

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

| NAME Vadappuram P. Chacko | POSITION TITLE Assistant Professor of Radiology | | |
|---|--|---------|-----------------------|
| eRA COMMONS USER NAME (credential, e.g., agency login) vchacko1 | | | |
| 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 |
| Bangalore University, Bangalore, India | B.Sc. | 1965-68 | Chemistry and Physics |
| Indian Institute of Technology, Kanpur, India | M.Sc. | 1969-71 | Chemistry |
| Indian Institute of Technology, Madras, India | Ph.D. | 1971-75 | Chemistry |
| University of Nijmegen, The Netherlands | Postdoc | 1975-76 | Chemistry |
| University of B.C., Canada | Postdoc | 1976-80 | Chemistry |

A. Personal Statement

As manager of the High Field MR Facilities at JHU, my responsibilities include maintenance and management of the high field MR laboratories. In addition to routine maintenance of the spectrometers, I ensure that all the operators of the spectrometers are properly trained in the use of these instruments and that the experiments are conducted properly. I assist in the design and construction of new MR probes whenever they are needed for any projects. Whenever new experiments are planned, I personally supervise these experiments to ensure that they are properly set up and performed. When new instrument purchase is planned for the facilities, I spearhead the efforts in the evaluation and selection of the instrument and supervise the installation and initial testing of all instruments in the MR facilities lab. My role in this project is similar to that of a quality assurance manager in any engineering firm. In addition to the day-to-day maintenance and supervision of operation of the PET-MR scanner, I will train and assist all the users of this shared instrumentation facility. I will also assist in the development and construction of any customized probes needed for the success of various collaborative projects described in this application and implementation of new pulse sequences.

B. Positions and Honors

Positions and Employment

1980-82 Research Associate, Department of Chemistry, U.C. Davis, California
1982-84 Research Specialist, Department of Chemistry, Univ. Minnesota, Minneapolis, MN
1984-present Assist. Professor, Dept. Radiology, The Johns Hopkins University, Baltimore, MD

C. Selected Peer-reviewed Publications (from a total of 76)

Most relevant to the current application

1. Chacko VP and Weiss RG. Intracellular pH Determination by ¹³C NMR Spectroscopy, Am. J. Physiol., 1993; 33, C755-C760.
2. Mori S, Crain BJ, Chacko VP and van Zijl PCM. Three-Dimensional Tracking of Axonal Projections in the Brain by Magnetic Resonance Imaging. Ann Neurol, 1999; 45, 265-269.
3. Chavin KD, Yang SQ, Lin HZ, Chatham JC, Chacko VP, Hoek JB, Walajtys-Rode E, Rashid A, Chen C-H, Huang C-C, Wu T-C, Lane MD and Diehl AM. Obesity Induces Expression of Uncoupling Protein-2 in Hepatocytes and Promotes Liver ATP Depletion. J Biol Chem, 1999; 274, 5692-5700.
4. Bhujwalla ZM, Aboagye EO, Gillies RJ, Chacko VP, Mendola CE and Backer JM. Transfected MDA-MB-435 Human Breast Carcinoma Cells Form Tumors With Altered Phospholipid Metabolism and pH: A ³¹P Nuclear Magnetic Resonance Study *in vivo* and *in vitro*. Magn Reson Med, 1999. 41, 897-903.
5. Breslow MJ, Min-Lee K, Brown DR, Chacko VP, Palmer D and Berkowitz DE. Effect of Leptin Deficiency on Metabolic Rate in ob/ob mice. Am J Physiology, 276, 1999. (Endocrinol. Metab. 39), E443-E449.

Additional recent publications of importance to the field (in chronological order)

6. Stenbit AE, Katz EB, Chatham JC, Greenen DL, Factor SM, Weiss RG, Tsao T-S, Malhotra A, Chacko VP, Ocampo C, Jelicks LA and Charron MJ. Preservation of glucose metabolism in hypertropic GLUT-4 null hearts. Am. J. Physiology, 2000; 279, H313-318.

