Name: Thomas M. Talavage

Education:

Degree	*Date*	*School*
BSCEE	May 1992	Purdue University
MSEE	Aug 1993	Purdue University *Advisor: R.L. Kashyap*
PhD	Jun 1998	Massachusetts Institute of Technology *Advisors: B.R. Rosen and J.R. Melcher*

Honorary Society Memberships:

[1] Alpha Lambda Delta (1989)
[2] Phi Eta Sigma (1989)
[3] Eta Kappa Nu (1991)
[4] Tau Beta Pi (1991)
[5] Golden Key (1992)
[6] Phi Kappa Phi (1992)

Honors and Awards:

[1] Ruth and Joel Spira Outstanding Teacher Award – ECE (Spring 2000)
[2] Teaching for Tomorrow Program – Purdue University (2000-2001)
[3] Dean Marion B. Scott Outstanding Professor Award – Tau Beta Pi, IN A (Spring 2001)
[4] Who's Who Among America's Teachers (2002)
[5] Motorola Excellence in Teaching Award – ECE (Spring 2003)
[6] Outstanding Professor Award – Eta Kappa Nu, Beta Chapter (Spring 2004)
[7] Purdue University College of Engineering Young Researcher Award (2005)
[8] C. Holmes MacDonald Outstanding Electrical and Computer Engineering Teacher Award – Eta Kappa Nu (2005)
[9] Purdue University College of Engineering Advising Award (Spring 2008)
[10] Purdue University College of Engineering Engagement/Service Award (Spring 2008)

Professional Experience:

May 1989 – Aug 1989	Summer programmer Pritsker Corporation, West Lafayette, IN
May 1990 – Aug 1990	Summer programmer Pritsker Corporation, West Lafayette, IN
Aug 1998 – Aug 2005	Assistant Professor School of Electrical & Computer Engineering Weldon School of Biomedical Engineering

	Purdue University
Aug 2005 – Present	Associate Professor School of Electrical & Computer Engineering Weldon School of Biomedical Engineering Purdue University
Jan 2004 – Present	Adjunct Assistant Professor Department of Radiology Indiana University School of Medicine
Nov 2007 – Present	Founding Co-Director, Purdue MRI Facility Weldon School of Biomedical Engineering Purdue University

Research Grants and Contracts Received:

[1] Principal Investigator (no co-PIs), PRF Showalter Grant, "Functional Magnetic Resonance Imaging (fMRI) of Human Sensory Systems," July 1, 1999 - June 30, 2000, $50,000.

[2] Principal Investigator (no co-PIs), PRF Summer Faculty Grant, "Functional Magnetic Resonance Imaging (fMRI) Determination of Auditory Linguistic Threshold," June 1, 2000 - July 31, 2000, $5,000.

[3] Principal Investigator (no co-PIs), PRF Research Grant, "Characterization of Reduction of Systemic Noise in fMRI," June 1, 2001 - May 31, 2003, $26,140.

[4] Principal Investigator (no co-PIs), General Electric Medical Systems, "Modeling of 1.5 T and 3.0 T Magnetic Resonance Imager Acoustic Noise Fields During Echo-Planar Imaging," June 1, 2002 - May 31, 2003, $8,662.

[5] Principal Investigator (no co-PIs), Indiana Center for Excellence in Biomedical Imaging 21st Century Funds Pilot Award, "fMRI of Simulated Cochlear Implant Language Stimulation," July 1, 2002 - June 30, 2003, $31,330.

[6] Principal Investigator (no co-PIs), NIH/NIBIB R21 EB00524, "An fMRI-Compatible Hand Controller for Subject Interaction," May 15, 2002 - October 31, 2003, $112,502.

[7] Principal Investigator (no co-PIs), American Hearing Research Foundation Grant, "Simulation and Evaluation of a Novel Rehabilitation Scheme for Cochlear-Implant Patients," January 1, 2003 - December 31, 2003, $18,000.

[8] Co-Principal Investigator (PI: John A. Nyenhuis, Purdue), Rita Medical, "MRI Compatibility of Electrodes," June 1, 2003 - August 30, 2004, $7,000 (Support: $3,000).

[9] Principal Investigator (no co-PIs), Guidant Corporation, "Torque Measurement for Guidant Insignia I Plus Implantable Pulse Generator," January 1, 2004 - December 31, 2004, $4,533.

[10] Principal Investigator (no co-PIs), PRF Research Grant, "Characterizing and Accounting for Acoustic Scanner Noise in Event-Related fMRI," June 1, 2003 - May 31, 2005, $27,978.

[11] Consultant (PI: Jackson T. Gandour, Purdue), NIH/NIDCD R01 DC004585, "Functional Neuroimaging Studies of Speech Prosody," January 1, 2003 - June 30, 2005, $1,193,341 (Support: $28,763).

[12] Co-Investigator (PI: David A. Kareken and Gary D. Hutchins, IUSM), Eli Lilly, "Effects of AMPA potentiation on regional cerebral physiology, behavior and induced brain dysfunction: An exploratory, imaging study in healthy volunteers," October 1, 2004 - September 30, 2005, $450,000 (Support: $5,000).

[13] Co-Investigator (PI: David A. Kareken, IUSM), Alcoholic Beverage Medical Research Foundation, "Functional MRI of alcohol olfactory cues during IV ethanol infusion," January 1, 2005 - December 31, 2005, $50,000 (Support: $5,000).

[14] Subcontract Principal Investigator (PI: Elizabeth Thompson, IPFW), NIH/NIMH R21 MH068267, "Application of the STAP Algorithm to fMRI Data," May 1, 2004 - April 30, 2006, $241,413 (Subcontract: $59,250).

[15] Co-Investigator (PI: Kenneth Byrd, IUSM), American Equilibration Society, "fMRI analysis in bruxers and non-bruxers," March 1, 2005 - May 31, 2006, $15,400 (Support: $2,400).

[16] Principal Investigator (no co-PIs), Indiana Radiology Associates, "Prof. Talavage support from IU Department of Radiology," May 1, 2003 - December 31, 2006, $103,140.

[17] Co-Investigator (PI: Mario A. Svirsky, IUSM), Purdue University/Indiana University School of Medicine Collaboration in Biomedical Research Committee, "Perceptual Learning with a Distorted Sensory Input," January 15, 2005 - December 31, 2006, $50,000 (Support: $19,831).

[18] Co-Principal Investigator (co-PI: T.N. Vijaykumar, Charles A. Bouman, Purdue), Computing Research Institute, "Scalable Parallelization of High-Performance Applications in Medical Imaging," August 2007 - May 2009.

[19] Co-Investigator (PI: David A. Kareken, IUSM), NIH/NIAAA R01 AA014605, "fMRI of the mesolimbic dopamine system in risky drinkers," August 10, 2005 - June 30, 2009, $1,527,556 (Support: $40,297).

[20] Co-Investigator (PI: Jeffrey Gilger, Purdue), American Psychological Foundation Esther Katz Rosen Grant, "A Neurodevelopmental Study of the Gifted and Twice Exceptional," August 1, 2006 - July 31, 2009, $75,000 (Support: $18,750).

[21] Principal Investigator (no co-PIs), NIH/NIBIB R03 EB004855, "fMRI Detection by Clustering Model Fitting Parameters," August 1, 2007 - July 31, 2009, $143,368.

[22] Consultant (PI: Mario A. Svirsky, IUSM), NIH/NIDCD R01 DC003937, "Models of Speech Perception by Cochlear Implant Users," September 1, 2004 - August 31, 2009, $1,723,315 (Support: $172,592).

[23] Principal Investigator (co-PI: Charles A. Bouman, Purdue), NIH/NIBIB R01 EB003990, "Systematic Artifact Reduction in Auditory fMRI," February 1, 2006 - January 31, 2010, $1,333,244.

[24] Principal Investigator, Diversity Supplement to NIH/NIBIB R01 EB003990, "Systematic Artifact Reduction in Auditory fMRI," March 7, 2007 - January 31, 2010, $131,750.

[25] Principal Investigator (co-PI: Larry J. Leverenz, Purdue), Indiana State Department of Health, Indiana Spinal Cord and Brain Injury Research Fund, "Predictive Modeling of Cognitive Impairment from Head Trauma in Collegiate Football Players," January 1, 2009 - December 31, 2010, $120,000.

[26] Principal Investigator (co-PIs: Charles A. Bouman, Eric A. Nauman, Larry J. Leverenz, Dennis A. Miller, Purdue), General Electric Healthcare, "Predictive Modeling of Cognitive Impairment from Head Trauma in Collegiate Football Players," July 1, 2009 - December 31, 2010, $50,000.

[27] Co-Investigator (PI: Amit Anand, IUSM), NIH/NIMH R01 MH075025, "Dysfunctional Cortico-Limbic Activity and Connectivity in Bipolar Disorder and Lithium Effects: An fMRI Study," March 17, 2007 - February 28, 2011, $1,215,523 (Support: $44,365).

