BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Michael A. Jacobs	Associate Professor of Radiology and Oncology
eRA COMMONS USER NAME (credential, e.g., agency login) majacobs	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Michigan	B.S	1990-1993	Mathematics Engineering Science
Oakland University/Henry Ford Hospital, Rochester, Michigan	Ph.D.	1994-1999	Biomedical Physics
The Johns Hopkins University School of Medicine, Baltimore, MD	Postdoctoral	2000-2002	Radiology

A. Personal Statement

Dr. Jacobs' current research interests include developing radiological methods for detection, monitoring, and treatment of cancer. He serves on the National Board of the American College of Radiology Imaging Network (ACRIN) Breast Imaging committee, as a member of the subcommittee of molecular and functional imaging of the ACRIN and as co-director of the Imaging Radiological Assessment Team (IRAT) at Johns Hopkins. Dr. Jacobs has pioneered the development of multiparametric analysis of different pathologies that can combine different modalities to derive diagnostic biomarkers and investigating their use in tumors. He is also PI on the Quantitative Imaging Network (QIN) P01 at JHU for developing novel methods for determining treatment response in clinical trials.

B. Positions and Honors

Positions and Employment

1980-92 United States Air Force: Non Commissioned Officer (NCO), Asst. NCOIC Supervisor of Emergency Room Medical Technician. Wilford Hall Medical Center San Antonio, TX, Lackland AFB
1993-95 Graduate Research Assistant, Mathematics Dept. Oakland University, Rochester, MI
1995-99 Senior Research Assistant, Depts. of Neurology and Radiology. Henry Ford Hospital, Detroit, MI
1999-00 Stroke Research Coordinator, Depts of Neurology and Radiology. Henry Ford Hospital, Detroit, MI
2000-02 Radiological Fellow, Dept. of Radiology. Johns Hopkins University School of Medicine
2002-03 Clinical Instructor, Dept. of Radiology, Johns Hopkins University School of Medicine
2003-06 Asst Professor, Dept. of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD
2005-06 Asst Professor, Dept. of Oncology, Johns Hopkins University School of Medicine
2006-07 Visiting Associate Professor, Radiology, The University of Pittsburgh Medical School
2007-08 Visiting Associate Professor, Oncology, The Johns Hopkins University School of Medicine
2007-08 Visiting Associate Professor, Radiology, The Johns Hopkins University School of Medicine
2009-present Associate Professor, Radiology, The Johns Hopkins University School of Medicine
2009-present Associate Professor, Oncology, The Johns Hopkins University School of Medicine

Other Experience and Professional Memberships

2003-07 Grant reviewer, Susan B. Komen Foundation for Breast Cancer. Dallas, TX
2003- Committee member, Breast Committee of the American College of Radiology Imaging Network (ACRIN)
2004-08 Grant reviewer, CBCRB foundation breast cancer. UCLA
2005 Grant reviewer, P01-Targeted Therapy Panel, NIH/NCI
2009 AAPM committee member: Task Group No. 189 - Validation of software tools for quantification of DCE MRI data

Honors

2000-02 National Research Service Award Cancer Research Training Grant
2000 First Place Award in Clinical Research at JHMI Oncology Center Research Day
2008 Bronze medal winner at the American Roentgen Ray Society, Washington DC
2009 Certificate of Merit Award at the Radiological Society of North America, Chicago IL
2010 (2) Certificates of Merit Award at the Radiological Society of North America, Chicago IL

Patents

(P#604/12/772,176) A compression device for enhancing normal/abnormal tissue contrast in MRI. Osmen N, Jacobs MA, Axel K, and Fahmy A
(P11328, 61/443,748) Multiparametric Non-Linear Dimension reduction methods for segmentation and classification of radiological images. Jacobs MA**,** Akhbardeh A.
(P11421, 61/443,770) A novel 3D registration and reslicing of radiological images. Akhbardeh A., Jacobs MA

