

**BIOGRAPHICAL SKETCH**

NAME	Barjor Gimi	POSITION TITLE	Assistant Professor
EDUCATION			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Lawrence University, Appleton, WI	B.A.	1995	Physics
Washington University, St. Louis, MO	B.S.	1995	Mechanical Engineering
University of Illinois at Chicago, Chicago, IL	M.S.	2000	Bioengineering
University of Illinois at Chicago, Chicago, IL	Ph.D.	2002	Bioengineering

**A. Position and Honors**

**Professional Experience**

Assistant Professor, University of Texas Southwestern Medical Center, Dallas, TX, 2005-current  
Adjunct faculty, Department of Radiology, The Johns Hopkins University School of Medicine, 2005-current  
Postdoctoral Fellow, Johns Hopkins University School of Medicine, Baltimore, MD, 2003-2005  
Research Assistant, University of Illinois, Chicago, IL, 2000-2002,  
Teaching Assistant, University of Illinois, Chicago, IL, 1999-2000  
Acting Director of Sustaining Engineering, AccuMed International, Inc., Chicago, IL, 1997–1998  
Engineer, Sunpower, Inc., Athens, OH, 1996–1997

**Editorial Board**

Magnetic Resonance Engineering

**Reviewing Activity**

Cancer Research  
Neoplasia

**Awards**

William G. Negendank Award, *outstanding investigator in the field of cancer MR*, 2004  
The First Annual Diabetes Technology Prize, Diabetes Technology Society, 2002  
Dean’s Scholar Award, *University of Illinois’ most distinguished award*, 2002  
Research Award, University of Illinois, 2002  
Sigma Xi Research Forum, international research society, First Prize, 2000  
Washington University international student award; 1993-95  
International Student Scholarship, University of Oxford, 1993  
J. Watumul Award; 1992-94, 2001  
Charlotte A. and Charles B. Schwartz Award, Lawrence University; 1992  
R. Sethna Scholarship, 1991

**Professional and Honors Societies**

Sigma Xi, international scientific research society  
American Association for Cancer Research  
International Society for Magnetic Resonance in Medicine  
Society for Molecular Imaging  
Phi Kappa Phi, national honors society  
Beta Beta Beta, national honors society  
Lambda Sigma, national honors society

## B. Publications

*Jens Vogel-Claussen\**, **Barjor Gimi\***, *Dmitri Artemov and Zaver M. Bhujwalla*, “Early tumor response to antivasular therapy detected by vascular volume and diffusion-weighted MRI,” *Cancer Research* (in review)

**Barjor Gimi**, *Lara Leoni, Jose Oberholzer, Mark Braun, Jose Avila, Yong Wang, Tejal Desai, Lou Philipson, Richard L. Magin, Brian R. Roman*, “Functional MR Microimaging of Pancreatic Beta Cell Activation,” *Cell Transplantation: The Regenerative Medicine Journal*, in press, 2006

**Barjor Gimi**, *Noriko Mori, Ellen Ackerstaff, Emma E. Frost, Jeff W.M. Bulte, Zaver M. Bhujwalla*, “Noninvasive MR imaging of endothelial cell response to human breast cancer cells,” *Neoplasia* Volume 8, Issue 3, 2006

*Timothy Leong, Hongke Ye, Emma Call, Barjor Gimi, Zaver Bhujwalla and D. H. Gracias*, “Microfabrication and Self-Assembly of 3D Microboxes for Biomedical Applications,” *IEEE MEMS*, 2006

**Barjor Gimi**, *Timothy Leong, Zhiyong Gu, Michael Yang, Dmitri Artemov, Zaver M. Bhujwalla, David H. Gracias*, “Self-assembled micropatterned and radio frequency (RF) shielded biocontainers,” *Biomedical Microdevices*, Volume 7, Issue 4, pp 341-345, 2005

**Barjor Gimi**, “MR Microscopy: Concepts, challenges and state-of-the-art,” Chapter on *Magnetic Resonance Imaging: Methods and Biological Applications, Methods in Molecular Medicine*, Humana Press, 2005

**Barjor Gimi**, *Arvind P. Pathak, Ellen Ackerstaff, Kristine Glunde, Dmitri Artemov and Zaver M. Bhujwalla*, “Molecular Imaging of Cancer: Applications of MR Methods,” Invited Paper in Proceedings of the IEEE: Special issue on Molecular Imaging, 2005