Professional Society Activities:

Organization: IEEE (Institute of Electrical and Electronic Engineers)
Engineering in Medicine and Biology Society (EMBS)
Signal Processing Society

Activity: Student Member, 1989 –1998
Member, 1998 – present

Positions:

- Co-Chair, Functional Neuroimaging Track, *26th Annual International Conference of the IEEE EMBS* (2004)
- Co-Chair, Neuroimaging Symposium, *26th Annual International Conference of the IEEE EMBS* (2004)
- Session Chair, *26th Annual International Conference of the IEEE EMBS* (2004)

- Judge, Student Paper Competition, *26th Annual International Conference of the IEEE EMBS* (2004)
- Judge, Student Design Competition, *26th Annual International Conference of the IEEE EMBS* (2004)
- Technical Program Committee Member, *International Conference on Communications, Circuits and Systems (ICCCAS)* (2005)
- Session Chair, *28th Annual International Conference of the IEEE EMBS* (2006)
- Associate Editor, Biomedical Imaging and Image Processing Track, *30th Annual International Conference of the IEEE EMBS* (2008)
- Associate Editor, Biomedical Imaging and Image Processing Track, *31st Annual International Conference of the IEEE EMBS* (2009)
- Board of Governors for IEEE-Eta Kappa Nu (2009 – Present)

Organization: International Society for Magnetic Resonance in Medicine
Activity: Student Member, 1995 – 1998
Member, 1998 – present

Positions:

- Secretary, Current Issues in Brain Function Study Group, 2006-2007.
- Session Chair, *16th Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine* (2008)

Organization: Organization for Human Brain Mapping
Activity: Member, 1998 – present

Organization: American Association for the Advancement of Science
Activity: Member, 1995 – present

Organization: American Society for Engineering Education
Activity: Member, 1999 – present

Organization: Acoustical Society of America
Activity: Member, 2001 – present

Organization: Association for Research in Otolaryngology
Activity: Member, 2002 – present

PhD Thesis Supervision Completed:

Name	*Date*	*Thesis Title*
J. Brandon Laflen	Dec. 2003	"Measurement and Analysis of Perceptual Coding in the Human Auditory System: Multi-Modal Studies Using Neural Activation Patterns"

Gregory G. Tamer, Jr.	May 2005	"Characterizing and Accounting for Acoustic Scanner Noise in Auditory Cortex Event-Related fMRI"
Ashish Rao	Aug. 2005	"Model based estimation and detection of hemodynamic response in event-related fMRI"
John Kassebaum	May 2008	"Application of Frequency Domain State-Space Analysis to Sleep" (Co-advisor with Professor Russell Eberhart, IUPUI Electrical and Computer Engineering)
Sun Geun Kim	Aug. 2008	"Neural correlates of visual and audio-visual perception using functional magnetic resonance imaging (fMRI)"
Lejian Huang	May 2009	"Novel imaging-processing-based analysis of fMRI data" (Co-advisor with Professor Mary Comer, ECE)
Shuowen Hu	Dec. 2009	"Characterization and compensation of artifacts in functional magnetic resonance imaging"
Javier Gonzalez Castillo	Dec. 2009	"Application of Functional Magnetic Resonance Imaging to the Study of Language"
Olumide Olulade	Dec. 2009	"Characterizing the Effect of Recent Acoustic History Properties on Auditory fMRI Responses"

Master's Thesis Supervision Completed:

Name	*Date*	*Thesis Title*
Jared Brosch	Dec. 2000	"Physiologic Noise Analysis in fMRI - Investigative Comparison Using Human Subject Data and Mechanically Induced Noise Data"
Ulas Ziyan	Dec. 2001	"Removal of Respiratory Artifacts from fMRI Data"
James Pollaro	May 2003	"Image Space Estimation and Removal of Undersampled Respiration Noise in Multi-Slice fMRI Data"

Pranesh Thirukkonda	Aug. 2003	"Simplified Model of Auditory Nerve Activation Patterns Induced by Cochlear Implants"
Jeffrey Jackson	Aug. 2003	"An MR-Compatible Computer Joystick Device: Design Approaches and Tradeoff Analysis"
Eri Haneda	Aug. 2003	"fMRI Evaluation of a Novel Rehabilitation Scheme for Cochlear-Implant Users"
Gilbert Tseng	May 2004	"Characterization of Acoustic Noise Generated by Magnetic Resonance Imaging"
Ruwan Ranaweera	May 2005	"Time-Frequency Features in Electroencephalography for Brain-Computer Interfacing"
Shrestha Basu Mallick	Dec. 2005	"Technique for High Spatial Resolution, Focused Electrical Stimulation of Electrically-Excitable Tissue" (Physics; co-advised with Prof. Ian Shipsey)
Chad Lau	May 2006	"Sensiomotor Integration in Dexterous Control of Objects with Precision Grip" (co-advised with Dr. Kristine Mosier, IUSM Department of Radiology)
Olumide Olulade	Aug. 2006	"Characterizing the Effect of Acoustic Imaging Noise and Acoustic Time History in Auditory Cortex Functional Magnetic Resonance Imaging"
N. Ellen Taylor	May 2007	"Evaluation of a Noiseband-Based Cochlear Implant Simulator"
Angela Hoffa	May 2008	"fMRI of the Visual System for Application to Schizophrenia"
Joseph Santos	Dec. 2008	"Novel Pre-Surgical Screening for Cochlear Implant Candidates"
Joshua Hayden	May 2009	"Diffusion weighted imaging in auditory functional magnetic resonance imaging"
Minseok Kwon	Aug. 2009	"Characterization of acoustic imaging noise-induced hemodynamic response as a function of noise intensity in human auditory cortex fMRI at 3.0T"

Master's and PhD Thesis Students Currently Being Supervised:

Daniel Aguiar	Ph.D.	(Began August 2006; ECE; passed QE, prelim)
Meghan (Floyd) Robinson	Ph.D.	(Began June 2008; BME)
Il-Yong Chun	Ph.D.	(Began August 2009; ECE)
Kihwan Han	Ph.D.	(Began January 2007; ECE; passed QE)
Josh Hayden	Ph.D.	(Began August 2009; ECE)
Paige Hopewell	Ph.D.	(Began August 2004; BME MD/PhD program; passed QE, prelim; co-advise with Dr. Navin Bansal, IUSM Radiology)
Minseok Kwon	Ph.D.	(Began August 2009; ECE; conditionally passed QE)
Liang Liu	Ph.D.	(Began August 2006; ECE; passed QE, prelim)
Lingyan Liu	Ph.D.	(Began August 2007; BME; co-advise with Professor Daniel Raftery, CHEM)
Awais Mansoor	Ph.D.	(Began August 2007; ECE; passed QE; co-advise with Professor J. Paul Robinson, BME)
Ruwan Ranaweera	Ph.D.	(Began January 2006; ECE; passed QE, prelim)
Christopher Smalt	Ph.D.	(Began August 2007; ECE; passed QE)
Andrea Snyder	Ph.D.	(Began June 2006; BME MD/PhD program; passed QE)
Catherine Strickland	Ph.D.	(Began July 2008; ECE; passed QE, prelim; co-advise with Professor Eric A. Nauman, ME)
Mark Svendsen	Ph.D.	(Began June 2008; BME; passed QE, prelim; co-advise with Professor Ed Berbari, IUPUI ECE)
Ching-Chih Wu	Ph.D.	(Began August 2009; ECE; passed QE)
Umit Yoruk	Ph.D.	(Began August 2009; ECE)
Peter McKinnis	M.S.	(Began January 2008; BME)
Josh Speciale	M.S.	(Began January 2009; ECE)

Graduate Research Project Course Supervision:

Name	*Proj. Type*	*Date*	*Title*
Allene Manning	EE 696	Dec. 1998	"Functional Magnetic Resonance Imaging"
Teju Prasad	ECE 696	Dec. 2000	"Auditory fMRI"
Delphina Han	ECE 696	May 2001	"Auditory fMRI"
P. Thirukkonda	ECE 696	May 2002	"fMRI of Hearing and Language"
Yi-Shao Liu	ECE 696	Dec. 2002	"fMRI Noise Cancellation"
Chih-Hsin Huang	ECE 696	Dec. 2003	"Generation of acoustic stimuli from a modeled cochlear implant-induced neural activation pattern"
Martin Beckmann	ECE 696	Dec. 2008	"MRI Pulse Sequence Programming"
Ching-Chih Wu	ECE 696	Dec. 2008	"Cochlear Implant Simulation"

Undergraduate Research Project Course Supervision:

Name	*Proj. Type*	*Date*	*Title*
Jared Brosch	EE 496	Dec. 1998	"fMRI Analysis Tools"
	EE 496	May 1999	"fMRI Data Analysis"
Arjun Sinha	EE 496	Dec. 1999	"Auditory Cortex Interconnectivity"
Ashish Tiwari	EE 496	Dec. 1999	"Magnetic Resonance Imaging Simulation"
W. Aaron Kay	EE 496	May 2000	"Overview of the Olfactory System"
Christopher Hiatt	ECE 496	Dec. 2000	"Functional Magnetic Resonance Imaging"
G.K. Viswanathan	ECE 496	Dec. 2000	"Auditory fMRI"
Jeffrey Jackson	ECE 496	Dec. 2000	"MRI Controller"
Gilbert Tseng	ECE 496	Dec. 2000	"MRI Controller"

James Telecsan	ECE 496	Dec. 2000	"MRI Controller"
James Pollaro	ECE 496	May 2001	"MRI Controller"
Eric Tkaczyk	ECE 496	May 2001	"MRI Simulator"
Daniel Dickinson	ECE 496	Aug. 2001	"Optical Joystick"
Erik Douglas	ECE 496	Dec. 2001	"fMRI of Nonsense Words"
Bryce Lobdell	ECE 496	May 2002	"MATLAB Simulation of MRI"
Stephen Cauley	ECE 496 ECE 496	May 2002 May 2003	"Event-Related fMRI Analysis" "Event-Related fMRI Analysis"
Michael Parker	ECE 496	May 2002	"Conversion of Data for Use with the Talairach Coordinate System"
Jeremy Nethercutt	ECE 496 ECE 496 ECE 496	Aug. 2002 May 2003 Dec. 2003	"MRI Cortex Reconstruction" "MRI Cortex Reconstruction" "MRI Cortex Reconstruction"
Nick Anderson	ECE 496	Dec. 2002	"fMRI Joystick Optics"
Santiago Duarte	ECE 496	Dec. 2002	"fMRI of Language"
Xiaobo Shi	ECE 496 ECE 496	Dec. 2002 May 2003	"fMRI Noise Cancellation" "Noise Cancellation Analysis"
Fan Lee	ECE 496 ECE 496	Aug. 2003 Dec. 2003	"Simulation of CI Stimulation" "Auditory Nerve Modeling"
Stephen Foldes	ECE 496	Dec. 2003	"Waveguide Stimulation"
Ka Ki Ng	ECE 496	May 2005	"Investigating Trial Location Variability in ER-fMRI of Visual Cortex"
Himani Shah	ECE 496	Dec. 2005	"fMRI of Motion Perception"
Akshay Kothari	ECE 496	May 2006	"fMRI Respiration Compensation"
Eric Naglich	ECE 496	May 2006	"A Practical Guide to the Design of a 1.5 Tesla Receive-Only Auditory Cortex MRI coil"
Dan Gazanfari	ECE 496	Aug. 2007	"Cochlear Implants"

