**CURRICULUM VITAE**

**NAME**: Robert Todd Constable, Ph.D.

**CURRENT ADDRESS**:

Yale University School of Medicine

Departments of Diagnostic Radiology and Neurosurgery

300 Cedar Street

The Anlyan Center, N132

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**EDUCATION**:

1984 B.Sc. Physics

University of Winnipeg

Winnipeg, Manitoba, Canada

1986 M.Sc. Medical Physics

University of Manitoba

Winnipeg, Manitoba, Canada

1990 Ph.D. Medical Biophysics

University of Toronto

Toronto, Ontario, Canada

2006 M.A. Honorary Master of Arts

Yale University

New Haven, CT, USA

**ACADEMIC APPOINTMENTS:**

1990 - 1991 Postdoctoral Fellow

Department of Diagnostic Radiology

Yale University School of Medicine

1991 - 1994 Associate Research Scientist

Department of Diagnostic Radiology

Yale University School of Medicine

1994 -2000 Assistant Professor

Department of Diagnostic Radiology

Yale University School of Medicine

1998 -2000 Assistant Professor

Department of Neurosurgery

Yale University School of Medicine

2000 - 2006 Associate Professor

Department of Diagnostic Radiology

Yale University School of Medicine

2000 - 2006 Associate Professor

Department of Neurosurgery

Yale University School of Medicine

2001 - Director MRI Research

Department of Diagnostic Radiology

Yale University School of Medicine

2001 - co-Director

Magnetic Resonance Research Center (MRRC)

Yale University School of Medicine

2003 - 2006 Associate Professor

Department of Biomedical Engineering

Yale University

2006 - Professor (Tenure)

Department Radiology and Biomedical Imaging, and Neurosurgery

Yale University

**SCHOLARSHIPS AND AWARDS:**

1983 Board of Regents General Proficiency Scholarship,

University of Winnipeg

1984 National Science and Engineering Research Council (NSERC) Summer Research

Award, Manitoba Cancer Foundation

University of Manitoba

1984, 1985 University of Manitoba Graduate Fellowship,

University of Manitoba

1985 - 1990 Medical Research Council of Canada Studentship

University of Toronto

2015 Academy of Radiology Research – Distinguished Investigator Award

**Grant History (principal Investigator):**

1993 - 1997 Whitaker Foundation Biomedical Engineering Research Award

Title: Development of advanced MRI techniques for in vivo quantitative measurements of myocardial wall motion. P.I. Constable

$243,000

1998 - 2000 American Heart Association: Connecticut Affiliate: Grant-in-Aid

Title: Quantifying myocardial blood volume and oxygenation in the presence of coronary artery stenosis. P.I. Constable

$86,000

1999 - 2000 National Institutes of Health: NIH-R01 #NS38467-01

Title: Functional MRI for Neurosurgical Planning in Epilepsy. P.I. Constable

$929,948

2002 - 2008 National Institutes of Health: NIH-R01 #NS38467-04

Title: Functional MRI for Neurosurgical Planning in Epilepsy. P.I. Constable

$1,065,000

2002 - 2004 National Institutes of Health: NIH-R01 #NS40497-01

Title: Functional Heterogeneity of the Hippocampal Formation. P.I. Constable

$769,654

2001 - 2003 NIH F32 MN64290-01 Postdoctoral Fellowship of Robert Astur.

Mentor. Constable.

$87,000

2002 - 2007 National Institutes of Health: NIH-BRP #EB00473-01

Title: Bioimaging and intervention in neocortical epilepsy

$7,100,000 (PI: Duncan, Partners: Constable, Rothman, Spencer)

2003 – 2004 Pfizer: Liver Fibrosis Project: $542,255

2004 – 2006 Pfizer: Next Generation Imaging Tools: $956,081

2005 – 2006 Pfizer: PET and ASL MRI Comparison $517,559

2005 – 2006 Pfizer: Test/Retest fMRI $275,690

2006 – 2007 Pfizer: Liver fibrosis in HCV patients: $322,000

2005 – 2009 National Institutes of Health: NIH-R01 #NS47605

Title: Epileptogenic Tissue Localization using EEG-fMRI.

