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Senior Technical Scientist

Support Unit for functional Magnetic Resonance Imaging
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Research Interests

- MRI Physics related to functional Magnetic Resonance Imaging (fMRI), with a particular emphasis on the methods necessary for high-resolution fMRI such as segmented EPI, parallel imaging, and parallel transmission.
- Safety issues related to parallel transmission MRI.
- Understanding the physiological basis of the BOLD signal as well physiological noise sources that interfere with the observation of BOLD responses.

Education

B.S. in Chemistry, Missouri Southern State College, Joplin, Missouri 1986
(now Missouri Southern State University)

Ph.D. in Chemistry, University of Missouri-Rolla, Rolla, Missouri 1993
(now Missouri University of Science & Technology)

Dissertation Title: *Self-Diffusion Studies in Polymer-Solvent Systems by Pulsed-Gradient Spin-Echo Nuclear Magnetic Resonance*

Experience

1987-1988 *Teaching Assistant*, University of Missouri-Rolla, Rolla, Missouri
1988-1993 *Research Assistant*, University of Missouri-Rolla, Rolla, Missouri
1993-1996 *Postdoctoral Fellow*, The Lovelace Institutes, Albuquerque, New Mexico
1996-2006 *Research Scientist - MRI Physics*, Brain Science Institute, RIKEN
2006-2018 *Research Specialist - MRI Physics*, Brain Science Institute, RIKEN
2018-2021 *Research Specialist - MRI Physics*, Center for Brain Science, RIKEN
2021-present *Senior Technical Scientist*, Support Unit for functional MRI,
Center for Brain Science, RIKEN

Professional Activities

- Reviewer for the journals *Science*, *Journal of Magnetic Resonance*, *Journal of Magnetic Resonance Imaging*, *NeuroImage*, *Neuroscience Research*, *Concepts in Magnetic Resonance Part B*, and *Magnetic Resonance in Medical Sciences*
- Abstract Reviewer for the *International Society for Magnetic Resonance in Medicine*
- Co-organizer of the first RIKEN-BSI fMRI mini-school in 2008
- Member of program committee for ISMRM Workshop on *Ultra High Field Systems & Applications: 7T & Beyond: Progress, Pitfalls & Potential* Lake Louise, Alberta, Canada, February 21-23, 2011
- Member of the *Safety Committee* of the *JSMRM*, 2011-2017
- Chairman of the *7 Tesla Safety Sub-Committee* of the *JSMRM*, 2011-2017.
- Member of the *7 Tesla Safety Sub-Committee* of the *JSMRM*, 2011-present.
- Co-organizer of the 18th *JSMRM - Safety Course 2014*
- Vice-Chairman of the Japanese Chapter of the *ISMRM 2016*
- Chairman of the Japanese Chapter of the *ISMRM 2017*
- Past-Chair and Awards Committee Chair of the Japanese Chapter of the *ISMRM 2018*
- Member of the *ISMRM 2019-20 Workshop & Study Group Review Committee*
- Member of the *ISMRM Education Committee 2020-2023*

Professional Organizations

- International Society for Magnetic Resonance in Medicine
- Japanese Chapter of International Society for Magnetic Resonance in Medicine
- Organization for Human Brain Mapping
- Japanese Society for Magnetic Resonance in Medicine

