

CURRICULUM VITAE

Maryellen L. Giger, Ph.D.

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Education

1978	B.S. summa cum laude (Mathematics, Physics, Health Sciences), Illinois Benedictine College
1979	M.Sc. (Physics), University of Exeter, England
1985	Ph.D. (Medical Physics), The University of Chicago
2015	Certificate in Executive Leadership in Academic Technology and Engineering (ELATE), Drexel University

Professional Experience

Summers of 1976, 1977, 1978	Lab Assistant, Beam Diagnostic Group and Cancer Therapy Group, Fermi National Laboratory, Batavia, Illinois
Oct. 1979 - Sept. 1983	NIH Pre-doctoral trainee, Department of Radiology, The University of Chicago, Chicago, Illinois
Oct. 1983 - March 1985	Research Assistant, Department of Radiology, The University of Chicago, Chicago, Illinois
1985 - 1986	Research Associate, Department of Radiology, The University of Chicago, Chicago, Illinois
1986 - 1991	Assistant Professor, Department of Radiology, The University of Chicago, Chicago, Illinois
1991 - 2000	Associate Professor, Department of Radiology, The University of Chicago, Chicago, Illinois
1998 - 2013	Director, Graduate Programs in Medical Physics, The University of Chicago, Chicago, Illinois

1999 - 2000	Associate Professor, Biological Sciences Collegiate Division, The University of Chicago, Chicago, Illinois
2000 - present	Professor, Department of Radiology & Biological Sciences Collegiate Division, The University of Chicago, Chicago, Illinois
2000 – present	Professor, Committee on Medical Physics, The University of Chicago, Chicago, Illinois
2000 – 2013	Chair, Committee on Medical Physics, The University of Chicago, Chicago, Illinois
2003 – 2008	Section Chief, Radiological Sciences, Department of Radiology, The University of Chicago, Chicago, Illinois
2003 – present	Vice Chair of Radiology for Basic Science Research, Department of Radiology, The University of Chicago, Chicago, Illinois
2007 – present	Senior Fellow, Computation Institute, The University of Chicago
2008 – present	Director, BSD Imaging Research Institute, The University of Chicago
2013 – present	A.N. Pritzker Professor of Radiology, The University of Chicago
2013 – present	Inaugural Fellow, Institute of Molecular Engineering, The University of Chicago

Professional Associations

Member -- National Academy of Engineering (NAE)

Member, Fellow, Former Treasurer, Former Board Member, Former President, & Former
Chairman of the Board -- American Association of Physicists in Medicine (AAPM)

Member & Fellow -- American Institute of Medical and Biological Engineers (AIMBE)

Member & Former Third Vice-President -- Radiological Society of North America (RSNA)

Member, Fellow, & Current Board Member -- The International Society for Optical Engineering
(SPIE)

Senior Member -- The Institute of Electrical and Electronics Engineers (IEEE)

Member -- Society for Computer Applications in Radiology (SCAR, SIIMS)

Member -- The Association of University Radiologists (AUR)

Honors

1975, 1976, 1977 President's Scholarship Award, Illinois Benedictine College

1977 Rev. Shonka, O.S.B. Scholarship Award in Physics

- 1978 B.S. summa cum laude
- 1978 Procopian Award, Illinois Benedictine College
(highest honor given to a graduating student)
- 1978 Who's Who in American Colleges and Universities
- 1978-1979 Rotary International Fellowship
- 1985 First Place Award, Young Investigators' Symposium, 27th meeting of the
American Association of Physicists in Medicine, Seattle, Washington
- 1986 The University of Chicago, American Cancer Society Institutional Grant
Award
- 1986 The University of Chicago Louis Block Research Grant Award
- 1987 Whitaker Foundation Biomedical Engineering Research Grant
- 1988 American Cancer Society Junior Faculty Research Award
- 1989 Wendy Will Case Cancer Fund Research Grant Award
- 1989 Certificate of Merit for Scientific Exhibit at the Radiological Society of North
America, Chicago, IL (MacMahon H, Doi K, Sanada S, Montner SM, Giger
ML, Metz CE, Yin FF, Yonekawa H, Takeuchi H: "Effect of Data
Compression on Diagnostic Accuracy in Digital Chest Radiography: An ROC
Study").
- 1991 American Cancer Society Faculty Research Award
- 1992 Certificate of Merit for Scientific Exhibit at the Radiological Society of North
America Annual Meeting, Chicago, IL (Hoffmann K, Doi K, MacMahon H,
Giger ML, Nishikawa RM: "Development of a digital duplication system for
portable chest radiographs").
- 1993 Certificate of Merit for Scientific Exhibit at the Radiological Society of North
America Annual Meeting, Chicago, IL (MacMahon H, Kano A, Xu XW, Doi
K, Giger ML, Hassell D: "Use of difference images for improved detection of
interval changes on digital chest radiographs").
- 1993 Magna cum laude for Scientific Exhibit at the Radiological Society of North
America Annual Meeting, Chicago, IL (Doi K, Giger ML, Nishikawa RN,
Hoffmann KR, MacMahon H, Schmidt RA, et al.: "Computer-aided diagnosis
in mammography, chest radiography, angiography, and bone radiography").
- 1994 Certificate of Merit for Scientific Exhibit at the Radiological Society of North
America Annual Meeting, Chicago, IL (MacMahon H, Giger ML, Sullivan B,
Ansari R, Dixon LB, Dachman AH: "Effect of glossy compression and spatial
resolution on the quality of general radiographic images").

- 1995 Stauffer Award (presented at the annual meeting of the Association of University Radiologists) for the best clinical paper published in 1994 in *Investigative Radiology/Academic Radiology* (Giger ML, Bae K, MacMahon H: "Computerized Detection of Pulmonary Nodules in Computed Tomography Images").
- 1995 Sylvia Sorkin Greenfield Award for the best paper published in *Medical Physics* in 1994 (Caligiuri P, Giger ML, Favus M: "Multifractal Radiographic Analysis of Osteoporosis")
- 1996 Visiting Professor, Mayo Clinic, Department of Radiology (9/26-9/27)
- 1997 Excellence in Design Award for scientific exhibit at the 83rd Assembly and Annual Meeting of RSNA, Chicago, Illinois (Doi K, Giger ML, Nishikawa RM, Hoffmann KR, Schmidt RA, MacMahon H: Computer-aided diagnostic schemes in mammography, chest radiography, angiography, and computed tomography)
- 1998 Cum laude award for scientific exhibit at the 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Jiang Y, Nishikawa RM, Giger ML, Huo Z, Schmidt RA, Wolverton DE, et al.: Computer-aided diagnosis of breast lesions: An interactive demonstration)
- 1998 Excellence in Design Award for scientific exhibit at the 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Armato SG, Giger ML, Moran CJ, Doi K, MacMahon H: Computerized detection of pulmonary nodules in CT scans)
- 2000 Fellow, AIMBE (American Institute of Medical and Biological Engineers)
- 2000 Stauffer Award, *Academic Radiology* (Jiang Y, Nishikawa RM, Schmidt RA, Metz CE, Giger ML, Doi K: Improving breast cancer diagnosis with computer-aided diagnosis)
- 2000 Cum laude award for scientific education exhibit at the 86th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Nishikawa RM, Giger ML, Jiang Y, Huo Z, Vyborny CJ, Jokich PM)
- 2001 Fellow, AAPM (American Association of Physicists in Medicine)
- 2001 Certificate of merit award for scientific education exhibit at the 87th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Giger ML, Nishikawa RM, Huo Z, Horsch K, Vyborny CJ, Hendrick RE)

- 2002 Excellence in Design Award for scientific education exhibit at the 88th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Jiang Y, Nishikawa RM, Giger ML, Vyborny CJ, et al.)
- 2004 Certificate of merit award for infoRad exhibit at the 90th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Giger, ML, Nishikawa RM, Jiang Y, Newstead GM, Schmidt RA, Metz CE, et al.)
- 2004 Excellence in Design Award for scientific education exhibit at the 90th Assembly and Annual Meeting of RSNA, Chicago, Illinois (Drukker K, Giger ML)
- 2004 - present Who's Who in America
- 2004 Certificate of Merit Award, InfoRad Exhibit: Integration of multi-modality breast CAD into the clinical workflow. Presented at 90th Scientific Assembly and Annual Meeting of the Radiological Society of North America, November 2004, Chicago, IL. (Authors: Giger ML, Nishikawa RM, Jiang Y, Schmidt FA, Newstead GM *et al.*)
- 2005 - present Who's Who in the World
- 2005 – present Senior Member, IEEE
- 2005 Third Vice-President, RSNA
- 2006 Distinguished Alumni Award, Benedictine University (Illinois Benedictine College)
- 2006 Honorable Mention Poster Award, Y. Yuan, M. L. Giger, K. Suzuki, H. Li and A. R. Jamieson, "A two-stage method for lesion segmentation on digital mammograms," SPIE Medical Imaging 2006 Symposium
- 2006 Honorable Mention Poster Award, J. R. Wilkie, M. L. Giger, C. A. Engh, Sr., R. H. Hopper, Jr., J. M. Martell, "Investigation of Temporal Radiographic Texture Analysis for the Detection of Periprosthetic Osteolysis." SPIE Medical Imaging 2006 Symposium
- 2009 Honorable Mention Poster Award, K. Drukker, N. Grusauskas, M. L. Giger, "Principal component analysis, classifier complexity, and robustness of sonographic breast lesion classification." SPIE Medical Imaging 2009 Symposium
- 2009 Excellence Award, University of Chicago Paul Hodges Alumni Society
- 2010 Hollingsworth Lectureship in Engineering, University of Texas, Austin, Texas

- 2010 Elected, National Academy of Engineering, one of the National Academies [<http://www.nationalacademies.org/>]
- 2013 Association for Women in Science: Chicago Area Chapter; Scientist of the Month (March 2013)
- 2013 A.N. Pritzker Professor of Radiology, The University of Chicago
- 2013 Named by the International Congress on Medical Physics (ICMP) as one of the 50 medical physicists with the most impact on the field in the last 50 years
- 2013 Inaugural Fellow of the Institute for Molecule Engineering, The University of Chicago
- 2014 Fellow, SPIE
- 2014 Honorable Mention Poster Award; Drukker K, Giger ML, Duewer F, Malkov S, Flowers CI, Joe B, Kerlikowske K, Drukteinis JS, Shepherd J, "Roles of biologic breast tissue composition and quantitative image analysis of mammographic images in breast tumor characterization." SPIE Medical Imaging 2014 Symposium
- 2014 Distinguished Science Alumni Award, Benedictine University (formerly Illinois Benedictine College)
- 2014 BSD DAC Divisional Academic Ceremony Faculty Marshall, The University of Chicago
- 2015 Visionary Award, Benedictine University (formerly Illinois Benedictine College)
- 2015 William D. Coolidge Award from the American Association of Physicists in Medicine (This award recognizes an AAPM member for an eminent career in medical physics. It is the highest award given by the AAPM.)

Grants (as P.I.)

Past grants:

1. American Cancer Society Institutional Grant, The University of Chicago, Maryellen Giger, P.I., 10/1/86-9/30/87. Total cost \$5,000.
2. Louis Block Fund, The University of Chicago, Maryellen Giger, P.I., 10/1/86-9/30/87. Total cost \$15,000.

3. Whitaker Foundation Bioengineering Grant, "Computer-Aided Detection of Lung Nodules", Maryellen Giger, P.I., 3/1/87-2/29/90. Total direct cost \$119,273.
4. Wendy Will Case Cancer Foundation Grant, "Digital Image Analysis for Cancer Detection", Maryellen Giger, P.I., 7/1/89-11/30/89. Total direct cost \$8,333.
5. American Cancer Society Junior Faculty Research Award JFRA-212 grant, "Computer-Aided Detection and Classification of Lesions in Digital Mammograms", Maryellen Giger, P.I., 7/1/88-6/30/91. Total direct cost \$75,117.
6. Ameritech Services grant, "Digital Radiography and Teleradiography", Maryellen Giger, P.I., 1/93-12/93. Total direct cost \$5,000.
7. NIH grant P20 CA66132, "Breast Cancer Planning Grant," Samuel Hellmann, P.I., Pilot Project "Computerized Mammographic Methods for Quantitatively Assessing Breast Cancer Risk (pilot project: P.I. Maryellen Giger), 9/30/94-9/29/95. Total direct cost \$34,985.
8. NIH grant RO1 CA48985, "Digital Image Analysis for Cancer Detection", Maryellen Giger, P.I., 12/1/89-11/30/95. Total direct cost \$550,062. (20% effort).
9. Ameritech Services grant, "Digital Radiography and Teleradiography", Maryellen Giger, P.I., 1/94-12/95. Total direct cost \$35,000.
10. The University of Chicago, Department of Surgery Research Committee, Pilot and Feasibility Study Application, "Computerized radiographic analysis of the proximal femur as a predictor of bone strength in vitro", John Martell and Maryellen Giger, co-P.I.s, 1/94-12/94, Total direct cost \$9,339.
11. Procter & Gamble grant, "Digital bone radiography", Maryellen Giger, P.I., 3/94-12/95. Total direct cost \$37,900.
12. United States Army Medical Research and Development Command grant DAMD-93-J-3021, "Development of methods for computer-assisted interpretations of digital mammograms for early breast cancer detection", Maryellen Giger, P.I., 3/93-2/96. Total cost \$1,400,000 (25% effort).
13. American Cancer Society Faculty Research Award FRA-390, "Development of a computer-vision system to aid in mammographic interpretation", Maryellen Giger, P.I., 7/1/91-6/30/96. Total direct cost \$189,258.
14. National Information Display Laboratory, U.S. Intelligence Community, U.S. Air Force Contract No. F33657-95-C-5056; Subcontract, "Serial change detection in digital mammography", Maryellen Giger, P.I., 8/1/96-11/30/96. Total cost \$14,791.
15. UC-ANL collaborative grant program, "Resource center for computational science: Project 4 on supercomputer-supported computer-aided diagnosis", co-P.I.s Maryellen Giger & Ian Foster for Project #4 (out of six projects which total \$230,000), 1996.

16. NIH Shared Instrument Grant 1S10RR11459, "A scientific visualization and image analysis system", Maryellen Giger, P.I., 7/1/96-6/30/97, Total cost \$387,745.
17. National Information Display Laboratory, U.S. Intelligence Community, Subcontract, "Use of HPNN in the detection of masses in digital mammography", Maryellen Giger, P.I. 6/1/96-10/31/97, Total cost \$29,540.
18. NIH grant P20 CA66132, "Breast Cancer Planning Grant," Samuel Hellmann, P.I., Pilot Project "Computerized Image Analysis of Ultrasound and MR Images of the Breast (pilot project: P.I. Maryellen Giger), 7/1/95-6/30/98. Total direct cost \$34,794.
19. National Information Display Laboratory, U.S. Intelligence Community, Subcontract, "Use of computerized analysis and HPNN in the Detection and Classification of Breast Masses", Maryellen Giger, P.I. 11/1/98-10/31/99, Total cost \$19,763.
20. NIH grant RO1 AR42739, "Computerized radiographic analysis of bone structure", Maryellen Giger, P.I., 4/1/96-3/31/00, Total cost \$760,926. [see also Grants 28 and 37 – three successful renewals]
21. DOD, U.S. Army Medical Research and Materiel Command, DAMD17-96-1-6058, "Advanced methods for the computer-aided diagnosis of lesions", Maryellen Giger, P.I., 6/7/96-6/6/00, Total cost \$867,451.
22. DOD, U.S. Army Medical Research and Materiel Command, DAMD17-97-1-7202, "Investigation of Genetic Algorithms for Computer-Aided Diagnosis. P.I. Maryellen Giger on behalf of Matthew Kupinski, 10/1/97-9/60/00, Total predoctoral fellowship cost \$61,619.
23. DOD, U.S. Army Medical Research and Materiel Command, IDEA grant, DAMD 17-98-1-8194 "Computerized Analysis of MR and Ultrasound Images of Breast Lesions, Maryellen Giger, P.I., 7/1/98-6/30/01. Total cost \$319,503.
24. NIH grant, R21 CA79711, "Computer-Aided Image Assessment of Breast Cancer Risk", Maryellen Giger, P.I., 10/1/99-9/30/01, Total cost \$294,320 .
25. RSNA (Radiological Society of North America) Medical Student Departmental Research Award Program, Maryellen Giger, P.I., 7/1/97-6/30/02, \$14,250.
26. DOD, U.S. Army Medical Research and Materiel Command, IDEA grant, DAMD 17-99-1911 "A new model for the estimation of breast cancer risk", Maryellen Giger, P.I., 7/1/99-6/30/02. Total cost \$317,020.
27. NIH grant, T32 CA09649-11, "Research training in medical physics", Maryellen Giger, P.I., 5/1/00-4/30/05, Total cost \$1,520,031 [see also Grants 35 and 42 – three successful renewals]
28. NIH grant RO1 AR42739, "Computerized radiographic analysis of bone structure", Maryellen Giger, P.I., 04/18/01-03/31/06, Total cost \$1,485,520.