PI: Constable

$1.5M

2006 – 2011 National Institutes of Health: NIH-R01 #NS051622-01A2

Title: Towards an Improved Understanding of negative BOLD signal change

PI: Constable

$1.5M

2007 – 2012 National Institutes of Health: NIH R01 #NS052344-01A2

Title: The influence of brain state on fMRI

PI: Constable

$1.7M

2007 - 2012 National Institutes of Health: NIH-BRP #EB00473-01

Title: Bioimaging and intervention in neocortical epilepsy

PI: Duncan, (Partners: Constable, Rothman, Spencer)

$7,100,000

2008-2009 National Institutes of Health: NIH-NCRR #S10RR24554-01

Title: Upgrade of Yale 3T Trio Imaging System

PI: Constable

$500,000

2010-2014 National Institutes of Health: NIH-NIBIB R01 #EB009666-01A1

Title: Method for Measuring Functional Subunits in Human Cortex

PI: Constable

$1.5M

2010-2015 National Institutes of Health: NIBIB BRP #EB012289-01

Title: Null Space Imaging: A Novel Approach to Accelerating MR Imaging

PI: Constable

$3.5M

2013-2017 National Institutes of Health: NIBIB R01 #EB016978-01A1

Title: O-Space Imaging: Accelerating MRI with Z2-Gradient Encoding

PI: Constable

$2.0M

2014-2015 National Institutes of Health: NIBIB S10 OD018527-01

Title: Acquisition of a Siemens Console and Gradients for a 7T MRI/MRS System

PI: Constable

$2.0M

2015-2018 National Institutes of Health: NINDS U01NS094358

Title: Multiscale imaging of spontaneous activity in cortex: Mechanisms,

Development and Function

PI: Constable and Crair (multi-PI)

$5.0M

2016 – 2021 Understanding evoked and resting-state fMRI through multi scale imaging

PI: Constable, Crair, Hyder (multi-PI)

