CURRICULUM VITAE

CARL J. VYBORNY, M.D., Ph.D.

PERSONAL DATA:

Date of Birth:	November 23, 1950
Place of Birth:	Oak Park, Illinois
Citizenship:	United States
Marital Status:	Married; one child

EDUCATION:

B.S. Physics and Mathematics with Honors, The University of Illinois, Chicago, IL, June 1972.

M.S. Physics, The University of Illinois, Urbana, IL, June 1973.

Ph.D. Medical Physics, The University of Chicago, Chicago, IL, December 1976.

M.D. Medicine with Honors, The University of Chicago, Pritzker School of Medicine, Chicago, IL, June 1980.

ACADEMIC APPOINTMENTS:

Sept 1972 - June 1973 Fellow and Graduate Teaching Assistant, The University of Illinois, Department of Physics, Urbana, IL.

Sept 1973 - Sept 1976 Fellow and United States Public Health Service Cancer Trainee, The University of Chicago, Department of Radiology, Chicago, IL.

Sept 1976 - June 1980 Senior Research Technician, The University of Chicago, Department of Radiology and the Center for Radiologic Image Research, Chicago, IL.

June 1980 - June 1984 Resident in Diagnostic Radiology, The University of Chicago Department of Radiology, Chicago, IL.

July 1984 - June 1985 Assistant Professor of Radiology, The University of Chicago, Chicago, IL.

July 1985 - Dec 2000 Clinical Associate Professor of Radiology, The University of Chicago, Chicago, IL.

Jan 2001 - Present Clinical Professor of Radiology, The University of Chicago, Chicago, IL.

HOSPITAL APPOINTMENTS:

July 1984   -   Present   Attending Radiologist, The University of Chicago Hospitals

July 1985   -   Present   Attending Radiologist, LaGrange Memorial Hospital, LaGrange,
                                 IL   (Senior Attending, 1990- present)

Jan 2000   -   Present   Attending Radiologist, Glen Oaks Hospital, Glendale Heights, IL

FELLOWSHIPS, HONORS, AND AWARDS:

Edmund James Scholar, The University of Illinois, Chicago, IL (1968-1972).

Honorable Mention, The National Science Foundation Scholarship Competition (1972).

Bachelor of Science with Honors and Highest Distinction in Physics and High Distinction in Mathematics, The University of Illinois, Chicago, IL (1972).

University Fellowship in Physics, The University of Illinois, Urbana, IL (1972-73).

University Fellowship in Medical Physics, The University of Chicago, Chicago, IL (1973–74).

United States Public Health Service Cancer Traineeship (1974-76).

The Eastman Kodak Scientific Award (1976).

Itek Award, Society of Photographic Scientists and Engineers (1979).

Nels Stranjord Memorial Award, Department of Radiology, The University of Chicago (1980).

Doctor of Medicine with Honors, The University of Chicago Pritzker School of Medicine (1980).

Andrew W. Mellon Foundation Fellowship Award, Division of Biological Sciences and the Pritzker School of Medicine, The University of Chicago (1984).

Fellow, The Society of Breast Imaging (1992).

Fellow, The American College of Radiology (1994).

Tutor of the Year (as member of Suburban Radiologists, S.C.) Family Practice Residency Program, La Grange Memorial Hospital (1995).

Fellow, The American Association of Physicists in Medicine (1999)

SOCIETY MEMBERSHIPS:

American College of Radiology

Radiological Society of North America

American Medical Association

American Association of Physicists in Medicine

Society of Breast Imaging

Society for Computer Applications in Radiology

Czechoslovak Society of Arts and Sciences

Illinois and Chicago Radiological Societies

BOARD CERTIFICATIONS:

National Board of Medical Examiners, (1981).

American Board of Radiology (Diagnostic Radiology), (1984).

National Institute of Occupational Safety and Health (Certified B Reader), (1993).

American Board of Radiology (Diagnostic Radiological Physics), (eligible).

NATIONAL / INTERNATIONAL ORGANIZATIONAL ACTIVITIES:

Mammography Accreditation Program Committee: Commission on Standards and Practice Accreditation, American College of Radiology (1990-1997).

Radiologist Clinical Image Review, Mammography Accreditation Program, American College of Radiology (1987-Present; Senior Reviewer 1993-Present).

Radiation Physics Panel for Radiographics (1989-1992).

Clinical Reviewer Training Committee, Center for Disease Control/American College of Radiology Cooperative Agreement (1990-Present).

Mammography Physics Subcommittee, American College of Radiology (1990-Present).

Phantom and Clinical Imaging Assessment Committee, Center for Disease Control/American College of Radiology Cooperative Agreement (1991-Present).

Special Reviewer, Diagnostic Radiology Study Section, The National Institutes of Health (1993).

Film Performance Focus Group, Center for Disease Control/American College of Radiology Cooperative Agreement (1994-1996).

Consultant in Chest Radiography, The International Commission on Radiation Units and Measurements (1994-1996).

Scientific Committee, 3rd International Workshop on Digital Mammography (1994-1996).

Board of the American Academy for Radiology Research, Representative of the Society of Breast Imaging (1994-Present).

Commission on Regulatory Issues, Academy of Radiology Research (1995-2001).

Commission on Non-NIH Federal Agencies, Academy of Radiology Research (1995-2001).

Reviewer, Small Business Innovations Research Section, The National Institutes of Health and the Small Business Administration (1995).

Human Resources Committee: Commission on Medical Physics, American College of Radiology (1995-Present).

Committee for the Whole Breast Digital Mammography Standard, American College of Radiology (1996-Present).

Task Force on Continuing Competence, American College of Radiology (1996-Present).

Chairman, Report Committee on Chest Radiography, The International Commission on Radiation Units and Measurements (1996-Present).

Consultant, Report Committee on Mammography, The International Commission on Radiation Units and Measurements (1997-Present).

Reviewer for Scientific Peer Review, Department of Defense Breast Cancer Clinical Translation

Research Program (1998).

Co-Chair, DICOM Digital Mammogaphy Working Group, American College of Radiology/NEMA (1998-Present).

External Grant Reviewer, National Cancer Institute of Canada (1999).

Examiner, Oral Board Examination (Breast), The American Board of Radiology (2000-Present).

Nominating Committee, Academy of Radiology Research (2001)

LOCAL ORGANIZATIONAL ACTIVITIES:

President, Resident Physician Section, Chicago Radiological Society, (1983-84).

Chairman, Committee on Mammography, Illinois Radiological Society (1990-Present; Member, 1985-Present).

By-Laws Committee, Chicago Radiological Society (1985-Present).

Committee on Socio-Economics for Residents, Illinois Radiological Society (1985-Present).