29. DOD, U.S. Army Medical Research and Materiel Command, Summer Undergraduate Research grant, DAMD17-03-1-0310, Maryellen Giger, P.I., 4/15/03-5/14/06, Total cost \$184,276.
30. DOD, U.S. Army Medical Research and Materiel Command, DAM17-03-1-0245, "Computerized interpretation of dynamic breast MRI". Maryellen Giger P.I. on behalf of Weijie Chen, Predoctoral fellowship, 4/14/03-5/14/06, Total cost \$90,000.
31. NIH grant RO1 CA89452, "Computer-aided diagnosis in breast imaging", Maryellen Giger, P.I., 04/24/2001 - 03/31/07, Total cost \$1,559,055.
32. NIH Grant R21 CA113800-01, "Optimization of CAD Output in Breast Imaging", Maryellen Giger, P.I., 05/01/2006 - 04/30/2008. Total cost \$419,375.
33. UCCRC/Argonne Collaborative Project Pilot Funding, "Grid-based optimization for breast cancer image analysis", Maryellen Giger and Ian Foster, co-P.I.s, University of Chicago Cancer Research Center and Argonne National Laboratory, 04/01/07-03/31/09, Total cost \$30,000.
34. DOD, U.S. Army Medical Research and Materiel Command, "Correlative feature analysis for multi-modality breast CAD". Maryellen Giger P.I. on behalf of Yading Yuan, Predoctoral fellowship, 10/01/06-9/30/09, Total cost \$90,000.
35. NIH grant, T32 EB002103-16, "Research training in medical physics", Maryellen Giger, P.I., 5/1/05-9/30/10, Total cost \$1,659,345
36. University of Chicago, ChicagoBioMedicine Center-style Seed Funding, "Research Resource for Biomedical Imaging and Informatics". Maryellen Giger, Paul Chang, Ian Foster, Conrad Gilliam, co-PIs. 05/01/09-04/30/10, Total cost \$75,000.
37. NIH grant RO1 AR42739-09, "Computerized radiographic analysis of bone structure", Maryellen Giger, P.I., 04/01/2006 - 12/31/2010, Total cost \$1,345,751.
38. NIH Breast SPORE Grant (overall grant co-PI) and Project 1 (project PI) P50CA125183-01, "Image-Based Determination of Breast Cancer Risk", Maryellen Giger, P.I., 08/01/06-07/31/11, Total cost project 1 approx. \$1.6M.
39. DOE, DE-FG02-08ER6478, "Integrated Multi-Modality, Image-based Markers of Breast Density & Structure in Assessing Breast Cancer Risk at the University of Chicago", Maryellen Giger, P.I., 06/01/08-05/31/11, Total cost \$573,000.
40. DOD, W81XWH-08-1-0731, U.S. Army Medical Research and Materiel Command, "Grid-Enabled Quantitative Analysis of Breast Cancer". Maryellen Giger P.I. on behalf of Andrew Jamieson, Predoctoral fellowship, 10/01/08-9/30/11, Total cost \$96,368.
41. DOD, BC093586, U.S. Army Medical Research and Materiel Command "Prognostic and Predictive MRI Computer-Extracted Biomarkers for Breast Cancer Assessment".

Maryellen Giger P.I. on behalf of Neha Bhooshan, Predoctoral fellowship, 03/01/10-02/28/13, Total cost \$127,941.

42. NIH Grant R33 CA113800-01, "Optimization of CAD Output in Breast Imaging", Maryellen Giger, P.I., 05/01/2008 - 04/30/2013 (no cost extension). Total cost \$1,251,686.
43. University of Chicago Comprehensive Cancer Center Program Pilot Project Funding "Multi-level correlative analysis of breast cancer tumors". Maryellen Giger. PI with co-PI Jeff Mueller, 04/01/2011-03/31/2012, Total cost \$35,000.
44. U-Systems Research Agreement "ROC Reader Study on the benefit of 3D ultrasound in screening of women with dense breasts and negative mammograms", 01/01/10-12/31/2012, Total cost \$650,000.
45. NIH Grant Sub award R01 EB002138-06 (UC-Davis Boone), "Breast CT Scanner for Earlier Cancer Detection", 06/01/08-03/01/13, Total cost \$382,500.
46. NIH Administrative Supplement to T32 EB002103 to support bioethics research, training, and translational activities. Maryellen Giger, P.I., 10/1/11-9/30/12, Total cost \$154,925.
47. GE/U-Systems Research Agreement (Giger), "Further Analysis of ROC Reader Study on the benefit of 3D ultrasound in screening of women with dense breasts and negative mammograms", 05/01/13-04/30/14, \$143,811.
48. University of Chicago CTSA Pilot Grant (Giger), "Quantitative Image Analysis of DCIS", NIH UL1 TR000430 (Solway), 05/07/13-05/06/14, \$30,000.

Current grants:

49. NIH grant, T32 EB002103-21, "Research training in medical physics", Maryellen Giger, P.I., 10/1/10-9/30/15, Total cost \$1,659,345.
50. NIH Grant, R01 CA166945-01 (Shepherd (UCSF), Giger (UChicago), co-PIs), "Lesion Composition and Quantitative Imaging Analysis on Breast Cancer Diagnosis", 03/01/13-02/29/18, Total cost \$511,615.
51. NIH QIN Grant U01CA195564, "Quantitative Image Analysis for Assessing Response to Breast Cancer Therapy", Maryellen Giger, P.I., 04/01/15-03/31/20, Total cost \$2,518,530.
52. AHA American Heart Association Pre-doctoral Fellowship Award, "Quantitative Image Analysis of Pial Collaterals in Acute Ischemic Stroke", Christopher Haddad Pre-doc Student (faculty advisor Maryellen Giger), 07/01/15-06/30/17, Total cost \$52,000.
53. NIH Grant "Integrative Molecular and Imaging Approaches for Risk of subtype Specific Breast Cancer", Randa El-Zein (PI MD Anderson, Methodist), Maryellen Giger PI of UChicago subcontract. 04/01/15-03/31/20, Total cost of subcontract \$814,710.

Pending grants:

54. NIH Grant CA - PAR-13-189, Biomarker Imaging of DCIS Breast Lesions, Maryellen Giger, P.I., 04/01/15-03/31/20, Total cost \$1,975,000.00

National and International Professional Activities

Professional Service to NIH and other Grant Funding Agencies

February 1990 Ad Hoc Member, Special Study Section, NIH
 October 1990 Ad Hoc Member, Diagnostic Radiology Study Section, National Institutes of Health
 January 1991 Grant Reviewer, Medical Research Council, London, United Kingdom
1991-1995 Regular Member, Diagnostic Radiology Study Section, National Institutes of Health
 1992-present Grant Reviewer, Dutch Cancer Society, Amsterdam, The Netherlands
1994-present Grant Reviewer, U. S. Army Medical Research and Development Command Breast Cancer Research Program (various DOD review sessions)
 1995 - 1997 Reviewer, State of California Breast Cancer Research Program, University of California
 1996-1997 Member, Research Review Task Force, American Cancer Society, Illinois Division, Inc.
1995-present Member, NIH Reviewers Reserve serving as ad hoc review on study sections and at times, chair
 1999-present Grant Reviewer, Austrian Science Foundation for the Erwin Schrodinger Fellowship
 2000 NIH Program Project Site Visit Study Section
 2001-2007 Study section member, RSNA Research Foundation
 2001-2014 Reviewer, State of Arizona Grants
 2005-2007 Chair, RSNA Research Foundation Study section

Editorial Service - Manuscript Reviewer (and as indicated other editorial positions) -- various journals & meetings since 1985

Medical Physics (*Associate Editor, 1995-2007*)
 SPIE Journal of Medical Imaging (*Editor-in-Chief, 2013-present*)
 Physics in Medicine and Biology (PMB) (*International Advisory Board, 2013-2014*)
 Radiology
 Optical Engineering
 IEEE Trans. Biomedical Engineering
 Medical Decision Making
 IEEE Trans. Medical Imaging (*Associate Editor, 1996-2007, Guest Editor Dec., 2001 issue*)
 Investigative Radiology
 Journal of Digital Imaging
 Academic Radiology (*1995-2001, Editor/Editorial Consultant*)
 Image and Vision Computing Journal
 The Journal of Intelligent Systems
 American Journal of Respiratory and Critical Care Medicine
 Medical Image Analysis
 American Journal of Roentgenology

Annals of Biomedical Engineering
 Vision, Image and Signal Processing
 Seminars in breast Disease (*Guest Editor, Dec. 2002 issue*)
 Journal of Medical and Biological Engineering (*USA editor, 2011-2014*)

Session Chairman at and Abstract Reviewer for regular meetings of (various meetings since 1986)

American Association of Physicists in Medicine (AAPM)
 Radiological Society of North America (RSNA)
 International Society for Optical Engineering (SPIE)
 World Congress on Medical Physics and Biomedical Engineering
 International Conference of IEEE Engineering in Medicine & Biology Society
 International Workshop on Digital Mammography (IWDM)

Faculty at National and International Meetings

1992 - 1994	Refresher/Categorical Course faculty, Radiological Society of North America Annual Assembly and Meeting, Chicago, Illinois
1993	Mini-symposium organizer and Trackchair, 15th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, California
June 1994	Session chair on Biomedical Applications of Neural Networks, World Congress on Neural Networks, 1994 International Neural Network Society Annual Meeting, San Diego, California
1997- present	Refresher/Categorical Course faculty, Radiological Society of North America Annual Assembly and Meeting, Chicago, Illinois
2001,2002,2004	SCAR, faculty for symposia on CAD

Professional Service to National Academy of Engineering (NAE)

2011 – present	Reviewer of various NRC reports from NAS, NAE, or IOM
2012 – present	Russ Award Committee
2014 – present	Section 2 Peer Committee

Professional Service to American Association of Physicists in Medicine (AAPM)

1987-1992	Member (Chairman 1989,1990), Commission on Accreditation of Educational Programs for Medical Physicists, AAPM
1989	Consultant, Educational Council, AAPM
1997-2001	Program Committee, AAPM
1997-1998	Scientific Program co-Director, AAPM annual meeting, San Antonio Texas (1998)
1998-1999	Scientific Program Director, AAPM annual meeting, Nashville, TN (1999)
2000-2002	AAPM Board Member
2001-2008	Member, Committee on Imaging within the AAPM
2001-2008	Member, NIBIB Subcommittee
2002-2004	Member, Awards and Honors Committee
2004-2007	Treasurer, AAPM
2004-2007	Chair, Finance Committee, AAPM
2004-2010	Member, AAPM Executive Committee
2008	President-Elect, AAPM

2009	President, AAPM
2010	Chairman of the Board, AAPM
2011-present	Member, Science Council
2011	Strategic Planning Committee, AAPM
2011-present	Member, Technology Assessment Committee, AAPM (Vice-Chair in 2012; Chair in 2013-present)
2014	Chair (with Sandy Napel, John Hazle, Paul Kinahan) AAPM FOREM on Imaging Genomics

Professional Service to RSNA: Radiological Society of North America

2001-2007	Member, RSNA Physics Subcommittee of the Program Committee
2003-2007	Chair, RSNA Physics Subcommittee of the RSNA Program Committee
2003-2008	Member, Executive Committee and Program Committee of BIROW - II; Biomedical Imaging Research Opportunities Workshop (AAPM; RSNA; BMES; ARR)
2003-2006	Member, RRRE Subcommittee of RSNA
2005-2007	Chair, RSNA Research Foundation Study section
2009-present	Member, QIBA, Quantitative Image Biomarker Alliance
2012-present	Member, QIBA Metrology Committee
2013-present	Member, QIBA Steering Committee

Professional Service to IWDM: International Workshop on Digital Mammography

1995-1996	Member, Organizing Committee, 3rd International Workshop on Digital Mammography for June 1996, Chicago, Illinois
2000	Member, Scientific Committee; IWDM-2000; 5th International Workshop on Digital Mammography, Toronto, Canada, June 11-14, 2000
2000-2002	Member, Scientific Committee; IWDM-2002; 6th International Workshop on Digital Mammography, June 23 - 25, 2002, Bremen, Germany
2002-2004	Member, Scientific Committee; IWDM-2004; 7th International Workshop on Digital Mammography, UNC-Chapel Hill, North Carolina
2004-2006	Member, Scientific Committee; IWDM-2006; 8th International Workshop on Digital Mammography, Manchester, England
2006-2008	Member, Scientific Committee; IWDM-2008; 9th International Workshop on Digital Mammography, Tucson, Arizona
2009-2010	Member, Scientific Committee; IWDM-2010; 10th International Workshop on Digital Mammography, Girona, Spain
2011-2012	Member, Scientific Committee; IWDM-2012; 11th International Workshop on Digital Mammography, Philadelphia, PA
2013-2014	Member, Scientific Committee; IWDM-2014; 12th International Workshop on Digital Mammography, Gifu, Japan

Professional Service to SPIE

2000-2006	Member, Image Processing Scientific Program Committee, Annual SPIE Medical Imaging Symposium, San Diego, California
2006-2009	Founding Chair and member, Program Committee for CAD Conference, part of the Annual SPIE Medical Imaging Symposium
2009-2011	Chair of SPIE Medical Imaging Symposium

2011-present	Member, Program Committee for CAD Conference, part of the Annual SPIE Medical Imaging Symposium
2012-present	Elected Board Member, SPIE
2012-present	SPIE Publications Committee
2013-present	Editor-in-Chief, SPIE Journal of Medical Imaging
2013-present	SPIE Board of Editors

Others

1999-2000	CARS'2000 Executive Committee
2000-present	Member, CARS Program Committee
2000	Member, Planning Group - U.S. Army Era of Hope Meeting 2000
2001-2003	Scientific Program Chair; BIROW - I; Biomedical Imaging Research Opportunities Workshop (AAPM; RSNA; BMES; ARR)
2001-2008	BIROW I, II, III Executive Committee

Advisory Committees/Boards

1995-1996	Mammography Integration Panel Member, Breast Cancer Research Program; U.S. Army Medical Research and Development Command, Purpose: determine policies & guidelines for broad agency announcement for grant applications. Select final applicants for funding based on satisfaction of guidelines and study section review.
2001-present	Advisory Board member, the Pritzker Institute of Medical Engineering, Illinois Institute of Technology, Chicago, IL
2002-2004	Member, Basic Sciences Committee, Academy of Radiology Research
2002	Member, NIBIB Workshop on Biomedical Imaging and Bioengineering Training (8/02)
2002-2007	Member, RRRE, RSNA
2002	Member, Study Section Boundaries Team, Center for Scientific Review (CSR), NIH
2002	Member, New Technologies Workgroup; American Cancer Society Breast Cancer Early Detection Guideline Review -- Meeting of Work Groups and Breast Cancer Advisory Group (9/02)
2004	External Advisor, Vanderbilt University Cancer Imaging Training Grant
2006-2009	Member, ACRIN External Advisory Committee [ACRIN: American College of Radiology Imaging Network, an NCI cooperative group]
2010-2013	Board Member, Orthopaedic Biomedical Imaging Institute at Weiss Memorial Hospital
2011-present	Member of the National Mammography Quality Assurance Advisory Committee and Consultant to the Center for Devices and Radiological Health, FDA
2011-present	External Advisory Board to advise the CDMRP Lung Cancer Research Program (LCRP) regarding the activities of a Lung Cancer Early Detection Clinical Consortium entitled Detection of Early Lung Cancer Among Military Personnel (DECAMP)
2012-present	Board Member, CAMPEP (Commission on Accreditation of Medical Physics Education Programs)
2012	External Advisory expert consultant, Texas Higher Education Coordinating Board
2015	External Advisory Board, UT-Austin biomedical imaging T32