$5.0M

**National STUDY SECTIONS:**

1996 - 2001 NIH DRG SBIR MR and Optical Technology SRO: Houston Baker

2000 NIH COBRE (RR) SRO: John Ryan

2001 NIH RR SRO: Tracy Orr

2001 NIH NIA SRO: Ramesh Vemuri

2001 NIH NIDCD SRO: Ali Azadegan

2004 NIH P40 SRO: Robert Nordstrom

2004 NIH BRP SRO: Behrouz Shabestari

2003-2005 NIH F01 SRO: Sherry Struesse

2006 NIH SAT SRO: Weihau Luo

2007 NIH BMIT SRO: Lee Rosen

2007 NIH ZEB1 OSR-B SRO: Ruixia Zhou

2008 NIH NIBIB SRO: Ruth Grossman

2008 NIH NIBIB BMIT SRO: Lee Rosen

2009-2012 NIH BMIT – Standing Member SRO: Lee Rosen

2012- 2015 NIH BMIT – Chair SRO: Lee Rosen

2014 NIH NICHD - P01 – Chair SRO: Joanna Kubler-Kielb

2015/4 NIH – U01 – HCP - Chair SRO: Cristina Backman

2015/9 NIH – S10 – co-Chair SRO: Jan Li

2015/10 NIH – U01 – HCP - Chair SRO: Cristina Backman

**INTerNational STUDY SECTIONS:**

2005 – 2008 Canadian Institute of Health (CIHR) Medical Physics and Imaging

**Academic Responsibilities:**

2005 Yale Search Committee for Child Study Center Faculty Recruit Fall

2008 Yale Search Committee for Child Study Center Faculty Recruit Fall

2009-2011 Yale Tenure Slot Allotment Committee

2015-2017 Yale Faculty Advisory Committee

**External Ph.D. Examiner,**

2001 Medical College of Wisconsin, Ph.D. Candidate: Vinai Roopchansingh,

Title: Field compensation approaches in MRI

Biophysics Research Institute

Madison Wisconsin

1996 University of Toronto, Ph.D. Candidate: Jonathon Bishop,

Dept. of Medical Biophysics Thesis Title: Techniques for Improved Time

and Data Efficiency in Fourier-encoded Magnetic Resonance Imaging,

Toronto, Ontario, Canada

2009 Claudine Gautier, Advisor: Richard Hoge, University of Montreal

2013 Kelvin Layton, University of Melbourne

2014 Mona Maneshi, Advisor: Jean Gotman, McGill University

2015 Thomas Andrew Depew, Advisor: Qing-San Xiang, Univ. of British Columbia

**Undergraduate Summer Students:**

1994 Joseph Yeh, Project Title: Phase Velocity Imaging in Cardiac MRI,

1995 Jessica Bloom Project Title: ROC Analysis of Methods in functional MRI,

1999 Johanna Zumer, Project Title: Functional MRI of the Hippocampus,

2000 Clifford Georges, Hippocampal Activation in Encoding and Retrieval,

2001 Ella Beyroya, fMRI of Language in Epilepsy,

2002 Samuel Wyche, Spatial Cueing and Exogenous Control over Covert Orienting,

2002 Nicole Hanick, fMRI Amplitude and Brain function, behavior, and Medication,

2002 Scott Degregorio, Partial volume, cortical thickness, fMRI activation amplitude,

2003 Nicole Hanick, fMRI Amplitude and Brain function, behavior, and Medication,

2004 Greg Fonzo, Configural vs. Elemental Associations: An EEG Investigation

2005 Geoffrey Schreiner: Imaging the Basilar Membrane

2005 Kendra Klang: Diffusion Tensor Imaging in Reading Disabled Children

2005 Jenelle Jindal: Subject Group Effects on fMRI of Language in Neurosurgery

2007 Kate Mullen: White matter microstructural abnormalities in preterm children

2007 Edmund Burke: Modality, Syntax and Semantics in preterm children

2008 Yuko Hara: Intrinsic Connectivity Contrast

2008 Neena Sanjit: Connectivity Behavior Correlations in Epilepsy

2008 Lin Shen: Time Varying Measures of Connectivity in Epilepsy

2010 Puja Rai: Network Measures in Epilepsy

2013 Patricia Lan, Optimization of Gradient Trajectories in Nonlinear Parallel Imaging

**Graduate Students**

2001 - 2006 Jed Meltzer, Ph.D. Student, Interdepartmental Neuroscience Program,

2003 - 2007 Amy Scouten, Ph.D. Student, Biomedical Engineering

2005 - 2009 Yeunan Wang, Ph.D. Student, Biomedical Engineering

2006 - 2011 Jason Stockman, Ph.D. Student, Biomedical Engineering

2008 - 2012 Pelin Aksit Ciris, Ph.D. Student, Biomedical Engineering

2008 - 2013 Leo Tam, Ph.D. Student, Biomedical Engineering

2009 - 2013 Dustin Scheinost, Ph.D. Student, Biomedical Engineering

2012 - Emily Finn, Ph.D Student, Interdepartmental Neuroscience Program

2013 - Nadine Luedicke, Ph.D Student, Biomedical Engineering

2015 - Mehraveh Salehi, Ph.D Student, Electrical Engineering

**Lecturer:**

1998 Yale University, Dept. of Psychology, Course: 675b Cognitive Neuroscience,

Prof. Elizabeth Phelps,

1999 Yale University, Department of Linguistics, Course: Psycholinguistics 161b,

Prof. Sergei Avrutin.,

2001 Yale School of Medicine, Departments of Psychiatry and Diagnostic Radiology,

Course: Metabolic Regulation,

2002 Yale School of Medicine, Departments of Psychiatry and Diagnostic Radiology,

Course: Metabolic Regulation,

2007/2008 Yale School of Medicine, INP Program, Neuroimaging in Neuropsychiatry

2006-2008 Yale University, Biomedical Engineering

2009 - Yale University, Department of Psychiatry, Brain Camp Lecturer

**Courses Taught**

2003-2014 BENG 421b/821b, Physics of Medical Imaging: Yale Department of BME

2000-2005 NS600 Experimental Methods in Neurosciences Course INP Program Graduate level course. Developed and taught the course.

1999 Fall Lectures Series: 9 Lectures - Technical Issues in Functional MRI, attending were PostDocs, Residents, Faculty from Diagnostic Radiology, Neuroscience, Psychiatry and Psychology, Yale University School of Medicine

1998 Yale University, Engineering and Applied Science #990a and b Special Investigations: Student: Peter Fong.

1985 Physics: Introductory Physics, Laboratory Instructor: University of Manitoba

1983 Physics: Mechanics and Wave Motion 1101-1, Laboratory Demonstrator

University of Winnipeg

**Supervision of Residents of Fellows Research:**

Neurosurgery Resident: Alexandre Carpentier from University of Paris VI, H'opital De La Salpetriere: Project Title: Functional MR Imaging of Language in Neurosurgical Planning, Oct. 98 - Oct. 99.

