

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME GRISWOLD, MARK A	POSITION TITLE Associate Professor		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Illinois, Urbana-Champaign, Urbana, IL	BS	1994	Electrical Engineering
University of Würzburg, Würzburg, Germany	PhD	2002	Physics

NOTE: The Biographical Sketch may not exceed four pages. Items A and B may not exceed two of the four-page limit.

A. Positions and Honors

List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

1993-1994 Electrical Engineer, University of Illinois 4T Project, University of Illinois, Urbana, IL, USA
 1995-1999 Director, RF Coil Development Laboratory, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA
 2002-2004 Postdoctoral Assistant, University of Würzburg, Würzburg, Germany
 2005-present Associate Professor, Department of Radiology, Case Western Reserve University and University Hospitals, Cleveland, OH

Honors

Dean's List, University of Illinois, Urbana, IL (1992), Bright Stars Award, Investigative Radiology (2001), Wilhelm C. Röntgen Preis, Universität Würzburg (2003)

B. Selected Peer-Reviewed Publications (Selected from over 30 to date)

Breuer FA, Kellman P, Griswold MA, Jakob PM. Dynamic autocalibrated parallel imaging using temporal GRAPPA (TGRAPPA). *MRM* 2005 Apr;53(4):981-5.
 Breuer FA, Blaimer M, Heidemann RM, Mueller MF, Griswold MA, Jakob PM. Controlled aliasing in parallel imaging results in higher acceleration (CAIPIRINHA) for multi-slice imaging. *MRM* 2005 Mar;53(3):684-91.
 Gulani V, Schmitt P, Griswold MA, Webb AG, Jakob PM. Towards a single-sequence neurologic magnetic resonance imaging examination: multiple-contrast images from an IR TrueFISP experiment. *Invest Radiol*. 2004 Dec;39(12):767-74.
 Mark A. Griswold, Stephan Kannengiesser, Robin M. Heidemann, Jianmin Wang, and Peter M. Jakob. Field-of-View Limitations in Parallel Imaging. *MRM* Nov;52(5):1118-26 2004
 Pschierer C, Griswold M, Lanz T, Haase A. An LN2 cooled toroid resonator *Concepts In Magnetic Resonance Part B-Magnetic Resonance Engineering* 21B (1): 11-18 Apr 2004
 Schmitt P, Griswold MA, Jakob PM, Kotas M, Gulani V, Flentje M, Haase A. Inversion recovery TrueFISP: Quantification of T-1, T-2, and spin density *Magnetic Resonance In Medicine* 51 (4): 661-667 Apr 2004
 Heidemann RM, Griswold MA, Muller M, Breuer F, Blaimer M, Kiefer B, Schmitt M, Jakob PM. Feasibilities and limitations of high field parallel MR. *Radiologe* 44 (1): 49-55 Jan 2004
 Kohler S, Hiller KH, Griswold M, Bauer WR, Haase A, Jakob PM. NMR-microscopy with TrueFISP at 11.75T. *Journal Of Magnetic Resonance*, 161 (2): 252-257 Apr 2003
 Streif JUG, Lanz T, Griswold M, Rommel E, Haase A. A coil combination for magnetic resonance perfusion imaging of mice in vivo at 7 T *Review Of Scientific Instruments*, 74 (5): 2843-2848 May 2003
 M.A. Griswold, R. Heidemann, M. Nittka, V. Jellus, J. Wang, A. Haase, P.M. Jakob. Generalized Auto-calibrating Partially Parallel Acquisitions (GRAPPA). *MRM*, 47(6):1202-1210 (2002)
 R. Heidemann, M.A. Griswold, A. Haase, P.M. Jakob. VD-AUTO-SMASH Imaging. *MRM* 45:1066-1074 (2001)
 M.A. Griswold, P.M. Jakob, M. Nittka, J.W. Goldfarb and A. Haase. Parallel Imaging with Localized Sensitivities (PILS), *MRM* 44(4):602:209 (2000).
 JA Bankson, MA Griswold, SM Wright, DK Sodickson. SMASH with an eight element multiplexed RF coil array. *MAGMA* 10(2), 84-92 (2000)
 MA Griswold, PM Jakob, RR Edelman, DK Sodickson. A multicoil array designed for cardiac SMASH imaging. *MAGMA* 10(2), 93-104 (2000)
 Haase A, Odoj F, Von Kienlin M, Warnking J, Fidler F, Weisser A, Nittka M, Rommel E, Lanz T, Kalusche B, Griswold M. NMR probeheads for in vivo applications. *Concepts In Magnetic Resonance* 12 (6): 361-388 2000
 J.W. Goldfarb P.V. Prasad, M.A. Griswold and R.R. Edelman, Dynamic three-dimensional magnetic resonance abdominal angiography and perfusion: implementation and preliminary experience. *JMRI* 11(2): 201-7. (2000 Feb).
 P.M. Jakob, M. Griswold, C. Hillenbrand, R. Heidemann, D. Hahn, A. Haase. High speed and high resolution cardiac MRI (parallel acquisition techniques & modular imaging). *MAGMA* 11:52-54 (2000)

