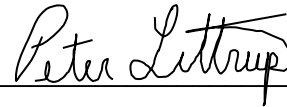


Date of Preparation: 5/27/2021



Peter J. Littrup, MD

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EDUCATION

- 1980 Baccalaureate: B.S. with Distinction, University of Michigan, Ann Arbor, MI.
- 1985 Graduate: University of Michigan Medical School, Ann Arbor, MI.

POSTGRADUATE TRAINING-

- 1985-1986 Transitional Program Intern, St. Joseph Mercy Hospital,
University of Michigan Medical School, Ann Arbor, MI
- 1986-1987 Fellowship in Prostatic Ultrasound, St. Joseph Mercy Hospital,
University of Michigan Medical School, Ann Arbor, MI
- 1987-1991 Resident in Radiology, New England Deaconess Hospital,
Harvard Medical School, Boston, MA
- 1990-1992 Radiological Society of North America Research Fellow

FACULTY APPOINTMENTS

- 1987-1991 Clinical Fellow in Radiology, Harvard Medical School.
- 1991-1994 Assistant Professor of Radiology and Urology,
Wayne State University School of Medicine.
- 1992-1994 Assistant Professor of Radiation Oncology,
Wayne State University School of Medicine.
- 1994-2005 Associate Professor of Radiology, Urology and Radiation Oncology,

Wayne State University School of Medicine

2005-present Professor of Radiology and Oncology, Wayne State University School of Medicine and Karmanos Cancer Institute.

2015-2017 Professor of Diagnostic Imaging, Department of Diagnostic Imaging, Rhode Island Hospital, Warren Alpert Medical School, Brown University

HOSPITAL OR OTHER PROFESSIONAL APPOINTMENTS

Radiological Society of North America Research Fellow, 1990-1992

Director of Research, Department of Radiology, St. Joseph Mercy Hospital, Ann Arbor, MI.; 1991-1993

Director of Research, Department of Radiology, Wayne State University School of Medicine, 1994-2003

Director of Medical Technologies, CETAID (Center for Cancer Economics, Technology Assessment, Innovation and Development), Karmanos Cancer Institute, 1999-2004

Director of Image Guided Therapy Program, Karmanos Cancer Center, 2004-2014

Director of Human Core Imaging and Radiological Research, Karmanos Cancer Institute, 2008-2014

Staff radiologist, Rhode Island Medical Imaging group, focusing on cross-sectional imaging and associated procedures, tumor ablation and breast imaging; 2015-2017.

Staff radiologist, Rochester Radiology group, focusing on cross-sectional imaging and associated procedures, tumor ablation and breast imaging; 2017 - present.

Co-founder and Medical Advisor to the Chief Executive Officer, Delphinus Medical Technologies, Inc., developing ultrasound tomography for women's breast imaging with a focus on dense breast screening; 2010 - present.

Chief Medical Officer, Rampart Health, LLC., focusing on the development of ablation immunotherapy delivery system and processes.

MAJOR PROFESSIONAL SOCIETIES

American Medical Student Association

American Medical Association

American Society for Lasers in Medicine and Surgery

Radiological Society of North America

American Institute of Ultrasound in Medicine

American College of Radiology: Member for 21 years;
Membership periods – 1991-2005 (15 yrs) and 2016-Now (6 yrs)

Society of Radiologists in Ultrasound

Society of Uroradiology (now part of Society of Abdominal Radiology)

MEDICAL LICENSURE

Rhode Island Department of Health: MD14797 Expiration: 6/30/2017

Michigan Board of Medicine: 4301050249 Expiration: 7/28/2023

DEA License Expiration: 3/31/2022

BOARD CERTIFICATION

American Board of Radiology No Expiration: Lifetime Membership

HONORS/AWARDS

- 1977 Salutatorian, Warren High School, Warren, MI.
Danish Brotherhood of America Scholarship Recipient.
- 1980 Honors in Biology with Distinction, Bachelor of Science, Univ. of Michigan.
- 1986 Cum Laude Citation, Scientific Exhibit Radiological Society of North America.
- 1987 Scientific Exhibit selected for Continuing Medical Education Credits,
Radiological Society of North America.
- 1990 Radiological Society of North America Research Fellow
Project: "Transurethral Laser and Microwave Hyperthermia of the Prostate"
- 1992 American Cancer Society Junior Faculty Award
Project: "Nd:YAG Laser Ablation of Localized Prostate Cancer"
- 1993 Scientific Exhibit, "Prostate Biopsy Decisions: When Where and How", selected for
Continuing Medical Education Credit, Certificate of Merit and Radiographics CDROM
publication, Radiological Society of North America.
- 1996 Wayne County Airport Director's Citation and WWJ-Radio "Citizen of the Week" for
resuscitation of sudden death victim.
- 1998 Society of Computed Body Tomography and Magnetic Resonance, Moncada Award,
for the outstanding Scientific Paper on Cross Sectional Imaging

- 1998 International Meeting of the Society of Uroradiology, Best Scientific Paper, "Grayscale and Color Doppler Issues in Prostate Cancer Detection: PSA Density, Location, Core Involvement and Race."
- 2011 MichBio Expo Innovators of the Year Award – Project: co-founder of Delphinus Medical Technologies Inc., and the co-creator of a breast cancer imaging device called SoftVue; Drs Littrup and Neb Duric
- 2016 Master of Arts *ad eundem*, Brown University

SERVICE

Journal Reviewer

- 1992-2003 Radiology
- 1992-2003 The Prostate
- 1993-2003 Cancer
- 1994-2003 Urology
- 2007-present Journal of Vascular and Interventional Radiology
- 2011-present Journal of Low Temperature Medicine

Major Committee Assignments:

State, National or International

- 1987-1996 Coinvestigator, American Cancer Society National Prostate Cancer Detection Project
- 1991-1992 Program Planning Committee for American Cancer Society's National Conference on Prostate Cancer
- 1992 American Joint Committee on Cancer's Task Force on Multiple Prognostic Factors
- 1992 Co-Director and Moderator, Seventh International Symposium: Transrectal Ultrasound in the Diagnosis and Management of BPH and Prostate Cancer, Detroit, MI., Sept. 11-13, 1992.
- 1992-1993 State of Michigan, Department of Public Health's Ad Hoc Prostate Cancer Committee
- 1993 Co-Director and Moderator, Eighth International Symposium: Transrectal Ultrasound in the Diagnosis and Management of BPH and Prostate Cancer, Detroit, MI., Oct. 8-10, 1993.
- 1993-1994 Program Planning Committee for American Cancer Society's National Conference on Prostate Cancer
- 1993-2003 State of Michigan, Department of Public Health's Prostate Cancer Advisory Committee
- 1994-2003 American Cancer Society (National) Detection and Treatment Advisory Group on