**PostDoctoral Fellows:**

1996 - 1998 Matthew Robson: Project Title: Imaging image distortions in MRI – Cardiac and other applications. Now Faculty at Oxford University

1999 - 2002 Huairen Zeng. Project Title: Image Distortion and the PSF in MRI, Now at Vanderbilt University

2000 - 2002 Robert Astur: Project title: The role of the hippocampus in mnemonic processes,

Now Faculty at University of Connecticut, Department of Psychology.

2001 – 2002 Jess DiGiogianni: Project title: Attention and Memory, Now teaching Faculty at

Magdelan College

2001 - 2007 Robin Schafer: Project title: Language, Linguistics and the impact of pathology

2001 - 2005 Vivien Rekkas: Project title: Encoding and Retrieval Processes in Memory

2002 - 2005 Michiro Negishi: Project title: fMRI/EEG Fusion for Epileptogenic Tissue Localization

2002 - 2004 Alexander Pinus: Project title: Dynamic shimming in fMRI, now in Medical

School

2002 - 2007 Maolin Qiu: Project title – Cerebral blood flow measured using MRI

2003 - 2007 Jinghua Wang: Project title – Diffusion tensor imaging in the presence of brain lesions

2003 - 2009 Rajeevan Nallakkandi: Project title – Development of analysis tools for fMRI

2004 - 2008 Hyeonjin Kim: Project title – Development of noninvasive assessment of liver disease

2005 - 2011 Ilan Laufer: Project title – Mismatched Negativity: EEG and fMRI correlates

relating to top-down versus bottom up processing

2006 - 2010 Jennifer Roth: Project Title – Negative BOLD and Cognitive Processing

2007 - 2009 Roberto Martuzzi: Project Title – EEG/fMRI in Multi-sensory paradigms with

modified baseline brain activity

2008 - 2011 Gigi Galiana: Ultrashort TE imaging, Tenure track faculty at Yale University

2009 - 2010 Xilin Shen: Functional Subunit identification with Connectivity Parcellation

2011 - 2012 Nolwenn Caillett, Novel Receiver Coils for Accelerated MRI

2012 - 2013 Pelin Ciris, MR methods for measuring absolute CBV

2012 - 2015 Emre Kopanoglu, Nonlinear Accelerated MRI

2012 - 2016 Yuqing Wan, Electrical impedance imaging

2015 - 2016 Sangwon Oh, Nonlinear accelerated MRI

2015 - 2016 Geli Hu, Nonlinear Accelerated MRI

**External Teaching Courses:**

2000 International Neuropsychology Society Continuing Education Course: *Contribution of fMRI to treatment planning - validity issue and development of behavioral tasks in neurosurgical planning*. Denver Colorado, Feb. 9-12.

2001 Human Brain Mapping: *Functional MRI in the Presence of Field Inhomogeneities*, Brighton, England, June 18.

2001 Educational Symposium: *Technical Advances in Body Imaging*, Radiological Society of North America (RSNA) Chicago, Il, Dec.8, 2001.

2002 *Cortical Plasticity in Humans*, Research Update in Neuroscience for Neurosurgeons (RUNN) Course, Woods Hole, MA, Oct. 27-Nov3.

2002 Educational Symposium: *Technical Advances in Body Imaging*, Radiological Society of North America (RSNA), Chicago Il, Dec.1.

2003 *fMRI Experimental Methods*, Categorical Course ISMRM Meeting, Course Organizer and Speaker, Toronto, May 12-16.

2004 ISMRM Education Weekend Course: MR Physics for Physicists, Kyoto, Japan

2005 ISMRM Education Weekend Course: MR Physics for Physicists, Maimi, Florida

2012 ISMRM Education Weekend Course: MR Physics for Physicists, Melbourne, Au

**BioSTEP Mentor**:

BIOSTEP: Biomedical Summer Research Training and Enrichment Program for Minority Students

Clifford Georges, from NYU, Summer 2000.