University Activities

1988	Member, Task Force on Research Associates, Biological Sciences Division, The University of Chicago
1989-1991	Member, Committee on Balancing Personal and Professional Life, Biological Sciences Division, The University of Chicago
1991-1993	Member, Committee on Academic and Research Networking, Biological Sciences Division, The University of Chicago
1991-present	Member, The University of Chicago Cancer Research Center
1991-1995	Member, Board of Computing Activities and Services, The University of Chicago, (Chair of subcommittee on platform support, 1992-1993)
1993-1998	Member, University of Chicago Breast Cancer Advisory Committee/Breast Cancer Program Steering Committee
1994-2008	Program Director, Advanced Imaging Program, The University of Chicago Cancer Research Center
1994-2008	Member, Executive Committee, The University of Chicago Cancer Research Center
1995-1996	Member, Dean's Task Force to consider recommendations of the Fuchs Report, The University of Chicago
1996-1998	Member, Subcommittee on Networking, Board of Computing Activities and Services, The University of Chicago
1996- 2001	Member, Committee on Patents and Software, The University of Chicago
1996-2007	Director, Scientific Visualization and Image Analysis Core Facility, The University of Chicago Cancer Research Center
1998-2000	Member, BSD Research Facilities Planning Committee, The University of Chicago
1999-2000	Member, University committee (the Hellman Committee) to review the Final report of the ad hoc committee on ARCH and technology transfer, The University of Chicago
1999-2000	Member, Divisional (elected) committee to review the Deanship of the BSD, The University of Chicago
2000-2001	Member and Chair, University (university-appointed) ad hoc committee (the Giger Committee) to make recommendations about the structure, scope, policies, staffing, finances, and modes of faculty involvement for a proposed Office for Commercialization of Intellectual Property, The University of Chicago [this led to the establishment of the UCTech office, now UChicagoTech]
2001-2006	Member and Chair (2001-2004), UCTech Faculty Advisory Committee
2002-2004	Member, COAP, BSD Divisional Committee on Appointments and Promotions
2002-2003	Member, BSD Dean's Research Aims Action Committee
2003	Member, BSD Committee to review the Department of Medicine
2003-2006	Member, BSD Research Advisory Committee (RAC) to the Dean
2004-2006	Chair, UC-ANL Subcommittee of RAC
2007-2008	Co-Chair, Imaging Subcommittee of RAC
2007-present	Senior Fellow, Computation Institute

2008-2009	Chair, Steering Committee of the Imaging Institute
2008-present	Director, BSD Imaging Research Institute
2009	Member, Faculty Science ad hoc Committee in ChicagoBioMedicine
2009-2012	Member (Chair, 2010-2012), University of Chicago Board of Computing Activities & Services
2010-present	Member, COAP, BSD Divisional Committee on Appointments and Promotions (co-Chair, 2014 – present)
2011-present	Chair, Computation Institute Beagle Internal Advisory Committee
2011-present	Co-Chair, Brain Research Imaging Center (BRIC) Internal Advisory Committee
2011-2013	Member, Institute of Molecular Engineering Faculty Recruitment Advisory Committee
2012-2013	Member, Provost's Committee on On-Line Education
2014-present	Member, University of Chicago Council of the University Senate

Departmental Activities

1987-1992	Member, Library Committee, Department of Radiology, The University of Chicago
1988-1997	Member, PACS (Picture Archiving and Communication Systems) Committee, Department of Radiology, The University of Chicago
1992-2001	Member, Department of Radiology Research Committee, The University of Chicago
1994-1999	Chair, Research Advisory Committee to the Associate Chairman for Research, Department of Radiology (Responsible for the evaluation of the potential of new research programs, allocation of new research space, development of lab floor plan for new Multi-Modality Imaging Center, preparation of a successful NIH Construction grant, development of a departmental seed grant program, and submission & implementation of a RSNA medical student summer research grant)
1994-1998	Member, Finance Committee, Department of Radiology
1995-1997	Member, Search Committee for Musculoskeletal Radiologist, Department of Radiology
1999-2000	Member, Research Committee
2000-2001	Member and Chair, Department Research Space Committee
2003-2008	Section Chief, Radiological Sciences Section, Department of Radiology
2003-present	Vice Chair of Radiology for Basic Science Research, Department of Radiology

Graduate Programs in Medical Physics Activities

1988-1992	Chairperson, Seminar Committee, Graduate Programs in Medical Physics, The University of Chicago
1988-present	Member, Curriculum Committee, Graduate Programs in Medical Physics, The University of Chicago
1991-1998	Assistant Director, Graduate Programs in Medical Physics, The University of Chicago

1992-1999	Chair, Curriculum Committee, Graduate Programs in Medical Physics, The University of Chicago (responsible for reviewing and reorganizing the curriculum and the qualifying/comprehensive examinations of the GPMP)
1992-1996	Representative of Graduate Programs in Medical Physics to Biological Sciences Division Committee on Teaching Assistants, The University of Chicago
1998-2013	Director, Graduate Programs in Medical Physics, The University of Chicago [including leading the program through the University to establish the program officially as a Ph.D.-degree grant Committee]
2003-present	Member, Committee on Medical Physics, The University of Chicago
2003-2013	Chair, Committee on Medical Physics, The University of Chicago

Teaching Experience

Courses Taught

2014 – present	Medical Physics 39600 Imaging Processing & Computer Vision (lecturer)
1992 - present	Medical Physics 34900 Mathematics for Medical Physicists (current lecturer, past course coordinator)
1984 - 1998	Medical Physics 38700 Physics of Diagnostic Radiology (now Physics of Medical Imaging I) (lecturer since 1984; course coordinator and lecturer since 1994)
1984 - 1998 2013 - present	Medical Physics 34300 Practicum in the Physics of Diagnostic Radiology (now Practicum in the Physics of Medical Imaging I) (lecturer)
1993 - 2008	Medical Physics 35600 Anatomical Structure of the Body (course co-coordinator)
1987 - 1999	Medical Physics 34000 Introduction to Research (This course is no longer offered under the new curriculum established in 1999) (instructor)
1988 - 1999	Medical Physics 41700 Research in Medical Physics (This course is no longer offered under the new curriculum established in 1999) (instructor)

- 1987 - 2013 Medical Physics 42100
Research in the Physics of Diagnostic Radiology
(research advisor)
- 1993-1996 Radiology Residency Program Mini-Course
Medical imaging research and computer-aided diagnosis
- 1997- 2004 BioSci 26300
Introduction to Medical Physics
Undergraduate course for juniors and seniors (registered students have
been from the departments of physics, chemistry and biology)
(founding instructor & course coordinator; course continues under
Patrick La Riviere)
- 2002-2006 Workshop in BSD Ethics Course, “Patenting and the Academic
Mission”
- 2001-2008 regular lectures at the Breast Imaging Symposia and Courses for
University of Chicago and the Lynn Sage Breast Center, Northwestern
University (now managed by American Roentgen Ray Society (ARRS))

Students/Trainees Supervised

The University of Chicago

Medical Physics (Postdoctoral Trainees/Research Associates):

- 1990-1992 Robert Nishikawa, Ph.D.
(Medical Biophysics, University of Toronto, 1990)
Research Associate
Research on computerized detection of microcalcifications in
digital mammograms
Currently, Assistant Professor, University of Chicago
- 1991-1994 Wei Zhang, Ph.D.
(Physics, Osaka University, Japan, 1991)
Research Associate
Research in use of artificial neural networks in medical imaging
Currently, Research staff, R2 Technology, Inc., CA.
- 1992-1994 Ulrich Bick, M.D.
(Medicine, University of Bonn, Germany, 1986)
Radiology research fellow
Research in computerized image segmentation and detection of
masses in digital mammograms
Currently, Associate Professor, University of Chicago.
- 1994-1995 Jie Yao, Ph.D.
(Optics, University of Arizona, 1994)
NIH postdoctoral fellow

- Research in the digital analysis of bone radiographs
Currently, Research staff, 3M, Minnesota
- 1994-1996 Regina Haldeman, M.D.
(Medicine, University of Basel, Switzerland, 1984)
Radiology research fellow
Research in evaluation of temporal subtraction and computer-aided diagnosis in mammography
- 1994-1996 Ming Zhang, Ph.D.
(Computer Science, Post doctoral fellow, British Columbia Cancer Research Centre in Canada)
Research Associate
Research on Hough Spectrum analysis for the detection of mass lesions in digitized mammograms
Currently, Staff, Lucent Technologies, Illinois
- 1996-1998 Kenneth Gilhuijjs, Ph.D.
(Physics, 1996)
Visiting Research Associate
Research in CAD of mass lesions in MR images of the breast
Currently, research staff, National Cancer Institute, The Netherlands
- 1997-1998 ChungShen Jiang, Ph.D.
(Bioengineering, Cornell, 1997)
NIH trainee post-doctoral fellow
Research in the computerized analysis of trabecular pattern using Minkowski dimension
Currently, Research in medical image analysis, Analogic, Peabody, MA
- 1998-2000 Karla Horsch, Ph.D.
(Applied Mathematics, University of Arizona, 1998)
NIH trainee post-doctoral fellow
Research in computer-aided diagnosis of mass lesions on 2D and 3D ultrasound images of the breast
- 1998-2001 Zhimin Huo, Ph.D.
(Medical Physics, University of Chicago, 1998)
Research Associate, Research Associate (Instructor)
Research in computer-aided diagnosis of mammographic lesions and Computerized image analysis for risk assessment
- 2001-present Karen Drukker, Ph.D.
(Chemistry, University of Amsterdam, 1998)
Research Associate; Research Associate (Assistant Professor)
Research in computer-aided detection of lesion on ultrasound images of the breast

- 2001-present Hui Li, Ph.D.
(Chemistry, University of Chicago, 2000)
Research Associate; Research Associate (Assistant Professor)
Research in computerized image analysis for assessment of breast cancer risk
- 2003-2005 HuiHua Wen, Ph.D.
(Electrical Engineering, Northwestern University, 2002)
NIH trainee post-doctoral fellow
Research in multimodality computer-aided diagnosis in breast imaging
- 2005-2007 Michael Chinander, Ph.D.
(Medical Physics, University of Chicago, 2004)
Research in radiographic texture analysis

***The University of Chicago
Medical Physics (Graduate Students):***

- 1984-1989 Victoria Sabeti (S.M. in Medical Physics, 1989)
Development of computerized database system for medical images
- 1987-1992 Fang-Fang Yin (Ph.D. in Medical Physics, 1992)
Dissertation research on an investigation of computerized methods for the detection of masses in digital mammography
(primary advisor)
Currently, Professor and Chief of Medical Physics, Duke University
- 1987-1993 Yuzheng Wu (Ph.D. in Medical Physics, 1993)
Dissertation research on application of artificial neural networks in medical images and medical decision making
was Postdoctoral Fellow, Georgetown, Washington, D.C.
- 1990-1997 Yulei Jiang, Ph.D.
Dissertation research on the computerized classification of microcalcifications in mammography
Currently, Associate Professor, Department of Radiology, The University of Chicago
- 1991-1997 Sam Armato
(NIH Predoctoral trainee, 1991-1994)
Dissertation research on computerized analysis of chest radiographs and radionuclide images
(primary advisor)
Currently, Associate Professor, Department of Radiology, The University of Chicago

- 1991-1998 Zhimin Huo
Dissertation research on the computerized classification of masses in mammography and the analysis of the risk of breast cancer (primary advisor)
Currently, Researcher, Eastman Kodak Company
- 1993-1996 Wendy Zouras
(NIH Predoctoral trainee, 1993-1996)
Masters thesis research on the computerized temporal analysis of mammograms (Masters)
(primary advisor)
- 1993-2004 Michael Chinander
(NIH Predoctoral trainee, 1993-1995)
Dissertation research on the effect of technical factors on the quantitative analysis of bone radiographs
(primary advisor)
Currently, Research Professional Departments of Radiology and Surgery, University of Chicago
- 1993-1996 Xin-Wei Xu
Dissertation research on the computerized detection of pulmonary nodules in digital chest radiographs
Currently, research staff, Deus, Caelum, Rockville, Maryland
deceased
- 1995-2000 Matt Kupinski
Dissertation research on computerized pattern classification in medical imaging
(primary advisor)
Currently, Professor, University of Arizona - Tucson
- 1997 Hania Al-Hallaq
Related research on computerized analysis of ultrasound images of the breast
Currently, Assistant Professor, Department of Radiation and Cellular Oncology, The University of Chicago
- 2002-2007 Weijie Chen
Dissertation research on computerized analysis of dynamic MRI of breast lesions
(primary advisor)
Currently, Scientist, FDA
- 2002-2007 Joel Wilkie
Dissertation research on computerized temporal analysis of bone structure for the detection of osteolysis
(primary advisor)
Currently, medical resident, U of Michigan-Ann Arbor

- 2004-2008 **Martin King**
Dissertation research on computerized image analysis for cardiac images
(MSTP; primary advisor)
Currently, medical resident in radiation oncology, Stanford
- 2004-2010 **Yading Yuan**
Dissertation research on correlation of lesions from multimodalities and multiple view images for breast cancer diagnosis
(primary advisor)
Currently, medical physics resident, Harvard University
- 2004-2008 **Laura Yarusso**
(committee member)
- 2004-2010 **Robert Tomek**
Masters thesis research on computerized image analysis of 2D and 3D gastric image data
(primary advisor)
Currently, CTO, Quantitative Insights
- 2006-2010 **Yahui Peng**
(committee member)
- 2006-2009 **Dan Xia**
(committee member)
- 2005-2010 **Neha Bhooshan**
Dissertation research on computerized image analysis for breast cancer prognosis on breast MRI
(MSTP; primary advisor)
Currently, Georgetown University medical resident
- 2006-2012 **Andrew Jamieson**
Dissertation research on non-linear data reduction and training with unlabeled data in CADx
(primary advisor)
- 2008-2014 **Martin Andrews**
(committee member)
- 2009-2012 **Zac Labby**
(committee member)
- 2010-2013 **Xiao Han**
(committee member)

- 2010-present William Weiss
Quantitative Image Analysis of HiSS Breast MRI
(primary advisor)
- 2013-present Christopher Haddad
(primary advisor)

***The University of Chicago
Junior Faculty and Radiology Residents***

- 1991-1994 Philip Caligiuri, M.D.
Clinical Assistant Professor of Radiology, University of Chicago
Research on the quantitative analysis of bone radiographs
- December 1992 Ron Kunst, M.D.
Radiology resident, University of Chicago
Research on the computerized analysis of digital mammograms
- November 1993 Charles Lerner, M.D.
Radiology resident, University of Chicago
Research on the effect of data compression on the quality of chest radiographs
- 1993-1995 Dulcy E. Wolverson, M.D.
Assistant Professor of Radiology, University of Chicago
Research on the evaluation of computer-aided diagnosis schemes and the analysis of false-positives detections
- 1996-1999 Jennifer Lin-Dunham, M.D.
Assistant Professor of Radiology, University of Chicago
Research on the computerized texture analysis of radiographs of the hip in pediatric patient
- 1997-1999 Sandy Kwak, M.D.
Assistant Professor of Radiology, University of Chicago
Research on a method for estimating volumetric BMD (bone mineral density) from area BMD to better predict degree of bone strength.

