

CURRICULUM VITAE

NAME: Robert Todd Constable, Ph.D.

CURRENT ADDRESS:

Yale University School of Medicine
Departments of Diagnostic Radiology and Neurosurgery
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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
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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:

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| 1996 - 1998 | Matthew Robson: Project Title: Imaging image distortions in MRI – Cardiac and other applications. Now Faculty at Oxford University |
| 1999 - 2002 | Huairan 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 Magdalen 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 -
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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 Title: *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., Mult-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., Fulbright 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

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BOOK CHAPTERS

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