Ella Beyroya, from Mount Holyoke, Summer 2001.

Samuel Wyche, Emory, Summer 2002.

Greg Fonzo, Summer 2004.

Ysis Tarter, Stanford, Summer 2012

**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS:**

American Association of Physicists in Medicine 1986 - 1998

Institute of Electrical and Electronics Engineers 1989 - 2000

International Society of Magnetic Resonance in Medicine 1988 -

Society for Neuroscience 2001 -

Cognitive Neuroscience Society 2001 - 2003

**SOCIETY ACTIVITIES**

Global Development Committee ISMRM 2002-04

Scientific Program Committee ISMRM 2002-05

Brain Function Study Group Secretary ISMRM 2004-05

Brain Function Study Group Chairman ISMRM 2005-06

Study Group Review Committee ISMRM 2005-08

Brain Function Study Group Chairman ISMRM 2010-11

OHBM Scientific Planning Committee 2015-2017

# EDITORIAL BOARD

Magnetic Resonance in Medicine 2005 –

Brain Connectivity 2011 -

**DEPUTY EDITOR**

Magnetic Resonance in Medicine 2008 -

**PRESIDING OFFICER:**

Radiological Society of North America (RSNA) 1993,1994,1995

International Society of Magnetic Resonance (ISMRM) 1996 - 2004

**INVITED TALKS**

QBIN Scientific Day, Functional Connectome Fingerprinting: Linking Connectivity to Behavior, Montreal Quebec, January 2016.

New York University, Langone Medical Center, The functional connectome fingerprint: Connectivity profiles are both unique and meaningful, New York, December 2015.

30th International Epilepsy Congress, Hot Topics in Clinical Epilepsy and Research, Montreal, 2013.

Massachusetts General Hospital (MGH) Harvard, The promise and challenge of voxel based measures of intrinsic connectivity, November 2, 2011.

University of Illinois, Urbana, Ill. Nonlinear gradient encoding for faster, more efficient, parallel imaging, Sept. 22, 2011.

University of Michigan, Functional MRI Speaker Series, March 10, 2009.

Yale University, Clinical Neuroscience Grand Rounds for Neurosurgery and Neurology, March 25, 2009.

Thomas Jefferson University Hospital, Dept. of Diagnostic Radiology Grand Rounds, Nov. 19, 2008

Quinnipiac Law School, Sept. 13, 2007, The use of fMRI in Lie Detection

Yale University, Department of Anesthesiology Grand Rounds, March 16, 2005, Functional Brain Imaging and Baseline Brain Activation Levels

Pittsburgh, PA, 10th Anniversary of the Pitt MR Center, Title: Functional MRI in Neurosurgical Planning, February 2005.

Montreal Neurologic Institute, Functional MRI in Neurosurgical Planning 2004

ISMRM Categorical Course, Japan 2004

ISMRM Weekend MR Physics for Physicists, Japan, 2004

ISMRM Categorical Course, Paradigm Design in fMRI, Toronto, 2003

RSNA, *Technical Advances in Body Imaging*, Teaching Course Dec. 7, 2001

Dec. 1, 2002

*Cortical Plasticity in Humans*, Research Update in Neuroscience for Neurosurgeons (RUNN) Course, Oct. 27-Nov3, Woods Hole, MA, 2002

Yale University, Department of Statistics, *Data analysis in fMRI*, April 15, 2002.

University of Colorado Medical Center, *Functional MRI in Neurosurgical Planning*, Sept. 26, 2001.

Human Brain Mapping, *Functional MRI in the Presence of Field Inhomogeneities*, Brighton, England, June, 2001.

*Applications of functional MRI in neurosurgical planning*, Current Research in Biomedical Engineering: A special symposium sponsored by the Yale Program in Biomedical Engineering and BEACON, March 25, 2000.

*Magnetic Resonance Imaging for Understanding Cortical Function*. Yale University Interdepartmental Neurosciences Program: Annual Neuroscience Retreat, Woods Hole, MA, Feb. 18-20, 2000.

*Contribution of fMRI to Treatment Planning: Validity Issues and Development of Behavioral Tasks in Neurosurgical Planning*. International Neuropsychological Society: Continuing Education Course – February 10, 2000, Denver, Co.