Early Detection Committee, American Cancer Society Illinois Division (1986-1989).

Local Refresher Course Committee, Radiological Society of North America (1988).

Committee on Radiologic Practice, Illinois Radiological Society (1993-1997).

Radiation Protection Advisory Council, State of Illinois (1994-Present).

Director of Development and Member of the Board of Directors, The Paul C. Hodges Alumni Association, Department of Radiology, The University of Chicago (1995-1999).

Committee on Standards, Illinois Radiological Society (1997-Present).

Alternate Councilor to the ACR, Illinois Radiological Society (1998-2001.

Trustee, Chicago Radiological Society (1998-Present).

Vice President and Chairman of the Program Committee, Chicago Radiological Society (1999- 2001).

Treasurer, Paul C. Hodges Alumni Society, Department of Radiology, The University of Chicago (2000-2001).

President, Chicago Radiological Society (2001-2002).

Councilor to the ACR, Illinois Radiological Society (2002-2004).

President, Paul C. Hodges Alumni Society, Department of Radiology, The University of Chicago (2001-2003).

EDITORIAL CONSULTANT:

Radiology (Editor's Recognition Award with Distinction; 1989-1992, 1994, 1996, 1997)

American Journal of Roentgenology

Radiographics

Medical Physics

Investigative Radiology

Optical Engineering

American Family Physician

IEEE Transactions on Medical Imaging

DISSERTATION COMMITTEES

Fang Fang Yin, Medical Physics Graduate Program, Department of Radiology, University of Chicago: Doctor of Philosophy (1992)

Zhimin Huo, Medical Physics Graduate Program, Department of Radiology, University of Chicago: Doctor of Philosophy (1998)

Matthew Kupinski, Medical Physics Graduate Program, Department of Radiology, University of Chicago: Doctor of Philosophy (2000).

HOSPITAL ACTIVITIES:

Chairman, Resident Selection Committee, Department of Radiology, The University of Chicago, (1984-1985).

Cancer Committee, La Grange Memorial Hospital (1987-1991).

Continuing Education Committee, La Grange Memorial Hospital (1987-1989).

Outpatient Committee, La Grange Memorial Hospital (1988-1990).

Curriculum Committee, Medical Physics Graduate Program, The University of Chicago (1989-Present).

Radiation Safety Officer, La Grange Memorial Hospital (1990-Present).

Board of the Physicians Practice Group, La Grange Memorial Hospital (1991-1996).

The Institutional Review Board, La Grange Memorial Hospital (1994-Present).

Medical Staff Nominating Committee, La Grange Memorial Hospital (1995-1997).

Clinical Performance Improvement Council, La Grange Memorial Hospital (1994-1997).

Contract Committee, La Grange Health Services (1996-2000).

Appointment and Promotions Committee, Department of Radiology, The University of Chicago (1998-Present).

Radiation Safety Officer, Glen Oaks Hospital (2000-Present).

Chairman, Continuing Medical Education Committee, Glen Oaks Hospital (2001-Present).

Associate Member, Cancer Research Center, The University of Chicago (2001-Present)

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GRANT PARTICIPATION:

1. Participant in NCI research grant (USPHS CA 24806) "Radiographic Imaging for Cancer Diagnosis", 1/1/80 - 12/31/87; Kunio Doi, Ph.D., Principal Investigator.

2. Resource person in NIH New Investigator Research Award (CA 36238) "Development of Dynamic Digital Chest Imaging Techniques", 4/1/86 - 3/31/89; Heang-Ping Chan, Ph.D., Principal Investigator.

3. Resource person in Whitaker Foundation Grant, "Development of Digital Imaging Techniques in Digital Chest Radiography", 4/1/86 - 3/31/89; Heang-Ping Chan, Ph.D., Principal Investigator.

4. Participant in NIH grant "Research Training in Medical Physics", 4/1/90 - 3/3195; Kunio Doi, Ph.D., Principal Investigator.

5. Participant in NIH grant RO1 CA48985, "Digital Image Analysis for Cancer Detection", 12/1/89- 11/30/94; Maryellen Giger, Ph.D., Principal Investigator.

6. Resource person in American Cancer Society Faculty Research Award FRA-390, "Development of a Computer-Vision System to Aid in Mammographic Interpretation", 7/1/91-6/30/96; Maryellen Giger, Ph.D., Principal Investigator.

7. Resource person in Whitaker Foundation Bioengineering Grant, "Development of an Intelligent Workstation for Mammographic Breast Cancer Detection", 12/1/91-11/30/94; Robert Nishikawa, Ph.D., Principal Investigator.

8. Resource person in United States Army Medical Research and Development Command Grant "Development of methods for computer-assisted interpretations of digital mammograms for early breast cancer detection", 3/93-2/96; Maryellen Giger, Ph.D., Principal Investigator.

9. Resource person in NIH grant (RO1 CA60187-01A1) "Computer-Aided Diagnosis in Digital Mammography", 1/1/94-12/31/97; Robert Nishikawa, Ph.D., Principal Investigator.

10. Participant in NIH grant (R01 CA62625-01A2) "Computer-Aided Diagnosis in Chest Radiography", 5/10/95- 2/28/00; Kunio Doi, Ph.D., Principal Investigator.

11. Resource Person in United States Army Medical Research and Development Command Grant "Advanced Methods for the Computer-Aided Diagnosis of Lesions in Digital Mammograms", 6/196-5/31/00: Maryellen Giger, Ph.D., Principal Investigator.

12. Principal Investigator at La Grange Memorial Hospital in United States Army Medical Research and Development Command Grant "Demonstration Project on Mammographic Computer-Aided Diagnosis for Breast Cancer Detection", 1/1/97-12/31/01; Kunio Doi, Ph.D., Principal Investigator.

13. Principal Investigator at La Grange Memorial Hospital in American College of Radiology Imaging Network "Digital Mammography Imaging Screening Trial (DMIST)", 10-01 - Present.

PEER REVIEWED ARTICLES:

1.   Kuchnir FT, **Vyborny CJ**, and Skaggs LS: A new method for determining the neutron response function of a "neutron insensitive" dosimeter. Radiology 116: 217-219, 1975.

2.   Haus AG, Rossmann K, **Vyborny CJ**, Hoffer P, Doi K: Sensitometry in diagnostic radiology, radiation therapy, and nuclear medicine. Journal of Applied Photographic Engineering. 3: 114-124, 1975.

3.   **Vyborny CJ**, Doi K, Metz CE, Haus AG: A simple source of fluorescent x-rays for the study of radiographic imaging systems. Medical Physics 4: 482-485, 1977.