***The University of Chicago
Medical Students***

- 1989-1992 Kyongtae Ty Bae, (Ph.D. in Bioengineering, 1988, M.D., 1992)
Research on the computerized analysis of computed tomography images of the liver and the thorax.
Currently Chair of Radiology, U of Pittsburgh
- 1993 Kenny Ong
Research on the quantitative analysis of hand radiographs

1993-1994	Bob Kao Research on the temporal analysis of mammograms
1994	Shephard Shuerman (from Chicago Medical School with rotations at the University of Chicago) Research on the effect of data compression on the quality of medical images
1994	Kris Prieb Research on the computerized detection of lung nodules in computed tomography (CT) images of the thorax.
1995	Edward Lee Research involving the pre-clinical evaluation of computerized classification of masses in digital mammograms
1999	Darrin Brenner (with Jennifer Lin-Dunham) Research on computerized radiographic analysis of bone geometry in the femur: A study of age related changes in normal children
2000	Ingrid Roseborough Research on evaluation of an intelligent search workstation for diagnosing breast lesions seen on mammography
2001	Alfredo Fredy Ceballos Research on computer-aided diagnosis of lesions from multi-modality (mammographic and sonographic) images of the breast
2003	David Rusinak Research on computerized multi-modality analysis of breast lesions
2006, 2009	Ken Chiang Correlation of computer-extracted MRI breast lesion features with human characterized lesion features (morphological and kinetic features)
2006-2009	Saurabh Agarwal Sonographic CADx observer study & Correlative analysis between radiologist-indicated BIRADs and Computer-extracted lesion features
2006	Jhee Un Lee Image-based breast cancer risk assessment
2007	John Lee Observer study evaluation of Breast MRI CADx
2007	Tuan Nguyen

Image-based analysis of FFDM of BRCA1/BRCA2 carriers

- 2008 Eric Barker
Temporal radiographic texture analysis for monitoring osteoporosis
- 2009 Stephanie McCann
Correlative analysis of breast images across modalities of sonograms, and MRI
- 2009 Huan Nguyen
Comparison of kinetic analyses of breast MRI for cancer diagnosis and assessment of response to therapy
- 2010 William Ufmann
Quantitative image analysis of prostate MR images
- 2011-2013 Daniel Budreau
Quantitative image analysis of breast MRI for assessing response to therapy

The University of Chicago
Undergraduate & masters students

- 1991-1992 David Kovar -- physics
Research in the computerized segmentation of masses in mammograms
Currently graduate student, Medical Physics, University of Chicago
- 1992-1993 Kurt Thoroughman -- physics
Research in the dual-energy analysis of radiographic images of the spine
(senior honors thesis work)
- 1995 Kensuke Arai -- physics
Research in the detection of lung nodules in CT images
- 1997 Kitty Moran -- physics
Research in the detection of lung nodules in CT images
(senior honors thesis work)
- 1998 Young-Jin Kim -- physics
Research in computerized analysis of mass lesions on mammograms and on MR images of the breast
- 2000 William Sensakovic -- physics
Research in the computerized analysis of CT images of the thorax
- 1999-2000 Matt Maloney – computer science masters program
Research in computerized analysis of FFDM images

- 2001 - 2003 Ruchi Shah -- biology
Research in the computerized analysis of bone trabecular in radiographic images of the heel
- 2001 David Cho -- biology
Research in computerized analysis of ultrasound images of the breast
- 2001 - 2003 Sara Doerr -- statistics
Research in computerized mammographic analysis for risk assessment and prognosis of breast cancer
- 2003-2005 Anna Margolis -- mathematics
Research in computerized texture feature for breast cancer risk assessment
- 2003-2004 Joseph Zapater – biology
Database assistant and research in CAD for FFDM
- 2005-2006 Andrew Jamieson – physics
Research in relationship between physical image quality and CAD
- 2006 Octavia Biris – physics
Research in computerized radiographic texture analysis for osteoporosis
- 2007-2008 Zach Rodgers – physics, chemistry, biology
Research in computerized assessment of motion contamination in cardiac CT
- 2008-2011 Jeremy Bancroft-Brown – physics
Research in computerized assessment of breast cancer risk from FFDM and kinetic analysis on breast MRI for CADx
- 2009-2011 Umnouy Ponsukcharoen – physics
Research in breast image-based biomarkers and genomics
- 2010-2011 Claire Salling - physics
Research in computerized assessment of multimodality breast images including 3D ultrasound and PET breast imaging
- 2010 Martin Mullen – biology
Research on the analysis of prostate cancer on MRI
- 2011-2013 Stephanie Burda - physics
Research in multi-modality breast imaging
- 2012 Bill Dague – physics

Research in analysis of Breast DWI

2013-2014 Terrell White – physics
AAPM summer fellowship
Research in DWI breast MRI

Other Graduate Programs

***Northwestern University, Evanston, Illinois
Electrical Engineering and Computer Science (Graduate Students)***

1988-1989 Darnell Little (M.S. in Electrical Engineering, 1989)
Thesis research on application of the maximum likelihood EM algorithm to radiologic images
Currently member of technical staff at AT&T Bell Laboratories, IL (co-advisor with B. Sullivan and C.T. Chen)

1991-1992 Jim Brailean, M.S.
Research on application of the maximum likelihood EM algorithm to radiologic images
(co-advisor with B. Sullivan and C.T. Chen)

***University of Illinois at Chicago (UIC), Chicago, Illinois
Biomedical Engineering (Graduate Students)***

2004-2008 Nick Gruszauskas
MS& Ph.D, Biomedical Engineering (BME)
Research in the translation of sonographic CAD to the clinical breast imaging area

2010-2014 Hsien-Chi Kuo
Ph.D. Student in Biomedical Engineering (BME)
Segmentation Methods in 3D Breast Imaging including CT

Chicago Medical School (medical physics graduate program)

1999-2002 Kwang-Taeg Oh
Dissertation research on computerized detection/diagnosis of mass lesions in mammograms including three-way classification on malignant, benign and false positives

Other institutions (Undergraduate students & high school students)

1989,1991,1992 Nicholas Ahn (summer research)
Undergraduate, Illinois Benedictine College, Lisle, Illinois
Research on the computerized detection of lung nodules in digital chest radiographs

1990 Rafi Ali (summer research)

- Undergraduate, Illinois Benedictine College, Lisle, Illinois
Research on the computerized delineation of liver contours in computed tomography (CT) images
- 1990 Heng Ly (summer research)
Undergraduate, Illinois Benedictine College, Lisle, Illinois
Research on the computerized delineation of liver contours in computed tomography (CT) images
- 1993 Tim Mickus (summer research)
Undergraduate, Illinois Benedictine College, Lisle, Illinois
Research on the effect of data compression on the quality of digital chest radiographs
- 1993, 1994 Adeaide Zhang (summer research)
High school student from Illinois Science Academy
Research on the digitization of medical images
- 1994-1995 Matt Kupinski
Undergraduate, Trinity University, San Antonio, Texas
Research on feature extraction methods for masses in digital mammograms and optimization of features for ANN
Summer research supported as a Pews Undergraduate Scholar and academic school year research for senior thesis
- 1994 Noam Ben Ami (summer research)
Undergraduate, University of Illinois, Urbana
Research on the effect of evaluation methods on the performance of computer-aided diagnosis schemes
- 2002, 2003 Petrice Mostardi (summer research)
Undergraduate, Biomedical Engineering, Vanderbilt University
Research on segmentation of breast lesions on digitized mammograms (2002), Research on computer-aided prognosis in breast cancer (2003)
- 2002 Michael Stern (summer research)
Undergraduate, Physics, University of Pennsylvania
Research on computerized detection of breast lesions on ultrasound
- 2002 Vitek Jaros (summer research)
Undergraduate, Computer Science, COD
Research on computerized fractal analysis of digital bone images of the os calcis
- 2002, 2003 Andrew Liu (summer research)
University of North Texas/Texas Academy of Math and Science

- Research on computer-aided diagnosis of mammographic breast lesions (2002), Research on automated lesion segmentation techniques for mammography (2003)
- 2003 Patrick Walsh (summer research)
St. Ignatius High School
Research on computerized classification of output from a CAD device
- 2003 Ed Dudek (summer research)
Undergraduate, Computer Engineering, Purdue University
Research on computerized lesion features (programming) for breast ultrasound
- 2003 Phoebe Kuesters (summer research)
Undergraduate, Psychology, Dickenson College
Research on observer performance in multi-modality CAD
- 2003 Ken Vojtek (summer research)
Undergraduate, Physics, Benedictine University
Research on classification of computerized detection results of malignant lesions and false-positive detections
- 2004-2008 Nick Gruszauskas
Undergraduate, MS& Ph.D, BME, University of Illinois at Chicago
Research in the translation of sonographic CAD to the clinical breast imaging area
- 2004 Exinnaya Ubagharaji (summer research)
High school student at Kenwood Academy
(American Cancer Society Summer Research Program)
Research in CAD of breast lesions (biopsied and non-biopsied)
- 2005 Brian Mikolajczyk (summer research)
High school student
(American Cancer Society Summer Research Program)
Research in computerized lesion segmentation methods for full field digital mammography
- 2006 Farihah Kahandaker (summer research)
High School student
(American Cancer Society Summer Research Program)
Research in computerized image analysis on screen-film mammography and full-field digital mammography
- 2007 Feng Cao (summer research)
Undergraduate University of Illinois – Champaign Urbana

- Research in the translation of radiographic texture analysis in the assessment of osteoporosis on a dataset of subjects on treatment and on placebo
- 2007 John Mussman (summer research)
High School student
(American Cancer Society Summer Research Program)
Research in computerized image analysis of double-contrast barium radiography for early detection of gastric cancer
- 2008 James Pelletiere (summer research)
Undergraduate, Benedictine University
Research in the computerized analysis of FFDM images for early diagnosis of breast cancer
- 2008 Aalok Patel (summer research)
High School student
(American Cancer Society Summer Research Program)
Research in computerized image analysis of breast ultrasound for improved lesion segmentation and early diagnosis of breast cancer
- 2009 Angelica Marquez (summer research)
Undergraduate, Loyola University, Chicago
Research in computerized image analysis of T1 and T2* breast MRI
- 2009 Anish Raman (summer research)
High School Student
(UC RIBS2 summer program)
Research in computerized image analysis of cancer risk assessment
- 2009 Saad Nasser (summer research)
High School Student
(American Cancer Society Summer Research Program)
Research in computerized image analysis of prostate images
- 2009 Gabriella Cozzi (summer research)
Entering Undergraduate, University of Notre Dame
Research in computerized image analysis of FFDM and breast MRIs for cancer risk assessment
- 2010 Rabi Alam (summer research; AAPM fellowship)
Undergraduate, Simon's Rock
Research in data reduction in breast CADx
- 2010 Aoife MacMahon (summer research)
Entering undergraduate, Brown University
Research in breast cancer risk assessment
- 2010 Mary Mussman (summer research)

- High School Student
(American Cancer Society Summer Research Program)
Research in breast cancer risk assessment
- 2011 Julia Mei (summer research)
High School Student
(American Cancer Society Summer Research Program)
Research in computerized analysis of FFDM
- 2011 Iris Pak (summer research)
Entering undergraduate, Brown University
University of Chicago RIBS program
Research in analysis of MRI of breast lymph nodes
- 2011 Mark Tomek (summer research)
Undergraduate, Illinois State University
Research in the registration of multi-parametric prostate images
- 2011 Daniel Simmons Marengo (summer research)
Undergraduate, Carleton College
Research in the pharmacokinetic analysis of DCE-MRI prostate images
- 2011 Ronald Stubblefield (summer research)
Undergraduate, Moorehouse
University of Chicago, Physics REU program
Research in data reduction techniques for content-based retrieval in breast imaging
- 2012 Abby Armato (summer research)
High School Student
Research in the effectiveness of mammographic texture analysis of contralateral breast images in the computer-aided diagnosis of breast lesions
- 2012 Kathy Rodogiannis (summer research)
High School Student
(American Cancer Society Summer Research Program)
Research on quantitative image analysis of DCIS breast cancer on FFDM
- 2012 Anais Carell (summer research)
High School Student
Research in the effectiveness of mammographic texture analysis of contralateral breast images in the computer-aided diagnosis of breast lesions
- 2012 Zexi (Kyle) Mao (summer research)
Undergraduate, Zhejiang University, China
University of Chicago. Molecular Engineering REU program
Magnetic resonance spectroscopy imaging of breast cancer

- 2012 Sunny Duan (summer research)
High School Student
DCE-MRI of mass and non-mass breast lesions
- 2012 Stephan Hu (summer research)
High School Student
University of Chicago RIBS program
Kinetic and textural differences between mass and non-mass lesions on breast MRI
- 2013 Cathleen Cahil (summer research)
Undergraduate, University of Illinois (UIUC)
Risk-based CADx and Robustness of RTA for assessment of breast parenchymal
- 2013 Victoria Rael
High School Student, Alpharetta, GA
University of Chicago RIBS program
Risk-based CADx and Robustness of RTA for assessment of breast parenchymal
- 2013 Rajiv Raju
Undergraduate, University of Illinois at Chicago (UIC)
Dimensional reduction of MRI lesion features in distinguishing mass and non-mass lesions
- 2013 Jack Kieffer
High School Student, Barrington, IL
Quantitative image analysis of T2-weighted MRI lesions for diagnosis and prognosis
- 2013 Payam Abdollah Yousefzadeh
Graduated medical student
Assessment of PE in emergency room
- 2013 Anthony Mei
High School Student, Chicago, IL
American Cancer Society Summer Program
Multi-modality image-based phenotyping of breast cancer subtypes
- 2014 Melissa Train
High School Student, Schaumburg, Illinois
Role of tumor volume and surface area in breast cancer prognosis
- 2014 Jonathan Schram
Undergraduate, computer science, Benedictine University
Investigation of SVMs and Decision Trees in Data mining

- 2014 Nyasha Maforo
AAPM DREAM fellowship
Undergraduate, physics, Fort Hays State University
Potential of DCE, T2w, and DWI combined in assessing breast cancer
- 2014 Xin Wen
High School Student, UChicago RIBS2 program
Potential of DCE and DWI combined in assessing breast cancer
- 2014 Karen Altergott
Undergraduate, BME, University of Washington, Seattle
Role of tumor heterogeneity/texture in breast cancer prognosis
- 2014 Celina Nhan
High School Student, Chicago, IL
UCCCC CURE summer program
Potential of DCE and T2w MRI combined in assessing breast cancer

Refereed Journal Articles

- J1. **Lissak M**, Wynn VT: The detection of low frequency rhythms in the electrocardiograms of male and female subjects. J. Interdiscipl. Cycle Res. 12: 69, 1981 .
- J2. **Giger ML**, Doi K: Investigation of basic imaging properties in digital radiography. 1. Modulation transfer function. Medical Physics 11: 287-295, 1984.
- J3. **Giger ML**, Doi K, Metz CE: Investigation of basic imaging properties in digital radiography. 2. Noise Wiener Spectrum. Medical Physics 11: 797-805, 1984.
- J4. **Giger ML**, Doi K: Investigation of basic imaging properties in digital radiography. 3. Effect of Pixel Size on SNR and Threshold Contrast. Medical Physics 12: 201-208, 1985.
- J5. Fujita H, Doi K, Chan HP, **Giger ML**, Duda EE: Development of dynamic and static phantoms for evaluation of digital subtraction angiography (DSA) systems. Radiology 155: 799-803, 1985.
- J6. Fujita H, Doi K, **Giger ML**: Investigation of basic imaging properties in digital radiography. 6. MTFs of I.I.-TV digital imaging systems. Medical Physics 12: 713-729, 1985.
- J7. Fujita H, Doi K, **Giger ML**, Chan HP: Investigation of basic imaging properties in digital radiography. 5. Characteristic curves of I.I.-TV digital systems. Medical Physics 13: 13-18, 1986.