International Magnetic Resonance and Epilepsy Symposium, Talk Tile: *Acquisition Techniques in Functional MRI for Surgical Planning in Epilepsy*, Birmingham, Al, Oct. 20-21, 2000.

Gordon Conference on In Vivo Magnetic Resonance, Topic: *Removing or Exploiting Susceptibility for Functional, High Speed, and Micro Imaging*, August 20-25, 2000.

*Functional Magnetic Resonance Imaging and Language, Surgical Treatment of Focal Epilepsies in Adults*, Association Pour La Neuro Psycho Pharmacologie, Chateau d'Isenbourg, France, June 7-9, 2000.

*Functional Imaging of Language Processing for Neurosurgical Planning*, University of Connecticut Health Center, Farmington, CT, February 7, 2000

*Functional Imaging the Presence of Field Inhomogeneities: Revisited*, University of Connecticut Health Center, Farmington, CT, March 29, 1999

*Functional MR Imaging in the Presence of Field Inhomogeneities*, Guy's Hospital, London, UK, June 9, 1999

**REVIEWER FOR THE FOLLOWING JOURNALS:**

Magnetic Resonance Imaging, Optical Society of America, Journal of Magnetic Resonance Imaging, Acoustical Society of America, IEEE Transactions on Medical Imaging, Magnetic Resonance in Medicine, Journal of Magnetic Resonance

**PATENTS:**

U.S. Patent # 5,001,429 Removal of Truncation Artifacts in NMR Imaging

R.T. Constable, R. Mark Henkelman.