		Aug. 2008	“Evaluation of Acoustic Simulations of Cochlear Implants”
Meenal Patel	BME 498	May 2008 Dec. 2008	“Functional MRI of the Auditory Cortex” "FMRI of Auditory System"
Namita Agrawal	BME 296	Dec. 2008	"fMRI of Audio-Visual Integration"
Tiffany Sukwanto	ECE 496	Dec. 2008	"Functional MRI Research"

Summer Undergraduate Research Experience Supervision:

Name	*Insitution*	*Program*	*Duration*
Kelly Bratic	Univ. Pittsburgh	REU (BME)	May-Aug 2001
Alex Espinosa	Rose-Hulman	REU (BME)	May-Aug 2002
Karen Hardy	Kettering Univ.	REU (BME)	May-Aug 2003
N. Ellen Taylor	Rose-Hulman	REU (BME)	May-Aug 2004
Adeshola Lawal	Univ. Minnesota	SURF (ECE)	May-Aug 2005
Joseph Santos	UPR-Mayaguez	SURF (ECE)	May-Aug 2005
Angela Hoffa	Purdue Univ.	REU (BME) SURF (BME) SURF (BME)	May-Aug 2005 May-Aug 2006 May-Aug 2007
Rachel Lenhart	Univ. Tennessee	REU (BME)	May-Aug 2006
Matteo Mannino	Purdue Univ.	SURI (ECE)	May-Aug 2006
Mehmet Gunal	Purdue Univ.	SURF (ECE)	May-Aug 2006
Namita Agrawal	Purdue Univ.	SURF (BME)	May-Aug 2008

Courses Developed:

BME/ECE 528 — Measurement and Stimulation of the Nervous System (begun Spring 2002)

BME 595 — Functional MRI Applilcations (RET Module; begun Spring 2009)

ECE 695T/BME 695R — Magnetic Resonance Imaging (begun Fall 2008)

Courses "In Charge Of":

ECE 255 — Electronic Devices Analysis and Design (Fall 1999 – Present)

ECE 400 — ECE Senior Seminar (Fall 2003 – Present)

ECE 520 — Topics in Bioengineering (Fall 1998 – Fall 2004)

ECE 528 — Measurement and Stimulation of the Nervous System (Spring 2002 – Present)

BME 595 — Functional MRI Applications (Spring 2009)

ECE 695T — Magnetic Resonance Imaging (Fall 2008)

School Committee Activities:

Committee: ECE Qualifying Exam Committee
Activity: Member, 1998 – 2000
Member, 2002 – 2004
Member, 2007 – Present

Committee: ECE Curriculum Committee
Activity: Member, 1999 – 2002

Committee: ECE Graduate Committee
Activity: Member, 2004 – 2007

Committee: ECE Strategic Planning Committee
Activity: Member, 2007 – Present

Committee: ECE External Review Committee (Ad Hoc)
Activity: Member, 2005 – 2006

Committee: ECE Undergraduate Reform Committee (Ad Hoc)
Activity: Member, 2006 – Present

Committee: BME Curriculum Committee
Activity: Member, 2003 – 2008

Committee: BME MD/PhD Committee
Activity: Chair, 2005 – Present

Committee: BME External Review Committee (Ad Hoc)
Activity: Member, 2008 – Present

Engineering-Wide Committee Activities:

Committee: First Year Engineering
Activity: Member (BME), 2003 – Present

University-Wide Committee Activities:

Committee: Healthcare Engineering Signature Area Committee
Activity: Member (BME), 2006 – Present

Committee: Computational Life Sciences Graduate Program Committee
Activity: Member (ECE), 2007 – Present

Research Book Contributions and Books Published:

[1] JR Melcher, TM Talavage and MP Harms, "Functional MRI of the Auditory System," Chapter 32 in *Functional MRI*, C.T.W. Moonen, P.A. Bandettini, eds., Springer-Verlag, Mauer, Germany, 1999.

Serial Journal Articles:

[1] PWR Woodruff, RR Benson, PA Bandettini, KK Kwong, RJ Howard, T Talavage, J Belliveau and BR Rosen, "Modulation of Auditory and Visual Cortex by Selective Attention is Modality-Dependent," *NeuroReport*, 7:1909-1913, 1996.

[2] AR Guimaraes, JR Melcher, TM Talavage, JR Baker, P Ledden, BR Rosen, NYS Kiang, BC Fullerton and RM Weisskoff, "Imaging Subcortical Auditory Activity in Humans," *Human Brain Mapping*, 6:33-41, 1998.

[3] RR Benson, DB FitzGerald, LL LeSueur, DN Kennedy, KK Kwong, BR Buchbinder, TL Davis, RM Weisskoff, TM Talavage, WJ Logan, GR Cosgrove, JW Belliveau and BR Rosen, "Language Dominance Determined by Whole Brain Functional MRI in Patients with Brain Lesions," *Neurology* 52:798-809, 1999.

[4] TM Talavage, WB Edmister, PJ Ledden and RM Weisskoff, "Quantitative Assessment of Auditory Cortex Responses Induced by Imager Acoustic Noise," *Human Brain Mapping*, 7:79-88, 1999.

[5] WB Edmister, TM Talavage, PJ Ledden and RM Weisskoff, "Improved Auditory Cortex Imaging Using Clustered Volume Acquisitions," *Human Brain Mapping*, 7:89-97, 1999.

[6] TM Talavage, PJ Ledden, RR Benson, BR Rosen and JR Melcher, "Frequency-Dependent Responses Exhibited by Multiple Regions in Human Auditory Cortex," *Hearing Research*, 150:225-244, 2000.

[7] JR Brosch, TM Talavage, JL Ulmer, JA Nyenhuis, "Simulation of Human Respiration in fMRI With a Mechanical Model," *IEEE Transactions on Biomedical Engineering*, 49:700–707, 2002.

[8] X Li, J Gandour, T Talavage, D Wong, M Dzemidzic, M Lowe, Y Tong, "Selective Attention to Lexical Tones Recruits Left Dorsal Frontoparietal Network," *NeuroReport*, 14:2263-2266, 2003.

[9] TM Talavage, MI Sereno, JR Melcher, PJ Ledden, BR Rosen, AM Dale, "Tonotopic Organization in Human Auditory Cortex Revealed by Progressions of Frequency Sensitivity," *Journal of Neurophysiology*, 91:1282-1296, 2004.

[10] TM Talavage, WB Edmister, "Non-linearity of fMRI Responses in Human Auditory Cortex," *Human Brain Mapping*, 22:216-228, 2004.

[11] J Gandour, Y Tong, D Wong, T Talavage, M Dzemidzic, Y Xu, X Li, M Lowe, "Different Hemispheric Roles in the Perception of Speech Prosody," *Neuroimage*, 23:344-357, 2004.

[12] X Li, D Wong, J Gandour, M Dzemidzic, Y Tong, T Talavage, M Lowe, "Neural Network for Encoding Immediate Memory in Phonological Processing," *NeuroReport* 15:2459-2462, 2004.

[13] Y Tong, J Gandour, T Talavage, D Wong, M Dzemidzic, Y Xu, X Li, M Lowe, "Neural Circuitry Underlying Sentence-level Speech Prosody," *Neuroimage*, 28:417-428, 2005.

[14] AA Rao, TM Talavage, "Reliability of Phase-encode Mapping in the Presence of Non-stationarity of Response Latency," *Neuroimage*, 28:563-578, 2005.

[15] Y Xu, J Gandour, T Talavage, D Wong, M Dzemidzic, Y Tong, X Li, M Lowe, "Activation of the Left Planum Temporale in Pitch Processing is Shaped by Language Experience," *Human Brain Mapping*, 27:173-183, 2006.

[16] FG Shellock, DS Fieno, LJ Thomson, TM Talavage, DS Berman, "Cardiac Pacemaker: *In Vitro* Assessment at 1.5-Tesla," *American Heart Journal*, 151:436-443, 2006.

[17] J Gandour, Y Tong, T Talavage, D Wong, M Dzemidzic, Y Xu, X Li, M Lowe, "The Neural Basis of First and Second Language Processing of Sentence-level Linguistic Prosody," *Human Brain Mapping*, 28:94-108, 2007.

[18] D Kemmerer, J Gonzalez Castillo, T Talavage, S Patterson, C Wiley, "Neuroanatomical Distribution of Five Semantic Components of Verbs: Evidence from fMRI," *Brain and Language*, 107:16-43, 2008.

[19] V Bragulat, M Dzemidzic, T Talavage, D Davidson, SJ O'Connor, DA Kareken, "Alcohol Sensitizes Cerebral Responses to the Odors of Alcoholic Drinks: An fMRI Study," *Alcoholism Clinical and Experimental Research*, 32:1124-1134, 2008.

[20] Y Fu, TM Talavage, JX Cheng, "New Imaging Techniques in the Diagnosis of Multiple Sclerosis," *Expert Opinion on Medical Diagnosis*, 2:1055-1065, 2008. {**Review**}

[21] L Huang, EA Thompson, VJ Schmithorst, SK Holland, TM Talavage, "Partially Adaptive STAP Algorithm Approaches to fMRI," *IEEE Transactions in Biomedical Engineering* 56:518-521, 2009.

[22] KE Byrd, LM Romito, M Dzemidzic, D Wong, TM Talavage, "fMRI Study of Brain Activity Elicited by Oral Parafunctional Movements," *Journal of Oral Rehabilitation* 36:346-361.

[23] S Hu, O Olulade, GG Tamer, WM Luh, TM Talavage, "Signal Fluctuations Induced by non-T1-related Confounds in Variable TR fMRI Experiments," *Journal of Magnetic Resonance Imaging* 29:1234-1239, 2009.