Prostate Cancer

- 1994 Co-Chairman, Committee for Diagnosis and Staging, Consensus Workshop on Screening and Global Strategy for Prostate Cancer, Antwerp Belgium
- 1995 Member, Genito-Urinary Committee of Southwest Oncology Group (SWOG)
- 1995 Chairman, Screening Subcommittee for State of Michigan, Department of Public Health - Prostate Cancer Consensus Conference
- 1996-1998 Co-Chairman, American Cancer Society National Prostate Cancer Detection Project
- 1997 Member, Commission on Cancer: Patient Care Evaluation Committee on Prostate Cancer
- 1997 Chairman, Economics/Morbidity Subcommittee for Workshop on American Cancer Society Guidelines for Prostate Cancer Screening
- 1996-2003 Member, Ad Hoc Committee on Ultrasound, Michigan Radiological Society
- 2000-2003 State of Michigan Cancer Consortium, Michigan Radiological Society Representative

Hospital Committees

- 1988-1991 Laser Committee, New England Deaconess Hospital (Completed laser safety and biophysics course, American Society for Laser Medicine and Surgery 4/87.)
- 1992-1993 Vice-Chairman, Prostate Leadership Group, St. Joseph Mercy Hospital, Ann Arbor, MI
- 1992-1995 Photodynamic Therapy Group, Wayne State University School of Medicine
- 1992 Cryosurgery Credentialing Committee, St. Joseph Mercy Hospital, Ann Arbor, MI
- 1993-1995 Radiology Utilization Sub-Committee of QECRM, Harper Hospital, Detroit, MI
- 1995-1996 Member, Translation Research: Clinical Task Force of Michigan Cancer Foundation - Comprehensive Cancer Center
- 1995-1996 Member, Translation Research: Community Task Force of Michigan Cancer Foundation - Comprehensive Cancer Center
- 2000-2003 Co-chair, Radiology Research Committee, Department of Radiology, Wayne State University

TEACHING

- 1986-1987 Research Associate - Helped instruct visiting physicians in the use of transrectal ultrasound.
- 1987-1991 Clinical Fellow, Harvard Medical School - Assist medical students in film interpretation during radiology rotations.
- 1990-1991 Principal Investigator of Laser Balloon Project - Developed radiological research laboratory for interventional techniques and helped teach related course at Harvard Medical School.
- 1992-2014 Professor of Radiology, Urology and Radiation Oncology, Wayne State University School of Medicine Radiology resident training program.
- 1992-1993 Cryotherapy Teaching Program, St. Joseph Mercy Hospital, Ann Arbor, MI.
- 1993-2003 Developed Cryotherapy Program for Harper Hospital.
- 1997 Visiting Professor, Department of Radiology, Albany Medical College.
- 1998 Visiting Professor, Department of Urology, Emory University Atlanta.
- 1999 Visiting Professor, Department of Oncology, First Military Hospital, Guangzhou (Canton), China.
- 2002 Visiting Professor, Department of Surgery, Keio University Hospital, Shinjuku, Tokyo, Japan.
- 2002 Visiting Professor, Department of Pulmonary Medicine, First Naval Hospital, Beijing, China.
- 2004 Visiting Professor, Department of Oncology, Cancer Centers of Fortaleza/Curitiba, Brazil.
- 2005 Visiting Professor, Department of Oncology, Cancer Centers of Fortaleza/Curitiba, Brazil.
- 2006 Visiting Professor, Cancer Center of Doha, Qatar; Departments of Radiology, King Hussein Cancer Center, Amman, Jordan; and American University, Beirut Lebanon.
- 2015-2017 Daily resident reviews of imaging studies, supervising resident/fellows biopsies/drainages/ablations and publishing scientific papers. Department of Diagnostic Imaging, Rhode Island Hospital, Warren Alpert Medical School, Brown University
- 2017-present Supervising rotating residents for interpretations and associated procedures. Wayne State University School of Medicine

GRANT, CONTRACTS, AND OTHER FUNDING

- 1986-1987 Blue Cross and Blue Shield of Michigan; "Early detection and transrectal ultrasound guided biopsy of early prostate cancer"; \$50,000; PI Fred Lee, M.D., Coinvestigator Peter J. Littrup, M.D.
- 1990-1992 Radiological Society of North America Research Fellow; "Transurethral laser and microwave balloon dilatation of the prostate"; \$30,000/yr. stipend with \$5000 project support funding. PI – Peter J. Littrup, M.D.
- 1990-1991 Bard Urological Division, C.R. Bard, Inc.; "Transurethral laser and microwave balloon dilatation of the prostate"; \$40,000; PI Peter J. Littrup, M.D.
- 1992-1993 Project approved for preclinical trial ; \$84,000; "Periurethral laser balloon ablation of the prostate"
PI Peter J. Littrup, M.D.
- 1992-1995 American Cancer Society Junior Faculty Award; "Nd:YAG Laser Ablation of Localized Prostate Cancer"; \$ 90,500/3 years.
PI – Peter J. Littrup, M.D.
- 1992-1993 Abbott Labs; "Early detection of prostate cancer in the African American population"; \$71,000; PI Peter J. Littrup, M.D.
- 1993-1994 Cryomedical Sciences Inc., "Cryosurgery of the prostate comparison with whole prostate specimens and biopsy"; \$10,000; PI Peter J. Littrup, M.D.
- 1993-1994 Wayne State University Interdisciplinary Seed Grant Support #144981, "Neural networks for diagnostic strategy in prostate cancer"; PI James Montie, M.D.; Co-PI Peter J. Littrup, M.D. and Ishwar Sethi, Ph.D.
- 1993-1994 ATL Ultrasound, "Interventional ultrasound and biopsy guidance development", \$96,000 Grant-in-kind; PI Peter J. Littrup, M.D.
- 1994-1995 U.S. Medical Systems, "Cryosurgery Cryosensitizer development and teaching program", \$10,000; PI Peter J. Littrup, M.D.
- 1995-1996 ATL Ultrasound, "3D prostate ultrasound clinical trial development", \$9000; PI Donal Downey, Co-PIs: Peter J. Littrup, M.D., Ants Toi, M.D. and Archie Alexander, M.D.
- 1995-1996 Michigan Department of Public Health, "Prostate Risk Initiative: Detection and Education - The P.R.I.D.E. Program, \$97,270; P.I.: Peter J. Littrup, M.D.
- 1996-1997 Michigan Department of Public Health, "Prostate Risk Initiative: Detection and Education - The P.R.I.D.E. Program, \$100,000; P.I.: Peter J. Littrup, M.D.
- 1996-1998 Abbott Pharmaceuticals, "Prostate Risk Initiative: Detection and Education - The P.R.I.D.E. Program, \$20,000; P.I.: Peter J. Littrup, M.D.