*Zaver M. Bhujwalla, Kristine Glunde, Ellen Ackerstaff, Arvind Pathak, Barjor Gimi, Noriko Mori, Venu Raman, and Dmitri Artemov*, “MR Molecular Imaging of Preclinical Cancer Models in Drug Discovery and Development.” CRC Press, 2005

*Arvind P. Pathak, Barjor Gimi, Kristine Glunde, Ellen Ackerstaff, Dmitri Artemov, Zaver M. Bhujwalla*, “Molecular and Functional Imaging of Cancer: Advances in MRI and MRS,” *Methods in Enzymology: Imaging*, Vol. 385-386, 2004

**Barjor Gimi**, *Sertac Eroglu, Lara Leoni, Tejal A. Desai, Richard L. Magin, Brian Roman*, “NMR Spiral Surface Microcoils: Applications,” *Concepts in Magnetic Resonance Imaging Part B: Magnetic Resonance Engineering*, Volume 18B, Issue 1, 2003

*Sertac Eroglu, Barjor Gimi, Brian Roman, Gary Friedman, Richard L. Magin*, “NMR Spiral Surface Microcoils: Field Characteristics and Applications” *Concepts in Magnetic Resonance Imaging Part B: Magnetic Resonance Engineering*, Volume 17B, Issue 1, 2003

*C. Massin, S. Eroglu, F. Vincent, B. Gimi, P.-A. Besse, R.L. Magin and R.S. Popovic*, “Planar microcoil-based Magnetic Resonance Imaging of cells”, *IEEE Transducers: Solid-State Sensors, Actuators, and Microsystems*, 2003

*Sertac Eroglu, Barjor Gimi, Lara Leoni, Brian Roman, Gary Friedman, Tejal Desai, Richard L. Magin*, “NMR Imaging of Microcapsules for Monitoring the Performance of Cell and Tissue Implants,” *IEEE EMBS: Special Topic Conference on Microtechnologies in Medicine and Biology*, 2002

**Barjor Gimi**, *Samuel C. Grant, Richard L. Magin, Gary Friedman*, “Investigation of NMR Signal-to-Noise for RF Scroll Microcoils.” *IEEE-EMBS: Special Topics Conference on Microtechnologies in Medicine & Biology*, 2000

### **Invited Talks**

The Johns Hopkins University Applied Physics Laboratory, “Self assembled 3D radio frequency (RF) shielded microdevices for cell encapsulation, October 2005

Laboratory of Diagnostic Radiology Research, National Institutes of Health, “Imaging Molecular Events with MR microscopy: diagnostics and therapeutics in complex disease,” June 2005

Northwestern University Evanston, IL, Department of Radiology, “Magnetic Resonance Microscopy: imaging molecular events in complex disease,” February 2005

Diabetes Technology Prize Plenary Lecture at the Second Annual Diabetes Technology Meeting, Atlanta, “Non-invasive monitoring of encapsulated beta cell function using Mn<sup>2+</sup>-enhanced Magnetic Resonance Imaging”, October 2002

Biomedical Engineering Society Annual Meeting. Artificial Cells and Nanotechnology Track, “Microcoil NMR: Theory and Applications,” *Richard L. Magin, Samuel C. Grant, Giorgio Moresi, Brian Roman, Barjor Gimi*, October 2001

In Vivo, Cellular and Molecular Imaging Seminar Series, Division of MR Research and Department of Radiology, The Johns Hopkins University School of Medicine, “Improvements in SNR for RF Scroll Coils in NMR Microimaging and Spectroscopy,” February 2001

### **Conference Abstracts and Presentations**

**B. Gimi, D. Artemov, T. Leong, and Z. M. Bhujwalla, and David H. Gracias**, “Cellular Encapsulation and MRI tracking with self-assembled RF shielded devices,” Oral presentation at the International Society of Magnetic Resonance in Medicine, Fourteenth Scientific Meeting, May 2006

**B. Gimi, N. Mori, and Z.M. Bhujwalla**, “Hypoxia increases endothelial cell invasion and migration,” Poster presentation at the International Society of Magnetic Resonance in Medicine, Fourteenth Scientific Meeting, May 2006

**B. Gimi, N. Mori, Z. M. Bhujwalla**, “Dynamic noninvasive tracking of response of endothelial cells to hypoxia and cancer cells using MRI,” Poster presentation at the Ninety-seventh Annual Meeting of the American Association for Cancer Research, 2006

*Timothy Leong, Barjor Gimi, Zhiyong Gu, Zaver Bhujwalla and David H. Gracias*, Self-assembled, radio frequency (RF) shielded non-invasively trackable micro containers,” American Electrophoresis Society annual meeting, 2005