[24] C Wang, J Chen, T Talavage, J Irudayaraj, "Gold nanorod/Fe3O4 nanoparticle `nano-pearl-necklaces' for simultaneous targeting, dual-mode imaging, and photothermal ablation of cancer cells," *Angewandte Chemie International Edition* 48:2759-2763, 2009.

[25] GG Tamer, Jr., WM Luh, JL Ulmer, TM Talavage, "Characterizing Response to Acoustic Imaging Noise for Auditory Event-Related fMRI," *IEEE Transactions on Biomedical Engineering* 56:1919-1928, 2009.

[26] JB Laflen, TM Talavage, "A Method for Delivering Spatio-Temporally Focused Energy to a Dynamically Adjustable Target along a Waveguiding Structure," *IEEE Transactions on Signal Processing* (in press; Accepted 17 August 2009).

[27] S Hu, O Olulade, J Gonzalez Castillo, J Santos, SG Kim, GG Tamer, Jr., WM Luh, TM Talavage, "Modeling Hemodynamic Responses in Auditory Cortex at 1.5T Using Variable Duration Imaging Acoustic Noise," *NeuroImage* (in press; Accepted 19 November 2009).

Pending Serial Journal Articles:

[1] DA Kareken, V Bragulat, M Dzemidzic, C Cox, T Talavage, D Davidson, SJ O'Connor, "Family History of Alcoholism Mediates the Frontal Response to Alcoholic Drink Odors and Alcohol in At-Risk Drinkers." Submitted to *NeuroImage*.

[2] L Huang, ML Comer, TM Talavage, "A Bayesian Segmentation Approach for Activation Detection in Event-Related Functional MRI." Submitted to *IEEE Transactions on Image Processing.*

[3] L Liu, K Han, TM Talavage, "Probabilistic Discriminant Analysis (PDA) Framework for Volumetric fMRI Data." Submitted to *NeuroImage*.

Serial Journal Correspondence or Letters:

Serial Journal Abstracts:

Conference Proceedings and Presentations:

[1] PW Woodruff, RR Benson, T Talavage, KK Kwong, PA Bandettini, J Goodman, JW Belliveau and BR Rosen, "Modulation of Auditory Cortical Activation by Attention Demonstrated with Functional MRI," presented at the First International Meeting for Functional Mapping of the Human Brain, Paris, France, 1995, *Human Brain Mapping* (Suppl 1), p. 190.

[2] PW Woodruff, RR Benson, TM Talavage, PA Bandettini, KK Kwong, HC Breiter, R Howard, JW Belliveau and BR Rosen, "Effect of Selective Attention on Activity with Auditory and Occipital Cortex as Demonstrated using Functional MRI," *Proceedings of the International Society for Magnetic Resonance in Medicine, Third Scientific Meeting and Exhibition*, Nice, France, 1995, p. 166.

[3] TM Talavage, RR Benson, AM Galaburda and BR Rosen, "Evidence of Multiple Tonotopic Fields in Human Auditory Cortex," *Proceedings of the International Society for Magnetic Resonance in Medicine, Fourth Scientific Meeting and Exhibition*, New York, New York, April 1996, p. 1842.

[4] AR Guimaraes, JR Melcher, TM Talavage, JR Baker, BR Rosen and RM Weisskoff. "Detection of Inferior Colliculus Activity during Auditory Stimulation using Cardiac Gated Functional MRI with T1 Correction," presented at the Second International Meeting for Functional Mapping of the Human Brain, Boston, MA, June 1996, *Neuroimage* 3(3):S9.

[5] TM Talavage, PJ Ledden, MI Sereno, RR Benson and BR Rosen, "fMRI Evidence of Tonotopic Organization in Human Auditory Cortex," presented at the Second

International Meeting for Functional Mapping of the Human Brain, Boston, MA, June 1996, *Neuroimage* 3(3):S355.

[6] RA Levine, RR Benson, TM Talavage, JR Melcher, BR Rosen, "Functional magnetic resonance imaging and tinnitus: Preliminary results," *Abstracts of the Twentieth Midwinter Research Meeting, Association for Research in Otolaryngology*, St. Petersburg Beach, FL, February 1997, #260, p. 65.

[7] ME Ravicz, JR Melcher, TM Talavage, RR Benson, BR Rosen, NYS Kiang, "Characterization and Reduction of Imager Generated Noise during Functional Magnetic Resonance Imaging (fMRI)," *Abstracts of the Twentieth Midwinter Research Meeting, Association for Research in Otolaryngology*, St. Petersburg Beach, FL, February 1997, #819, p. 205.

[8] TM Talavage, PJ Ledden, MI Sereno, RR Benson, JR Melcher, BR Rosen and AM Dale, "Evidence for Multiple Frequency-Selective Fields in Human Auditory Cortex Obtained by Functional Magnetic Resonance Imaging," *Abstracts of the Twentieth Midwinter Research Meeting, Association for Research in Otolaryngology*, St. Petersburg Beach, FL, February 1997, #818, p. 205.

[9] TM Talavage, PJ Ledden, MI Sereno, RR Benson, JR Melcher, BR Rosen and AM Dale, "Phase-Encoded Tonotopic Maps in Human Auditory Cortex," *Proceedings of the International Society for Magnetic Resonance in Medicine, Fifth Scientific Meeting and Exhibition*, Vancouver, Canada, April 1997, p. 6.

[10] TM Talavage, PJ Ledden, MI Sereno, BR Rosen and AM Dale, "Multiple Phase-Encoded Tonotopic Maps in Human Auditory Cortex," presented at the Third International Meeting for Functional Mapping of the Human Brain, Copenhagen, Denmark, May 1997, *Neuroimage* 5(4):S8.

[11] TM Talavage, "Multiple Tonotopic Areas in Human Auditory Cortex as Revealed by fMRI," American Speech-Language-Hearing Association Annual Convention, Boston, Massachusetts, November, 1997, #674, p. 174. {**Invited Presentation**}

[12] TM Talavage and WB Edmister, "Measuring and Reducing the Impact of Imaging Noise on Echo-Planar Functional Magnetic Resonance Imaging (fMRI) of Auditory Cortex," *Abstracts of the Twenty-First Midwinter Research Meeting, Association for Research in Otolaryngology*, St. Petersburg Beach, FL, February 1998, #138, p. 35.

[13] I Sigalovsky, RA Levine, JR Melcher, JJ Guinan, TM Talavage, ME Ravicz, BR Rosen, RR Benson, BC Fullerton, "Tinnitus Studied using Functional Magnetic Resonance Imaging: Development of Methods," *Abstracts of the Twenty-First Midwinter Research Meeting, Association for Research in Otolaryngology*, St. Petersburg Beach, FL, February 1998, #204, p. 51.

[14] H Breiter, R Gollub, W Edmister, T Talavage, N Makris, D Kennedy, J Melcher, H Kantor, I Elman, D Gastfriend, J Riorden, T Campbell, M Foley, S Hyman, R Weisskoff, B Rosen, "fMRI of Cocaine Effects on Brainstem and Reward Circuitry," *Biological Psychiatry*, 43(Suppl. 8):214, 1998.

[15] TM Talavage, WB Edmister, PJ Ledden and RM Weisskoff, "Quantification of the Impact of fMRI Scanner Noise on Auditory Cortex," *Proceedings of the International Society for Magnetic Resonance in Medicine, Sixth Scientific Meeting and Exhibition*, Sydney, Australia, April 1998, p. 1502.

[16] TM Talavage, WB Edmister, PJ Ledden and RM Weisskoff, "Comparison of Impact of fMRI Sequence Acoustics on Auditory Cortex Activation," *Proceedings of the International Society for Magnetic Resonance in Medicine, Sixth Scientific Meeting and Exhibition*, Sydney, Australia, April 1998, p. 1503.

[17] H Breiter, R Gollub, W Edmister, T Talavage, N Makris, J Melcher, D Kennedy, H Kantor, I Elman, J Riorden, D Gastfriend, T Campbell, M Foley, R Weisskoff and B Rosen, "Cocaine Induced Brainstem and Subcortical Activity Observed through fMRI with Cardiac Gating," *Proceedings of the International Society for Magnetic Resonance in Medicine, Sixth Scientific Meeting and Exhibition*, Sydney, Australia, April 1998, p. 499.

[18] TM Talavage, WB Edmister, PJ Ledden and RM Weisskoff, "Measurement of Signal Changes Induced by fMRI Imaging Noise," presented at the Fourth International Meeting for Functional Mapping of the Human Brain, Montreal, Canada, June 1998, *Neuroimage* 7(4):S360.

[19] TM Talavage and WB Edmister, "Saturation and Nonlinear fMRI Responses in Auditory Cortex," presented at the Fourth International Meeting for Functional Mapping of the Human Brain, Montreal, Canada, June 1998, *Neuroimage* 7(4):S362.

[20] WB Edmister, TM Talavage, PJ Ledden and RM Weisskoff, "Auditory Cortical Activation Affected by Temporal Organization of Noise," presented at the Fourth International Meeting for Functional Mapping of the Human Brain, Montreal, Canada, June 1998, *Neuroimage* 7(4):S367.

[21] JL Ulmer, OB Nordling, DL Daniels, LP Mark, FZ Yetkin, GA Hatfield, EA DeYoe, TM Talavage, "Functional Magnetic Resonance Imaging of Eloquent Cortex," *Proceedings of the 99th Annual Meeting of the American Roentgen Ray Society*, New Orleans, LA, May 9–14, 1999, p. 188. {**Bronze Medal Award**}

[22] LP Mark, JL Ulmer, DL Daniels, B Biswal, TM Talavage, "Auditory System Anatomy and Functional MR Imaging in Auditory Activation," *Proceedings of the 37th Annual Scientific Meeting of The American Society for Neuroradiology*, San Diego, CA, May 23–28, 1999, p. 333. {**Summa Cum Laude Award**}

[23] SJ Kisner, JL Ulmer, TM Talavage, "Bayesian Approach to Edge-Preserving fMRI Restoration," *Proceedings of the International Society for Magnetic Resonance in Medicine, Eighth Scientific Meeting and Exhibition*, Denver, CO, April 2000, p. 840.