4.   **Vyborny CJ**, Metz CE, Doi K, Rossmann K: Screen/film system speed: Its dependence on x-ray energy. Radiology 125: 811-816, 1977.

5.   **Vyborny CJ**, Metz CE, Doi K, Haus AG: Calculated characteristic x-ray reabsorption in radiographic screens. Journal of Applied Photographic Engineering. 4: 172-177, 1978.

6.   **Vyborny CJ**: The H and D curves of screen-film systems: Factors affecting their dependence on x-ray energy. Medical Physics 6: 39-44, 1979.

7.   Chen C, Doi K, **Vyborny CJ**, Chan HP, Holje GE: Monte Carlo simulation studies of detectors used in the measurement of diagnostic x-ray spectra. Medical Physics 7: 650-655,   1979.

8.   **Vyborny CJ**, Metz CE, Doi K: Relative energy to photographic density conversion efficiencies in typical screen-film systems. Radiology 136: 465-471, 1979.

9.   Doi K, **Vyborny CJ**, Holje GE: Development of a rigid fluorescent x-ray source for monoenergetic radiation studies in radiographic imaging. Radiology 142: 233-236, 1982.

10. **Vyborny CJ**, Loo LN, Doi K: The energy dependent behavior of noise Wiener spectra in their low frequency limits: Comparisons with simple theory. Radiology 144: 619-622, 1982.

11. Doi K, Frank PH, Chan HP, **Vyborny CJ**, Makino S, Iida N, Carlin M: Physical and clinical evaluation of new high-strip density radiographic grids. Radiology 147: 575-582, 1983.

12. Metz CE, **Vyborny CJ**: Wiener spectral effects of spatial correlation between the sites of characteristic x-ray emission and reabsorption in radiographic screen-film systems. Physics in Medicine and Biology   28: 547-564, 1983.

13. **Vyborny CJ**. MacMahon H: Foil filters for equalized chest radiography. Radiology 151: 524, 1983.

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14.   Sabau M, Radkowski MA, **Vyborny CJ**: Scatter dose in the neonatal intensive care unit. The American Journal of Roentgenology 144: 811-814, 1985.

15.   MacMahon H, **Vyborny CJ**, Sephadari S, Kirschner P, Ryan J: Gallium accumulation in the stomach: A frequent incidental finding. Clinical Nuclear Medicine 10 (10): 719, 1985.

16.   MacMahon H, **Vyborny CJ**, Metz CE, Doi K, Sabeti V, Solomon SL: Digital radiography of subtle pulmonary abnormalities: An ROC study of the effect of pixel size on observer performance. Radiology 158: 21-26, 1986.

17.   **Vyborny CJ**, Merrill TN, Geurkink RE: Alternate orthogonal projections for difficult mammographic needle localizations. Radiology 161: 839-841, 1986.

18.   Stewart JG, MacMahon H, **Vyborny CJ**, Pollak ER: Dystrophic calcification in a squamous carcinoma of the lung: Demonstration by CT. The American Journal of Roentgenology 148: 29-30, 1987.

19.   Chan HP, **Vyborny CJ**, MacMahon H, Metz CE, Doi K, Sickles EA: Digital mammography: ROC studies of the effects of unsharp-mask filtering on the detection of subtle microcalcifications. Investigative Radiology 22: 581-589, 1987.

20.   Chan HP, Doi K, Galhotra S, **Vyborny CJ**, MacMahon H, Jokich PM: Image feature analysis and computer-aided diagnosis in digital radiography: 1. Automated detection of microcalcifications in mammography. Medical Physics 14: 538-548, 1987.

21.   Hatfield M, **Vyborny CJ**, MacMahon H, Chessare JW: Congenital absence of the azygous vein: A cause for "aortic nipple" enlargement. The American Journal of Roentgenology 149: 273-274, 1987.

22.   **Vyborny CJ**, Merrill TN, Reda J, Geurkink RE, Smith SJ: Subacute subcapsular hematoma of the spleen complicating pancreatitis: Successful percutaneous drainage. Radiology 169: 161-162, 1988.

23.   Chan HP, Doi K, **Vyborny CJ**, Lam KL, Schmidt RA: Computer-aided detection of microcalcifications in mammograms: Methodology and preliminary clinical study. Investigative Radiology 23: 664-671, 1988.

24.   Heater K, MacMahon H, **Vyborny CJ**: Occult lung carcinoma presenting with dysphagia: The value of computed tomography. Clinical Imaging 13: 122-126, 1989.

25.   **Vyborny CJ**, Schmidt RA: Mammography as a radiographic examination: An overview. Radiographics 9: 723-764, 1989.

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26.   Chan HP, Doi K, **Vyborny CJ**, Schmidt RA, Metz CE, Lam KL, Ogura T, Wu Y,
       MacMahon H: Improvements in radiologist's detection of clustered microcalcifications on
       mammograms: The potential of computer-aided diagnosis. Investigative Radiology 25:
       1102-1110, 1990.

27.   Yin FF, Giger ML, Doi K, **Vyborny CJ**, Metz CE, Schmidt RA: Computerized detection
       of masses in digital mammograms. Analysis of bilateral-subtraction images. Medical
       Physics 18: 414-420, 1991.

28.   Nishikawa RM, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA: Computer-aided detection
       of microcalcifications in digital mammograms. Image Technology and Information
       Display 23: 1092-1096, 1991.

29.   Doi K, Giger ML, MacMahon H, Hoffmann KR, Nishikawa RM, Schmidt RA, Chua KG,
       Katsuragawa S, Nakamori N, Sanada S, Yoshimuri H, Metz CE, Montner SM, Matsumoto
       T, Chen X **Vyborny CJ**.: Computer-aided diagnosis: Development of automated
       approaches for quantitative analysis of radiographic images. Seminars in Ultrasound, CT
       and MR, 13(2): 140-152, 1992.

30.   MacMahon H, **Vyborny CJ**: Technical advances in chest radiology. In Chest Radiology,
       Syllabus of the 1992 Categorical Course, Radiological Society of North America: 30-38,
       1992.

31.   Yin FF, Giger ML, **Vyborny CJ**, Doi K, Schmidt RA: Comparison of bilateral-subtraction
       and single-image processing techniques in the computerized detection of mammographic
       masses. Investigative Radiology 28: 473-481, 1993.

32.   Giger ML, **Vyborny CJ**: Product development: Computers and the diagnosis of breast
       abnormalities. Diagnostic Imaging 98-102, June 1993.

33.   **Vyborny CJ**: Quality control in mammography: The radiologist's role. Applied
       Radiology. 23(5): 11-16, 1994.