Publications

34. H. Watanabe and R.A. Waggoner, **About 7 T MRI** in *MRI Safety - Principles, Standards, and Clinical Concerns (second edition)*, Gakken Medical Shujunsha Co., Ltd. Publishers, Tokyo, Japan, 40-45, 2014.
33. P. Sun, J.L. Gardner, M. Costagli, K. Ueno, R.A. Waggoner, K. Tanaka, and K. Cheng, **Demonstration of tuning to stimulus orientation in human visual cortex: a high-resolution fMRI study with a novel continuous and periodic stimulation paradigm**, *Cerebral Cortex*, **23(7)** 1618-1629, 2013.
32. Y. Matsuda, K. Ueno, R.A. Waggoner, D. Erickson, Y. Shimura, K. Tanaka, K. Cheng, and R. Mazuka, **Processing of infant-directed speech by adults**, *NeuroImage*, **54(1)**, 611-621, 2011.
31. R.A. Waggoner, K. Tanaka, and K. Cheng, **Exploring the Origins of the DfMRI Signal at 4 Tesla**, *NeuroImage*, **47(S1)**, S186, 2009.
30. M. Costagli, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Correction of 3D rigid body motion in fMRI time series by independent estimation of rotational and translational effects in k-space**, *NeuroImage*, **45(3)**, 749-757, 2009.
29. P. Sun, K. Ueno, R.A. Waggoner, J.L. Gardner, K. Tanaka, and K. Cheng, **A temporal frequency-dependent functional architecture in human V1 revealed by high-resolution fMRI**, *Nature Neuroscience*, **10(11)**, 1404-1406, 2007.
28. Y. Matsuda, K. Ueno, R.A. Waggoner, D. Erickson, Y. Shimura, K. Tanaka, K. Cheng, and R. Mazuka, **Processing of infant-directed speech in adults**, *NeuroImage*, **36(S1)**, S38, 2007.
27. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **SENSE or TSENSE for fMRI, Which is Better?** *NeuroImage*, **31(S1)**, S173, 2006.
26. M. Costagli, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **3D Motion Correction in the Fourier Domain for fMRI Time Series**, *NeuroImage*, **31(S1)**, S152, 2006.
25. Y. Tanaka, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **The left parieto-occipital cortex is critically involved in the object completion with degraded image information**, *NeuroImage*, **31(S1)**, S119, 2006.
24. P. Sun, J.L. Gardner, M. Costagli, K. Ueno, R.A. Waggoner, K. Tanaka, K. Cheng, **Direct demonstration of tuning to stimulus orientation in human V1: a high-resolution fMRI study with a continuous stimulation paradigm and a differential mapping method**, *NeuroImage*, **31(S1)**, S112, 2006.
23. R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **The Significance of Physiological Noise with increasing R in SENSE-EPI**, *NeuroImage*, **26(S1)**, S43, 2005.
22. K. Ueno, R.A. Waggoner, K. Tanaka, K. Cheng, **Spatial precision of BOLD-fMRI in human V1: point spread function measured at 4T with spatially localized and size-varied stimuli**, *NeuroImage*, **26(S1)**, S23, 2005.

21. R. Horie, C. Hirata, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, J. Tani, **Functional Mapping of State-dependent Activity in a Learned Artificial Grammar**, *NeuroImage*, **26(S1)**, S30, 2005.
20. J.L. Gardner, P. Sun, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Contrast Adaptation and Representation in Human Early Visual Cortex**, *Neuron*, **47(4)**, 607-620, 2005.
19. C. Hirata, R. Horie, R.A. Waggoner, K. Ueno, K. Cheng, K. Tanaka, J. Tani, **Neural substrates of learned abstract motor sequence: a high-field fMRI study**, *NeuroImage*, **22(S1)**, e1238, 2004.
18. P. Sun, K. Ueno, R. Waggoner, K. Tanaka, K. Cheng, **Temporal frequency dominance domains in human primary visual cortex: a high resolution fMRI study**, *NeuroImage*, **22(S1)**, e1104, 2004.
17. J. L. Gardner, P. Sun, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **Adaptation causes horizontal shifts of contrast response curves in early human visual cortex: an event-related fMRI study**, *NeuroImage*, **22(S1)**, e969, 2004.
16. F. Moradi, L.C. Liu, K. Cheng, R.A. Waggoner, K. Tanaka, and A.A. Ioannides, **Consistent and precise localization of brain activity in human primary visual cortex by MEG and fMRI**, *NeuroImage*, **18(3)**, 595-609, 2003.
15. K. Tanaka, K. Ueno, K. Cheng and R.A. Waggoner, **Recent development in noninvasive brain activity measurement by functional magnetic resonance imaging (fMRI)**, *Oyo Buturi*, **72(8)**, 1033-1038, 2003.
14. 上野賢一, 程康, R.A. Waggoner, 田中啓治, **4テスラfMRIによる大脳コラムのイメージング**, *脳21*, **5(4)** : 363-367, 2002.
13. K. Cheng, R.A. Waggoner, and K. Tanaka, **Human Ocular Dominance Columns as Revealed by High-Field Functional Magnetic Resonance Imaging**, *Neuron*, **32(2)**, 359-374, 2001.
12. R.A. Waggoner, K. Cheng, and K. Tanaka, **A Comparison of the BOLD Response in V1, MT, and M1**, *NeuroImage*, **11(5)**, S782, 2000.
11. K. Cheng, R.A. Waggoner, and K. Tanaka, **Mapping Human Ocular Dominance Columns with High-Field (4T) fMRI**, *NeuroImage*, **11(5)**, S705, 2000.
10. K. Tanaka, K. Cheng, H. Takeichi, T. Ong, R.A. Waggoner, E. Yoshitome, S. Mizuta, and K. Ueno, **Using functional Magnetic Resonance Imaging to study Human Brain Functions**. *RIKEN Review*, **24**, 64-66, 1999.
9. M. Nakagawa, R.A. Waggoner, and E. Fukushima, **Non-Invasive measurement of Fabric Particle Packing by NMR** in *Introduction to Mechanics of Granular Flow*, M. Oda, ed., A.A.Balkema Publishers, Rotterdam, Netherlands, 240-247, 1999.
8. R.A. Waggoner, M. Nakagawa, J. Glass, M. Reece and E. Fukushima, **Particle Compaction as Observed by MRI** in *Spatially Resolved Magnetic Resonance: Methods and Applications in Materials Science, Agriculture and Biomedicine*, B. Blümich, P. Blümler, R. Botto, and E. Fukushima ed., M. Bauschulte, Quirinustr Publishers, Roetgen Germany, 299-304, 1998.
7. E. Yoshitome, R.A. Waggoner, and K. Tanaka, **Contrast Decrease in EPI with Centric Order Phase Encoding**, *NeuroImage*, **7(4)**, S539, 1998.
6. D.O. Kuethe, A. Caprihan, E. Fukushima, and R.A. Waggoner, **Imaging Lungs Using Inert Fluorinated Gases**, *Magnetic Resonance in Medicine*, **39(1)**, 85-88, 1998.