- 1997-1998 Michigan Department of Public Health, "Prostate Risk Initiative: Detection and Education - The P.R.I.D.E. Program, \$92,542; P.I.: Peter J. Littrup, M.D.
- 1998-1999 Michigan Department of Public Health, "Prostate Risk Initiative: Detection and Education - The P.R.I.D.E. Program, \$92,542, P.I.: Peter J. Littrup, M.D.
- 1998-2005 Karmanos Cancer Institute, "Computerized Ultrasound Risk Evaluation Project", \$12,000,000/8 yrs., Co-P.I.: Peter J. Littrup, M.D.
- 2000-2002 Sanarus, Inc., "Safety and Efficacy Study of CRYOcare™ Surgical System for the Ablation of Breast Fibroadenoma", \$~150,000 for ~50 patients (@ \$3000/pt). PI – Peter J. Littrup, M.D.
- 2002-2004 Ralph C. Wilson, Sr. and Ralph C. Wilson, Jr. Medical Research Foundation, "*Development of Advanced 3-D Holographic Acoustic Diagnostic Systems Using Novel Micro-Array Technology*", \$100,000/yr., P.I.: Gregory Auner, Co-Investigator - Peter J. Littrup, M.D.
- 2004-2004 Small Business Innovation Research (SBIR) Grant. National Cancer Institute, "Clinical Breast Ultrasound Tomography", \$93,992/yr., P.I.: Peter J. Littrup, M.D.
- 2004-2005 National Cancer Institute, "Dynamic Focusing for Non-Invasive Treatments", \$102,282/yr., P.I.: Peter J. Littrup, M.D.
- 2002-2005 Karmanos Cancer Institute, "CURE Clinical Prototype", \$5,500,000/3 yrs., Co-P.I.: Peter J. Littrup, M.D.
- 2005-2015 Endocare, "3 paper study: Renal, Liver, & Lung", \$80,000/yr., P.I.: Peter J. Littrup, M.D.
- 2005-2008 Endocare, "Percutaneous Thoracic Cryotherapy for Inoperable Primary Lung Cancer and Metastatic Management", \$188,500/40 patients, P.I.: Peter J. Littrup, M.D.
- 2005 NIH. "Percutaneous Cryotherapy and Aerosolized GM-CSF for Pulmonary Metastases from Renal Cell Carcinoma", \$250,000/2 yrs., Co. P.I.: Peter J. Littrup, M.D.
- 2006.2008 NCI/Avon, "Improvements in Ultrasound Tomography for Characterization of Breast Masses", \$237,000/2 yrs, Co-P.I.: Peter J. Littrup, M.D.; PI – Neb Duric
- 2006.2008 MEDC, "Clinical Validation of CURE: A Novel Technology for Improved Breast Cancer Diagnosis", \$1.6M/2 yrs., Co-P.I.: Peter J. Littrup, M.D.; PI – Neb Duric
- 2006 Endocare. "Percutaneous US and CT-guided Cryoablation of Painful Metastases Involving Bone", 30 patients, co-investigator: Peter J. Littrup, M.D.; P.I. – Matt Callstrom, Mayo Clinic
- 2009-2010 Small Business Innovation Research (SBIR) Grant. National Cancer Institute; Phase 1: (1R43CA141989-01) 07/01/2009 - 06/30/2010: "Liquid Cooling Cycle

- for Ablation Using Integrated Thermal and Imaging Feedback”, \$150,000, CryoMedix LLC; P.I.: Alex V. Babkin, PhD., Co-P.I.: Peter J. Littrup, M.D.
- 2011 Galil Medical, “3 paper study: Soft Tissue, Lung Mets, RCC Mets”, \$45,000/yr., P.I.: Peter J. Littrup, M.D.
- 2010-2013 Komen Foundation (KG100100) 03/01/2010 - 05/01/2014 \$600,000; “Development of a predictive model for improved, cost-effective breast cancer detection based on biomechanical properties of tissue”; Using ultrasound tomography data, develop a 3-parameter model for differentiating cancer from benign tissue from measurements of sound speed, attenuation and reflection. P.I.: Neb Duric, PhD., Co-P.I.: Peter J. Littrup, M.D.
- 2011-2014 NCI (Contract HHSN261201100476P) 08/2011 – 07/2015; \$542,000; “The Ultrasound Study of Tamoxifen.”; The goal of this project is to measure breast density changes in women taking Tamoxifen. P.I.: Neb Duric, PhD., Co-P.I.: Peter J. Littrup, M.D.
- 2012-2015 Endocare, “4 paper study: Lung, Colon Mets, Liver-HCC, Liver-oligo”, \$60,000/yr., P.I.: Peter J. Littrup, M.D.
- 2012-2015 Small Business Innovation Research (SBIR) Grant. National Cancer Institute; Fast-Track: (1R44CA165320-01A) 09/24/2012 – 08/28/2015; \$1,040,000; *Delphinus Medical Technologies, Inc.*: “Transitioning the SoftVue Breast Scanner to the clinical marketplace”; The goal of this study is to ready the SoftVue scanner for the market place through a comparison with ultrasound and mammography. P.I.: Neb Duric, PhD; Co-P.I.: Peter J. Littrup, M.D
- 2014-2015 SBIR Grant - National Cancer Institute; Phase 1: (1R43CA186318 – 01) 08/01/2014 – 07/31/2015; \$170,000; *Delphinus Medical Technologies, Inc.*: “Development of a 3-D multi-planar biopsy system using new ultrasound tomographic technology”; The goal of this study is to translate the SoftVue technology to a multi-segment biopsy array which is out-of-water. P.I.: Olivier Roy, PhD; Co-P.I.: Peter J. Littrup, M.D
- 2015-2017 NCI (2R44CA171601); 08/2015-07/2017; \$970,000; “High-resolution, quantitative whole-breast ultrasound: bridging the gap to clinical practice”; The goal of this project is to implement waveform tomography into a clinical package for breast cancer detection. P.I.: Neb Duric, PhD; Co-I: Peter J. Littrup, M.D
- 2016-2019 NCI (2R44CA165320) 04/01/2016 – 03/31/2019; \$3,000,000; “Toward a screening designation for SoftVue: A multi-center clinical trial in support of Pre-Market Approval”. The goal of this project is to test the performance of ultrasound tomography in a screening setting. P.I.: Neb Duric, PhD; Co-I: Peter J. Littrup, M.D
- 2019-2023 NIH (R01EB028652) 10/01/2019 – 9/30/2023; \$1,070,000; “Advanced image reconstruction for accurate and high-resolution breast ultrasound tomography.” The goal of this project is to develop 3D imaging techniques to further improve the quality of ultrasound tomography images. P.I.: Mark Anastasio, PhD; Co-I: Peter J. Littrup, M.D