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- A191. **Giger ML**, Horsch KJ, Vyborny CJ, Venta LA, Huo Z, Lan L, et al: Performance of CAD in the interpretation of breast lesions on ultrasound images: Results of an observer study using independent cases. *RSNA*, 221: 521, 2001.
- A192. Armato SG, Li F, **Giger ML**, MacMahon HM, Sone S, Doi K: Performance of automated CT lung nodule detection on missed cancers. *RSNA*, 221: 312, 2001.
- A193. Armato SG, Li F, **Giger ML**, Sone S, Doi K, MacMahon HM, et al: Interactive interpretation of CT scans with the benefit of automated lung nodule detection results. *RSNA*, 221: 715, 2001.
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- A195. Horsch KJ, **Giger ML**, Huo Z, Bonta I, Vyborny CJ, Hendrick E, et al: Computerized classification of lesions on mammograms and ultrasound images of the breast. *RSNA*, 221: 425, 2001.
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- A198. Bonta I, Giger ML, Heiman R, McBride R, Lan L, Huo Z, **Vyborny CJ**, Doerr S: Computerized mammographic analysis for prognosis. *Medical Physics* 29, 1308, 2002.
- A199. Drukker K, **Giger ML**, Mendelson EB, Vyborny CJ, Schmidt RA: Computerized detection of breast lesions on sonograms. *Radiology* 225(P) 498, 2002.
- A200. **Giger ML**, Huo Z, Vyborny CJ, Lan L, Li H: Mammographic risk-modulated computer-aided diagnosis. *Radiology* 225(P) 602, 2002.

- A201. Horsch KJ, **Giger ML**, Huo Z, Vyborny CJ, Lan L, Hendrick RE: Pre-clinical evaluation of multimodality CAD for breast cancer diagnosis. *Radiology* 225(P) 498, 2002.

Stopped adding abstracts in 2003

Invited Lectures

- I1. Giger ML, Doi K: Analysis of MTFs, Wiener spectra and signal-to-noise ratios of digital radiographic imaging systems. 1984 American Association of Physicists in Medicine Annual Summer School, "Recent Developments in Digital Imaging," Univ. of Notre Dame, South Bend, Indiana; July 1984.
- I2. Giger ML: MTFs, Wiener spectra and signal-to-noise ratios of digital radiographic imaging systems. Seminar at Research Laboratories, Eastman Kodak Company, Rochester, New York, 1984.
- I3. Giger ML: Digital radiography and evaluation of image quality. Medical Physics Section, Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois, Winter 1986.
- I4. Giger ML: Computer-aided diagnosis in digital radiography. AUR Computer Symposium, Association of University Radiologists, Charleston, South Carolina, Spring 1987.
- I5. Giger ML: Digital radiography and computer-aided diagnosis. Seminar for Department of Physics, University of Exeter, England, July 1987.
- I6. Giger ML: Digital radiography, digital radiographic imaging systems and image quality. Seminar for the Medical Diagnostic Systems Group, AT&T Bell Laboratories, Middletown, New Jersey, Autumn 1987.
- I7. Giger ML: Computer-aided diagnosis. Seminar for the Medical Diagnostic Systems Group, AT&T Bell Laboratories, Middletown, New Jersey, Autumn 1987.
- I8. Giger ML: Image quality: Effects of digitization, matrix size and noise. 1987 American Association of Physicists in Medicine Annual Summer School, "Image Communication and Image Analysis," Univ. of Michigan, Ann Arbor, Michigan; July 1987.
- I9. Giger ML: Film digitization - Technical requirements. Chest Imaging Conference-87, Univ. of Wisconsin, Madison, Wisconsin; August 1987.
- I10. Giger ML, Doi K, MacMahon H: Automated detection of pulmonary nodules in digital chest images. American Association of Physicists in Medicine Midwest Chapter Meeting, Chicago, Illinois, October 1987.
- I11. Giger ML: Digital processing of medical images: a review. SPIE Applications of Electronic Imaging: Critical Reviews of Optical Science and Technology (Conf. 1082), Los Angeles, California, 1989.

- I12. Giger ML: Computer-aided detection of pulmonary nodules. Pendergrass Diagnostic Research Laboratory, University of Pennsylvania, 1989.
- I13. Giger ML: Computer-aided diagnosis and its effect on observer performance. Conference Faculty. Third Farwest Image Perception Conference, Tucson, Arizona, 1989.
- I14. Giger ML: Computerized scheme for the detection of pulmonary nodules. 11th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Seattle, Washington, November 1989.
- I15. Giger ML: Computer-aided diagnosis in digital chest radiography and mammography. Grand Rounds. Harvard Medical School, Brigham and Women's Hospital, Boston, Massachusetts, February 1990.
- I16. Giger ML: Computer vision schemes in digital chest radiography and mammography. Department of Electrical Engineering and Computer Science. Northwestern University, Evanston, Illinois, April 1990.
- I17. Giger ML: Digital radiography and computer-aided diagnosis. Sixth Mid-America Conference on Advanced Science and Technology. Evanston, Illinois, April 1990.
- I18. Giger ML: Image analysis and computer-aided diagnosis. Grand Rounds, Department of Radiology, Rush Presbyterian-St. Luke's Medical Center, Chicago, Illinois, 1991.
- I19. Giger ML: Computer-aided diagnosis in chest radiography and mammography. 44th annual conference of the Society for Imaging Science and Technology (S&T), St. Paul, Minnesota, May 1991.
- I20. Giger ML, Yin F-F, Doi K, Vyborny CJ, Schmidt RA, Metz CE: Computerized detection and classification of masses in digital mammograms. World Congress on Medical Physics and Biomedical Engineering. Kyoto, Japan, July 1991.
- I21. Giger ML, Yoshimura H, Doi K, MacMahon H, Matsumoto T, Montner S: Computerized detection of lung nodules in digital chest radiographs. World Congress on Medical Physics and Biomedical Engineering. Kyoto, Japan, July 1991.
- I22. Giger ML: Automated scheme for lung nodule detection in chest radiographs. Kumamoto University, Kumamoto City, Japan, July 1991.
- I23. Giger ML: Automated scheme for lung nodule detection in chest radiographs. Konica Corporation, Hino, Japan, July 1991.
- I24. Giger ML: Automated scheme for lung nodule detection in chest radiographs. Toshiba Corporation, Nasu, Japan, July 1991.
- I25. Giger ML: Computerized detection of masses in mammograms. Toshiba Corporation, Nasu, Japan, July 1991.

- I26. Giger ML: Automated scheme for lung nodule detection in chest radiographs. Iwate Medical University, Morioka, Japan, July 1991.
- I27. Giger ML: Computer analysis of chest and mammographic x-ray images. Department of Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio, March 1992.
- I28. Giger ML: Digital x-ray radiography. Optical Engineering Midwest-1992, OEM Tutorial on Medical Imaging, Illinois Institute of Technology, Chicago, Illinois, March 1992.
- I29. Giger ML: Computer-aided diagnosis in mammography. American Cancer Society DuPage Unit, DuPage County, Illinois, May 1992.
- I30. Giger ML: Artificial intelligence in medical radiographic imaging. Organization of Graduate Women in Science. Chicago, Illinois, June 1992.
- I31. Giger ML: Computer-aided diagnosis in mammography. American Cancer Society West DuPage Unit, Illinois, July 1992.
- I32. Giger ML: Computer-aided diagnosis in digital mammography. 34th Annual meeting of American Association of Physicists in Medicine. Scientific symposium on 'Computerized image analysis in digital mammography. Calgary, Canada, August 1992.
- I33. Giger ML: Computer-aided diagnosis. National Institutes of Health Workshop on Developments in Multidimensional Image Processing. Bethesda, Maryland, October 1992.
- I34. Giger ML, Yin FF, Doi K, Wu Y, Vyborny CJ, Schmidt RA, Huo Z: Computerized detection and characterization of mass lesions in digital mammography. IEEE International Conference on Systems, Man and Cybernetics, Chicago, Illinois, October 1992.
- I35. Giger ML: Categorical course on the technical aspects of breast imaging: Future of breast imaging: Computer-aided diagnosis. 78th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1992.
- I36. Giger ML: Practical problems in image analysis: medical perspective. Optical Society of Chicago, Illinois, December 1992.
- I37. Giger ML: Computer-aided diagnosis in radiology, New Concepts in Medical Imaging. The University of Chicago, Chicago, February 1993.
- I38. Giger ML: Computer-aided diagnosis in medical imaging. Departmental Seminar. Department of Medical Physics, University of Wisconsin-Madison, March 1993.
- I39. Giger ML: Computer-aided diagnosis in medical imaging. Illinois Benedictine College, Lisle, Illinois, March 1993.

- I40. Giger ML: Computer-aided diagnosis. Kodak 2nd Annual Striving for Excellence in Mammography course. Oak Brook, Illinois, July 1993.
- I41. Giger ML: Computer applications in analysis of radiological image of the breast. NCI Workshop on Computer Applications for Early Detection and Staging of Cancer. Bethesda, Maryland, July 1993.
- I42. Giger ML: Computer-aided diagnosis in digital mammography. Invited mini-symposia. 15th Annual International Conference of IEEE Engineering in Medicine and Biology Society, San Diego, California, October 1993.
- I43. Giger ML: Categorical course on the technical aspects of breast imaging. Future of breast imaging: Computer-aided Diagnosis. 79th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1993.
- I44. Giger ML, Huo Z, Zhang W: Application of artificial neural networks to the task of merging feature data in computer-aided diagnosis schemes. World Congress on Neural Networks, San Diego, California, June 1994.
- I45. Giger ML: Computer-aided diagnosis in mammography. American Association of Physicists in Medicine Annual Meeting, Anaheim, California, July 1994.
- I46. Giger ML: Computerized radiographic analysis of bone structure. American Association of Physicists in Medicine Annual Meeting, Anaheim, California, July 1994.
- I47. Giger ML: Categorical course on the technical aspects of breast imaging. Future of breast imaging: Computer-aided Diagnosis. 80th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1994.
- I48. Giger ML: Computer vision system to aid in mammographic interpretation: An intelligent mammography workstation. American Cancer Society Science Writers' Seminar. New Orleans, Louisiana, March 1995.
- I49. Giger ML: Digital concepts and digital mammography. Workshop on Mammography. Charles University, Prague, Czech Republic, April 1995.
- I50. Giger ML: Computer-aided diagnosis. Workshop on Mammography. Charles University, Prague, Czech Republic, April 1995.
- I51. Giger ML: Computer vision system to aid in mammographic interpretation: An intelligent mammography workstation. Keynote Speaker. American Cancer Society, Illinois Division, Annual Meeting, October, 1995.
- I52. Giger ML: Computerized radiographic analysis of bone radiographs. Proctor & Gamble, Cincinnati, Ohio, January, 1996.
- I53. Giger ML: Can computers help us read Mammograms?. Fourth Annual Striving for Excellence in Mammography, Oak Brook, Illinois, April, 1996.

- I54. Giger ML: Computer-aided diagnosis in mammography, Association of University Radiologists (AUR) annual meeting, Birmingham, Alabama, April, 1996.
- I55. Giger ML: Current issues in computer-aided diagnosis in mammography, 3rd International Workshop on Digital Mammography, Chicago, Illinois, June, 1996.
- I56. Giger ML: Computer-aided diagnosis, Continuing Education Course in Digital Mammography, 38th Annual Meeting of the American Association of Physicists in Medicine. Philadelphia, PA, July, 1996.
- I57. Giger ML: Rationale and Potential of Computer-Aided Diagnosis in Radiology, Department of Diagnostic Radiology, Mayo Clinic, Rochester, Minnesota, September, 1996.
- I58. Giger ML: Evaluation of Physical Imaging Properties in Digital Radiography, Department of Diagnostic Radiology, Mayo Clinic, Rochester, Minnesota, September, 1996.
- I59. Giger ML: Computer-Aided Diagnosis in Mammography, Department of Diagnostic Radiology, Mayo Clinic, Rochester, Minnesota, September, 1996.
- I60. Giger ML: Grant Writing, Department of Radiology Research Conference, University of Chicago, Chicago, Illinois, October, 1996.
- I61. Giger ML: Computer Detection of Cancer: Current Results with Primary Breast Cancer. Potential for Earlier Diagnosis of Metastases. Creative Concepts Conference, Vail, Colorado, December, 1996.
- I62. Giger ML: Image Processing for Human Vision. Basic Imaging Technology Course, Philips Medical Systems North America Co., Shelton, Connecticut, May, 1997.
- I63. Giger ML: Image Processing for Computer Vision and Computer-Aided Diagnosis. Basic Imaging Technology Course, Philips Medical Systems North America Co., Shelton, Connecticut, May, 1997.
- I64. Giger ML: Computer-Aided Diagnosis in Radiology, Sunnybrook Health Science Centre, University of Toronto, Toronto, Canada, June, 1997.
- I65. Giger ML: Computer-Aided Diagnosis in Breast Imaging, University of Chicago Cancer Research Center, Breast Cancer Program, Chicago, October, 1997.
- I66. Giger ML: Development of Methods for Computer-Assisted Interpretations of Digital Mammograms for Early Breast Cancer Detection. Era of Hope Meeting, Department of Defense Breast Cancer Research Program, Washington, D.C., November, 1997.
- I67. Giger ML: Categorical course on the technical aspects of breast imaging. Future of breast imaging: Computer-aided Diagnosis. 83rd Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1997.

- I68. Giger ML: Lung nodule CAD detection methods. Lung Imaging Workshop: Technology Transfer Diagnostic Imaging Program, NCI, Washington, D.C., January, 1998.
- I69. Yaffe MJ, Giger ML: Integration of image processing and CAD with workstation design. Working Group on Digital Mammography: Digital Displays and Workstation Design, Office of Women's Health and NCI, Washington, D.C., March, 1998.
- I70. Giger ML: Computer-Aided Diagnosis in Medical Imaging. Whitaker Foundation Conference, San Diego, CA, August, 1998.
- I71. Giger ML: Overview of CAD in Breast Imaging. First International Workshop on Computer-Aided Diagnosis, Chicago, IL, September, 1998.
- I72. Giger ML: The Clinical Aspect of Full Field Digital Mammography. GE Medical Systems Seminar on digital x-ray detector technology, Chicago O'Hare, IL, November, 1998.
- I73. Giger ML: Update course on the technical aspects of breast imaging. Computer-Aided Diagnosis in Breast Imaging. 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1998.
- I72. Giger ML: The Clinical Aspect of Full Field Digital Mammography. GE Medical Systems Seminar on digital x-ray detector technology, Vancouver, Canada, February, 1999.
- I73. Giger ML: Refresher course on Digital Mammography & Computer-Aided Diagnosis, SPIE, San Diego, CA, February, 1999.
- I74. Giger ML: Perception Workshop on Computer-Aided Diagnosis, SPIE, San Diego, CA, February, 1999.
- I75. Giger ML: Tutorial on Computer-Aided Diagnosis, SCAR, Houston, Texas, May, 1999.
- I76. Giger ML: Computer-Aided Diagnosis, BECON (hosted by NIH), Washington, D.C., June, 1999.
- I77. Giger ML, Huo Z: Artificial neural networks in breast cancer diagnosis: Merging of computer-extracted features from breast images. Proc. Of Conference on Evolutionary Computing (CEC'99), 1999.
- I78. Giger ML: Categorical course on the technical aspects of breast imaging. Computer-Aided Diagnosis in Breast Imaging. 85th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1999.
- I79. Giger ML: Breast imaging and computer-aided diagnosis. University of Chicago Cancer Risk Symposium, Chicago, Illinois, June, 2000.