34.   Wu Y, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA, Metz CE: Artificial neural networks
       in mammography: Application to decision making in the diagnosis of breast cancer.
       Radiology 187: 81-87, 1993. (reprinted in the Yearbook of Medical Informatics, Rotterdam
       pp. 371-377, 1994).

35.   Nishikawa RM, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA: Computer-aided detection
       of clustered microcalcifications: An improved method for grouping detected signals.
       Medical Physics 20: 1661-1666, 1993.

36.   Giger ML, Doi K, MacMahon H, Nishikawa R, Hoffmann K, **Vyborny CJ** Schmidt RA,
       Jia H, Abe K, Chen X: An "intelligent" workstation for computer-aided diagnosis.
       Radiographics 13: 647-656, 1993.

37.   **Vyborny CJ**: Image quality: The radiologist's perspective. In AAPM Monograph
Specification, Acceptance Testing and Quality Control of Diagnostic X-ray Imaging
Equipment Proceedings of the 1991 AAPM Summer School, American Institute of
Physics, Woodbury NY; pp.145-172, 1994.

38.   Yin FF, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA: Computerized detection of masses
in digital mammograms: Automated alignment of breast images and its effect on the
bilateral subtraction technique: Medical Physics 21: 445-452, 1994.

39.   **Vyborny CJ**, Schmidt RA: Technical image quality and the visibility of mammographic
detail. In Technical Aspects of Breast Imaging, Syllabus of the 1992 Categorical Course
Radiological Society of North America: 85-93, 1992; Syllabus of the 1993 Categorical
Course: 90-98, 1993, and Syllabus of the 1994 Categorical Course: 104-112, 1994.

40.   Yin FF, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA: Computerized detection of masses
in digital mammograms: Investigation of feature-analysis techniques. J. Digital Imaging
7:     18-26,   1994.

41.   Giger ML, **Vyborny CJ**, Schmidt RA: Computerized characterization of mammographic
masses: Analysis of spiculation. Cancer Letters 77: 201-211, 1994.

42.   Nishikawa RM, Giger ML, Doi K, **Vyborny CJ**: Effect of case selection on the
performance of computer-aided detection schemes. Medical Physics 21: 265-269, 1994.

43.   **Vyborny CJ**, Giger ML: Computer vision and artificial intelligence in mammography.
American Journal of Roentgenology 162: 699-709, 1994.

44.   MacMahon H, **Vyborny CJ**: Technical advances in chest radiography. American Journal
of Roentgenology 163: 1049-1059, 1994.

45.   Smith SJ, **Vyborny CJ**, Vogelzang RL: Percutaneous removal of two deeply lodged
foreign bodies. Cardiovascular and Interventional Radiology 17: 113-115, 1994.

46.   Nishikawa RM, Doi K, Giger ML, Schmidt RA, **Vyborny CJ**, Monnier L, Papaioannou J,
Lu P: Computerized detection of clustered microcalcifications: Evaluation of performance
using mammograms from multiple centers. Radiographics 15: 343-352, 1994.

47.   **Vyborny CJ**: Can computers help radiologists read mammograms? Radiology 191: 315-
317, 1994.

48.   Nishikawa RM, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA: Computer-aided detection
of clustered microcalcifications on digital mammograms. Medical and Biological
Engineering   and Computing   33: 171-178, 1995.

49.   Huo Z, Giger ML, **Vyborny CJ**, Bick U, Wolverton DE, Schmidt RA Lu P: Analysis of
       spiculation in the computerized classification of mammographic masses. <u>Medical Physics</u>
        22:    1569-1579, 1995

50.   Jiang J, Nishikawa RM, Wolverton DE, Metz CE, Giger ML, Schmidt RA, **Vyborny CJ**,
       Doi K: Automated feature analysis and classification of malignant and benign clustered
       microcalcifications. <u>Radiology</u> 198: 671-678, 1995.

51.   Schmidt RA, Wolverton D, **Vyborny CJ**: Computer-aided diagnosis in mammography. In
       <u>Breast Imaging</u> Syllabus of the 1995 Categorical Course, The Radiological Society of
        North America: 199-208, 1995.

52.   Smith SJ, **Vyborny CJ**, Hines JL: Recanalization of a chronic SVC occlusion related to
       fibrosing mediastinitis with self-expanding stents. <u>Cardiovascular and Interventional
       Radiology </u>: 20: 161-162, 1997.

53.   Armato SG, Giger ML, MacMahon H, Chen CT, **Vyborny CJ**: Automated registration
       of ventilation and perfusion images with digital chest radiographs. <u>Academic Radiology</u>
       4: 182-193, 1997

54.   **Vyborny CJ**: Image quality and the clinical examination. <u>Radiographics</u> 17: 479-498,
       1997.

55.   Huo Z, Giger ML, **Vyborny CJ**, Wolverton DE, Doi K, Schmidt RA: Computerized
       classification of benign and malignant lesions on digital mammograms. <u>Academic
       Radiology </u>5: 155-168, 1998.

56.   **Vyborny CJ**: Chest radiography -- assessment of image quality. <u>ICRU News </u>2: 2-8,
       1998.

57.   Ashizawa K, Ishida T, MacMahon H, **Vyborny CJ**, Katsuragawa S, Doi K: Artificial
        neural networks in chest radiographs: Application to differential diagnosis of interstitial
       disease. <u>Academic Radiology</u> 6: 2-9, 1999.

59.   Ashizawa K, MacMahon H, Ishida T, Nakamura K, **Vyborny CJ,** Katsuragura S, Doi K:
        Effect of artificial neural network on radiologist performance for differential diagnosis of
       lung disease on chest radiographs. <u>American Journal of Roentgenology</u> 172: 1311-1314,
       1999

60.   **Vyborny CJ:** Computer-aided diagnosis in x-ray mammography. Submitted as part of
       Report of the Working Group on Digital Mammography: Computer-Aided Diagnosis and
       3D Image Display as a Supplement to <u>Academic Radiology.</u> (In press).

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61.   **Vyborny CJ**: Should chest radiography and chest radiography for the early detection of lung cancer be the same examination? ICRU News 2: 8-11, 1999.

62.   Burhenne LJW, D'Orsi CJ, Feig SA, Kopans DB, Sickles EA, Tabar L, **Vyborny CJ**, Castellino RA: The potential contribution of computer-aided detection to the sensitivity of screening mammography. Radiology 215: 554-562, 2000.

63.   **Vyborny CJ**, Doi T, O'Shaughnessy KF, Harlan HM, Schneider AC, Stein AA: Importance of spiculation in the computer detection of breast cancer. Radiology 215: 703-707, 2000.

64.   Armato III SG, Giger ML, Chen CT, **Vyborny CJ**, Ryan J, MacMahon H: Automated registration of frontal and lateral radionuclide lung scans with digital chest radiographs. Academic Radiology 7: 530-539, 2000.