PATENTS

Chronological Order	U.S. Patent #	Title	Authors	Filed	Issued	Assignee
1	6,385,474	Method and apparatus for high-resolution detection and characterization of medical pathologies	Rather JDG, Caulfield HJ, Doolittle RD, Littrup P , and Zeiders GW.	3/19/1999	5/7/2002	Barbara Ann Karmanos Cancer Institute
2	6,728,567	Method and apparatus for high-resolution detection and characterization of medical pathologies	Rather JDG, Caulfield HJ, Doolittle RD, Littrup P , and Zeiders GW.	11/27/2001	4/27/2004	Barbara Ann Karmanos Cancer Institute
3	6,789,545	Method and system for cryoablating fibroadenomas	Littrup PJ , Stabinsky SA, Bladel KV, Zindel L, Foy G.	10/4/2002	9/14/2004	Sanarus Medical, Inc.
4	6,984,210	Diagnostic analysis of ultrasound data	Chambers DH, Mast J, Azevedo SG, Wuebbeling Frank, Natterer F, Duric N, Littrup PJ , Holsapple E	12/18/2002	1/10/2006	Barbara Ann Karmanos Cancer Institute
5	7,083,612	Cryotherapy system	Littrup PJ , Babkin AV, Duncan R, Boldarev S	1/14/2004	8/1/2006	CryoDynamics, LLC
6	7,128,738	Method and system for cryoablating fibroadenomas	Littrup PJ , Stabinsky SA, Bladel KV, Zindel L, Foy G	9/14/2004	10/31/2006	Sanarus Medical, Inc.
7	7,273,479	Methods and systems for cryogenic cooling	Littrup PJ , Babkin AV, Duncan R, Boldarev S	9/27/2004	9/25/2007	CryoDynamics, LLC
8	7,285,092	Computerized ultrasound risk evaluation system	Duric N, Littrup PJ , Holsapple E, Barter RH, Moore T, Azevedo SG, Ferguson SW	12/18/2002	10/23/2007	Barbara Ann Karmanos Cancer Institute
9	7,410,484	Cryotherapy probe	Littrup PJ , Babkin AV, Duncan R, Kerkar P, Boldarev S	1/14/2004	8/12/2008	CryoDynamics, LLC
10	7,458,379	Method and system for cryoablating tumors	Littrup PJ , Stabinsky SA, Bladel KV, Zindel L, Foy G	9/1/2005	12/2/2008	Sanarus Medical, Inc.
11	7,499,745	Multidimensional bioelectrical tissue analyzer	Littrup PJ and Duncan R.	2/27/2001	3/3/2009	Barbara Ann Karmanos Cancer Institute
12	7,507,233	Cryotherapy system	Littrup PJ , Babkin AV, Duncan R, Boldarev S	6/6/2006	3/24/2009	CryoDynamics, LLC
13	7,780,658	Method and system for cryoablating fibroadenomas	Littrup PJ , Stabinsky SA, Bladel KV, Zindel L, Foy G	10/31/2006	8/24/2010	Sanarus Medical, Inc.
14	7,921,657	Methods and systems for cryogenic cooling	Littrup PJ , Babkin AV, Duncan R, Boldarev S	8/28/2007	4/12/2011	Endocare, Inc.
15	7,959,625	Method and system for cryoablating fibroadenomas	Littrup PJ , Stabinsky SA, Bladel KV, Zindel L, Foy G	8/17/2010	6/14/2011	Sanarus Medical, Inc.
16	8,087,256	Cooling methods and systems using supercritical fluids	Babkin AV, Duncan R, Efremov AI, Littrup PJ	9/23/2008	1/3/2012	Cryomechanics, LLC
17	8,376,946	Method and apparatus for combined diagnostic and therapeutic ultrasound system incorporating noninvasive thermometry, ablation control and automation	Littrup PJ, Duric N, Holsapple E	5/16/2003	2/19/2013	Barbara Ann Karmanos Cancer Institute
18	8,387,402	Methods and systems for cryogenic cooling	Littrup PJ , Babkin AV, Duncan R, Boldarev S.	3/11/2011	3/5/2013	CryoDynamics, LLC
19	8,475,441	Isotherm-based tissue ablation control system	Littrup PJ and Babkin AV.	12/21/2009	7/2/2013	CryoMedix, LLC
20	8,591,503	Cryotherapy probe	Littrup PJ , Babkin AV, Duncan R, Kerkar P, and Boldarev S.	1/23/2008	11/26/2013	CryoDynamics, LLC
21	8,685,014	Isotherm-based tissue ablation control system	Babkin AV and Littrup PJ .	11/1/2012	4/1/2014	CryoMedix, LLC
22	8,740,891	Flexible multi-tubular cryoprobe	Babkin AV, Littrup PJ , Duncan R, Nydam W.	11/19/2008	6/3/2014	Endocare, Inc.
23	8,814,850	Method and system for cryoablation treatment	Babkin AV, Littrup PJ and Nydam W.	4/19/2009	8/26/2014	CryoMedix, LLC
24	8,845,628	Cryoablation system having docking station for charging cryogen containers...	Babkin AV, Littrup PJ , Nydam W and Nydam B.	10/8/2012	9/30/2014	CryoMedix, LLC
25	8,870,771	Method and apparatus for categorizing breast density and assessing cancer risk utilizing acoustic parameters	Glide-Hurst C, Duric N, Littrup PJ	5/5/2008	10/28/2014	Barbara Ann Karmanos Cancer Institute

PATENTS (cont.)

