pelc: Use of repeated gradient echoes for noise reduction and improved NMR imaging, U.S. Patent 4,896,113, filed June 16, 1989, issued Jan. 23, 1990.
25. G.H. Glover, N.J. Pelc, and K.M. Bradshaw: Gradient and Polarizing Field Compensation, U.S. Patent 4,950,994, filed Mar. 7, 1988, issued Aug. 21, 1990.
26. N.J. Pelc: Variable bandwidth multiecho NMR imaging, U.S. Patent 4,952,876, filed Oct. 12, 1989, issed Aug. 28, 1990.
27. R.S. Stormont, J.P. Noonan, and N.J. Pelc: RF synthesizer for an NMR instrument, U.S. Patent 4,952,877, filed Aug. 11, 1989, issued Aug. 28, 1990.
28. C.C. Scheid, J.A. McFaul, D.L. McDaniel, N.J. Pelc and D.M. Barrett: Scanning mammography system with reduced scatter radiation, U.S. Patent 4,969,174, filed Sept. 6, 1989, issued Nov. 6, 1990.
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30. C.R. Crawford and N.J. Pelc: Method for reducing motion induced image artifacts in projection imaging, U.S. Patent 4,994,965, filed Nov. 23, 1988, issued Feb. 19, 1991.
31. M. O'Donnell, K.B. Welles, C.R. Crawford, N.J. Pelc, and S.G. Karr: Method and apparatus for coherent imaging system, U.S. Patent 5,005,419, filed June 16, 1988, issued Apr. 9, 1991.
32. N.J. Pelc and S.W. Flax: Method and apparatus for predicting values of a varying periodic phenomenon, U.S. Patent 5,051,903, filed Aug. 14, 1989, issued Sept. 24, 1991.
33. N.J. Pelc and G.G. Glover: Encoding for NMR Phase Contrast Flow Measurement, U.S. Patent 5,093,620, filed Aug. 9, 1990, issued Mar. 3, 1992.
34. N.J. Pelc: Rapid flow measurement using an NMR imaging system, U.S. Patent 5,101,156, filed Aug. 9, 1990, issued Mar. 31, 1992.
35. N.J. Pelc: Noninvasive myocardial motion analysis using phase contrast MRI maps of myocardial velocity, U.S. Patent 5,195,525, filed Nov. 26, 1990, issued Mar. 23, 1993.
36. M.A. Bernstein and N.J. Pelc: Phase correction of complex difference processed magnetic resonance angiograms, U.S. Patent 5,226,418, filed Aug. 1, 1992, issued July 13, 1993.
37. N.J. Pelc: System for selective material imaging, U.S. Patent 5,253,282, filed Apr. 27, 1992, issued Oct. 12, 1993.
38. N.J. Pelc: Method of noninvasive motion analysis by using forced closure of phase contrast MRI maps of velocity, U.S. Patent 5,257,625, filed Apr. 9, 1992, issued Nov. 2, 1993.
39. N.J. Pelc, D.C. Noll and J.M. Pauly: Method of noninvasive myocardial motion analysis using bidirectional motion integration in phase contrast MRI maps of myocardial velocity, U.S. Patent 5,257,626, filed July 28, 1992, issued Nov. 2, 1993.
40. N.J. Pelc: Reduced field-of-view system for imaging compact embedded structures, U.S. Patent 5,299,248, filed Apr. 22, 1993, issued Mar. 29, 1994.
41. S.M. Song, S.A. Napel and N.J. Pelc: Flow measurement of incompressible fluid using divergence free constraint, U.S. Patent 5,309,100, filed Oct. 30, 1992, issued May 3, 1994.
42. N.J. Pelc: Method and apparatus for tracking of deformable regions by phase contrast MRI, U.S. Patent 5,318,026, filed Aug. 11, 1993, issued June 7, 1994.
43. N.J. Pelc and T.J. Brosnan: Phase-contrast MRI using phased-array multi-coil, U.S. Patent 5,399,970, filed Aug. 11, 1993, issued Mar. 21, 1995.

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45. H. Hu, A.H. Pfoh and N.J. Pelc: Reconstruction method for helical scanning computed tomography apparatus with multi-row detector array employing overlapping beams, U.S. Patent 5,430,783, filed Jan. 26, 1993, issued July 4, 1995.
46. A.H. Pfoh, N.J. Pelc and T.L. Toth: Detector channel gain calibration using focal spot wobble, U.S. Patent 5,430,785, filed Apr. 11, 1994, issued July 4, 1995.
47. H. Hu, N.J. Pelc and A.H. Pfoh: Projection domain reconstruction method for helical scanning computed tomography apparatus with multi-column detector array employing overlapping beams, U.S. Patent 5,469,486, filed Nov. 8, 1993, issued Nov. 21, 1995.
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51. H. Hu and N.J. Pelc: Systems, methods and apparatus for reconstructing images in a CT system implementing a helical scan, U.S. Patent 5,559,847, filed Dec. 6, 1995, issued Sept. 24, 1996.
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53. N.J. Pelc and J.O. Fredrickson: Method and apparatus for improved temporal resolution in dynamic MRI, U.S. Patent 5,653,233, filed Aug. 11, 1995, issued Aug. 5, 1997.
54. S.M. Song and N.J. Pelc: Iterative method for determining trajectory of a moving region in a moving material using velocity measurements in a fixed frame of reference, U.S. Patent 5,680,862, filed Feb. 1, 1995, issued Oct. 28, 1997.
55. N.J. Pelc and S.G. Hushek: Method for increasing temporal resolution of MR fluoroscopy, U.S. Patent 5,697,370, filed Jan. 17, 1996, issued Dec. 16, 1997.
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