65.   **Vyborny CJ**, Giger ML, Nishikawa, RM: Computer-aided detection and diagnosis. Radiologic Clinics of North America 38: 725-740, 2000.

66.   Huo Z, Giger ML, **Vyborny CJ**, Wolverton DE, Metz CE: Computerized classification of benign and malignant masses on digitzed mammograms. Academic Radiology 7: 1077-1084, 2000.

67.   Horsch K, Giger ML, Venta LA, **Vyborny CJ**: Automatic segmentation of breast lesions on ultrasound. Medical Physics 28: 1652-1659, 2001.

68.   Huo Z, Giger ML, **Vyborny** CJ: Computerized analysis of multiple-mammographic views: Potential usefulness of special view mammograms in computer-aided diagnosis. IEEE Transactions on Medical Imaging 20: 1285-1292, 2001.

69.   Horsch K, Giger ML, Venta LA, **Vyborny CJ**: Computerized diagnosis of breast lesions on ultrasound. Medical Physics 29: 157-164, 2002.

70.   Huo Z, Giger ML, **Vyborny CJ**, Metz CE: Effectiveness of CAD in the diagnosis of breast cancer: An observer study on an independent database of mammograms Radiology 224:560-568, 2002.

71.   Giger ML, **Vyborny CJ:** CAD helps improve interpretation of breast images. Diagnostic Imaging 24, 154-159, 2002.

72.   Smith SJ, **Vyborny CJ**, Moran G: Successful percutaneous treatment of right ovarian vein syndrome: A case report. Clinical Imaging (in review).

73.   Drukker K, Giger ML, Horsch K, Kupinski MA, **Vyborny CJ**, Mendelson EB: Computerized lesion detection on breast ultrasound. Medical Physics 29:1438-1446, 2002.

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74.   **Vyborny CJ:** Image and observer issues in mammography. <u>Seminars in Breast Disease</u> 5:190-198, 2002.

75.   Horsch K, Giger ML, **Vyborny CJ**, Huo Z, Venta LA: Performance of CAD in the interpretation of lesions on breast sonography. <u>Academic Radiology</u> (accepted).

76.   **Vyborny CJ**, Haus AG: Signal detection, image quality and radiation dose in mammography. <u>Seminars in Breast Disease</u> (in press).

77.   Drukker K, Giger ML, **Vyborny CJ**, Mendelson EB: Computerized detection and classification of cancer on breast ultrasound, <u>Academic Radiology</u> (submitted).

78.   Drukker K, Giger ML, Mendelson EB, **Vyborny CJ**: Computerized methods for detection of lesions and lesion-shadows on breast sonograms, <u>IEEE Trans. Med. Imaging</u> (submitted)

PUBLISHED PROCEEDINGS:

1.   Kuchnir FT, **Vyborny CJ**, and Skaggs LS: Experimental determination of the neutron sensitivity function of a dosimeter. In: <u>Proceedings of the 2nd Symposium on Neutron Dosimetry in Biology and Medicine.</u> Neurhenberg-Munich, EURATOM, pp 879-891, 1974.

2.   Kuchnir FT, **Vyborny CJ**, and Skaggs LS: A precise method for measuring the neutron response function of a "neutron insensitive" dosimeter. In: <u>Proceedings of the International Symposium on Advances in Biomedical Dosimetry.</u> Vienna (IAE-SM-193/51), pp. 107-115, 1975.

3.   Haus AG, Marsh LS, **Vyborny CJ**: Sensitometry in medical imaging. <u>Proceedings SPIE</u> 127: 76-86, 1977.

4.   **Vyborny CJ**, Metz CE, Doi K: Large-area contrast prediction in screen-film systems. <u>Proceedings SPIE</u> 233: 30-36, 1980.

5.   MacMahon H, **Vyborny CJ**, Powell G, Doi K, Metz CE: The effects of pixel size on the detection rate of early pulmonary sarcoidosis in digital chest radiographic systems. <u>Proceedings SPIE</u> 486: 14-20, 1984.

6.   **Vyborny CJ**, MacMahon H, Doi K, Sabau M: Variable-thickness chest filtration: The effect of high atomic number filter materials. <u>Proceedings SPIE</u> 486: 8-13, 1984.

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64.   **Vyborny CJ**, Doi T, O'Shaughnessy K, Romsdahl AC, Schmeider BS, Wang SP: Importance of spiculation in the computer detection of breast cancer. Radiology 213(P) 151, 1999.

65.   Huo Z, Giger ML, **Vyborny CJ**, Jiang Y, Nishikawa RM, Engelmann, RM: Effectiveness of computer aid for radiologists classification of mass lesions. Radiology 213(P) 200, 1999.

66.   Maloney MM, Zuo Z, Giger ML, Venta LA, **Vyborny CJ**: Computerized classification of mass lesions on images from a medium-field digital mammography unit. Radiology 213(P) 230, 1999.

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70.   Horsch K, Giger M, Venta L, Kupinski M, **Vyborny C**: Computerized segmentation of lesions in breast sonography. Med Phys 27(6), 1398, 2000.

71.   Nishikawa RM, Giger ML, Jiang Y, Huo Z, **Vyborny CJ**, Jokich PM: Implementation of computer-aided diagnosis (CAD) into the clinical mammography work flow. Radiology 217 (P): 626, 2000.

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72.   Giger ML, Horsch KJ, **Vyborny, CJ**, Venta LA, Huo Z, Lan L: Performance of CAD in the interpretation of breast lesions on ultrasound images: Results of an observer study using independent cases. <u>Radiology</u> 221 (P), 521, 2001.

73.   Horsch KJ, Giger ML, Huo Z, Bonta I, **Vyborny CJ**, Hendrick, RE: Computerized classification of lesions on mammograms and ultrasound images of the breast. <u>Radiology</u> 221(P) 425, 2001.

74.   Bonta I, Giger ML, Heiman R, McBride R, Lan L, Huo Z, **Vyborny CJ,** Doerr S: Computerized mammographic analysis for prognosis. <u>Medical Physics</u> 29, 1308, 2002.

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76.   Giger ML, Huo Z, **Vyborny CJ**, Lan L, Li H: Mammographic risk-modulated computer-aided diagnosis. <u>Radiology</u> 225(P) 602, 2002.

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

78.   Jiang Y, Schmidt RA, D'Orsi CJ, **Vyborny CJ**, Nishikawa RJ, Pasquerault S: Classification of malignant and benign clustered microcalcifications based on computer-extracted lesion features and radiologist-provided BIRADS description. <u>Radiology</u> 225(P) 497, 2002.