26	8,876,716	Method of characterizing breast tissue using multiple ultrasound renderings	Duric N, <i>Littrup PJ</i>	2/14/2011	11/4/2014	Delphinus Medical Technologies, Inc.
27	8,888,768	Cryoablation system having docking station for charging cryogen containers... (Part B)	Babkin AV, <i>Littrup PJ</i> , Nydam W and Nydam B.	4/29/2010	11/18/2014	CryoMedix, LLC
28	9,095,320	Cryo-induced renal neuromodulation devices and methods	<i>Littrup PJ</i> , Babkin AV, Nydam W and Nydam B.	9/27/2011	8/4/2015	CryoMedix, LLC
29	9,101,290	Method of characterizing breast tissue using multiple contrast enhanced ultrasound	Duric N, <i>Littrup PJ</i>	12/11/2012	8/11/2015	Delphinus Medical Technologies, Inc.
30	9,144,403	Method of characterizing the pathological response of tissue to a treatment plan	Duric N, <i>Littrup PJ</i>	2/14/2011	9/29/2015	Delphinus Medical Technologies, Inc.
31	9,345,527	Method and system for cryoablation treatment	Babkin AV, <i>Littrup PJ</i> , and Nydam WJ.	11/9/2011	5/24/2016	CryoMedix, LLC
32	9,402,676	Cryoablation balloon catheter and related method	Babkin AV, <i>Littrup PJ</i> , Nydam W and Nydam B.	8/26/2011	8/2/2016	CryoMedix, LLC
33	9,408,655	Cryoablation apparatus with enhanced heat exchange area and related method	Babkin AV, <i>Littrup PJ</i> , and Nydam WJ.	10/27/2011	8/9/2016	CryoMedix, LLC
34	9,408,656	Cryotherapy probe	<i>Littrup PJ</i> , Babkin AV, Duncan R, Kerkar P, and Boldarev S.	11/23/2013	8/9/2016	CryoMedix, LLC
35	9,814,441	Method of characterizing tissue of a patient	Duric N, <i>Littrup PJ</i>	6/30/2015	11/14/2017	Delphinus Medical Technologies, Inc.
36	10,123,770	Patient support system	Szpak J, Duric N, <i>Littrup PJ</i> , Janer R, and Tesic M.	3/13/2013	11/13/2018	Delphinus Medical Technologies, Inc.
37	10,143,443	Method for representing tissue stiffness	Duric N, <i>Littrup PJ</i> , Li C, Roy O, and Schmidt S.	5/5/2014	12/4/2021	Delphinus Medical Technologies, Inc.
38	10,159,522	Cryotherapy probe	<i>Littrup PJ</i> , Babkin AV, Duncan RV, Kerkar P, and Boldarev S.	11/22/2013	12/25/2018	Adagio Medical, Inc.
39	10,201,324	Patient interface system (Breast density)	Glide-Hurst C, Duric N and <i>Littrup PJ</i> .	5/5/2008	2/12/2019	Delphinus Medical Technologies, Inc.
40	10,231,696	Method of characterizing tissue of a patient (contrast agents)	Duric N and <i>Littrup PJ</i> .	6/30/2015	3/19/2019	Delphinus Medical Technologies, Inc.
41	10,278,672	Method of characterizing the pathological response of tissue to a treatment plan	<i>Littrup PJ</i> and Duric N.	2/14/2011	5/7/2019	Delphinus Medical Technologies, Inc.
42	10,285,667	Method for generating an enhanced image of a volume of tissue (Stiffness Fusion)	Duric N, <i>Littrup PJ</i> and Li C.	8/5/2014	5/14/2019	Delphinus Medical Technologies, Inc.
43	10,368,831	Waveform enhanced reflection and margin boundary characterization for ultrasound tomography (WAFER).	Duric N, <i>Littrup PJ</i> , Sandhu GS, Krycia M, and Sak M.	12/2/2016	8/6/2019	Delphinus Medical Technologies, Inc.
44	10,898,164	System for shaping and positioning a tissue body (Seqr Breast Interface)	Ho R, <i>Littrup PJ</i> and Duric N.	2/9/2016	1/26/2021	Delphinus Medical Technologies, Inc.
45	10,952,676	Endoesophageal balloon catheter, system, and related method	Babkin AV, <i>Littrup PJ</i> and Kovalcheck SW.	10/14/2013	3/23/2021	Adagio Medical, Inc.

BIBLIOGRAPHY

Original Observations in Refereed Journals:

1. *Littrup PJ*, Aisen AM, Braunstein EM, and Martel W. Magnetic resonance imaging of femoral head development in roentgenographically normal patients. *Skeletal Radiology* 1985, 14:159-63.
2. *Littrup PJ*, Gebarski SS. MR imaging of Hallervorden-Spatz disease. *J Comput Assist Tomogr* 1985; 9:491-3.
3. Torp-Pedersen S, Holm HH, *Littrup PJ*. Transperineal I-125 seed implantation in prostate cancer guided by transrectal ultrasound. *Prog Clin Biol Res.* 1987;237:143-52. PMID: 3317425.

PUBLICATIONS (cont)

4. **Littrup PJ**. The development of a three dimensional prostate model. Prog Clin Biol Res. 1987; 237:213-8. PMID: 3317431.
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121. Aoun HD, **Littrup PJ**, Nahab B, Rizk M, Prus M, Samantray J, Weaver D, Vaishampayan U, Pontes E. Percutaneous cryoablation of adrenal metastases: technical feasibility and safety. *Abdom Radiol (NY)*. 2021 Feb 4. doi: 10.1007/s00261-020-02848-1. Epub ahead of print. PMID: 33543315.
122. Jennings JW, Prologo JD, Garnon J, Gangi A, Buy X, Palussière J, Kurup AN, Callstrom M, Genshaft S, Abtin F, Huang AJ, Iannuccilli J, Pilleul F, Mastier C, **Littrup PJ**, de Baère T, Deschamps F. Cryoablation for Palliation of Painful Bone Metastases: The MOTION Multicenter Study. *Radiol Imaging Cancer*. 2021 Feb 12;3(2):e200101.
123. Regen-Tuero HC, Ward RC, Sikov WM, **Littrup PJ**. Cryoablation and Immunotherapy for Breast Cancer: Overview and Rationale for Combined Therapy. *Radiol Imaging Cancer*. 2021; 3(2):e200134.

Review Articles:

1. Lee F, TorpPedersen S, Siders DB, **Littrup PJ**, McLeary RD. State of the art: Transrectal ultrasound in the diagnosis and staging of prostatic carcinoma. *Radiology* 1989;

170:609615.