- I80. Giger ML: Computer-aided diagnosis in breast imaging. Breast Imaging Course, Northwestern University, Chicago, Illinois, July, 2000.
- I81. Giger ML: Computer-aided diagnosis. Columbia University Inaugural Symposium for their new Bioengineering Department, New York, NY, October, 2000.
- I82. Giger ML: Categorical course on the technical aspects of breast imaging. Computer-Aided Diagnosis in Breast Imaging. 86th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November, 2000.
- I83. Giger ML: Computer-Aided Diagnosis. Student Radiographer Theater Presentation. . 86th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November, 2000.
- I84. Giger ML: Refresher course on Digital Mammography & Computer-Aided Diagnosis, SPIE, San Diego, CA, February, 2001.
- I85. Giger ML: Workshop on Computer-Aided Diagnosis: Breadth and Depth of CAD, SPIE, San Diego, CA, February, 2001.
- I86. Giger ML: Rationale for and Status of Computer-Aided Diagnosis. M. D. Anderson Cancer Center, Houston, Texas, March, 2001.
- I87. Giger ML: Technical Aspects of Computer-Aided Diagnosis. M. D. Anderson Cancer Center, Houston, Texas, March, 2001.
- I88. Giger ML: Computer-Aided Diagnosis and Medical Imaging. Program on Biomedical Engineering in the 21st Century: Challenges and Promise, Illinois Institute of Technology, Chicago, Illinois, March, 2001.
- I89. Giger ML: Computer-Aided Diagnosis in Medical Imaging. Electrical Engineering and Biomedical Engineering Departments, University of Iowa, Iowa City, Iowa, April, 2001
- I90. Giger ML: Computer-Aided Diagnosis in Medical Imaging. Department of Radiology, University of Iowa Hospitals, Iowa City, Iowa, April, 2001
- I91. Giger ML: Extent of Computer-Aided Diagnosis in Medical Imaging. Special Session on CAD. SCAR 2001, The 18th Symposium for Computer Applications in Radiology, Salt Lake City, Utah, May, 2001.
- I92. Giger ML, Vyborny CJ: Computer Applications to Radiological Diagnosis. Key Note speaker, GE Medical Systems, AAC (Academic Advisory Council), Milwaukee, WI, June, 2001.
- I93. Giger ML, Armato SA: Current status and future direction of computer-aided diagnosis in chest CT. CARS 2001, Computer Assisted Radiology and Surgery, Berlin, Germany, June, 2001.
- I94. Giger ML: Update on Computer-Aided Diagnosis in Mammography, 2001 AAPM Annual Meeting, Salt Lake City, UT, July 2001.

- I95. Giger ML: Computational Methods in CAD, 2001 AAPM Annual Meeting, Salt Lake City, UT, July 2001.
- I96. Giger ML: Computerized Analysis of Breast Images: A New Era in Image Interpretation, American Cancer Society Excalibur Roundtable Symposium, Chicago, IL, August, 2001.
- I97. Giger ML: Computer-aided diagnosis in medical imaging. 2nd Beijing International Conference on Physics and Engineering of Medical Imaging. University of Beijing, Beijing, China, October 24-28, 2001.
- I98. Giger ML: Computer-Aided Diagnosis in Medical Imaging. University of Toronto, Toronto, Canada, December, 2001.
- I99. Giger ML: Computer-Aided Diagnosis in Breast Imaging. Special Session on CAD. SCAR 2001, The 18th Symposium for Computer Applications in Radiology, Cleveland, Ohio, May, 2002.
- I100. Giger ML: Computer-aided diagnosis in breast ultrasound. CARS 2002, Computer Assisted Radiology and Surgery, Paris, France, June, 2002.
- I101. Giger ML: Computer-aided diagnosis in medical imaging. 9th International Congress of the Metastasis Research Society, Chicago, Illinois, Sept. 2002.
- I102. Giger ML: A new model for the estimation of breast cancer risk. Era of Hope Department of Defense Breast Cancer Research Program Meeting, Orlando, FL, Sept. 2002.
- I103. Giger ML: Roots of CAD. Creative Concepts Conference, Vail, Colorado, December, 2002.
- I104. Giger ML: Computer-assisted diagnosis, Institute of Medicine, IOM/NAS workshop on "New Technologies for the Early Detection and Diagnosis of Breast Cancer", National Academy of Science, Washington D.C., January 2003
- I105. Giger ML: CAD in breast imaging, Siemens Medical, Pennsylvania, March, 2003.
- I106. Giger ML: Moderator and Report Presenter for Data Reconstruction, Interpretation, and Informatics, at "Defining the State-of-the-Art in Biomedical Imaging: Research Needs for the Future", NIBIB/UMMC Workshop, March, Jackson, Mississippi, 2003.
- I107. Giger ML. CAD in Breast Imaging, AAPM, San Diego, August, 2003.
- I108. Giger ML: Cancer Screening and Diagnosis. NCI CAD/Informatics Workshop. Maryland, September, 2003.
- I109. Giger ML; CAD for Breast Ultrasound. Lynn Sage Breast Imaging Symposium, Chicago, IL, October 2003.

- I110. Giger ML: CAD for Mammography, Ultrasound, and MRI. Lynn Sage Breast Imaging Symposium, Chicago, IL, October 2003.
- I111. Giger ML: Collaboration between MDs and PhDs. RSNA Revitalizing the Radiology Research Enterprise. Oak Brook, IL October, 2003.
- I112. Giger ML. Computer-Aided Diagnosis in Breast Imaging, NCI Forum, Bethesda, Maryland, January 2004.
- I113. Giger ML: Computerized Image Analysis: Breast Cancer Imaging, BIROW II, Bethesda, Maryland, February 2004.
- I114. Giger ML: Computer-Aided Diagnosis in Breast Cancer Imaging – Challenges and Opportunities, Marquette University, March, 2004.
- I115. Giger ML: CAD Overview for Radiologists (SCAR U102), SCAR, Vancouver, Canada, May 2004.
- I116. Giger ML: Computer-Aided Diagnosis in Breast Imaging (SCAR U 204), SCAR, Vancouver, Canada, May 2004.
- I117. Giger ML; CAD in Breast Imaging – TRIP Session, SCAR, Vancouver, Canada, May 2004.
- I118. Giger ML: Computer-Aided Diagnosis in Breast Cancer Imaging – Challenges and Opportunities. International Workshop on Digital Mammography (IWDM), Chapel Hill, North Carolina, June 2004.
- I119. Giger ML: Computer-Aided Diagnosis in Breast Cancer Imaging: Latest Developments. CARS, Chicago, June 2004.
- I120. Giger ML: Biomedical Imaging Perspective; Joint BECON/BISTIC Symposium 2004 entitled “Biomedical Informatics for Clinical Decision Support: A Vision for the 21st Century”, Bethesda, Maryland, June, 2004.
- I121. Giger ML: CAD for Breast Ultrasound. Northwestern Breast Imaging Course, Chicago, Illinois, October, 2004
- I122. Giger ML: Multi-modality computer-aided diagnosis in the interpretation of breast images Imaging Network Ontario Symposium, Toronto, Canada, March, 2005.
- I123. Giger ML: Multimodality CAD in the Interpretation of Breast Images. DePaul University, Chicago, Illinois, May, 2005.
- I124. Giger ML: Computer-aided detection and diagnosis. RSNA, Chicago, Illinois, November, 2005.

- I125. Giger ML: Computer-aided diagnosis in diagnostic mammography & multi-modality breast imaging. RSNA, Chicago, Illinois, November, 2005.
- I126. Giger ML: Multi-modality breast computer-aided diagnosis. CVAMIA Workshop (Computer Vision Approaches to Medical Image Analysis), Graz, Austria, May, 2006.
- I127. Giger ML: The switch and setting of priorities while balancing a family and an academic career. University of Chicago Women in Science, Chicago, Illinois, May, 2006.
- I128. Giger ML: Multi-Modality Breast CAD. DePaul University, Chicago, Illinois, July 2006.
- I129. Giger ML: Breast CAD in the Digital Era. AAPM Annual Meeting. Orlando, Florida, August, 2006.
- I130. Giger ML: Multi-Modality Breast CAD. National Laboratory of Pattern Recognition, Institute of Automation, The Chinese Academy of Sciences, Beijing, China, August 2006.
- I131. Giger ML: Computer-Aided Diagnosis in Medical Imaging. International Workshop on Medical Imaging and Augmented Reality (MIAR06), Shanghai, China, August 2006.
- I132. Giger ML: Multi-Modality Breast CAD. International Workshop on Medical Imaging and Augmented Reality (MIAR06), Shanghai, China, August 2006.
- I133. Giger ML: Multi-Modality Breast Computer-Aided Diagnosis and Prognosis. AAPM Midwest Chapter, Lawrence Lanzl Award Lecture. Downers Grove, Illinois, October 2006.
- I134. Giger ML: Lessons Learned from Breast CAD. The 15th International Conference on Screening for Lung Cancer (I-ELCAP). Weill Medical College of Cornell University. New York, NY, October 2006.
- I135. Giger ML: CAD for Breast Ultrasound. Northwestern/University of Chicago Breast Imaging Course. Chicago, Illinois, October 2006.
- I136. Giger ML: Computer-Aided Diagnosis – Reflections on the Past, Present, and Future. Forum on Emerging Biomedical Technologies, 2006 International Workshop on CAD at Taiwan National University, Taipei, Taiwan, November 2006.
- I137. Giger ML: Breast CAD. Forum on Emerging Biomedical Technologies, 2006 International Workshop on CAD at Taiwan National University, Taipei, Taiwan, November 2006.
- I138. Giger ML: Computer-aided diagnosis in diagnostic mammography & multi-modality breast imaging. RSNA, Chicago, Illinois, November, 2006.
- I139. Giger ML: The State of CAD. Are you Ready to Move? Breast CAD. RSNA, Chicago, Illinois, November, 2006

- I140. Giger ML: Computer-Aided Diagnosis, Southeast AAPM Chapter Meeting, Atlanta, Georgia, March 2007.
- I141. Giger ML, Yuan Y, Li H, Drukker K, Chen W, Lan L, Horsch K: CAD in Radiology – Current Status and Future Directions – Progress in Breast CADx. IEEE ISBI, Arlington, Virginia, April, 2007.
- I142. Giger ML: Computer-Aided Diagnosis for Breast Cancer and Other Diseases, University of Chicago Computation Institute, Chicago, Illinois, May, 2007.
- I143. Giger ML, Li H: Image-Based Breast Cancer Risk Assessment. ASCO American Society of Clinical Oncology, Chicago, Illinois, June, 2007.
- I144. Giger ML: Breast CAD: Lessons learned and vision for the future. Medical Imaging and Informatics (MIMI 2007), Beijing, China, August 2007
- I145. Giger ML: CAD: State-of-the-art and future. Medical Imaging and Informatics (MIMI 2007), Beijing, China, August 2007
- I146. Giger ML: CAD for detection of breast cancer. AAPM Southern California Chapter midwinter Workshop, Universal City, California, January 2008
- I147. Giger ML, Karssemeijer N, van Ginneken B, Summers R : Computer-Aided Diagnosis (SC882), Refresher Course, SPIE Medical Imaging, San Diego, CA, February 2008.
- 148. Giger ML: State of the AAPM and the future. PennOhio AAPM Chapter, Youngstown, Ohio, June 2008.
- I149. Giger ML: Updates on AAPM and Research in Breast CAD. RAMPS, New York, NY, September, 2008.
- I150. Giger ML: State licensure and other AAPM initiatives. AAPM North Central Chapter, Milwaukee, WI, October 2008.
- I151. Giger ML: Breast cancer, imaging, and computer-aided diagnosis. IAAP, Oak Brook, IL, October 2008.
- I152. Giger ML: Multi-modality breast CAD. Chicago International Breast Course, Chicago, IL, November, 2008.
- I153. Giger ML: Quantitative image analysis of breast MRI. (keynote) International Forum on Medical Imaging in Asia (IFMIA), Taipei, Taiwan, January 2009.
- I154. Giger ML: Multimodality breast CADx. (tutorial) International Forum on Medical Imaging in Asia (IFMIA), Taipei, Taiwan, January 2009.

- I155. Giger ML: Status and future of medical physics and the AAPM. University of Wisconsin – Madison, February, 2009.
- I156. Giger ML: Multimodality breast CADx. University of Wisconsin – Madison, February, 2009.
- I157. Giger ML: Status of the AAPM. Florida AAPM Chapter, Orlando, Florida, March 2009.
- I158. Giger ML: Quantitative Image Analysis in Radiology. Southeast AAPM Chapter, Chapel Hill, North Carolina, March 2009.
- I159. Giger ML: Future of the AAPM Organization and the Medical Physics Profession. Southeast AAPM Chapter, Chapel Hill, North Carolina, March 2009.
- I160. Giger ML: Informal Discussion on Future of the AAPM Organization and the Medical Physics Profession, Duke University Medical Physics Program, Durham, North Carolina, March 2009.
- I161. Giger ML: Multimodality image analysis in breast cancer. Argonne Workshop on Imaging Structural Hieracrchy in Biological Systems. Argone National Laboratory, Argonne, IL, April, 2009.
- I162. Giger ML: New Horizons in Cancer Diagnosis: Artificial Intelligence & Computer Vision. Chicago Women’s Alliance, Chicago, Illinois, May 2009.
- I163. Giger ML: Current Approaches to Computerized Image Assessment for the Detection and Diagnosis of Disease. In Frontiers of Biomedical Imaging Science, Vanderbilt University, Nashville, TN, June 2009.
- I164. Giger ML: Risk Assessment from Parenchyma Characteristics. At 4th International Workshop on Breast Densitometry and Breast Cancer Risk Assessment. San Francisco, California, June 2009.
- I165. Giger ML: Computer-aided detection and R2 Technologies. ARCH Venture Partners Innovation Workshop Series, Chicago, IL, June 2009.
- I166. Giger ML: Advances of CAD in Breast Imaging. XIV Congress of Medical Physics in Brazil. Sao Paulo, Brazil, October 2009.
- I167. Giger ML: Computer-assisted decision systems in radiology – The hope, the hype, and the hard truth: A short history of CAD, RSNA Chicago, IL, November, 2009.
- I168. Giger ML: Computer-aided detection and quantitative image analysis. 6th Annual Memphis BioImaging Symposium, Memphis, TN, November, 2009.
- I169. Giger ML: Update on AAPM. AAPM Midwest Chapter, Chicago, IL November, 2009.

- I170. Giger ML: Computer-aided diagnosis and quantitative image analysis of breast cancer. PathBio 2: IMAGE, University of Wisconsin-Madison, November, 2009.
- I171. Giger ML: Computerized analysis of multimodality images for diagnosis, risk assessment, prognosis, and response to therapy. AOCR 2010, 13th Asian Oceanian Congress of Radiology, Taipei, Taiwan, March, 2010.
- I172. Giger ML: Computerized analysis of multimodality breast images. AOCR 2010, 13th Asian Oceanian Congress of Radiology, Taipei, Taiwan, March, 2010.
- I173. Giger ML: Computer-aided diagnosis and quantitative image analysis of breast cancer. Medical Physics Seminar, MD Anderson, Houston, TX, April, 2010
- I174. Giger ML: Computer-aided diagnosis and quantitative image analysis of breast cancer. Hollingsworth Lectureship in Engineering, University of Texas, Austin, TX, April, 2010
- I175. Giger ML: Research and Medical Physics, Medical Physics Student Research Retreat, MD Anderson, Houston, TX, July, 2010.
- I176. Giger ML: Developer Perspectives. Joint FDA-MIPS Workshop on Methods for the Evaluation of Imaging and Computer-Assist Devices. Rockville, MD, July 2010.
- I177. Giger ML: Computer-assisted decision systems in radiology – The hope, the hype, and the hard truth: A short history of CAD, RSNA Chicago, IL, November, 2010.
- I178. Giger ML: Computer-aided diagnosis (CADx) and beyond (prognosis and response to therapy), RSNA Chicago, IL, November, 2010.
- I179. Giger ML: CAD for breast, lung, and colon cancer: Is this quantitative image analysis for clinical practice? (organizer and introduction). Controversy session. RSNA Chicago, IL, November, 2010.
- I180. Giger ML: Building a fulfilling career: Balancing personal and professional life. AAPM/COMP annual meeting. Vancouver, Canada, August 2011.
- I181. Giger ML: Imaging biomarkers (MRI). American Roentgen Ray Society (ARRS) Chicago International Breast and Women's Imaging Symposium, Chicago, IL, October 2011.
- I182. Giger ML: Computer-assisted decision systems in radiology – The hope, the hype, and the hard truth: A short history of CAD, RSNA Chicago, IL, November, 2011.
- I183. Giger ML: Computer-aided diagnosis (CADx) and beyond (prognosis and response to therapy), RSNA Chicago, IL, November, 2011.