C. Selected Peer-reviewed Publications

Most relevant to the current application

1. Rohlfing T., Maurer, CR, Bluemke DA, Jacobs MA. Volume-Preserving Non-Rigid Registration of MR Breast Images Using an Incompressibility Constraint: An Evaluation Study. IEEE Trans Med Imaging 2003; 22; 6; 1-12.
2. Jacobs MA, Barker, PB, Bluemke DA, Herskovits EH, Bhujwalla Z. Benign and malignant breast lesions: diagnosis with multiparametric MR imaging. Radiology. 2003; 229:225-232.
3. Jacobs MA, Barker PB, Bottomley PA, Bhujwalla, Z, Bluemke DA, Proton Spectroscopic Imaging of Human Breast Cancer;a preliminary study. J. Magn. Reson. Imag. 2004;19:68-75.
4. Jacobs MA, Ouwerkerk R, Wolff AE, Stearns, V, Bottomley, P, Barker, PB, Davidson NE, Bhujwalla ZM, Bluemke DA. Multiparametric and Multinuclear Magnetic Resonance Imaging of Human Breast Cancer: Current Applications. Technol Cancer Res Treat. 2004 Dec;3(6):543-50.
5. Jacobs MA, Barker PB, Argani P, Ouwerkerk R, Bhujwalla, Z, Bluemke DA. Combined Spectroscopic and Dynamic Breast MR Imaging; a preliminary study. J. Magn. Reson. Imag. 2005:23-28.
6. Jacobs MA, Herskovits EH, Kim H.S., Diffusion weighted imaging of high intensity focused ultrasound treatment for uterine fibroids. Radiology. 2005 Jul;236(1):196-203.
7. Glunde K, Jacobs MA, Bhujwalla ZM.Choline metabolism in cancer: implications for diagnosis and therapy. Expert Rev Mol Diagn. 2006 Nov;6(6):821-829.
8. Jacobs MA, Ouwerkerk R, Petrowski K, Macura KJ. Diffusion-weighted imaging with apparent diffusion coefficient mapping and spectroscopy in prostate cancer. Top Magn Reson Imaging. 2008 Dec;19(6):261-272. PMC3110834.
9. Jacobs MA. Multiparametric magnetic resonance imaging of breast cancer. J Am Coll Radiol. 2009 Jul;6(7):523-526. Review.
10. Glunde K, Artemov D, Penet MF, Jacobs MA, Bhujwalla ZM. Magnetic resonance spectroscopy in metabolic and molecular imaging and diagnosis of cancer. Chem Rev. 2010 May 12;110(5):3043-3059. PMC2877696.
11. Jin G, An N, Jacobs MA, Li K. The role of parallel diffusion-weighted imaging and apparent diffusion coefficient (ADC) map values for evaluating breast lesions: preliminary results. Acad Radiol. 2010 Apr;17(4):456-463. PMC2860539.
12. Ei Khouli RH, Jacobs MA, Mezban SD, Huang P, Kamel IR, Macura KJ, Bluemke DA. Diffusion-weighted imaging improves the diagnostic accuracy of conventional 3.0-T breast MR imaging. Radiology. 2010 Jul;256(1):64-73. PMC2897691.
13. Jacobs MA**,** Stearns V, Wolff AC, Macura K, Argani P, Khouri N, Tsangaris T,Barker PB, Davidson NE, Bhujwalla ZM, Bluemke DA, Ouwerkerk R. Multiparametric magnetic resonance imaging, spectroscopy and multinuclear (^{23}Na) imaging monitoring of preoperative chemotherapy for locally advanced breast cancer. Acad Radiol. 2010 Dec;17(12):1477-85. NIHMS240651.
14. Harouni AA, Hossain J, Jacobs M.A., Osman. N. Improved hardware for higher spatial resolution strain-encoded (SENC) breast MRI for strain measurements. Acad Radiol. 2011 Jun;18(6):705-15. NIHMS271594.

15. Jacobs MA, Ouwerkerk R, Wolff AC, Gabrielson E, Warzecha H, Jeter S, Bluemke DA, Wahl R, Stearns V. Monitoring of neoadjuvant chemotherapy using multiparametric, (23)Na sodium MR, and multimodality (PET/CT/MRI) imaging in locally advanced breast cancer. Breast Cancer Res Treat. 2011 Jul;128(1):119-26. Epub 2011 Apr 1. [PMCID-in progress].

D. Research Support

Ongoing Research Projects

2P50CA103175-06A2 (Bhujwalla) 09/22/11 - 07/31/16
NCI JHU ICMIC Program
This center grant funds an *in vivo* Cellular and Molecular Imaging Center at Johns Hopkins. The program consists of four research components, four developmental projects, one career development award and four resources.

P50CA88843 Cancer Center (Sukumar) 09/01/010-8/30/12
Breast Spore Grant
The goal of this grant to develop whole body imaging for metastatic breast cancer patients.

2UO1 CA70095-14 (Carducci) 03/01/08-02/28/13
NIH/NCI
Phase I Clinical Trials of New Anti-cancer Targeted Therapies
The major goal of this project is to evaluate new agents for advanced cancer.

U01CA140204 (Wahl, Jacobs, Frey) 09/01/11-08/20/16
NIH/NCI
Quantitative Cancer Imaging
The goal of this grant to develop MRI, PET, and SPECT quantitative metrics for treatment response.

Completed Projects Within Last Three Years

P30CA006973 (Nelson) 05/07/97-04/30/12
NCI
Cancer Center Support Grant – Functional Imaging Core
The goal of this project is to provide an imaging resource for the Sidney Kimmel Comprehensive Cancer Center. The Core provides molecular and functional imaging services using MR, PET and optical imaging, trains and assists investigators in the use of imaging technologies, guides investigators in the use of the most relevant imaging technologies for the proposed project and assists in developing new concepts in image analysis and visualization.

RO1CA100184 (Jacobs) 07/01/04-06/30/11
NIH/ NCI
Multiparametric MRI in Breast Cancer
The major goal of this project is to evaluate the role of novel MRI techniques such as proton MR, sodium, and spectroscopy in the characterization of breast cancer.

NCI P50CA103175-05S1 (Bhujwalla) 08/01/03-07/31/11 NCE
JHU ICMIC Program
This center grant funds an *in vivo* Cellular and Molecular Imaging Center at Johns Hopkins. The program consists of four research components, developmental projects, career development awards and five resources.

5P30CA006973-43 (Abeloff) 11/01/05-10/30/09
NIH Imaging Radiological Assessment Team
The major goal of this project is integrating radiology into the cancer center using PET/CT and MRI.