PRESENTATIONS NOT ABSTRACTED:

1.   **Vyborny CJ**, Metz CE, Doi K, and Haus AG: X-ray energy absorption in radiographic screens. Presented at the 30th Annual Conference of Photographic Scientists and Engineers. Los Angeles, California, May 1-5, 1977.

2.   **Vyborny CJ**, Metz CE, and Doi K: The effect of screen phosphor on radiographic contrast. Presented at the 63rd Scientific Assembly of the Radiological Society of North America, Chicago, IL, November 27-December 2, 1977.

3.   **Vyborny CJ**, Loo LN, Doi K: Noise wiener spectra of screen-film systems: Their dependence on monoenergetic x-ray energy. Presented at the 66th Scientific Assembly of the Radiological Society of North America, Dallas. Texas, November 16-21, 1980.

4.   Doi K, Frank PH, Chan HP, **Vyborny CJ**, Makino S, Iida N: Evaluation of a new generation of radiographic grids. Presented at the 67th Scientific Assembly of the Radiological Society of North America. Chicago, IL, November 15-20, 1981.

5. **Vyborny CJ**, Metz CE, Doi K, Loo LN: The noise properties of characteristic x-rays reabsorbed in radiographic screens. Presented at the Sixty Seventh Scientific Assembly of the Radiological Society of North America. Chicago, IL., November 15-20, 1981.

6. Sabau M, Radkowski MA, **Vyborny CJ**: Radiation exposure due to scatter in an intensive care neonatal nursery. Presented at the 24th Annual Meeting of the American Association of Physicists in Medicine. New Orleans, LA., August 1-5, 1982.

7. MacMahon H, **Vyborny CJ**, Powell GF, Doi K, Metz CE: Studies of spatial resolution requirements in digital chest radiography. Presented at the 26th Annual Meeting of the American Association of Physicists in Medicine. Chicago, IL., July 15-19, 1984.

8. Giger ML, Doi K, MacMahon H, Schmidt RA, **Vyborny CJ**, Yin FF: Image-processing techniques used in computer-aided detection of radiographic lesions in anatomic background. Presented at SPIE Medical Imaging II (Conf 914). Newport Beach, California, February, 1988.

9. 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. Presented
   at the 31st Meeting of the American Association of Physicists in Medicine. Memphis, Tennessee, July, 1989.

10. Giger ML, Doi K, Yin F-F, MacMahon H, Metz CE, **Vyborny CJ**: 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.

11. 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. Seventy fifth Assembly and Annual Meeting of RSNA. Chicago, Illinois, November, 1989.

12. 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, February, 1990.

13. Chan HP, **Vyborny CJ**: Computer-aided detection of mammographic microcalcifications and its effect on radiologists' performance. Researchers Cancer Conference, American Cancer Society. Ann Arbor, MI, June 22-23, 1990.

14. Giger ML, Yin FF, Doi K, **Vyborny CJ**, Schmidt RA, Metz CE: Image features of mammographic masses used in the development of computerized schemes. Tenth Conference of Computer Applications in Radiology and Fourth Conference on Computer Assisted Radiology. Anaheim, CA, June, 1990.

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15.   Giger ML, Doi K, Yin FF, Bae T, MacMahon H, **Vyborny CJ**, Schmidt RA, Metz CE, Montner S: Computer vision schemes for lung and breast cancer detection. Presented at the Second International Conference on Visual Search. Durham, U.K., September 3-6, 1990.

16.   Nishikawa RM, Giger ML, Doi K, **Vyborny CJ**, Schmidt RA: Automated detection of cluster microcalcifications in digital mammograms. The World Congress Medical Physics and Biomedical Engineering Meeting. Kyoto, Japan, July, 1991.

17.   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.

INVITED PRESENTATIONS NOT ABSTRACTED:

1.   **Vyborny CJ**: The physics of screen-film mammography. The American Cancer Society Seminar for Mammographers. Oak Brook, IL., March 21, 1987.

2.   **Vyborny CJ**: Mammography as a radiographic examination. 74th Scientific Assembly and Annual Meeting of the Radiological Society of North America. Chicago, IL, November 28 to December 3, 1988.

3.   **Vyborny CJ**: Screen-film mammography. The American Cancer Society Seminar for Mammographers. Oak Brook, IL., April 19, 1990.

4.   **Vyborny CJ**: Physical principles of mammography. Breast Imaging for the 90's, Loyola University of Chicago Medical School Symposium. Oak Brook, IL., August 18-19, 1990 and August 12-13, 1991.

5.   **Vyborny CJ**: Image quality: The radiologist's perspective. The 1991 AAPM Summer School. Santa Cruz, California, July, 1991.

6.   Schmidt RA, Gephardt PG, **Vyborny CJ**, Jokich PM et al. Failure to diagnose breast cancer. The 25th National Breast Cancer Conference. Boston, MA, April 18-22, 1992.

7.   **Vyborny CJ**: Quality assurance issues in mammography. Breast Imaging for the 90's, Loyola University of Chicago Medical School Symposium. Oak Brook, IL, July 19, 1992.

8.   **Vyborny CJ**: Artificial intelligence as applied to breast imaging. First Meeting and Postgraduate Course, The Society of Breast Imaging. Amelia Island, FL, April 14-18,1993.

9.   Smathers RA, **Vyborny CJ**: Workshop on applications of digital breast imaging. First Meeting and Postgraduate Course; The Society of Breast Imaging. Amelia Island, FL,

April 14-18, 1993.

10. **Vyborny CJ**: Difficulties in mammographic image analysis. 15th Annual International Conference of the IEEE Society of Engineering in Medicine and Biology. San Diego, CA, October 28-30, 1993.

11. **Vyborny CJ**: Technical image quality and the visibility of mammographic detail. 79th Scientific Assembly and Annual Meeting of the Radiological Society of North America. Chicago, IL, November 28 to December 3, 1993.

12. **Vyborny CJ**: Detail visibility in screen-film mammography. Health Science Division, Eastman Kodak Corporation. Rochester, NY, November 7, 1994.

13. **Vyborny CJ**: The American College of Radiology Mammography Accreditation Program. Workshop on Mammography. Charles University, Prague, Czech Republic, April 6-7, 1995.

14. **Vyborny CJ**: The clinical importance of mammographic image quality. Workshop on Mammography. Charles University, Prague, Czech Republic, April 6-7, 1995.

15. **Vyborny CJ**: The private practice of radiology in the United States. Workshop on Mammography. Charles University, Prague, Czech Republic, April 6-7, 1995.

16. **Vyborny CJ**: Computer aided diagnosis in mammography. Second Postgraduate Course of the Society of Breast Imaging. Orlando, FL, May 10-13, 1995.