- I184. Giger ML: Quantitative Image-based Biomarkers in the Assessment, of Breast Cancer Risk, Diagnosis, Prognosis, and Response to Therapy, Carl J. Vyborny Memorial Lecture, Chicago, IL, January, 2012.
- I185. Giger ML: Computerized Analysis of Multimodality Breast Images for Diagnosis, Risk Assessment, Prognosis, and Response to Therapy, JRC 2012, Yokohama, Japan, April, 2012.
- I186. Giger ML: Computerized Analysis of Multimodality Breast Images for Diagnosis, Risk Assessment, Prognosis, and Response to Therapy, Gifu University, Gifu, Japan, April 2012.
- I187. Giger ML: Medical Physics in USA, Kumamoto University, Kumamoto, Japan, April, 2012.
- I188. Giger ML: Medical Physics in USA, Kyusyu University, Fukuoka, Japan, April, 2012.
- I189. Giger ML: Computerized Analysis of Multimodality Breast Images for Diagnosis, Risk Assessment, Prognosis, and Response to Therapy, Kyusyu University, Fukuoka, Japan, April, 2012.
- I190. Giger ML: Image-based biomarkers of breast cancer risk. The 2012 Breast Cancer Research Program Spring Annual Retreat, MD Anderson, Houston, Texas, April, 2012.
- I191. Giger ML: Breast cancer, imaging, CAD, and quantitative image analysis. IAAP, Oak Brook, IL, May, 2012.
- I192. Giger ML: Quantitative image analysis and data mining in image-based breast cancer biomarkers. University of Chicago Breast Cancer SPORE and the Institute for Translational medicine, Chicago, IL, June, 2012.
- I193. Giger ML: Quantitative imaging of cancer for patient-specific diagnosis, phenotyping, and population-based discovery. Translation Research to Inform Modern Medicine: 2nd Joint Institutional Symposium (UChicago & NorthShore), Chicago, IL September, 2012.
- I194. Giger ML: Image-based phenotyping. Imaging Investigator Workshop, ACRIN, Arlington, VA, October, 2012.
- I195. Giger ML: Quantitative image-based biomarkers in the assessment of breast cancer risk, diagnosis, prognosis, and response to therapy. Ivy Plus STEM Symposium, Philadelphia, PA, October, 2012.
- I196. Giger ML: Computer-aided diagnosis (CADx) and beyond (prognosis and response to therapy), RSNA Chicago, IL, November, 2012.

- I197. Giger ML: Quantitative image analysis and computer-aided diagnosis in breast cancer risk assessment, diagnosis, prognosis, and response to therapy. Keynote at Digital Imaging Computer Techniques and Applications (DICTA), Perth, Western Australia, December, 2012.
- I198. Giger ML: Quantitative image analysis of multi-modality breast images: image-based phenotyping in breast cancer research. NorthShore University Healthsystem. Evanston, IL, January, 2013.
- I199. Giger ML: Quantitative imaging biomarkers/phenotypes in the assessment of breast cancer risk, diagnosis, prognosis, and response to therapy. Distinguished Lecturer Grand Rounds, Emory University, Department of Radiology and Imaging Sciences, Atlanta, GA, February, 2013.
- I200. Giger ML: Progress in Image-based Biomarkers/Phenotypes for Breast Cancer Research Research in Progress Seminar (RIPS), Emory University, Department of Radiology and Imaging Sciences, Atlanta, GA, February, 2013.
- I201. Giger ML: Imaging Genomics: Imaging Phenotypes in Breast Cancer Risk Assessment, Diagnosis, Prognosis, and Response to Therapy. IEEE Engineering in Medicine and Biology Society, San Francisco, CA, April, 2013.
- I202. Giger ML: Imaging Genomics - Decoding Cancer with Imaging & Big Data - What can we do in the future?, NCI Workshop on Correlating Imaging Phenotypes with Genomic Signatures, NIH Campus-Natcher, Bethesda, MD, June 2013.
- I203. Giger ML: Decoding Breast Cancer with Imaging & Big Data: Imaging Phenotypes in Breast Cancer Risk Assessment, Diagnosis, Prognosis, and Response to Therapy, Stanford University, ISIS Seminar, Department of Radiology, Stanford, CA, July, 2013.
- I204. Giger ML: Medical Imaging and Computers in the Diagnosis of Breast Cancer, Named Professor Lecture Series (as new A. N. Pritzker Professor), University of Chicago, Chicago, IL, November, 2013.
- I205. Giger ML: Decoding Breast Cancer with Imaging & Big Data: Imaging Phenotypes in Breast Cancer Risk Assessment, Diagnosis, Prognosis, and Response to Therapy. Penn Center for Innovation in Personalized Breast Cancer Screening (PCIPS) seminar series, University of Pennsylvania, Philadelphia, PA, April 2014.
- I206. Giger ML: Decoding Breast Cancer with Imaging & Big Data: Imaging Phenotypes in Breast Cancer Risk Assessment, Diagnosis, Prognosis, and Response to Therapy. CDM Research Colloquium, De Paul University, Chicago, IL May 2014.
- I207. Giger ML: AAPM, QIBA, and Technology Assessment. Quantitative Imaging Biomarkers Alliance (QIBA) Annual Meeting, Arlington, VA, May 2014

- I208. Giger ML: Molecular imaging and quantitative image analysis. NTU/ANL/IME Joint Meeting on Molecular Imaging, Taipei, Taiwan, May 2014.
- I209. Giger ML: Update on women in science and quantitative image analysis/CAD. Women Leaders Program to Promote Well-being in Asia, Nagoya University, Nagoya, Japan. July 2014
- I210. Giger ML: Image-based phenotyping and genomics in the Quantitative Imaging Symposium: Genomics and Image-omics for Medical Physicists, AAPM, Austin, TX, July 2014.
- I211. Giger ML: Why is metrology important in QI? In the Quantitative Imaging Metrology: What Should be Assessed and How?, AAPM, Austin, TX, July 2014.
- I212. Giger ML: Medical imaging and computers in the diagnosis of breast cancer. SPIE Optics & Photonics, PISCES session, San Diego, CA, August 2014.
- I213. Giger ML: Decoding breast cancer with imaging and big data: Imaging phenotypes in breast cancer risk assessment, diagnosis, prognosis, and response to therapy. 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Theme Keynote Speaker, Chicago, IL, August 2014.
- I214. Giger ML: Decoding breast cancer with imaging and big data: Imaging phenotypes in breast cancer risk assessment, diagnosis, prognosis, and response to therapy. 2014 Radiomics Meeting, Houston, TX, September 2014.
- I215. Giger ML: Deciphering breast cancer with imaging, genomics, & big data. Distinguished Lecture as part of the Biomedical Engineering Leadership Seminar Series. University of Florida, Gainesville, FL, November 2014.

Other Presentations (up to 1998)

- L1. **Lissak M, Doi K, Ishida M, Loo LN:** Determination of MTFs of digital radiographic imaging systems. 24th meeting of American Association of Physicists in Medicine, New Orleans, Louisiana, July 1982.
- L2. **Lissak M, Doi K, Ishida M, Loo LN:** Investigation of noise Wiener spectra of digital radiographic imaging systems. 68th Assembly and Annual Meeting of RSNA, Chicago, Illinois, July 1982 .
- L3. **Lissak M, Doi K, Loo LN, Ishida M:** Modulation transfer functions and noise Wiener spectra of digital radiographic imaging systems. American Association of Physicists in Medicine Midwest Chapter meeting, Chicago, Illinois, 1983.

- L4. **Giger ML**, Doi K, Loo LN, Ishida M: Signal-to-noise ratios of digital radiographic imaging systems and their relationship to detectability. 25th meeting of American Association of Physicists in Medicine, New York, New York, 1983.
- L5. **Giger ML**, Doi K, Loo LN: Effect of pixel size on the detection of simulated low-contrast radiographic patterns in digital radiography. 69th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, 1983.
- L6. **Giger ML**, Doi K, Fujita H, Ohara K: Analysis of noise Wiener spectra in digital I.I./TV imaging systems. 26th meeting of American Association of Physicists in Medicine and Inter-American Meeting of Medical Physics, Chicago, Illinois, 1984.
- L7. **Giger ML**, Doi K: Effect of pixel size and scatter on threshold detection in digital radiography. 70th Assembly and Annual Meeting of Radiological Society of North America, Washington, D.C., 1984.
- L8. **Giger ML**, Doi K, Metz CE: Investigation of basic imaging properties in digital radiography. 27th meeting of American Association of Physicists in Medicine (Young Investigators' Symposium, First Place Award), Seattle, Washington, 1985.
- L9. **Giger ML**, Doi K: SNR and threshold contrast of digital radiographic images. SPSE - 25th Fall Symposia Imaging, Arlington, Virginia, 1985.
- L10. **Giger ML**, Ohara K, Doi K: Effect of quantization on digitized noise and detection of low-contrast objects. SPIE Medicine XIV/PACS IV, Newport Beach, California, 1986.
- L11. **Giger ML**, Doi K, MacMahon H: Computer-aided detection of lung nodules. 28th meeting of American Association of Physicists in Medicine, Lexington, Kentucky, 1986.
- L12. **Giger ML**, Doi K, MacMahon H: Computer-aided detection of lung nodules in digital chest radiographs. 72nd Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, 1986.
- L13. **Giger ML**, Doi K, MacMahon H: Computerized detection of lung nodules in digital chest radiographs. SPIE Medical Imaging (Conf. 767), Newport Beach, California, 1987.
- L14. **Giger ML**, Doi K, MacMahon H: Automated scheme for the detection of lung nodules. 29th Meeting of American Association of Physicists in Medicine, Detroit, Michigan, 1987.
- L15. **Giger ML**, Doi K, MacMahon H: Computer-aided diagnosis of pulmonary nodules. Chest Imaging Conference-87, Univ. of Wisconsin, Madison, Wisconsin, Aug. 3 1-Sept. 2, 1987.
- L16. **Giger ML**, Doi K, MacMahon H: Filtering and feature-extraction techniques used in the computer-aided detection of pulmonary nodules. 73rd Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, Nov. 29 - Dec. 4, 1987.

- L17. **Giger ML**, Doi K, MacMahon H, Schmidt RA, Vyborny CJ, Yin F-F: Image-processing techniques used in the computer-aided detection of radiographic lesions in anatomic background. SPIE Medical Imaging II (Conf. 914), Newport Beach, California, 1988.
- L18. **Giger ML**, Doi K, MacMahon H, Metz CE, Yin F-F: Computer-aided detection of pulmonary nodules in digital chest images. 17th International Congress of Radiology, Paris, France, July 1-8, 1989.
- L19. **Giger ML**, Yin F-F, Doi K, Schmidt RA, Vyborny CJ: Feature-extraction techniques used in the computerized detection and classification of lesions in digital mammograms. 31st Meeting of American Association of Physicists in Medicine, Memphis, Tennessee, 1989.
- L20. **Giger ML**, Doi K, Yin F-F, MacMahon H, Metz CE, Vyborny CJ, Schmidt R: Feature-extraction techniques used in the computerized detection of lung nodules and mammographic lesions in digital medical images. Optical Engineering Midwest, Northbrook, Illinois, November 1989.
- L21. **Giger ML**, Doi K, Yin F-F, Schmidt R, Vyborny C: Computerized classification of mass lesions in digital mammograms: Lesion spiculation in analysis of malignancy. 75th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, November 1989.
- L22. **Giger ML**, Yin F-F, Doi K, Metz CE, Schmidt RA, Vyborny CJ: Computerized detection and classification of mass lesions in digital mammograms. SPIE Medical Imaging IV (Conf. 1233), Newport Beach, California, 1990.
- L23. **Giger ML**, Yoshimura H, Bae T, Doi K, MacMahon H, Montner S, Metz CE: Computer vision schemes for lung cancer detection. 38th annual meeting of Association of University Radiologists (AUR), Minneapolis, Minnesota, April 1990.
- L24. **Giger ML**, Yin F-F, Doi K, Vyborny C, Schmidt R, Metz CE: Image features of mammographic masses used in the development of computerized schemes. 10th Conference of Computer Applications in Radiology and 4th Conference on Computer Assisted Radiology, Anaheim CA, June 1990.
- L25. **Giger ML**, Doi K, Yin F-F, Yoshimura H, MacMahon H, Vyborny CJ, Schmidt RA, Metz CE, Montner S: Computer-vision schemes for lung and breast cancer detection. 2nd International Conference on Visual Search. University of Durham, United Kingdom, September 1990.
- L26. **Giger ML**, Roeske J, Dixon LB, Doi K, Gowrishankar TR, Caligiuri P, Katsuragawa S, Collins PA: Computerized analysis of osteoporosis on bone radiographs. 76th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, November 1990.
- L27. **Giger ML**, Nishikawa RM, Doi K, Yin FF, Vyborny CJ, Schmidt RA, Metz CE, Wu Y, MacMahon H, Yoshimura H: Development of a "smart" workstation for use in mammography. SPIE Medical Imaging V (Conf. 1445), San Jose, California, 1991.

- L28. **Giger ML**, Caligiuri P, Favus M, Jia H, Doi K, Dixon LB: Computerized radiographic analysis of bone structure for evaluation of osteoporosis. 34th annual meeting of American Association of Physicists in Medicine, Calgary, Canada, August 1992.
- L29. **Giger ML**, Huo Z, Yin FF, Kovar D, Doi K, Vyborny CJ, Schmidt RA: Computer-aided diagnosis in mammography: Automated classification of masses. 78th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, December 1992.
- L30. **Giger ML**, Nishikawa RM, Schmidt RA, Vyborny CJ, Lu P, et al.: Preliminary evaluation of an "intelligent" mammography workstation. SPIE Medical Imaging VII, CA, poster presentation, 1993.
- L31. **Giger ML**, Caligiuri PC, Bick U, Favus M, Lu P, Doi K: Computer-aided diagnosis in bone radiography: analysis of bone structure for risk of fracture. 79th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, November 1993.
- L32. **Giger ML**, Lu P, Doi K, Vyborny CJ, Schmidt RA: Computed bilateral comparison of mammograms with feature-space images for detection of masses and parenchymal distortions. 79th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, November 1993.
- L33. **Giger ML**, Lu P, Huo Z, Bick U, Doi K, Vyborny CJ, Schmidt RA, Zhang W, Metz CE, Wolverton D, Nishikawa RM, Zouras W: CAD in digital mammography: Computerized detection and classification of masses. Second International Workshop on Digital Mammography, York, UK, July 1994.
- L34. Huo Z, **Giger ML**, Bick U, Lu P, Vyborny CJ, Wolverton DE, Schmidt RA, Doi K: Computerized characterization of masses in digital mammograms. 36th annual meeting of American Association of Physicists in Medicine, Anaheim, California, July 1994.
- L35. Zhang W, **Giger ML**, Doi K, Lu P: Computerized detection of subtle masses on mammograms of dense breasts. 80th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, November 1994.
- L36. **Giger ML**, Lu P, Bick U, Zhang W, Vyborny CJ, Doi K, et al.: Triage system for computer-aided detection of masses on digital mammograms of fatty and dense breasts. 80th Assembly and Annual Meeting of Radiological Society of North America, Chicago, Illinois, November 1994.
- L37. **Giger ML**, Moran C, Wolverton DE, Al-Hallaq H: Computer-aided diagnosis in ultrasound: Classification of breast lesions. 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1998.

Stopped listing in 1999.