2. **Littrup PJ** and Lee F. State of the art: screening for prostate cancer. *Seminars in Interventional Radiology* 1989, 6:1019.
3. **Littrup PJ**, Mettlin C and Lee F. Prostate cancer screening: Current trends and future implications. *CA Cancer Clin J* 1992; 42:198211.
4. **Littrup PJ**. Color doppler ultrasound of the prostate gland: In my view. *Prospectives* 1993; 3:56.
5. **Littrup PJ**, Mody A and Sparschu R. Prostate cryosurgery complications. *Seminars in Interventional Radiology* 1994; 11:226230.
6. **Littrup PJ**, Wang S and Sparschu R. Prostate biopsy decisions and complications. *Seminars in Interventional Radiology* 1994; 11:231236.
7. **Littrup P**, Lee F, Rajan D, Meetze K, Weaver D. Hepatic Cryotherapy: State-of-the-Art Techniques and Future Developments. *Ultrasound Quarterly* 1998; 14:171-188.
8. **Littrup PJ**, Bailey SE. Prostate cancer: The role of transrectal ultrasound and its impact on cancer detection and management. *Radiol Clin North Am.* 2000; 38:87-113.

Conferences Papers

1. **Littrup PJ**, Duric N, Azevedo S, Chambers DH, Candy JV, Johnson S, Auner G, Rather J and Holsapple ET. Computerized ultrasound risk evaluation (CURE) system: Development of combined transmission and reflection ultrasound with new reconstruction algorithms for breast imaging. *Proceedings of the 26th International Acoustical Imaging Symposium*; Windsor, Canada; Sept. 9-12, 2001.
2. **Littrup PJ**, Duric N, Leach Jr. RR, Azevedo SG, Candy JV, Moore T, Chambers DH, Mast JE and Holsapple ET. Characterizing tissue with acoustic parameters derived from ultrasound data. *Proceedings of the SPIE: Medical Imaging 2002*; San Diego, California; Feb. 23-28, 2002. *Ultrasonic Imaging and Signal Processing – Paper 4687-43.*
3. Leach Jr. RR, Azevedo SG, Berryman JG, Bertete-Aguirre HR, Chambers DH, Mast JE, **Littrup PJ**, Duric N, Wuebbeling F. A comparison of ultrasound tomography methods in circular geometry. *Proceedings of the SPIE: Medical Imaging 2002*; San Diego, California; Feb. 23-28, 2002. *Ultrasonic Imaging and Signal Processing – Paper 4687-44.*
4. Chambers DH and **Littrup PJ**. Ultrasound imaging using diffraction tomography in a cylindrical geometry. *Proceedings of the SPIE: Medical Imaging 2002*; San Diego, California; Feb. 23-28, 2002. *Ultrasonic Imaging and Signal Processing – Paper 4687-53.*
5. Duric N, **Littrup PJ**, Leach Jr. RR, Azevedo SG, Candy JV, Moore T, Chambers DH, J. Mast JE and Holsapple ET. Using Data Fusion to Characterize Breast Tissue. *Proceedings of the SPIE: Medical Imaging 2002*; San Diego, California; Feb. 23-28, 2002. *Ultrasonic Imaging and Signal Processing – Paper 4687-39.*

6. Azevedo SG, Moore T, Huber RD, Ferguson W, Leach Jr. RR, Benson S, Duric N, **Littrup PJ** and Holsapple ET. Apparatus for circular tomographic ultrasound measurements. Proceedings of the SPIE: Medical Imaging 2002; San Diego, California; Feb. 23-28, 2002. Ultrasonic Imaging and Signal Processing – Paper 4687-12.
7. Duric N, **Littrup P**, Holsapple E, Babkin A, Duncan R, Kalinin A, Pevzner A and Tokarev A. Ultrasound Imaging of Breast Tissue. Proceedings of the SPIE: Medical Imaging 2003; San Diego, California; Feb. 21-26, 2003. Ultrasonic Imaging and Signal Processing – Paper 5035-4.
8. Huang LJ, Duric N, **Littrup, PJ**. Ultrasonic Breast Imaging Using a Wave-Equation Migration Method. Proceedings of the SPIE: Medical Imaging 2003; San Diego, California; Feb. 21-26, 2003. Ultrasonic Imaging and Signal Processing – Paper 5035-4.

Books and Chapters:

1. **Littrup PJ**. The development of a three dimensional prostate model. in: The Use of Transrectal Ultrasound in the Diagnosis and Management of Prostate Cancer. Progress in Clinical and Biological Research, Volume 237, p213218. Alan R. Liss, Inc., New York, 1987.
2. Holm HH, TorpPedersen S, **Littrup PJ**. Transperineal I125 seed implantation in prostate cancer guided by transrectal ultrasound. in: The Use of Transrectal Ultrasound in the Diagnosis and Management of Prostate Cancer. Progress in Clinical and Biological Research, Volume 237, p143152. Alan R. Liss, Inc., New York, 1987.
3. **Littrup PJ**. State of the art: Prostate cancer screening. In: Therapeutic Alternatives in the Management of Benign Prostatic Hyperplasia, ed. Castaneda F. and Smith A. Thieme Publishing Co., 1993.
4. Porter AT, **Littrup P**, Grignon D, Montie J, Forman JD: Radiotherapy and Cryotherapy for Prostate Cancer. in Campbell's Urology, 1997.
5. Neb Duric and **Peter Littrup**. Breast Ultrasound Tomography. In: Breast Imaging, ed. Cherie Kusmiak. InTech 2018.

Mass Distributed Teaching Materials:

1. *1995 Michigan Prostate Cancer Concensus Conference: Concensus Statements and Recommendations for Further Study*. Peter J. Littrup: Roundtable discussion Leader for Epidemiology: Screening Section. Distributed to Michigan physicians by American Cancer Society and Michigan Department of Public Health.
2. *Detroit Education and Detection Program: Prostate Cancer Facts*. Peter J. Littrup: Co-Investigator. Distributed to 1100 Detroit area African American men.
3. *Prostate Risk Initiative Detection and Education Program: Prostate Cancer Facts*. Peter J.

Littrup: Principal Investigator. Distributed to 1050 Detroit area men.

4. *Recommendations for Reducing Prostate Cancer Mortality and Morbidity in Michigan – from the Prostate Cancer Advisory Committee.* Peter J. Littrup: Member. Distributed to Michigan physicians by Michigan Department of Public Health, November, 1998.
5. *Prostate Risk Initiative Detection and Education Program: What Do You Do With Prostate Specific Antigen (PSA) Results.* Peter J. Littrup: Principal Investigator. Distributed to Detroit area physicians in conjunction with the Wayne County Medical Society.