Intl Patent Parallel magnetic resonance imaging using nonlinear gradient

encoding, RT Constable, J Stockman, LK Tam

Intl Patent Null Space Imaging,

RT Constable, J Stockman, LK Tam

Intl Patent Single Echo MRI

RT Constable, Gigi Galiana

**PUBLICATIONS in Refereed Journals:**

**Scopus h index = 69, cited 15,862**

**Google Scholar h index = 85, cited 24,045**

1. Constable R.T., Dunscombe P.B., Tsoukatos A., Malaker K., Perturbation of the Temperature Distribution in Microwave Irradiated Tissue Due to the Presence of Metallic Thermometers. *Medical Physics,* 14(3), 385-388, 1987.
2. Dunscombe P.B., Constable R.T., McLellan J., Minimizing the Selfheating Artefacts Due to Microwave Irradiation of Thermocouples. *International Journal of Hyperthermia*, 4, 437-445, 1988.
3. Constable R.T., Henkelman R.M., The Application of Maximum Entropy to the Reconstruction of MR Images. *Proceedings of the 8th International Maximum Entropy Workshop*., ed. J. Skilling, Kluwar Academic Publishers, 65-72, 1988.
4. Constable R.T., Kay I., Smith M.R., Henkelman R.M., High Quality Zoomed MR Images., *Journal of Computer Assisted Tomography*., 13(1), 179-181, 1989.
5. Constable R.T., Henkelman R.M., Why MEM does not work in MR Imaging., *Magnetic Resonance in Medicine,* 14, 12-25, 1990.
6. Constable R.T., Henkelman R.M., Data Extrapolation for Truncation Artifact Removal., *Magnetic Resonance in Medicine,* 17, 108-118, 1991.
7. Smith M.R., Nichols S.T., Constable R.T., Henkelman R.M., A Quantitative Comparison of the TERA Modeling and DFT Magnetic Resonance Reconstruction Techniques, *Magnetic Resonance in Medicine,* 19, 1-19, 1991.
8. Constable R.T., Henkelman R.M., Contrast, Resolution and Detectability in MR Imaging. *J. Comput. Assist. Tomog*., 15(2), 297-303, 1991.
9. Constable R.T., Smith R.C., Gore J.C., Signal to Noise and Contrast in Fast Spin Echo (FSE) Imaging and Inversion Recovery FSE, *J. Comput. Assist. Tomog.*, 16(1), 41-47, 1992.
10. Constable R.T., Gore J.C., The Loss of Small Objects in Variable TE Imaging: Implications for FSE, RARE and EPI, *Magn. Reson. in Medicine*, 28, 9-24, 1992.
11. Constable R.T., Anderson A.W., Zhong J., Gore J.C., Factors Influencing Contrast in Fast Spin Echo MR Imaging, *Magn. Reson. Imag.*, 10(4), 497-511, 1992.
12. Sze G., Kawamura Y., Negishi C., Constable R.T., Merriam M., Oshio K., Jolesz F., Fast Spin Echo MR Imaging of The Cervical Spine: Influence of Echo Train Length and Echo Spacing on Image Contrast and Quality, *Amer. J. Neuro. Radiology,* 14(5), 1203-1213, 1993.
13. Smith R.C., Reinhold C., McCauley T.R., Lange R.C., Constable R.T., Kier R., McCarthy S., Mulit-Coil High Resolution Fast Spin Echo MR Imaging of the Female Pelvis, *Radiology*, 184, 671-675, 1992.
14. Constable R.T., Smith R.C., Gore J.C., Coupled Spin Fast Spin Echo MR Imaging, *J. Magn. Reson. Imag.*, 3, 547-552, 1993.
15. Panush D., Fulbright R., Sze G., Smith R.C., Constable R.T., Inversion-Recovery Fast Spin-Echo MR Imaging: Efficacy in the Evaluation of Head and Neck Lesions, *Radiology*, 187, 421-426, 1993.
16. Constable R.T., McCarthy G., Allison T., Anderson A.W., Gore J.C., Functional Brain Imaging at 1.5T Using Conventional Gradient Echo Imaging Techniques, *Magnetic Resonance Imaging*, 11(4), 451-459, 1993.
17. Fulbright R., Panush D., Sze G., Smith R.C., Constable R.T., MR of the Head and Neck: Comparison of Fast Spin Echo and Conventional Spin Echo Sequences, *Am J Neuro Radiol* 15(4), 767-773, 1993.
18. Hinks R.S., Constable R.T., Gradient Moment Nulling in Fast Spin Echo, *Magnetic Resonance in Medicine*, 32, 698-706, 1994.
19. Constable R.T., Rath K.M., Gore J.C., Development and Evaluation of Tracking Algorithms for Cardiac Wall Motion Analysis Using Phase Velocity MR Imaging, *Magnetic Resonance in Medicine*, 32, 33-42, 1994.
20. Shaywitz B.A., Pugh K.R., Constable R.T., Shaywitz S.E., Bronen R.T., Fullbright R., Shankweiler D., Katz L., Fletcher J.M., Gore J.C., Semantic Processing Activates Bilateral Frontal Regions During Conventional (1.5T) Functional Magnetic Resonance Imaging, *Human Brain Mapping*, 2: 149-158, 1995.
21. Graham G.D., Zhong J., Petroff A., Constable R.T., Prichard J.W., Gore J.C., MRI Monitoring of Changes in Cerebral Perfusion Induced by Acetazolamide and Hypercarbia in the Rat, *Magn Reson in Med*, 31, 557-560, 1994.
22. Constable R.T., Kennan R.P., Puce A., McCarthy G., Gore J.C., Functional MR Imaging using Fast Spin Echo at 1.5T, *Magnetic Resonance in Medicine*, 31, 686-690, 1994.