[24] JL Ulmer, OB Nordling, DL Daniels, LP Mark, BB Biswal, FZ Yetkin, VM Haughton, TM Talavage, EA DeYoe, "Functional Magnetic Resonance Imaging of Human Cortex: A review of functional anatomy and clinical applications," *Proceedings of the 38th Annual Scientific Meeting of The American Society for Neuroradiology*, Atlanta, GA, April 2–8, 2000, p. 294. {**Summa Cum Laude Award**}

[25] JR Brosch, JL Ulmer, TM Talavage, "Comparison of Respiratory Artifacts between Human Subjects and a Mechanical Model," presented at the Sixth International Meeting for Functional Mapping of the Human Brain, San Antonio, TX, June 2000, *Neuroimage* 11(5):S564.

[26] JL Ulmer, EA DeYoe, TM Talavage, BB Biswal, DL Daniels, LP Mark, OB Nordling, "Functional Magnetic Resonance Imaging of Human Cortex: A Review of Functional Anatomy and Clinical Applications," *Proceedings of the 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America*, Chicago, IL, November 26–December 1, 2000, p. 674. {**Cum Laude Award**}

[27] U Ziyan, JR Brosch, TM Talavage, "Amplitude-Adaptive Filtering of Respiration Noise in fMRI Data," *Proceedings of the International Society for Magnetic Resonance in Medicine, Ninth Scientific Meeting and Exhibition*, Glasgow, Scotland, April 2001, p. 751.

[28] J Brosch, GA Morris, T Wilson, TM Talavage, "Design and Testing of an MRI Compatible Therapeutic Transducer," *Proceedings of the 2001 IEEE Ultrasonics Symposium, Vol. 2*, October 7-10, 2001, pp. 1169-1172.

[29] U Ziyan, JL Ulmer, TM Talavage, "Image-space Based Estimation and Removal of Respiration Noise from fMRI Data," *Proceedings of the International Society for Magnetic Resonance in Medicine, Tenth Scientific Meeting and Exhibition*, Honolulu, HI, May 2002, p. 1407.

[30] U Ziyan, J Ulmer, T Talavage, "Enhanced Activation from Image-space Estimation and Filtering of Respiration Noise," *8th International Conference on Functional Mapping of the Human Brain*, Sendai, Japan, June, 2002, p. 255.

[31] J Pollaro, U Ziyan, J Ulmer, T Talavage, "Estimation of Undersampled Respiration Noise from Image-domain Multi-slice fMRI Data," *8th International Conference on Functional Mapping of the Human Brain*, Sendai, Japan, June, 2002, p. 196.

[32] JB Laflen, A Rout, TM Talavage, P Thirukkonda, "A Flexible, Analytical Framework for Applying and Testing Alternative Spectral Enhancement Algorithms," *Abstracts of the*

International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA, August 21–25, 2002, #PC28, p. 80.

[33] SF Cauley, G Tamer, TM Talavage, JL Ulmer, "Trial Modeling of the Hemodynamic Response using Event-related fMRI," *Proceedings of the Second Joint EMBS-BMES Conference*, Houston, TX, October 23–26, 2002, pp. 165–166.

[34] SJ Kisner, TM Talavage, JL Ulmer, "Testing a Model for MR Imager Noise," *Proceedings of the Second Joint EMBS-BMES Conference*, Houston, TX, October 23–26, 2002, pp. 1086–1087.

[35] JB Laflen, TM Talavage, AK Sarychev, "High Spatial Resolution, Focused Electrical Stimulation of Electrically-excitable Tissue," *Proceedings of the Second Joint EMBS-BMES Conference*, Houston, TX, October 23–26, 2002, pp. 2080–2081.

[36] JB Laflen, TM Talavage, PM Thirukkonda, MA Svirsky, "Physiologically Based Analysis of Cochlear Implant Representations," *Proceedings of the Second Joint EMBS-BMES Conference*, Houston, TX, October 23–26, 2002, pp. 2078–2079.

[37] JR Pollaro, TM Talavage, U Ziyan, JL Ulmer, "Image-space Based Estimation of Undersampled Respiration Noise in Multi-slice fMRI Data," *Proceedings of the Second Joint EMBS-BMES Conference*, Houston, TX, October 23–26, 2002, pp. 1109–1110.

[38] JB Laflen, TM Talavage, MA Svirsky, "Generating Acoustic Stimuli with Minimal Perceptual Error for Psychophysical Experiments Involving `Normal Hearing' Subjects," *Abstracts of the Twenty-Sixth Midwinter Meeting, Association for Research in Otolaryngology*, Daytona Beach, FL, February 2003, #894, p. 225.

[39] MA Svirsky, S Sinha, H Neuburger, TM Talavage, "Gradual Adaptation to Shifts in the Peripheral Acoustic Frequency Map," *Abstracts of the Twenty-Sixth Midwinter Meeting, Association for Research in Otolaryngology*, Daytona Beach, FL, February 2003, #230, p. 59.

[40] MA Svirsky, R Rayala, S Sinha, H Neuburger, TM Talavage, "A New Method to Accelerate Perceptual Learning after Cochlear Implantation," *American Auditory Society Science and Technology Meeting*, Scottsdale, AZ, February 2003, *ASA Bulletin* 28:33.

[41] SF Cauley, G Tamer, Jr., JL Ulmer, TM Talavage, "Analysis of Trial Dependencies and Saturation in Event-related fMRI," 9^{th} *International Conference on Functional Mapping of the Human Brain*, New York, NY, June 2003, CD-ROM #800.

[42] G Tamer, Jr., T-Q Li, JL Ulmer, TM Talavage, "Validation of Rapid-presentation Event-related fMRI in Auditory Cortex," *Proceedings of the International Society for Magnetic Resonance in Medicine, Eleventh Scientific Meeting and Exhibition*, Toronto, Canada, July 2003, p. 1745.

[43] SF Cauley, G Tamer, Jr., JL Ulmer, TM Talavage, "An Investigation into Trial-dependencies Using Event-related fMRI," *Proceedings of the International Society for Magnetic Resonance in Medicine, Eleventh Scientific Meeting and Exhibition*, Toronto, Canada, July 2003, p. 1808.

[44] TM Talavage, E Haneda, MA Svirsky, H Neuburger, "Improving Adaptation to Basalward Shift for Speech Perception in CI Users," *American Speech-Language-Hearing Association Annual Convention*, Chicago, IL, November, 2003, #56, p. 83. {**Invited Presentation**}

[45] MA Svirsky, TM Talavage, S Sinha, H Neuburger, "Adaptation to a Shifted Frequency Map: Gradual is Better," *Proceedings of the American Association for the Advancement of Science Annual Meeting: Science at the Leading Edge*, Seattle, WA, February 12–16, 2004, p. S5.

[46] TM Talavage, MA Svirsky, E Haneda, H Neuburger, "FMRI Evaluation of a Novel Cochlear Implant Rehabilitation Strategy Reveals Correlation of Cortical Activity with Speech Perception Performance is Dependent on Stimuli Used for Training," *Abstracts of the Twenty-Seventh MidWinter Meeting, Association for Research in Otolaryngology*, Daytona Beach, FL, February 2004, #94, p. 32.

[47] JB Laflen, TM Talavage, MA Svirsky, S Foldes, F Lee, "Are Noise-Bands an Adequate Acoustic Model of Intra-Cochlear Electrical Stimulation? Analysis of the Perceptual Coding of the Noise-Band in the Human Auditory System," *Abstracts of the Twenty-Seventh MidWinter Meeting, Association for Research in Otolaryngology*, Daytona Beach, FL, February 2004, #253, p. 85.

[48] Y Xu, J Gandour, T Talavage, D Wong, M Dzemidzic, Y Tong, M Lowe, "Chimeric Speech Stimuli to Isolate Prelexical Processing of Lexical Tones," *11th Annual Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA, April 2004, #B76, p. 68.

[49] Y Tong, J Gandour, D Wong, T Talavage, M Dzemidzic, Y Xu, M Lowe, "Identifying the Neural Substrates underlying the Perception of Chinese Intonation and Tone," *11th Annual Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA, April 2004, #C75, p. 102.

[50] X Li, J Gandour, D Wong, M Dzemidzic, T Talavage, Y Tong, MJ Lowe, "An fMRI Investigation of Immediate Memory and Selective Attention underlying Chinese Tone Processing," *28th International Congress of Psychology*, Beijing, China, August 8–13, 2004, CD-ROM #4116.7.

[51] CH Huang, JB Laflen, TM Talavage, "Generation of Acoustic Stimuli from a Modeled Cochlear Implant-Induced Neural Activation Pattern," *Proceedings of the VIII International Cochlear Implant Conference*, Indianapolis, IN, May 2004, R.T. Miyamoto, ed., *International Congress Series*, Vol. 1273C, pp. 52–55, 2004.

[52] JB Laflen, TM Talavage, "A Theoretical, Continuous Alternative to the Discrete Electrode Array," *Proceedings of the VIII International Cochlear Implant Conference,* Indianapolis, IN, May 2004, R.T. Miyamoto, ed., *International Congress Series,* Vol. 1273C, pp. 56–59, 2004.

[53] E Haneda, TM Talavage, MA Svirsky, H Neuburger, "Functional MRI of Adaptation to Simulated Cochlear Implant Stimulation," *Proceedings of the Twelfth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine*, Kyoto, Japan, May 2004, p. 396.

[54] SJ Kisner, TQ Li, Y Wang, T Talavage, V Mathews, W Kronenberger, D Dunn, "Quantitative Comparisons of Cluster Maps for Functional Connectivity Studies," *Proceedings of the Twelfth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine*, Kyoto, Japan, May 2004, p. 1099.