- Jakob PM, Griswold MA, Edelman RR, Manning WJ, Sodickson DK. Accelerated cardiac imaging using the SMASH technique. *Journal of Cardiovascular Magnetic Resonance* 1(2), 153-157 (1999).
- Griswold MA, Jakob PM, Chen Q, Goldfarb JW, Manning WJ, Edelman RR, Sodickson DK. Resolution enhancement in single shot imaging using Simultaneous Acquisition of Spatial Harmonics (SMASH). *Magn. Reson. Med.* 41, 1236-45 (1999).
- Chen Q, Levin DL, Kim D, David V, McNicholas M, Chen V, Jakob PM, Griswold MA, Goldfarb JW, Hatabu H, Edelman RR. Pulmonary disorders: ventilation-perfusion MR imaging with animal models. *Radiology* 213(3): 871-9 (1999 Dec)
- Sodickson DK, Griswold MA, Jakob PM, Edelman RR, Manning WJ. Signal-to-noise ratio and signal-to-noise efficiency in SMASH imaging. *Magn. Reson. Med.* 41, 1009-1022 (1999).
- K.O. Lövblad, R. Thomas, P.M. Jakob, T. Scammell, C. Bassetti, M. Griswold, J. Ives, J. Matheson, R.R. Edelman, S. Warach. Silent functional magnetic resonance imaging demonstrates focal activation in rapid eye movement sleep. *Neurology* 53:2193-2195 (1999)
- Jakob PM, Schlaug G, Griswold MA, Lovblad KO, Thomas R, Ives JR, Matheson JK, Edelman RR. Functional Burst Imaging. *Magn. Reson. Med.* 40, 614-621 (1998)
- Chen Q, Jakob PM, Griswold MA, Levin DL, Hatabu H, Edelman RR. Oxygen enhanced MR ventilation imaging of the lung. *MAGMA*. Dec 7(3): 153-61. (1998)
- Jakob PM, Griswold MA, Edelman RR, Sodickson DK. AUTO-SMASH: a self-calibrating technique for SMASH imaging. *MAGMA* 7:42-54 (1998).
- Jakob PM, Griswold MA, Lovblad KO, Chen-Q, Edelman-RR. Half-Fourier BURST imaging on a clinical scanner. *Magn-Reson-Med.* Oct; 38(4): 534-40. (1997)

C. Research Support

List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

ACTIVE

5R01 EB004637-01 (Duerk, PI)	9/01/05-08/31/10	10%
NIBIB	\$320,320	

Improvements in Spiral MRI

The major goals of this project are to develop new MRI pulse sequences for interventional MRI. The methods include new pulse sequence methods for generating contrast between tissues, reducing motion artifacts and monitoring thermal ablation. Visual perception experiments with trained radiologists are used to evaluate the new MRI pulse sequences in an interventional MRI setting.