PRESENTATIONS:

1. Transrectal ultrasound in the diagnosis, biopsy, staging and treatment of prostate cancer. Radiology and Surgical Grand Rounds, New England Deaconess Hospital, Boston, MA., October 8, 1986.
2. Transperineal and transrectal biopsy procedures. Teleconference Endosonography in the Diagnosis and Management of Prostate Cancer, Orlando, FL., March 25, 1987.
3. Transrectal ultrasound guided biopsy techniques and prostate cancer screening. 20th Annual Postgraduate Seminar in Pediatric and Adult Urology, Miami Beach, FL., January, 1988.
4. Transrectal ultrasound: normal and abnormal anatomy; Prostate cancer screening. American College of Radiology Puerto Rican Chapter Meeting. San Juan, P.R., February, 1988.
5. Early detection of prostate cancer: ultrasound, digital rectal examination and prostate specific antigen. HightJones Cancer Symposium: New Directions in Cancer Diagnosis and Staging, Worcester, MA, June 8, 1988.
6. Normal and abnormal prostate anatomy; New techniques and screening with transrectal ultrasonography. 39th Annual Convention Puerto Rican Urological Association, San Juan, P.R., November 18, 1988.
7. Prostate ultrasound: Clinical utility and screening potential. New England Society of Ultrasound in Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA., Jan. 10, 1989.
8. The clinical utility and screening potential of prostate ultrasound. Grand Rounds, Morton Plant Hospital, Clearwater, FL. June 6, 1989.
9. Noncancerous diseases of the prostate and seminal vesicles; Screening for prostate cancer where do we stand? Ultrasound of the Prostate Minicourse, Boston, MA. July 29, 1989.
10. Transrectal ultrasound, prostate specific antigen and digital rectal exam for prostate cancer screening. Radiology Grand Rounds, Brigham and Womens Hospital, Harvard

Medical School, Boston, MA., Sept. 6, 1989.

11. Transrectal ultrasound guided laser ablation of the prostate a potential alternative treatment for early prostate cancer. Early Prostate Cancer Which Treatment ? Workshop/Symposium, The Gwent Postgraduate Center, Newport, Wales, U.K., Nov.9, 1990.
12. Clinical utility of prostate specific antigen for prostate cancer screening. American Roentgen Ray Society; New England Chapter Meeting, Boston, MA., May 17, 1991.
13. Transrectal ultrasound zonal anatomy and pathology; Prostate ultrasound in the 1990's. Second Annual Transrectal Ultrasound Seminar, Newport, R.I., Nov.23, 1991.
14. Prostate Cancer Screening Workshop (Panelist). American Cancer Society's National Conference on Prostate Cancer, San Francisco, CA. Feb.1315, 1992.
15. Prostate cancer: current trends and future implications. Urology Grand Rounds, Wayne State University School of Medicine, Detroit, MI. Oct. 9, 1992.
16. American Cancer Society College of American Pathologists Workshop on PSA: Benefits and Limitations (Panelist). Miami, FL. Nov. 1314, 1992.
17. Relationship of PSA and ultrasound. Update on the Management of Benign Prostatic Hypertrophy and Prostate Cancer. Westland, MI. Feb. 17, 1993.
18. Prostate ultrasound. Third Annual Ultrasound Symposium. Perrysburg, OH. Feb. 27, 1993.
19. The economics of prostate cancer screening. Advances in Prostatic Hyperplasia and Cancer International Symposium. Dearborn, MI. May 12, 1993.
20. Prostatic volume, PSA density and clinical correlation. International Symposium on Cryosurgery. Pittsburgh, PA. June 4, 1993.
21. What's new in renal tumor staging?; Prostate cancer screening. International Prostate Symposium. Ankara, Turkey. May 1, 1993.
22. Neoadjuvant cryosurgery and radiation therapy. Protocol proposal. Radiation Therapy Oncology Group. Philadelphia, PA. July 23, 1993.
23. Neural Networks and Early Detection Rapporteur. Computer Applications for Early Detection and Staging of Cancer. National Cancer Institute and American Joint Committee on Cancer. Bethesda, MD. July 29, 1993.
24. Experimental and Clinical Experience with Prostate Cryosurgery. Practicum: Ultrasound Guided Cryosurgery for Tumor Ablation. Boston, MA. Sept. 23, 1993.
25. Prostate ultrasound and PSA. Eighth International Symposium of Urology Update 1993. Espinho, Portugal. Oct. 27, 1993.
26. Cost Benefit Analyses. The Detection and Treatment of Early Stage Prostate Cancer A

Scientific Seminar by the American Urological Association, American Cancer Society in cooperation with the National Cancer Institute and the American College of Surgeons Commission on Cancer, Crystal City, Virginia, December 35, 1993.

27. Screening/Early Detection Model (Why Screen?) Prostate Cancer. American Cancer Society/Centers for Disease Control and Prevention's National Conference on Cancer and the Older Person. Atlanta, GA. Feb. 10, 1994.
28. Screening/Early Detection Model (Why Screen?) Prostate Cancer. American Cancer Society/Centers for Disease Control and Prevention's National Conference on Cancer and the Older Person. Atlanta, GA. Feb. 10, 1994.
29. The American Cancer Society's National Prostate Cancer Detection Project. Canadian Workshop on Screening for Prostate Cancer. Quebec City, Quebec, Canada. March 24, 1994.
30. Transrectal ultrasound and prostate cancer risks: The "tailored" prostate biopsy. American Cancer Society's National Conference on Prostate Cancer, Philadelphia, PA. September 29, 1994.
31. Prostatic cryotherapy: Current experiences. American Cancer Society's National Conference on Prostate Cancer, Philadelphia, PA. September 29, 1994.
32. Economic considerations of prostate cancer. American Cancer Society's National Conference on Prostate Cancer, Philadelphia, PA. October 1, 1994.
33. Staging of prostate cancer: Imaging and reality. A Commitment to Urology: Therapeutic Innovations in BPH and Prostate Cancer, Palm Springs, CA. January 20, 1995.
34. Costeffective prostate cancer detection: Reduction of lowyield biopsies. A Commitment to Urology: Therapeutic Innovations in BPH and Prostate Cancer, Palm Springs, CA. January 21, 1995.
35. Staging of prostate cancer: Imaging and reality. A Commitment to Urology: Therapeutic Innovations in BPH and Prostate Cancer, Keystone CO, February 10, 1995.
36. Cryoablation of the prostate. A Commitment to Urology: Therapeutic Innovations in BPH and Prostate Cancer, Keystone CO, February 10, 1995.
37. Cryoablation of the prostate. A Commitment to Urology: Therapeutic Innovations in BPH and Prostate Cancer, Fort Myers, FL, March 23, 1995.
38. Reduction of low-risk biopsies. A Commitment to Urology: Therapeutic Innovations in BPH and Prostate Cancer, Fort Myers, FL, March 24, 1995.
39. Economics of prostate cancer. Cancer Symposium: Prostate, Providence Hospital, Southfield, MI, April 12, 1995.
40. Practical prognostic factors in prostate cancer. BPH and Prostate Cancer Symposium, Captiva Island, FL, May 4 - 5, 1995.