7. Chacko V.P., Aresta F.A., Chacko S.M. and Weiss R.G. Noninvasive Assessment of *in vivo* Murine Cardiac Metabolism, Morphology and Function at Physiologic Heart Rates with Magnetic Resonance Spectroscopy and Imaging. *Am. J. Physiology*, 2000; (Heart Circ. Physiol.) 279, H2218-H2224.
8. Natarajan K., Mori N., Artemov D., Aboagye E.O., Chacko V.P., and Bhujwalla Z.M. Phospholipid Profiles of Invasive Human Breast Cancer Cells Are Altered Towards a Less Invasive Phospholipid Profile by the Anti-Inflammatory Agent Indomethacine. *Advan. Enzyme Regul.* 2000 40; 271-284
9. Yang, ShiQi, Lin H.Z., Hwang J., Chacko V.P., Diehl A.M.: Hepatic Hyperplasia in Noncirrhotic Fatty Livers. Is Obesity-related Hepatic Steatosis a Premalignant Condition? *Cancer Research* 2001; 61, 5016-5023.
10. Mori N., Natarajan K., V.P., Artemov D. Bhujwalla Z.M. Choline phospholipid metabolites of human vascular endothelial cells altered by cyclooxygenase inhibition, growth factor depletion, and paracrine factors secreted by cancer cells *Molecular Imaging* 2003; 2, 124-130.
11. Naumova, A.V., Chacko, V.P., Ouwerkerk R., Stull L. Marban E. and Weiss R.G. Xanthine Oxidase Inhibitors improve energetics and function after infarction in failing mouse hearts, *Am. J. Physiol. Heart Circ. Physiol.* 2006; 290, H837-843.
12. M.Y.Maslov, V.P.Chacko, M.Stuber, A.L.Moens, D.A.Kass, H.C.Champion and R.G.Weiss. Altered High Energy Phosphate metabolism predicts contractile dysfunction and subsequent ventricular remodeling in pressure-overload hypertrophy mice, *Am. J. Physiol. Heart Circ. Physiol.* 2007; 292, H387-H391.
13. Nagae-Poetscher LM, McMahon M, Braverman N, Lawrie WT, Fatemi A, Degaonkar M, Horska A, Pomper M, Chacko VP and Barker P. Metabolites in Ventricular Cerebrospinal Fluid Detected by Proton Magnetic Resonance Spectroscopic Imaging, *J.Magn.Reson.Imag.* 2004; 20, 496-500.
14. Ruiz-Cabello J, Walczak P, Kedziorek DA, Chacko VP, Schmieder AH, Wickline SA, Lanza GM and Bulte. *Magn. Reson. Med.* 2008; 60, 1506-1511; PMID:PMC2597664.
15. Thomale U, Tyler B, Renard V, Dorfman B, Chacko VP, Carson BS, Haberl EJ and Jallo GI. Neurological grading, survival, MR Imaging and histological evaluation in the rat brainstem glioma model, *Childs Nerv. Syst.* 2009; 25, 433-441. Not Funded by NIH.

D. Research Support

Ongoing Research Support

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.

Research Projects Completed Within the Last Three Years

NIH R01HL63030 (Weiss)

04/01/07-03/31/12

Creatine Kinase Metabolism in Failing Murine Hearts

This grant is geared towards studying cardiac metabolism and function using proton MRI and ³¹P NMR spectroscopy, including saturation transfer studies, in both induced and transgenic models of heart failure in mice.

NIH 2R01 HL39752-20 (Steenbergen)

07/01/07-06/30/12

Elevated Calcium and Myocardial Ischemic Injury

The major goal of this project is to understand the mechanisms of cardioprotection with a focus on signaling pathways, particularly those that regulate ion homeostasis during myocardial ischemia and reperfusion.

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.