[55] JH Jackson, TM Talavage, GHC Tseng, JL Ulmer, "Evaluation of General-Purpose Fiber-Optic Interaction Device for Use in MRI," *10th International Conference on Functional Mapping of the Human Brain*, Budapest, Hungary, June 2004, CD-ROM #TH 293.

[56] AA Rao, TM Talavage, "Assessment of False Alarm and Missed Detection in fMRI Phase-Encode Mapping," *10th International Conference on Functional Mapping of the Human Brain*, Budapest, Hungary, June 2004, CD-ROM #WE 285.

[57] D Wong, X Li, J Gandour, M Dzemidzic, Y Tong, T Talavage, MJ Lowe, "Immediate Memory underlying Verbal Working Memory," *10th International Conference on Functional Mapping of the Human Brain*, Budapest, Hungary, June 2004, CD-ROM #TU 97.

[58] SJ Kisner, TM Talavage, "Testing the Distribution of Non-stationary MRI Data," *Proceedings of the 26th International Conference of the IEEE Engineering in Medicine and Biology Society*, San Francisco, CA, September 1–5, 2004, pp. 1888–1891.

[59] AA Rao, TM Talavage, "Clustering of fMRI Data for Activation Detection using HDR Models," *Proceedings of the 26th International Conference of the IEEE Engineering in Medicine and Biology Society*, San Francisco, CA, September 1–5, 2004, pp. 1876–1879.

[60] GG Tamer, Jr., TM Talavage, WM Luh, JL Ulmer, "Characterizing the Amplitude and Spatial Extent of the Cortical Response in Auditory Cortex to Acoustic Scanner Noise Generated during Echo-planar Image Acquisition in Functional Magnetic Resonance Imaging," *Proceedings of the 26th International Conference of the IEEE Engineering in Medicine and Biology Society*, San Francisco, CA, September 1–5, 2004, pp. 1899–1902.

[61] GG Tamer, Jr., TM Talavage, JL Ulmer, "Characterizing the Attenuation and/or Saturation Effect of the Acoustic Scanner Noise in Auditory Event-related Functional Magnetic Resonance Imaging," *Proceedings of the 26th International Conference of the*

IEEE Engineering in Medicine and Biology Society, San Francisco, CA, September 1–5, 2004, pp. 1868–1871.

[62] GHC Tseng, TM Talavage, RS Hinks, "Repeatability and Variability of Noise Generated during MRI," *Proceedings of the 26th International Conference of the IEEE Engineering in Medicine and Biology Society*, San Francisco, CA, September 1–5, 2004, pp. 1096–1099.

[63] TM Talavage, "Experimental Design and Analysis in Functional MRI," Neuroimaging Symposium, *Proceedings of the 26th International Conference of the IEEE Engineering in Medicine and Biology Society*, San Francisco, CA, September 1–5, 2004, pp. 5226–5229. {**Invited Presentation**}

[64] NE Taylor, TM Talavage, MA Svirsky, H Neuburger, JB Laflen, "The Evaluation of Cochlear Implant Simulators," presented at the Biomedical Engineering Society 2004 Annual Fall Meeting, Philadelphia, PA, October 2004.

[65] Y Xu, D Wong, J Gandour, M Dzemidzic, T Talavage, Y Tong, M Lowe, "Experience-Dependent Activation of Left Planum Temporale in Lexical Tone Processing," *Society for Neuroscience 34th Annual Meeting*, San Diego, CA, October 23–27, 2004, CD-ROM #80.2.

[66] TM Talavage, JT Gandour, MA Svirsky, "Functional Magnetic Resonance Imaging of the Auditory System: Techniques and Applications," *Frontiers in Biomedical Imaging Symposium*, Champaign-Urbana, IL, November 8–10, 2004, p. 21. {**Invited Presentation**}

[67] JB Laflen, TM Talavage, "Generation of Specific Auditory Nerve Input Patterns in Normal-hearing Subjects using Inverse Models of the Peripheral Auditory System," *National Institute of Neurological Disorders and Strokes Neural Interfaces Workshop*, Bethesda, MD, November 15–17, 2004 (1 page).

[68] RD Ranaweera, TM Talavage, A Krishnan, "Activation and Deactivation Patterns in Joint Time-frequency Analysis Differentiate Direction of Finger Movement in Cued and Self-paced Tasks," *National Institute of Neurological Disorders and Strokes Neural Interfaces Workshop*, Bethesda, MD, November 15–17, 2004 (1 page).

[69] JB Laflen, T Talavage, M Svirsky, NE Taylor, T Ng, H Neuburger, "Reproducing Auditory Outcomes with Simulated Neural Activation Patterns," *Abstracts of the Twenty-Eighth MidWinter Meeting, Association for Research in Otolaryngology*, New Orleans, LA, February 2005, CD #518.

[70] NE Taylor, K Hardy-Bruce, T Talavage, JB Laflen, M Svirsky, H Neuburger, "Evaluation of a Noiseband-Based Cochlear Impant Simulator: Consonant Perception," *Abstracts of the Twenty-Eighth MidWinter Meeting, Association for Research in Otolaryngology*, New Orleans, LA, February 2005, CD #745.

[71] RD Ranaweera, TM Talavage, A Krishnan, "Time-frequency Features Differentiate Direction of Finger Movement in Cued and Self-paced Tasks," *Proceedings of the 2nd International IEEE EMBS Conference on Neural Engineering*, Arlington, VA, March 16–19, 2005, p. 551-554.

[72] L Huang, EA Thompson, TM Talavage, "A Partially Adaptive STAP Algorithm Approach to fMRI," *Proceedings of the Thirteenth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine*, Miami, FL, May 2005, p. 1580.

[73] AA Rao, TM Talavage, "Statistical Significance of Phase-encode Maps in the Presence of Response Latency Variance," *Proceedings of the Thirteenth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine*, Miami, FL, May 2005, p. 1584.

[74] AA Rao, TM Talavage, "Analysis of Event-related fMRI Data by Incorporating Physiological Information in HDR Models," *Proceedings of the Thirteenth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine*, Miami, FL, May 2005, p. 1586.

[75] RD Ranaweera, TM Talavage, A Krishnan, "Time-frequency Features Differentiate Direction of Finger Movement in Cued and Self-paced Tasks," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #491.

[76] GG Tamer, TM Talavage, JL Ulmer, "Characterizing the Attenuation Effect of the Acoustic Imaging Noise for Auditory Event-related fMRI," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #597.

[77] GG Tamer, TM Talavage, WM Luh, JL Ulmer, "Characterizing Response to Acoustic Imaging Noise for Auditory Event-related fMRI," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #599.

[78] AA Rao, TM Talavage, "Performance Evaluation of a Hierarchical Clustering Method for fMRI Data Analysis," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #717.

[79] AA Rao, TM Talavage, "Hierarchical Clustering of fMRI Data based on Hemodynamic Response Model Parameters," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #746.

[80] D Wong, J Gandour, Y Xu, M Dzemedzic, T Talavage, Y Tong, M Lowe, "Lexical Tone Processing in the Left Planum Temporale is Experience-dependent: An fMRI Study using Cross-language Comparisons," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #1088.

[81] TM Talavage, Z Pizlo, FJ Pizlo, SG Kim, RM Steinman, "Central Nervous System Correlates of the Perception of φ (Pure Apparent) Movement," *Eleventh Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 2005, #1401.

[82] MA Svirsky, TM Talavage, A Kaiser, H Neuburger, T Morbiwala, M Daga, "Gradual Adaptation to a Modified Peripheral Frequency Map by Postlingually Deaf CI Users," presented at the 2005 Conference on Implantable Auditory Prostheses, Asilomar Conference Grounds, Pacific Grove, CA, July-August 2005, p. 52.

[83] J Gandour, Y Tong, T Talavage, D Wong, M Dzemidzic, Y Xu, M Lowe, "A Cross-language fMRI Study of Sentence-level Prosody in Mandarin," presented at the 43rd Annual Meeting of the Academy of Aphasia, Amsterdam, The Netherlands, October 2005, *Brain and Language* 95:54–55.

[84] A Anand, Y Li, Y Wang, S Gao, JW Wu, MJ Lowe, T Talavage, JI Nurnberger, D Goldman, J Murrell, "Genetic Correlates of Cortico-limbic Activity and Connectivity in Major Depression," *Neuropsychopharmacology,* 30:S159, December 2005.

[85] NE Taylor, A Lawal, K Hardy-Bruce, TM Talavage, JB Laflen, MA Svirsky, H Neuburger, "Evaluation of a Noiseband-based Cochlear Implant Simulator: Consonant Perception Revisited," *Abstracts of the Twenty-Ninth MidWinter Meeting, Association for Research in Otolaryngology*, Baltimore, MD, February 2006, CD #657.

[86] NE Taylor, A Lawal, K Hardy-Bruce, TM Talavage, JB Laflen, MA Svirsky, H Neuburger, "Evaluation of a Noiseband-based Cochlear Implant Simulator: Vowel Perception," *Abstracts of the Twenty-Ninth MidWinter Meeting, Association for Research in Otolaryngology*, Baltimore, MD, February 2006, CD #659.

[87] J Gonzalez Castillo, A Hoffa, T Talavage, M Svirsky, E Haneda, H Neuburger, "Event-related fMRI Evaluation of Adaptation to Acoustic Simulation of Cochlear Implant Electrical Stimulation," *Abstracts of the Twenty-Ninth MidWinter Meeting, Association for Research in Otolaryngology*, Baltimore, MD, February 2006, CD #1009.

[88] KE Byrd, LM Romito, M Dzemidzic, D Wong D, TM Talavage, "fMRI Investigation of Brain Activation Patterns during Brux-like Oromotor Tasks in Bruxers and Nonbruxers," presented at *51st Annual Meeting of the American Equilibration Society*, Chicago, IL, February 2006.

[89] KE Byrd, TM Talavage, D Wong, LM Romito LM, M Dzemidzic, "fMRI Studies of Brain Regions Activated by Bruxers and Non-Bruxers," presented at *35th Annual Meeting of the American Association for Dental Research*, Orlando, FL, March 2006, *Journal of Dental Research*, 85(A): 0851.