17. **Vyborny CJ**: Chest radiography -- assessment of image quality. The 1995 Meeting of the International Commission on Radiation Units and Measurements. Remscheid-Lennep, Germany, September 11-15, 1995.

18. **Vyborny CJ**: Image quality: A clinicians perspective. The Technical Aspects of Mammographic Imaging. North Central Chapter of the American Association of Physicists in Medicine. Mayo Clinic, Rochester, MN, November 3, 1995.

19. **Vyborny CJ**: Image quality and the clinical examination. 81st Scientific Assembly and Annual Meeting of the Radiological Society of North America. Chicago, IL, November 28 to December 3, 1995.

20. **Vyborny CJ**: Computer aided diagnosis in mammography. Argonne National Laboratory, Lemont IL April 6, 1996.

21. **Vyborny CJ**: Artificial intelligence applied to mammography. Sixth Breast Imaging in the 90's. Northwestern University, Chicago IL, July 13-14, 1996.

22. **Vyborny CJ**: Computer aided diagnosis. Third Postgraduate Course of the Society of Breast Imaging. San Diego CA, April 16-19, 1997.

23.   **Vyborny CJ**: Image quality and basic mammographic physics. Third Postgraduate
      Course of the Society of Breast Imaging. San Diego CA, April 16-19, 1997.

24.   **Vyborny CJ**: Computer aided diagnosis in mammography. Essentials of Mammography.
      Breast Cancer Foundation. Dayton OH, September 11, 1997.

25.   **Vyborny CJ**: Mammographic image quality. Essentials of Mammography. Breast Cancer
      Foundation. Dayton OH, September 11, 1997.

26.   **Vyborny CJ**: The BIRADS reporting system for mammography. Incorporating
      Structured Reporting and Computer-Aided Diagnosis into DICOM. American College of
      Radiology. Reston VA, September 24, 1998.

27.   **Vyborny CJ:** Image quality in chest radiography. The 63rd Annual Meeting. Illinois
      State Society of Radiologic Technologists, Bloomington IL, October 1-3, 1998.

28.   **Vyborny CJ:** Computer-aided diagnosis. University of Chicago Breast Imaging
      Weekend, Chicago IL, March 27-29, 1999; April 14-16, 2000.

29.   **Vyborny CJ:** Computer assisted diagnosis in mammography. Midwest Clinical
      Conference, Chicago IL, February 24-27, 2000.

30.   **Vyborny CJ**, Haus AG, High M, Mourad W: Understanding the clinical mammogram and
      how to apply MQSA and ACR requirements to improve image quality. Meeeting of the
      American Association of Physicists in Medicine, Chicago IL, July 23-27, 2000.

31.   **Vyborny CJ:** When will the clinician embrace CAD? Medical Imaging 2001. Society of
      Photo-Optical Instrumentation Engineers, San Diego, CA, February 17-22, 2001.

32.   **Vyborny CJ:** Assessing the quality of the screening mammogram. University of Chicago
      8th Annual Course on Breast Imaging and General Diagnostic Imaging, Boca Raton FL,
      March 19-23, 2001 and 9th Annual Course, Orlando FL, March 16-20, 2002.

33.   **Vyborny CJ:** Computer aided detection of breast cancer. University of Chicago 8th
      Annual Course on Breast Imaging and General Diagnostic Imaging, Boca Raton FL, March
      19-23, 2001.

34.   **Vyborny CJ**, Haus AG**:** Signal detection in mammography. Fifth Postgraduate Course of
      the Society of Breast Imaging. San Diego CA, May 19-23, 2001.

35.   **Vyborny CJ:** Clinical applications computer-aided diagnosis in mammography. The 18th
      Symposium for Computer Applications in Radiology, Salt Lake City UT, May 3-6, 2001.

36. **Vyborny CJ:** Automating radiological diagnosis. Grand Rounds. The Center for Devices and Radiological Health, Food and Drug Administration, Rockville MD, June 5, 2001.

37. **Vyborny CJ:** Motivations for automating radiological diagnosis. Keynote Address. Academic Advisory Council, General Electric Medical Systems, Waukesha WI, June 7, 2001.

38. **Vyborny CJ:** CAD in screening mammography. University of Chicago 9th Annual Course on Breast Imaging and General Diagnostic Imaging, Orlando FL, March 19-23, 2002.

39. **Vyborny CJ**: Chest radiography. Annual Meeting of the Illinois State Society of Radiologic Technologists, Peoria IL, April 18-20, 2002.

40. **Vyborny CJ**: Computer-aided diagnosis. Annual Meeting of the Illinois State Society of Radiologic Technologists, Peoria IL, April 18-20, 2002.

41. **Vyborny CJ:** The promise of CAD and full field digital mammography. Fourth Annual Spring Assembly of the College of Imaging Administrators, Oakbrook IL, April 25-26, 2002.

42. **Vyborny CJ**: CAD and double reading. 102nd Annual Meeting of the American Roentgen Ray Society, Atlanta GA, April 28-May 3, 2002.

43. **Vyborny CJ**, Haus AG: Signal detection, image quality and radiation dose. Northwestern University Breast Imaging Symposium, Chicago IL, October 30-November 3, 2002.

44. **Vyborny CJ:** Fundamantals of mammography imaging. American College of Radiology Clinical Reviewer Training Course, Reston VA, November 11, 2002.

SESSION CHAIRS:

1. **Vyborny CJ:** Breast Imaging Under New Management. Third International Workshop on Digital Mammography. Chicago IL, June 9-12, 1996.

2. **Vyborny CJ:** Digital Mammography, CAD Session. 83rd Scientific Assembly and Annual Meeting, Radiological Society of North America. Chicago IL, November 30-December 5, 1997.

3. **Vyborny CJ:**   Breast Imaging Session. First International Workshop on Computer-Aided Diagnosis. Chicago IL, September 20-23, 1998.

4. **Vyborny CJ:** Computer-Aided Diagnosis for X-ray Mammography. Working Group on Computer-Aided Diagnosis and 3-D Image Analysis and Display; DHHS Public Health Service and the National Cancer Institute. Boston MA, October 8-9, 1998.

5.   **Vyborny CJ:** New Developments in Breast Imaging. Fourth Postgraduate Course of the Society of Breast Imaging. Boston MA, May 25-28, 1999.

6.   **Vyborny CJ:** Computer-Assisted Mammographic Diagnosis: Are Computers Telling Us Something We Should Know? 85th Scientific Assembly and Annual Meeting, Radiological Society of North America. Chicago IL, November 29-December 4, 1999.