Scientific Exhibits/Posters (up to 2002)

- S1. **Giger ML**, Doi K, MacMahon H, Metz CE, Yin F-F: Computer-aided human detection of pulmonary nodules in digital chest images. 74th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November, 1988. (Invited for submission by RadioGraphics).
- S2. MacMahon H, Doi K, Sanada S, Montner SM, **Giger ML**, Metz CE, Yin F-F, Yonekawa H, Takeuchi H: Effect of data compression on diagnostic accuracy in digital chest radiography: Receiver-operating characteristic study. 75th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 1989. (Awarded Certificate of Merit Citation).
- S3. MacMahon H, Sanada S, Doi K, **Giger ML**, Xu X-W, Yin F-F, Montner SM: Direct comparison of conventional and computed radiography with a dual-image recording technique. 75th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November, 1989 and American Roentgen Ray Society, May 1990.
- S4. Doi K, **Giger ML**, MacMahon H, Hoffmann KR, Katsuragawa S, Yoshimura H, Nishikawa RM, Yin F-F, Metz CE, Asada N, Alperin N, Vyborny CJ, Schmidt RA, Montner SM, Ramsey R, Chua KG, Sanada S, Wu Y, Xu XW, Carlin M: Clinical radiology and computer-aided diagnosis: Potential partners in medical diagnosis? 76th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 1990.
- S5. MacMahon H, Doi K, Sanada S, Carlin M, **Giger ML**, Montner SM: Single new processing algorithm to replace the standard dual-image format in computed chest radiography. 76th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 1990.
- S6. Montner SM, Doi K, MacMahon H, Yoshimura H, Xu X-W, **Giger ML**: High-quality film digitization as a practical alternative to computed and conventional radiography. 76th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, December 1991.
- S7. Doi K, **Giger ML**, MacMahon H, Nishikawa RM, Hoffmann KR, Katsuragawa S: An intelligent workstation for computer-aided diagnosis. 77th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, December 1991.
- S8. MacMahon H, Doi K, Xu XW, Montner SM, **Giger ML**, Carlin M: Clinical experience with an advanced laser digitizer for cost-effective digital radiography. 77th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, December 1991.
- S9. Hoffmann KR, Doi K, MacMahon H, **Giger ML**, Nishikawa RM: Development of a digital duplication system for portable chest radiographs. 78th Scientific

- Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, December 1992. (Awarded Certificate of Merit Citation).
- S10. Doi K, **Giger ML**, MacMahon H, Nishikawa RM, Schmidt RA, Hoffmann KR: Computer-aided diagnosis: Potential usefulness of real-time computer outputs to interpretations of radiologists. 78th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, December 1992.
- S11. Nishikawa RM, Jiang Y, **Giger ML**, Doi K, Vyborny CJ, Schmidt RA: Improved method for automated detection of clustered microcalcifications from digital mammograms. 40th Annual Meeting of the Association of University Radiologists, Chicago, IL, April 1992.
- S12. **Giger ML**, Nishikawa RM, Schmidt RA, Vyborny CJ, Lo P, et al: Preliminary evaluation of an "intelligent" mammography workstation. Medical Imaging VII Conference, Newport Beach, CA, February, 1993.
- S13. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, MacMahon H, Schmidt RA, et al.: Computer-aided diagnosis in mammography, chest radiography, angiography, and bone radiography. 79th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 1993. (awarded Magna Cum Laude)
- S14. MacMahon H, Kano A, Xu XW, Doi K, **Giger ML**, Hassell D: Use of difference images for improved detection of interval changes on digital chest radiographs. 79th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 1993. (awarded Certificate of Merit)
- S15. Nishikawa RM, Vyborny CJ, **Giger ML**, Doi K: Analysis of false-negative and false-positive clusters identified by a mammographic computer-aided detection scheme. Medical Imaging VIII Conference, Newport Beach, CA, February, 1994.
- S16. Yaffe MJ, Nishikawa RM, **Giger ML**, Plewes DB, Doi K, Rowlands JA, et al: Development of digital mammography for clinical evaluation. Presented at the Capitol Hill Briefing on New Frontiers in Breast Cancer Imaging and Early Detection, Washington, D.C., October, 1994.
- S17. MacMahon H, **Giger ML**, Sullivan B, Ansari R, Dixon LB, Dachman AH, et al.: Effect of glossy compression and spatial resolution on the quality of general radiographic images. 80th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1994. (awarded Certificate of Merit)
- S18. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, MacMahon H, Schmidt RA: Radiology workstation with advanced techniques for computer-aided diagnosis. 80th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1994.

- S19. Schmidt RA, Schreiberman KL, Sussmann MA, Nishikawa RM, Wolverton DE, **Giger ML**, et al.: Lesions missed at mammography. 80th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1994.
- S20. **Giger ML**, Nishikawa RM, Schmidt RA, Vyborny CJ, Wolverton DE, Doi K: Computer-aided diagnosis in digital mammography. 80th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1994. InfoRad Exhibit.
- S21. Bick U, **Giger ML**, Schmidt RA, Nishikawa RM, Doi K: Peripheral density correction of digital mammograms. 81st Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1995.
- S22. Schmidt RA, Haldemann RC, Nishikawa RM, Giger ML, Doi K, Wolverton DE, et al: Prospective testing of a prototype clinical mammography workstation for computer-aided diagnosis. 81st Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1995.
- S23. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, Schmidt RA, MacMahon H, et al.: Prototype clinical "intelligent" workstation for computer-aided diagnosis. 81st Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1995.
- S24. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, Schmidt RA, MacMahon H, et al: Prototype clinical "intelligent" workstation for computer-aided diagnosis. 55th Annual Meeting of the Japan Radiological Society, Yokohama, Japan, April, 1996.
- S25. **Giger ML**, Nishikawa RM, Schmidt RA, Wolverton DE, Doi K: Computer-aided diagnosis in digital mammography. 82nd Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1996. InfoRad Exhibit.
- S26. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, et al: Computer-aided radiographic interpretation on intelligent workstations. 82nd Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1996. (awarded Cum Laude)
- S27. **Giger ML**, Nishikawa RM, Vyborny CJ, et al.: Development of Methods for Computer-Assisted Interpretations of Digital Mammograms for Early Breast Cancer Detection. Era of Hope Meeting, Department of Defense Breast Cancer Research Program, Washington, D.C., November, 1997.
- S28. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, Schmidt RA, MacMahon H: Computer-aided diagnostic schemes in mammography, chest radiography, angiography, and computed tomography. 83rd Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1997. (received Excellence in Design Award)
- S29. Nishikawa RM, Giger ML, Yiang J, Yoshida H, et al: Computer-aided diagnosis for the detection and classification of breast lesions. 83rd Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1997.

- S30. Armato SG, **Giger ML**, Moran CJ, Doi K, MacMahon H: Computerized detection of pulmonary nodules in CT scans. 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1998. (received Excellence in Design Award)
- S31. Doi K, **Giger ML**, Nishikawa RM, Hoffmann KR, MacMahon, Schmidt RA, et al.: Computer-aided diagnosis: From lab to practice. 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1998.
- S32. Jiang Y, Nishikawa RM, **Giger ML**, Huo Z, Schmidt RA, Wolverton DE, et al.: Computer-aided diagnosis of breast lesions: An interactive demonstration. 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois, December 1998. (awarded cum laude)
- S33. **Giger ML**, Nishikawa RM, Schmidt RA, Wolverton DE, Doi K: Computer-aided diagnosis in breast imaging. 84th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November 1998. InfoRad Exhibit.
- S34. **Giger ML**, Nishikawa R, Huo Z, Jiang Y, Venta L, Doi K: Computer-aided diagnosis (CAD) in breast imaging. 85th Assembly and Annual Meeting of RSNA, Chicago, Illinois, November, 1999.
- S35. **Giger ML**: Computerized analysis of magnetic resonance images and ultrasound images of breast lesions. Era of Hope, Department of Defense Breast Cancer Research Program Meeting, Atlanta, Georgia, June, 2000.
- S36. **Giger ML**, Nishikawa RM, Huo Z, Horsch K, Vyborny CJ, Hendrick RE. scientific education exhibit at the 87th Assembly and Annual Meeting of RSNA, Chicago, Illinois November, 2001.
- S37. Jiang Y, Nishikawa RM, **Giger ML**, Papaioannou J, Lan L, Vyborny CJ et al: On-line demonstration of computer-aided diagnosis (CAD) of malignant and benign breast lesions. Presented at the 88th Scientific Assembly of the Radiological Society of North America, Chicago IL, December 1st - December 6th, 2002.

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Patents

- PA1. Doi K, Chan H-P, **Giger ML**: Method and system for enhancement and detection of abnormal anatomic regions in a digital image. U. S. Pat. No. 4907156, March 6, 1990.
- PA2. **Giger ML**, Doi K, Metz CE, Yin F-F: Automated method and system for the detection and classification of abnormal lesions and parenchymal distortions in digital medical images. U. S. Pat. No. 5133020, July 21, 1992.

- PA3. Doi K, Matsumoto T, **Giger ML**, Kano A: Method and system for analysis of false positives produced by an automated scheme for the detection of lung nodules in digital chest radiographs. U.S. Pat. No. 5289374, February 22, 1994.
- PA4. Nishikawa RM, **Giger ML**, Doi K: Method for computer-aided detection of clustered microcalcifications from digital mammograms. U.S. Pat. No. 5,537,485, July 16, 1996.
- PA5. **Giger ML**, Armato SG, MacMahon H: Automated method and system for the detection of gross abnormalities and asymmetries in chest images. U. S. Pat. No. 5,638,458, June 10, 1997.
- PA6. **Giger ML**, Chen C-T, Armato S, Doi K: Automated method and system for the alignment and correlation of images from two different modalities. U. S. Pat. 5,974,165, October 26, 1999.
- PA7. **Giger ML**, Doi K, Lu P, Huo Z: Automated method and system for improved computerized detection and classification of mass in mammograms. U. S. Pat. No. 5,832,103, November 3, 1998.
- PA8. Bick U, **Giger ML**: Automated method and system for the segmentation of medical images. U. S. Pat. No. 5,452,367, September 19, 1995.
- PA9. **Giger ML**, Doi K: Method and system for the computerized radiographic analysis of bone. U. S. Pat. No. 5,931,780, August, 3 1999.
- PA10. **Giger ML**, Bae K, Doi K: Automated method and system for the detection of lesions in medical computed tomographic scans. U. S. Pat. No. 5,881,124, March 9, 1999.
- PA11. Bick U, **Giger ML**: Method and system for the detection of lesions in medical images. U.S. Pat. 6,185,320, February 6, 2001.
- PA12. **Giger ML**, Zhang M, Lu P: Method and system for the detection of masses and parenchymal distortions in mammograms. U.S. Pat. No. 5,657,362, August 12, 1997.
- PA13. Kupinski MA, **Giger ML**: Method and system for the segmentation and classification of lesions. U.S. Pat. : 6,138,045, Oct. 24, 2000
- PA14. Huo Z, **Giger ML**: Method and system for the computerized assessment of breast cancer risk. U.S. Pat. 6,282,305, August 28, 2001.
- PA15. **Giger ML**, Al-Hallaq H, Wolverton DE, Bick U: Method and system for the automated analysis of lesions in ultrasound images. U.S. Pat. 5,984,870, Nov. 16, 1999.

- PA16. Gilhuijs K, **Giger ML**, Bick U: Method, computer program product, and system for the automated analysis of lesions in magnetic resonance, mammogram and ultrasound images. U.S. Pat. 6,317,617, November 13, 2001.
- PA17. Armato SA, **Giger ML**, Bick U: Methods and system for the segmentation of lung regions in lateral chest radiographs. U.S. Pat. 6,335,980, January 1, 2002.
- PA18. Armato SA, **Giger ML**, MacMahon H: Method and system of the automated delineation of lung regions and costophrenic angles in chest radiographs. U.S. Pat. 6,282,307, Aug.28, 2001.
- PA19. Armato SA, **Giger ML**, MacMahon H: Detecting costophrenic angles in chest radiographs. U.S. Pat. 6,483,934, November 19, 2002.
- PA20. Jiang C, Chinander M, **Giger ML**: Method and system for the computerized analysis of bone mass. U.S. Pat. 6,442,287, August 27, 2002.
- PA21. Gilhuijs K, **Giger ML**, Bick U: Method and system for the assessment of tumor extent. U.S. Pat. 6,112,112, August 29, 2000.
- PA22. Armato SA, **Giger ML**, MacMahon H: Method and system of the automated delineation of lung regions and costophrenic angles in chest radiographs. U.S. Pat. 6,724,925, April 20, 2004.
- PA23. Armato SG, MacMahon H, **Giger ML**: Automated method and system for the segmentation of lung regions in computed tomography scans. U.S. Pat. Pending, 09/760,854.
- PA24. Armato SG, **Giger ML**, MacMahon H: Method, system and computer readable medium for the two-dimensional and three-dimensional detection of lesions in computed tomography scans. U.S. Pat. 6,898,303, May 24, 2005.
- PA25. **Giger ML**, Vyborny CJ, Huo Z, Lan L: Method, system and computer readable medium for an intelligent search workstation for computer assisted interpretation of medical images. U.S. Pat. 6,901,156, May 31, 2005.
- PA26. **Giger ML**, Vyborny CJ, Huo Z, Lan L: Method, system and computer readable medium for an intelligent search workstation for computer assisted interpretation of medical images. U.S. Pat. 7,184,582, February 27, 2007.
- PA27. Drukker K, **Giger ML**, Horsch K, Vyborny CJ: Automated method and system for the detection of abnormalities in sonographic images. U.S. Pat. 6,855,114, February 15, 2005.
- PA28. **Giger ML**, Chinander MR, Vokes T, Favus M: Automated method, system and computer program product for the diagnosis of bone disease on radiographic images. U.S. Pat. Pending 20030133601, July 17, 2003.

- PA29. Drukker K, **Giger ML**: Computerized method and system for detecting and/or diagnosing lesions on ultrasound images using analysis of lesion shadows. U.S. Pat. Pending 20030161513, August 28, 2003.
- PA30. **Giger ML**, Huo Z, Vyborny CJ: Automated method and system for risk-modulated computer-aided diagnosis. U.S. Pat. 7,123,762, October 17, 2006.
- PA31. **Giger ML**, Wen HH, Lan L: Method, media, and system for feature-based correlation for lesions from multiple images. U.S. Pat. 7,298,881, November 20, 2007.
- PA32. **Giger ML**, Bonta D: Automated method and system for advanced non-parametric classification of medical images and lesions. U.S. Pat. 7,298,883, November 20, 2007.
- PA33. **Giger ML**, Bonta I, Nishikawa RM, Heimann R, Vyborny CJ: Automated method and system for computer-aided prognosis. U.S. Pat. 7,418,123, August 26, 2008.
- PA34. Pan X, Zou Y, Yu L, Kao C-M, King M, **Giger ML**, Xia D, Halpern H, Pelizzari C, Sidky E, Cho S: Imaging system performing substantially exact reconstruction and using non-traditional trajectories. U.S. Patent 7,444,011, October 28, 2008.
- PA35. Horsch K, **Giger ML**, Metz CE, Vyborny CJ, Lan L: Method, system, and medium for prevalence-based computerized analysis of medical images and information. U.S. Patent 7,769,215. August 3, 2010.
- PA36. **Giger ML**, Li H: Method and system for fractal-based analysis of medical image texture. U.S. Patent 7,848,558, December 7, 2010.
- PA37. Chen W, **Giger ML**, Newstead G: Method, system, and software product for automated identification of temporal pattern with high initial enhancement in dynamic magnetic resonance breast imaging. U.S. Patent 7,983,732 B2, July 19, 2011.
- PA38. **Giger ML**, Tomek R, Bancroft Brown J, Jamieson AR, Lan L, Chinander MR, Drukker K, Li H, Bhooshan N, Newstead G: Method, system, software and medium for advanced intelligent image analysis and display of medical images and information. U.S. Pat. 2012/0189176 A1, July 26, 2012.
- PA39. **Giger ML**, Lan L, Hui L: Method, system, software, and medium for advanced intelligent image-based arrays for analysis and display of biomedical information. U.S. Pat. Pending (provisional submitted November 2011, followed by full submission in 2012).