[90] L Huang, EA Thompson, SK Holland, V Schmithorst, TM Talavage, "Element Space Partially Adaptive STAP: A Method for Detecting Brain Activation Regions in Real

fMRI Human Data," *32nd Annual Northeast Bioengineering Conference*, Easton, PA, April 2006.

[91] A Anand, Y Wang, L Yu, K Skirvin, MJ Lowe, T Talavage, "Prediction of Antidepressant Efficacy and Side Effects using fMRI Measures of Corticolimbic Activation and Connectivity," *Biological Psychiatry*, 59:47S-48S, April 2006.

[92] S Hu, AD Kothari, TM Talavage, "Efficacy of Data-driven Respiration Compensation Methods in fMRI Data at 1.5T," *Proceedings of the Fourteenth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine*, Seattle, WA, May 2006, CD #2830.

[93] J Gonzalez Castillo, E Haneda, MA Svirsky, H Neuburger, TM Talavage, "Longitudinal fMRI Study of Adaptation to Degraded Speech Stimuli," *Twelfth Annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy, June 2006.

[94] S Kim, TM Talavage, F Pizlo, Z Pizlo, RM Steinman, "Perception of [phi] (Pure Apparent) Movement in an Event-related Paradigm," *Twelfth Annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy, June 2006.

[95] J Gandour, Y Tong, T Talavage, D Wong, M Dzemidzic, Y Xu, X Li, M Lowe, "Neural Substrates of L1 and L2 Processing of Sentence-level Prosody," *Twelfth Annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy, June 2006.

[96] K Byrd, M Dzemidzic, D Wong, T Talavage, LM Romito, "fMRI Study of Brux-like Oromotor Tasks in Bruxers and Nonbruxers," *Twelfth Annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy, June 2006.

[97] C Lau, Y Wang, T Talavage, K Mosier, "Cortical Processing of Kinematic Parameters in Control of Fingertip Forces: Relationship of EMG to the BOLD Signal During a Grasp Stability Task," *Twelfth Annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy, June 2006.

[98] J Bazil, A Kyle, S Bhatia, B Moerdyk, T Talavage, A Sieving, A Brightman, G Graber, A Rundell, "Bioinstrumentation Instruction through Hybrid Wet/circuit Laboratory Activities," *ASEE Annual Conference and Exposition*, Chicago, IL, June 2006, #2109.

[99] JA Kassebaum, BH Forsman, TM Talavage, RC Eberhart, "Observations from Chaotic Analysis of Sleep EEGs," *28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, August 2006.

[100] KE Byrd, D Wong, M Dzemidzic, LM Romito, TM Talavage, "fMRI Study of Motor-imagery in Bruxism," *Society for Neuroscience 36th Annual Meeting*, Atlanta, GA, October 2006.

[101] A Anand, Y Wang, Y Li, T Talavage, J Murrell, "Genetic and Cortico-amygdalar Functional Connectivity Correlates of Antidepressant Treatment Response," *Neuropsychopharmacology*, 31:S92-93, December 2006.

[102] L Liu, AA Rao, TM Talavage, "Regional Approach to fMRI Data Analysis Using Hemodynamic Response Modeling," *Computational Imaging V*, San Jose, CA, January 2007.

[103] L Huang, E Thompson, V Schmithorst, S Holland, T Talavage, "Partially Adaptive STAP for fMRI: A Method for Detecting Brain Activation Regions in Simulation and Human Data," *2007 IEEE International Symposium on Biomedical Imaging*, Washington, D.C., April, 2007.

[104] J Gonzalez Castillo, E Haneda, MA Svirsky, H Neuburger, TM Talavage, "Longitudinal fMRI Study of Adaptation to Degraded Speech Stimuli," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[105] SJ Kisner, TM Talavage, TQ Li, Y Wang, WG Kronenberger, DW Dunn, VP Mathews, "A Clustering Strategy for Quantitative Assessment of Functional Connectivity in Resting-state fMRI Data," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[106] L Liu, TM Talavage, "Iterative Segmentation of fMRI Data Using Linear Discriminant Analysis," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[107] S Hu, J Santos, T Talavage, "Estimation of Volume Acquisition Noise-Induced Response in Auditory Cortex," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[108] S Hu, SJ Kisner, T Talavage, "Efficacy of Data-Driven Respiration Compensation Methods in Event-Related fMRI Data at 1.5T," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[109] O Olulade, S Hu, J Santos, G Tamer, WM Luh, T Talavage, "Characterizing Dependence of Auditory fMRI Response on Acoustic Imaging Noise," *1st Indiana Neuorimaging Symposium*, Bloomington, IN, May 14, 2007.

[110] S Kim, TM Talavage, Z Pizlo, F Pizlo, RM Steinman, "Neural Correlates of Perception of [phi] (pure apparent) Movement," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[111] S Kim, TM Talavage, R Lenhart, A Hoffa, D Wong, D Pisoni, "Recruitment of Language Pathway by Audio-Visual Presentation of Degraded Speech," *1st Indiana Neuroimaging Symposium*, Bloomington, IN, May 14, 2007.

[112] L Liu, TM Talavage, "Iterative Segmentation Optimization for Model-Based Detection of fMRI Activation," *Proceedings of the Fifteenth Scientific Meeting and Exhibition of the*

International Society for Magnetic Resonance in Medicine, Berlin, Germany, May 2007, CD #1349.

[113] L Huang, EA Thompson, SK Holland, V Schmithorst, TM Talavage, "An Improved Space-Time Adaptive Processing (STAP) Model: A Spatiotemporal Approach For fMRI," *Thirteenth Annual Meeting of the Organization for Human Brain Mapping*, Chicago, IL, June 2007.

[114] S Hu, O Olulade, JM Santos, GG Tamer, Jr., W-M Luh, TM Talavage, "Estimation of Volume Acquisition Noise-Induced Response in Auditory Cortex," *Thirteenth Annual Meeting of the Organization for Human Brain Mapping*, Chicago, IL, June 2007.

[115] S Hu, SJ Kisner, TM Talavage, "Efficacy of Data-Driven Respiration Compensation Methods in Event-Related fMRI Simulations at 1.5T," *Thirteenth Annual Meeting of the Organization for Human Brain Mapping*, Chicago, IL, June 2007.

[116] S Kim, T Talavage, R Lenhart, A Hoffa, D Wong, D Pisoni, "Recruitment of Language Pathway by Audio-Visual Presentation of Degraded Speech," *Thirteenth Annual Meeting of the Organization for Human Brain Mapping*, Chicago, IL, June 2007.

[117] O Olulade, S Hu, GG Tamer, Jr., JM Santos, W-M Luh, TM Talavage, "Characterizing Dependence of Auditory fMRI Response on Acoustic Imaging Noise," *Thirteenth Annual Meeting of the Organization for Human Brain Mapping*, Chicago, IL, June 2007.

[118] J Wei, TM Talavage, I Pollak, "Modeling and Activation Detection in fMRI Data Analysis," *IEEE/SP 14th Workshop on Statistical Signal Processing*, Madison, WI, August 2007, p. 141–145.

[119] L Huang, ML Comer, TM Talavage, "A Novel Image Analysis Method based on Bayesian Segmentation for Event-related Functional MRI," *Computational Imaging VI*, San Jose, CA, January 2008, #6814-12.

[120] L Liu, K Han, TM Talavage, "Volumetric fMRI Data Analysis using an Iterative Classification Method," *Computational Imaging VI*, San Jose, CA, January 2008, #6814-13.

[121] KE Byrd, M Dzemidzic, LM Romito, TM Talavage, D Wong, "Brain Activation and Dental Wear Correlations in Bruxers and Non-Bruxers," presented at *American Association for Dental Research 37th Annual Meeting and Exhibition*, March 2008.

[122] K Byrd, M Dzemidzic, LM Romito, T Talavage, D Wong, "Brain Activation and Dental Wear Correlations in Bruxers and Non-bruxers," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[123] V Bragulat, M Dzemidzic, CA Cox, T Talavage, R Considine, DA Kareken, "Cerebral Network Activation Elicited by Food-related Odors in Obese and Lean Subjects: A Pilot Study," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[124] C Shao, RW Proctor, J Gonzalez Castillo, TM Talavage, "Comparison of Two SRC Tasks: Shared Neural Basis for Different Spatial Stimulus Modes," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[125] S Kim, TM Talavage, R Lenhart, A Hoffa, D Wong, DB Pisoni, "Cortical Networks underlying Benefits of Audio-visual Speech Integration," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[126] O Olulade, S Hu, GG Tamer, Jr., JM Santos, W-M Luh, TM Talavage, "Effect of Acoustic Imaging Noise and Recent Acoustic History on Auditory fMRI Response," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[127] O Olulade, TM Talavage, J Gilger, "Characterization of Verbal and Spatial Information Processing in Twice Exceptional Individuals," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[128] S Hu, P McKinnis, SJ Kisner, TM Talavage, "Efficacy of Data-driven Respiration Compensation Methods in Event-related fMRI Simulations at 1.5T," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[129] L Huang, ML Comer, TM Talavage, "EM/MPM Approach for Event-related fMRI," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[130] J Santos, J Gonzalez Castillo, JH Jackson, O Olulade, JL Ulmer, TM Talavage, "fMRI of Violent Video Gaming and Fiber-optic Joystick Evaluation," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[131] E Malaia, R Ranaweera, T Talavage, R Wilbur, "fMRI Study of Event Structure Effects on Predicate Processing in ASL," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[132] S Kim, TM Talavage, Z Pizlo, F Pizlo, RM Steinman, "Neural Correlates of `Magni-[phi]'," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[133] S Hu, O Olulade, JM Santos, GG Tamer, Jr., W-M Luh, TM Talavage, "Volume Acquisition Noise-induced Activation," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008. {**Best Poster Award**}

[134] DA Kareken, V Bragulat, M Dzemidzic, T Talavage, D Davidson, S O'Connor, "What if Proust's Teacup had had Cognac? Cerebral Networks of Alcohol Craving Elicited by Alcoholic Odors," *2nd Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[135] O Olulade, S Hu, GG Tamer, Jr., JM Santos, WM Luh, TM Talavage, "Effect of Acoustic Imaging Noise and Recent Acoustic History on Auditory fMRI Response," *16th Scientific Meeting and Exhibition of the ISMRM*, Toronto, Ontario, Canada, May 2008.