7.   **Vyborny CJ:** Women's Imaging. Midwest Clinical Conference. Chicago IL, February 24-27, 2000.

8.   **Vyborny CJ:** Interventional Radiology. Midwest Clinical Conference. Chicago IL, February 22-25, 2000.

9.   **Vyborny CJ**: Breast Imaging Section. University of Chicago 8th Annual Course on Breast Imaging and General Diagnostic Imaging, Boca Raton FL, March 19-23, 2001.

10.   **Vyborny CJ**: Digital Mammography. 87th Scientific Assembly and Annual Meeting, Radiological Society of North America. Chicago IL, November 22-November 29, 2001.

11.   **Vyborny CJ:** Breast Imaging Section. University of Chicago 9th Annual Course on Breast Imaging and General Diagnostic Imaging, Orlando FL, March 19-23, 2002.

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SCIENTIFIC EXHIBITS:

1.   Doi K, Frank PH, Chan HP, **Vyborny CJ**, et.al. Evaluation of a new generation of radiographic grids. Presented at the 67th Scientific Assembly of the Radiological Society of North America, Chicago, IL, November 15-20, 1981.

2.   **Vyborny CJ**, MacMahon H. A new filter design for equalized chest radiography. Presented at the 68th Scientific Assembly of the Radiological Society of North America, Chicago, IL, November 28-December 3, 1982.

3.   MacMahon H, **Vyborny CJ**, Powell G, Doi K, Metz CE. Effects of pixel size and image processing on visibility of subtle pulmonary abnormalities in digital radiographs. Presented at the 70th Scientific Assembly of the Radiological Society of North America, Washington, DC., November 25-30, 1984.

4.   Chan HP, Doi K, **Vyborny CJ**, Schmidt RA, Metz CE, MacMahon H, Lam KL, Wu Y. Computer-aided detection of microcalcifications on mammograms: Pilot study of its effects on radiologist performance. Presented at the 74th Scientific Assembly of the Radiological Society of North America, Chicago, IL., November 22 - December 2, 1988.

5.   Chan HP, Doi K, **Vyborny CJ**, Schmidt RA, Metz CE, MacMahon H, Lam KL, Ogura T. Computer-aided detection of microcalcifications on mammograms: An ROC study of its effects on radiologists performance. Presented at the 17th International Congress of Radiology, Paris, France, July 1-8, 1989.

6.   Doi K, Giger ML, MacMahon H, ... **Vyborny CJ**, et al.: Clinical radiology and computer-aided diagnosis: Potential partners in medical diagnosis? Presented at the 76th Scientific Assembly of the Radiological Society of North America, Chicago, IL, November 25-30, 1990.

7.   Doi K, Giger ML, MacMahon H, ... **Vyborny CJ**, et al.. Computer-aided diagnosis: Potential usefulness of real-time output to interpretations of radiologists. Presented at the 78th Scientific Assembly of the Radiological Society of North America, Chicago, IL, November 29th - December 4th, 1992.

8.   Doi K, Giger ML, Nishikawa RM, ... **Vyborny CJ**, et al.. Computer-aided diagnosis in mammography, chest radiography, angiography and bone radiography. Presented at the 79th Scientific Assembly of the Radiological Society of North America, Chicago IL, November 28th - December 3rd, 1993.

9.   Giger ML, Nishikawa RM, Schmidt RA, **Vyborny CJ**, Wolverton DE, Doi K. Computer-aided diagnosis in digital mammography. Presented at the 80th Scientific Assembly of the Radiological Society of North America, Chicago IL, November 27th- December 2nd, 1994.

10. Doi K, Giger ML, Nishikawa RM ... **Vyborny CJ** et al. Prototype clinical intelligent
     workstation for computer-aided diagnosis. Presented at the 81st Scientific Assembly of the
     Radiological Society of North America, Chicago IL, November 25th - December 1st,
     1995.

11. Doi K, Giger ML, Nishikawa RM ... **Vyborny CJ** et al. Computer-aided radiographic
     interpretation on intelligent workstations. Presented at the 82st Scientific Assembly of the
     Radiological Society of North America, Chicago IL, December 1st- December 6th, 1996.

12. Ashizawa K, MacMahon H, Ishida T, **Vyborny CJ**, Katsuragawa S, Doi K: Differential
     diagnosis of interstitial lung disease by using artificial neural networks as a second opinion.
     Presented at the 83rd Scientific Assembly of the Radiological Society of North America
     (Cum Laude Award), Chicago IL, November 30th - December 5th, 1997.

13. Doi K, Giger ML, Nishikawa RM ... **Vyborny CJ** et al. Computer-aided diagnostic
     schemes in mammography, chest radiography, angiography and computed tomography.
     Presented at the 83rd Scientific Assembly of the Radiological Society of North America,
     Chicago IL, November 30th - December 5st, 1997.

14. Doi K, Giger ML, Nishikawa RM ... **Vyborny CJ** et al. Computer-aided diagnosis: From
     lab to practice. Presented at the 84th Scientific Assemly of the Radiological Society of
     North America, Chicago IL, November 29th - December 4th, 1998.

15. Nishikawa RM, Giger ML, Schmidt RA ... **Vyborny CJ** et al. Computer-aided diagnosis
     in screening mammography: Detection of missed cancers. Presented at the 84th Scientific
     Assemly of the Radiological Society of North America, (Cum Laude Award) Chicago IL,
     November 29th - December 4th, 1998.

16. Giger ML, Nishikawa RM, Huo Z ... **Vyborny CJ** et al. Computer-aided diagnosis in
     breast imaging. Presented at the 84th Scientific Assembly of the Radiological Society of
     North America, Chicago IL, November 29th - December 4th, 1998.

17. Giger ML, Nishikawa RM, Huo Z ... **Vyborny CJ** et al... Computer-aided diagnosis in
     breast imaging. Presented at the 85th Scientific Assemly of the Radiological Society of
     North America, Chicago IL, November 28th - December 3rd, 1999.

18. 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.

19. Jiang Y, Nishikawa RM, Giger ML, Papaloannou 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 Assemly of the Radiological Society of North America,
     Chicago IL, December 1st - December 6th, 2002.

PATENTS

1. 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. pending, 09/773,636

2. Drukker K, Giger ML, Horsch K**, Vyborny C**J: Automated method and system for the detection of abnormalities in sonographic images. U.S. Pat. Pending 60/332,005.

3. Giger ML, Huo Z, **Vyborny CJ**: Automated method and system for risk-modulated computer-aided diagnosis. U.S. Pat. Pending

4. Giger ML, Bonta I, Nishikawa RM, Heimann R, **Vyborny CJ**: Automated method and system for computer-aided prognosis. U.S. Pat. Pending

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