23. Meyer F.G., Constable R.T., Sinusas A.J., Duncan J.S., Tracking Myocardial Deformation Using Spatially-Constrained Velocities, *IEEE Trans. Med. Imag*., 15(4), 453-463, 1996.
24. Smith R.C., Constable R.T., Reinhold C., McCauley T., Lange R.C., McCarthy S., Fast Spin Echo STIR Imaging, *J. Comput. Assist. Tomog.*, 18(2), 209-213, 1994.
25. Constable R.T., Skudlarski P., Gore J.C., An ROC Approach for Evaluating Functional Brain MR Imaging and Post-Processing Protocols, *Magn. Reson. in Med.*, 34, 57-64, 1995.
26. Puce A., Constable R.T., Luby M.L., McCarthy G., Nobre A.C., Spencer D.D., Gore J.C., Allison T., Functional Magnetic Resonance Imaging of Sensory and Motor Cortex: Comparison with Electrophysiological Localization, *Journal of Neurosurgery*, 83(2), 262-270, 1995.
27. Shaywitz B.A., Shaywitz S.E., Pugh K.R., Constable R.T., et al, Sex Difference in the Functional Organization of the Brain for Language, *Nature*, 373(6515), 607-609, 1995.
28. Shi P., Amini A., Robinson G., Sinusas A., Constable R.T., Duncan J., Shape-Based 4D Left Ventricular Myocardial Function Analysis, *IEEE Workshop on Biomedical Image Analysis*, Seattle, Washington, June, 88-99, 1994.
29. Duncan J., Shi P., Amini A., Constable R.T., Staib L., Dione D., Heller E., Singer M., Chakraborty A., Robinson G., Gore J., Sinusas A., Towards Reliable Noninvasive Measurement of Myocardial Function from 4D Images, Medical Imaging 1994: Physiology and Function from Multidimensional Images, SPIE Press, vol. 2168, Newport Beach, Ca., 149-161, 1994.
30. Constable R.T., Functional MR Imaging using Gradient Echo EPI in the Presence of Large Static Field Inhomogeneities, *J. Magn. Resonance Imaging*, 5(6), 746-752, 1995.
31. Shi P., Robinson G., Chakraborty A., Staib L., Constable R.T., Sinusas A., Duncan J., A Unified Framework to Assess Myocardial Function from 4D Images, *First International Conference on computer vision, Virtual Reality and Robotics in Medicine*, Nice, France, April 3-6, 1995.
32. Pugh K.R., Shaywitz B.A., Shaywitz S.E., Constable R.T., Skudlarski P., Fulbright R.K., Bronen R.A., et al, Cerebral Organization of Component Processes in Reading, *Brain*, 119, 1221-1238, 1996.
33. Shaywitz B.A., Shaywitz S.E., Pugh K.R., Skudlarski P., Fulbright R.K., Constable R.T., Bronen R.A., Fletcher J.M., Shankweiler D.P., Katz L., Lacadie C., Gore J.C., The Functional Organization of Brain for Reading and Reading Disability (Dyslexia), *Neuroscientist*, 2(4), 245-255, 1996.
34. McCarthy G., Puce A., Constable R.T., Krystal J.H., Gore J.C., Goldman-Rakic P., Activation of Human Prefrontal Cortex During Spatial and Object Working Memory Tasks Measured by Functional MRI, *Cerebral Cortex*, 6(4), 600-611, 1996.
35. Robson M.D., Constable R.T., Three Dimensional Strain-Rate Imaging, *Magnetic Resonance in Medicine*, 36(4), 537-546, 1996.
36. Pugh K.R., Shaywitz B.A., Shaywitz S.E., Fulnright R.K., Byrd D., Skudlarski P., Shankweiler D.P., Katz L., Constable R.T., Fletcher J., Lacadie C., Marchione K., Gore J.C., Auditory Selective Attention: An fMRI Investigation, *NeuroImage*, 4, 159-173, 1996.
37. Choe K.A., Smith R.C., Wilkens K., Constable R.T., Motion Artifact in T2-Weighted Fast Spin-Echo Images of the Liver: Effect on Image Contrast and Reduction of Artifact Using Respiratory Triggering in Normal Volunteers, *J. Magn. Reson. Imag.*, 7, 298-302, 1997.
38. Pugh K.R., Shaywitz B.A., Shaywitz S.E., Shankweiler D.P., Katz l., Fletcher J.M., Skudlarski P., Fulbright R.K., Constable R.T., Bronen R.A., Gore J.C., Predicting Reading Performance From Neuroimaging Profiles: The Cerebral Basis of Phonological Effects in Printed Word Identification, *J. Exp. Psych:Human Perception Performance*, 23(2), 299-318, 1997.
39. Wexler B.E., Fulbright R.K., Skudlarski P., Kelz M.B., Lacadie C.M., Constable R.T., Gore J.C., An fMRI Study of the Human Cortical Motor System Response to Increasing Functional Demands, *Magn. Reson. Imag.*, 15(4), 385-396, 1997.
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**BOOK CHAPTERS**

1. Shaywitz B.A., Shaywitz S.E., Pugh K.R., Constable R.T., Skudlarski P., Bronen R., Fulbright R.K., Shankweiler D.P., Katz L., Gore J.C., The Neurobiology of Developmental Reading Disorders as Viewed Through the Lens of Neuroimaging Technology. In: G.R. Lyon and J. Rumsey (Eds.), A Window to the Neurological Foundations of Learning and Behaviour, Baltimore: Paul H. Brookes 1997.
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