**B. Gimi, N. Mori, E. Ackerstaff, E. E. Frost, J. W.M. Bulte, Z. M. Bhujwalla**, “Optimized iron oxide labeling and MR parameters for endothelial cell tracking in a non-invasive angiogenesis assay,” Poster presentation at the International Society of Magnetic Resonance in Medicine, Thirteenth Scientific Meeting, May 2005

*J. Vogel-Claussen, B. Gimi, Z.M. Bhujwalla*, “Diffusion-weighted MRI detects early treatment response after antivasular therapy of prostate tumors,” Poster presentation at the International Society of Magnetic Resonance in Medicine, Thirteenth Scientific Meeting, May 2005

**B. Gimi, N. Mori, E. Ackerstaff, E. E. Frost, J. W. M. Bulte, Z. M. Bhujwalla**, “Imaging endothelial cell invasion and network formation in response to human breast cancer cells,” Poster presentation at the Ninety-sixth Annual Meeting of the American Association for Cancer Research, April 2005

*H. Song, K. Shahverdi, J. Fox, Y.I. Cho, Y. Wang, B. Gimi, M. Pomper, B. Tsui, Z. Bhujwalla, R.T. Reilly, g. Sgouros*, “A mouse model for breast cancer metastases for targeted alpha-particle radioimmunotherapy in the presence of cross-reactive normal organs.” Poster presentation at the Ninety-sixth Annual Meeting of the American Association for Cancer Research, April 2005

*E. Ackerstaff, B. Gimi, D. Artemov, Z.M. Bhujwalla*, “Anti-inflammatory Treatment Reduced Breast Cancer Cell Invasion and Caused Metabolic Changes Characteristic of a Less Malignant Phenotype,” Poster presentation at the XXI International Conference for Magnetic Resonance in Biological Systems, 2005

*B. Gimi, N. Mori, E. Ackerstaff, E. E. Frost, J. W. M. Bulte, Z. M. Bhujwalla*, “An assay to study endothelial cell and network response to paracrine factors secreted by MDA-MB-231 breast cancer cells, using a superparamagnetic T<sub>2</sub> contrast agent,” Poster presentation at the International Society of Magnetic Resonance in Medicine Workshop on Advances in Experimental and Clinical MR in Cancer Research, October 2004

*B. Gimi, N. Mori, E. Ackerstaff, E. E. Frost, J. W.M. Bulte, Z. M. Bhujwalla*, “MR Imaging Of Superparamagnetically Labeled Endothelial Cells Revealed Directed Migration In Response To Factors Secreted By Human Breast Cancer Cells.” Poster presentation at the Third Annual Meeting of the Society for Molecular Imaging, September 2004

*Hong Song, Karineh Shahverdi, James Fox, Yuchuan Wang, Barjor Gimi, Martin Pomper, Zaver Bhujwalla, R. Todd Reilly, George Sgouros*, “A Model of Metastatic Breast Carcinoma for Targeted Alpha-emitter Therapy Modeling/Dosimetry Studies.” Poster presentation at the Tenth Conference on Cancer Therapy with Antibodies and Immunoconjugates, 2004

*Ellen Ackerstaff, Barjor Gimi, Dmitri Artemov, Zaver M. Bhujwalla*, “Anti-inflammatory Agent Indomethacin Reduces Invasion and Causes Metabolic Changes in a Human Breast Cancer Cell Line,” Poster presentation at the International Society of Magnetic Resonance in Medicine, Twelfth Scientific Meeting, May 2004

*Barjor Gimi, Noriko Mori, Ellen Ackerstaff, Emma E. Frost, Jeff W. Bulte, Zaver M. Bhujwalla*, “Tracking of Endothelial Cell Response to Angiogenic Factors Using a T<sub>2</sub>-weighted Intracellular Contrast Agent,” Poster presentation at the International Society of Magnetic Resonance in Medicine, Twelfth Scientific Meeting, May 2004

*Barjor Gimi, Lara Leoni, Mark Braun, Sertac Eroglu, Richard L. Magin, Brian B. Roman*, “Non-invasive functional microimaging of pancreatic islets using manganese enhanced MRI” Talk at the Society for Molecular Imaging, Second Annual Meeting, August 2003

*Barjor Gimi, Mark Braun, Richard L. Magin, and Brian B. Roman*, “Functional Imaging of Pancreatic Islets.” Talk at the International Society of Magnetic Resonance in Medicine, Eleventh Scientific Meeting, July 2003