PRESENTATIONS (cont):

41. Prostate cancer update. Beaver Dam Symposium, Gaylord, MI, June 17, 1995.
42. Ultrasound and PSA evaluation of the prostate. Brachytherapy of the Prostate, Seattle, WA, June 23, 1995.
43. Racial differences in prostate cancer. Man-to-Man, Southfield, MI, February 8, 1996.
44. Molecular Markers and Prostate Cancer Staging. Advanced Prostate Cancer: Redefining the Challenge. Cleveland, OH, March 19, 1996.
45. Cryoablation of the Prostate: Experimental Results and Techniques. American Urological Association National Meeting: Postgraduate Course, Orlando, FL, May 8, 1996.
46. Racial differences in prostate cancer. National Prostate Cancer Detection Project Meeting. Seattle, WA, August 24, 1996.
47. Prostate ultrasound overview: Urology Grand Rounds, Detroit, MI, September 13, 1996.
48. Hepatic cryotherapy and prostate cancer detection. Beaverdam Symposium, Gaylord, MI, September 20-21, 1996.
49. Prostate cancer screening. Memorial Lecture: St. Joseph Mercy Hospital, Ann Arbor, MI, September 25, 1996.
50. Point-counterpoint debate: TRUS guided prostate biopsies color doppler of the prostate. Sixth International Meeting of Dutch and Belgian Urological Sonographic Team. Tilburg, The Netherlands, October 11, 1996.
51. Molecular Markers and Prostate Cancer Staging. Advanced Prostate Cancer: Redefining the Challenge. Marina Del Ray, CA, November 1, 1996.
52. Ultrasound and cost-effective early detection. Michigan State Medical Society Meeting, Lansing, MI, November 14, 1996.
53. Moderator of prostate cancer imaging session of Radiology Society of North America National Meeting, Chicago, IL, December 3, 1996.
54. Radiation Therapy for Prostate Cancer. Advanced Prostate Cancer: Redefining the challenge. Houston, TX, February 14, 1997.
55. Molecular markers and prostate cancer staging. Advanced prostate cancer: Redefining the challenge, Pittsburgh, PA, February 22, 1997.
55. Future Benefits and Cost Effectiveness of Prostate Carcinoma Screening. American Cancer Society Workshop: Review of Current Data Impacting Early Detection Guidelines for Prostate Cancer, Phoenix, AZ, March 10-11, 1997.
56. Imaging and Intervention of the Prostate and Seminal Vesicles: Workshop II. Society of Uroradiology, Santa Fe, NM, June 16, 1997.

PRESENTATIONS (cont):

57. Hepatic Cryotherapy. Michigan Sonographers' Society, October 15, 1997.
58. Transrectal US Prostate Cancer Detection: Results of a Large Biopsy Series, Society of Uroradiology, Hamilton, Bermuda, June 7, 1998.
59. Imaging and Prostate Cancer Chemoprevention: Current Diagnosis and Future Directions. National Cancer Institute's Conference on Prostate Cancer Chemoprevention, August 8, 1999.
60. Hepatic Cryotherapy: State of the Art. Including: Visiting Professorship and Live Demonstration of First Percutaneous Hepatic Cryotherapy, Guangzhou (Canton), China, October 4-9, 1999.
61. Prostate Ultrasound Detection and Biopsy: How I do it. Society of Gastrointestinal and GenitoUrinary Radiologists, Poipu, Kauai, Hawaii, March 16, 2000.
62. Breast Cryotherapy; Percutaneous Cryotherapy (Liver, Kidney, Lung and Bone); Great Lakes Radiological Nursing Association, Detroit, MI. Oct. 20, 2001.
63. Percutaneous Cryotherapy (Liver, Kidney, Lung and Bone); Including: Visiting Professorship, Porcine Demonstration/Teaching Laboratory, and First 4 human cases of Hepatic Cryotherapy in Japan, Keio University Hospital, Shinjuku, Toyko, Japan, January 16-24, 2002.
64. Brazil: Invited lectures on cryoablation for cancer physicians in Curitiba, Sao Paulo, Fortaleza; sponsored in part by Detroit Medical Center and Karmanos Cancer Institute; Years: 2003, 2004, 2005, 2007, 2008 and 2014.
65. Middle East: Invited cryoablation and ultrasound tomography lectures; Qatar/Jordan/Lebanon 2005; Saudi Arabia/Bahrain 2009 & 2011.
66. Russia: Invited cryoablation lectures; St. Petersburg, Russia; October 2009.
67. CIO: Symposiums on Clinical Interventional Oncology; Invited cryoablation lectures; Miami, Florida: Years: 2011, 2012, 2014, 2015, 2016, 2018.
68. The Fire & Ice Tumor Ablation Symposium and Workshops; Invited cryoablation lectures; Las Vegas, NV. Years: 2005-8, 2011.
69. International Society of Cryosurgery; Invited cryoablation lectures; Trieste, Italy and Vienna Austria; 2011.
70. Masters of Ablation Conferences; Invited cryoablation lectures; Las Vegas, NV; Years: 2013 & 2014.
71. New England Roentgen Ray Society; Invited cryoablation and ultrasound tomography lectures; Boston, MA; Years: 2011 & 2016.

Scientific Displays

Cum Laude Citation:

Lee F, McLeary RD, Kumasaka G, Straub W, **Littrup PJ**, et al. US and biopsy techniques in prostatic carcinoma. Radiological Society of North America, Chicago, IL, Nov. 30 Dec. 5, 1986.

Cited for Continuing Education Credits:

Lee F, **Littrup PJ**, Kumasaka GH, et al. Transrectal US of prostate cancer utilizing transrectal guidance and an automatic biopsy system. Radiological Society of North America, Chicago, IL., December, 1987.

Cited for Continuing Education Credits and awarded Certificate of Merit with CDROM publication:

Littrup PJ, Sparschu R, Segel M, et al. Prostate biopsy decisions: When, where and how? The tailored biopsy approach. Radiological Society of North America, Chicago, IL., December, 1993.

Awarded Best Scientific Paper and Exhibit:

Littrup P, Gross M, Klein R, Silva J. Grayscale and Color Doppler Issues in Prostate Cancer Detection: PSA Density, Location, Core Involvement and Race. International Meeting of the Society of Uroradiology, Bermuda, July, 1998.