[136] E Malaia, J Gonzalez Castillo, T Talavage, R Wilbur, "Experimental Evidence of Event Structure Effects on American Sign Language Predicate Production and Processing," *The 44th Annual Meeting of the Chicago Linguistic Society*, Chicago, IL, May 2008.

[137] S Hu, O Olulade, J Santos, G Tamer, WM Luh, T Talavage, "Volume Acquisition Noise-Induced Activation," *Fourteenth Annual Meeting of the Organization for Human Brain Mapping*, Melbourne, Australia, June 2008.

[138] S Kim, TM Talavage, R Lenhart, A Hoffa, D Wong, DB Pisoni, "Cortical Networks underlying Benefits of Audio-visual Speech Integration," *Fourteenth Annual Meeting of the Organization for Human Brain Mapping*, Melbourne, Australia, June 2008.

[139] J Santos, J Gonzalez Castillo, J Jackson, O Olulade, J Ulmer, T Talavage, "fMRI of Violent Video Gaming and Fiber-optic Joystick Evaluation," *Fourteenth Annual Meeting of the Organization for Human Brain Mapping*, Melbourne, Australia, June 2008.

[140] J Gilger, T Talavage, J Sanchez-Bloom, O Olulade, M Wilkins, G Hynd, "A Neurodevelopmental Study of the Twice Exceptional: The Nonverbally Gifted Dyslexic," *116th Annual Convention of the American Psychological Association*, Boston, MA, August 2008.

[141] J Wei, TM Talavage, I Pollak, "A New Method for FMRI Activation Detection," *Computational Imaging VII*, San Jose, CA, January 2009.

[142] S Hu, O Olulade, GG Tamer, WM Luh, TM Talavage, "Compensation of non-T1-related artifacts in variable TR fMRI at 1.5T," *17th Scientific Meeting and Exhibition of the ISMRM*, Honolulu, HI, April 2009.

[143] L Liu, C Bouman, T Talavage, V Taracila, Y Stickle, L Feng, P Chan, F Robb, "Model-Based MRI Coil Tuning Algorithm," *17th Scientific Meeting and Exhibition of the ISMRM*, Honolulu, HI, April 2009.

[144] L Liu, T Talavage, C Bouman, Y Stickle, L Feng, V Taracila, P Chan, F Robb, "Novel Method to Estimate Coil Coupling for Enhanced Tuning and Parallel Image Reconstruction," *17th Scientific Meeting and Exhibition of the ISMRM*, Honolulu, HI, April 2009.

[145] S Choi, K Kirk, T Talavage, V Krull, C Smalt, S Baker, "Effects of training format on perceptual learning of spectrally degraded voices," *157th Meeting of the Acoustical Society of America*, Portland, OR, May 2009.

[146] J Gilger, O Olulade, T Talavage, J Sanchez-Bloom, M Wilkins, G Hynd, "A Neurodevelopmental Study of the Twice Exceptional: The Nonverbally Gifted Dyslexic," *117th Annual Convention of the American Psychological Association*, Toronto, Ontario, Canada, August 2009.

[147] E Malaia, R Ranaweera, G Tamer, RB Wilbur, TM Talavage, "Cortical representation of predicate processing in American Sign Language," *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA, June 2009.

[148] TM Talavage, JM Santos, N Agrawal, SG Kim, D Wong, DB Pisoni, "Clinical Assessment of Executive Function Predicts Self-Selected Strategy and Performance in Audio-Visual Speech Integration," *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA, June 2009.

[149] AL Francis, RD Ranaweera, O Olulade, TM Talavage, "Differential effects of perceptual and working memory load on neural correlates of selective attention to speech in competing speech," *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA, June 2009.

Pending Conference Proceedings and Presentations:

Invited Lectures:

[1] "Functional Magnetic Resonance Imaging of Sensory Systems," Anatomy Seminar Series, Department of Anatomy, Indiana University School of Medicine, Indianapolis, IN, April 1, 1999.

[2] "Auditory fMRI: Neurophysiology and Applications to Language Perception," DeVault Otologic Research Laboratory, Indiana University School of Medicine, Indianapolis, IN, May 16, 2000.

[3] "Use of fMRI for the Study of Audition and Language Perception," Speech Research Laboratory, Indiana University, Bloomington, IN, February 8, 2002.

[4] "Medical Imaging Research Activities at Purdue University," General Electric Medical Systems, Applied Sciences Laboratory, Waukesha, WI, March 1, 2002.

[5] "Current ECE Research in Medical Imaging at Purdue University," General Electric Medical Systems, Applied Sciences Laboratory, Waukesha, Wisconsin, February 27, 2004.

[6] "fMRI Evaluation of a Novel Cochlear Implant Rehabilitation Strategy: Improving Adaptation to Basalward Shift for Speech Perception in CI Users," General Electric Medical Systems, Applied Sciences Laboratory, Waukesha, WI, February 27, 2004.

[7] "Auditory fMRI: Results, Problems and Solutions," Speech Research Laboratory, Indiana University, Bloomington, IN, December 14, 2004.

[8] "Auditory Neuroscience with fMRI: Problems and Solutions," Biophysics Seminar Series, Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, March 4, 2005.

[9] "Auditory fMRI: Neurophysiology to Perception," Grand Rounds, Department of Otolaryngology-Head and Neck Surgery, University of Cincinnati College of Medicine, Cincinnati, OH, March 9, 2005.

[10] "Brain Mapping of Frequency Tonotopy in the Auditory Cortex," Workshop on the Functional Organization of the Laminar Structure of the Auditory Cortex, Johns Hopkins University, Baltimore, MD, February 4, 2006.

[11] "Auditory Neuroengineering," MD/PhD Seminar Series, Indiana University School of Medicine, Indianapolis, IN, March 23, 2006.

[12] "fMRI of Auditory Neurophysiology: Tonotopy and Related Issues," Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, October 20, 2006.

[13] "Inverse and Iterative Solutions in Neuroimaging and Neuroscience," MIND Institute, Albuquerque, NM, December 7, 2007.

[14] "Audio-Visual Integration Benefit During Degraded Speech Perception: Behavioral Measures from an fMRI Study," Speech Research Laboratory, Indiana University, Bloomington, IN, April 4, 2008.

[15] "Neuroimaging at Purdue: A Vision for the Future," *2nd Annual Indiana Neuroimaging Symposium*, Indianapolis, IN, April 25, 2008.

[16] "Inverse Solutions: The Purdue MRI Facility and You," *3rd Annual Purdue/Korean Institute of Science and Technology Global Research Laboratory Symposium*, Seoul, South Korea, June 2, 2008.

Published Reviews:

Technical Reports:

Patents:

[1] Submitted to United States Patent and Trademark Office (Purdue Ref: P-02012.00.US), 03/28/2003: "Technique for High Spatial Resolution, Focused Electrical Stimulation of Electrically-Excitable Tissue," JB Laflen, TM Talavage.

Activities as a Referee:

Conferences:
[1] International Society for Magnetic Resonance in Medicine
[2] International Magnetics (INTERMAG)
[3] IEEE Engineering in Medicine and Biology Society
[4] Organization for Human Brain Mapping
[5] International Conference on Communications, Circuits and Systems
[6] International Conference on Image Processing

Journals:
[1] Cerebral Cortex
[2] IEEE Transactions on Medical Imaging
[3] IEEE Transactions on Biomedical Engineering
[4] Human Brain Mapping
[5] Neuroimage
[6] Hearing Research
[7] Neuroscience Letters
[8] Journal of the Acoustical Society of America
[9] IEEE Transactions on Magnetics
[10] Brain Research
[11] Proceedings of the National Academy of Sciences
[12] Audiology and Neurootology
[13] Magnetic Resonance in Medicine

Proposals:
[1] NSF STS Program (2001)
[2] United States - Israel Binational Science Foundation (2006)
[3] NIH T90 (2006)
[4] NIH MEDI, invited reviewer (2007)
[5] NIH NIDCD F31/F32 (2007)
[6] NIH NIDCD Tinnitus (2008)
[7] NIH NIDCD R03 (2009)

Books:
[1] Wiley Encyclopedia of Biomedical Engineering

Theses:

[1] External Reader, PhD Thesis, Swinburne University of Technology, Melbourne, Australia (2004, 06)

Editorial Positions:

Special Projects, Short Courses, etc. - Contribution:

Short Courses and Workshops Attended:

[1] Purdue University Racial Diversity Workshop, Fall 2000

[2] Neural Interfaces Workshop, National Institutes for Health, National Institute for Neurological Disorders and Stroke (NIH-NINDS), Bethesda, MD, November 15-17, 2004.

Other Activities:

Administrative

[1] Area Chair, Communications, Networking, Signal and Image Processing (2006 – Present)

Advising

- Student Organizations

[1] Tau Beta Pi (Indiana Alpha Chapter): Advisor (1999 – Present)

[2] Purdue University IEEE Student Chapter: Branch Counselor (1999 – 2007)

[3] Eta Kappa Nu (Beta Chapter): Advisor (2000 – 2001), Head Advisor (2001 – Present)

- Academic Programs

[1] Mentor, HORIZONS Student Support Program, Purdue University, Fall 2007, 2008.

Conference Oral Session Moderator

[1] *VIII International Conference on Cochlear Implants* (2004)

[2] *Computational Imaging V* (2007)

Internal Workshops and Symposiums

[1] Coordinator, Medical Imaging Track, Healthcare Engineering Workshop, Purdue University, 26 September 2006

[2] Co-Organizer and Moderator, Purdue MRI Facility Dedication Symposium, 2 November 2007.