*Shadi F. Othma, Barjor Gimi, Amarjit S. Viridi, Ricahrd L. Magin, and Dale R. Sumner*, “The Effect of Proteoglycan On MR Parameters of Articular Cartilage.” Poster presentation at the International Society of Magnetic Resonance in Medicine, Eleventh Scientific Meeting, July 2003

*C. Massin, S. Eroglu, F. Vincent, B. Gimi, P.-A. Besse, R.L. Magin and R.S. Popovic*, “Planar microcoil-based Magnetic Resonance Imaging of cells”, Poster presentation at the IEEE Transducers '03, The 12<sup>th</sup> International Conference on Solid-State Sensors, Actuators, and Microsystems, Boston, MA, June 2003

*Barjor Gimi, Lara Leoni, Sertac Eroglu, Mark Braun, Tejal Desai, Richard Magin, and Brian B. Roman*, “Imaging of Pancreatic  $\beta$ -cell Function by Mn<sup>2+</sup>- Enhanced MRI,” Talk at the National Institute of Biomedical Imaging and Bioengineering workshop, National Institute of Diabetes and Digestive and Kidney Diseases, and Juvenile Diabetes Research Foundation International, *Imaging the Pancreatic Beta Cell*, April 2003

**Barjor Gimi**, “MR microimaging of pancreatic beta cell activation,” Talk at In Vivo, Cellular and Molecular Imaging Seminar Series, Division of MR Research and Department of Radiology, Johns Hopkins University, February 2003

**Barjor Gimi, Lara Leoni, Sertac Eroglu, Tejal Desai, Richard L. Magin, Brian Roman**, “Non-invasive monitoring of encapsulated beta cell function using Mn<sup>2+</sup>-enhanced Magnetic Resonance Imaging”, Diabetes Technology Prize Plenary Lecture at the Second Annual Diabetes Technology Meeting, Atlanta, October 2002

**Sertac Eroglu, Barjor Gimi, Lara Leoni, Brian Roman, Gary Friedman, Tejal Desai, Richard L. Magin**, “NMR Imaging of Microcapsules for Monitoring the Performance of Cell and Tissue Implants,” Talk at the 2nd Annual International IEEE EMBS Special Topic Conference on Microtechnologies in Medicine and Biology, May 2002

**Barjor Gimi, Lara, Leoni, Tejal Desai, Richard L. Magin, Brian Roman**, “Imaging of Pancreatic Beta Cell Function by Mn<sup>2+</sup>-Enhanced MRI.” Talk at the International Society of Magnetic Resonance in Medicine, Tenth Scientific Meeting, Honolulu, Hawaii, May 2002

**Barjor Gimi, Sertac Eroglu, Lara Leoni, Tejal Desai, Richard L. Magin, Brian Roman**, “Assessing Activation of Pancreatic  $\beta$  Cells Using MRI.” Poster presentation at the Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, April 2002

**Barjor Gimi**, “Concepts in Magnetic Resonance Imaging”, *Experiencing Bioengineering* Seminar at University of Illinois at Chicago, 2002

**Richard L. Magin, Samuel C. Grant, Giorgio Moresi, Brian Roman, Barjor Gimi**, “Microcoil NMR: Theory and Applications.” Talk at Biomedical Engineering Society Annual Meeting. Artificial Cells and Nanotechnology Track. October 2001

**Barjor Gimi**, “Improvements in SNR for RF Scroll Coils in NMR Microimaging and Spectroscopy,” Talk at In Vivo, Cellular and Molecular Imaging Seminar Series, Division of MR Research and Department of Radiology, Johns Hopkins University, February 2001

**Barjor Gimi, Samuel C. Grant, Richard L. Magin, Gary Friedman**, “Investigation of NMR Signal-to-Noise for RF Scroll Microcoils.” Poster presentation at the 1<sup>st</sup> Annual International IEEE-EMBS Special Topics Conference on Microtechnologies in Medicine & Biology, October 2000

**Barjor Gimi, Samuel C. Grant, Richard L. Magin, Alan Feinerman, Elina Frolova, Gennady Friedman**, “SNR Improvements for RF Scroll Microcoils.” Poster presentation at the Experimental Nuclear Magnetic Resonance Conference, April 2000

### **C. Research Support**

**Molecular Imaging with Magnetic Resonance Microsystems (Gimi, B., PI) 08/01/05 – 08/01/07**  
Molecular Imaging in Cancer: Developmental Project  
NIH/NCI P50 (*The Johns Hopkins University ICMIC Program*)

### **D. Provisional Patent**

Self-assembled, micropatterned, and radio frequency (RF) shielded biocontainers  
JHU Ref.#: 4751