5. R.A. Waggoner and E. Fukushima, **Velocity Distribution of Slow Fluid Flows in Bentheimer Sandstone: An NMRI and Propagator Study**, *Magnetic Resonance Imaging*, **14(9)**, 1085-1092 (1996).
4. R.A. Waggoner, F.D. Blum, and John Lang, **Diffusion in Aqueous Solutions of Poly(ethylene glycol)**, *Macromolecules*, **28(8)**, 2658-2664 (1995).
3. R.A. Waggoner, F.D. Blum, and J.M.D. MacElroy, **Dependence of the Solvent Diffusion Coefficient on Concentration in Polymer Solutions**, *Macromolecules*, **26(25)**, 6841-6848 (1993).
2. F. D. Blum, S. Pickup, R. A. Waggoner, **NMR Measurements of Solvent Self-Diffusion Coefficients in Polymer Solutions**, *Polymer Preprints*, **31(1)**, 125-126 (1990).
1. R.A. Waggoner and F.D. Blum, **Solvent-Diffusion and Drying of Coatings**, *J. Coat. Tech.*, **61(768)**, 51-56 (1989). (Finalist in the Roon Award Competition of the Federation of Coatings Societies).

Presentations

- 60 R.A. Waggoner, T. Feiweier, K. Tanaka. **High b-Value DTI on a Clinical Scanner via Stimulated-Echo EPI**, *48th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Virtual, September 11- October 4, 2020.
59. R.A. Waggoner, T. Feiweier, K. Tanaka, **The Use of Stimulated-Echo EPI to Obtain High b-Value DTI Data at Short TEs on a Clinical Scanner**, *28th Scientific Meeting and Exhibition of the ISMRM, Virtual, August 8-14, 2020*.
58. R.A. Waggoner, S. Gupta, K. Tanaka. **Chemical-Shift Selective Imaging Using Slice-Selective Gradient Reversal in the Presence of Incomplete Spectral Separation**, *47th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Kumamoto, Japan, September 20-22, 2019.
57. R.A. Waggoner **fMRI Studies of Cortical Columns in Humans**, *BRAIN 2019 Satellite Symposium on Advances in Multi-Scale Imaging of Cerebral Blood Flow and Metabolism in relation to Brain Activity*, Suwon, Korea, July 9-10, 2019. (Invited Talk)
56. R.A. Waggoner, K. Ueno, K. Matsumoto, K. Tanaka. **The Benefits of Multi-Shot EPI**, *International Symposium of Brain/MINDS ISBM2019*, Tokyo, Japan, January 29, 2019.
55. R.A. Waggoner, K. Ueno, K. Tanaka. **In-Plane Signal Leakage in GRAPPA Reconstructions**, *3rd Annual Meeting of the ISMRM Japanese Chapter*, Nagoya, Japan, December 22-23, 2018.
54. R.A. Waggoner, K. Ueno, H. Kuribayashi, K. Tanaka. **Direct Measurement of In-Plane Signal Leakage Using TGRAPPA**, *46th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Kanazawa, Japan, September 7-9, 2018.
53. R.A. Waggoner, K. Ueno, H. Kuribayashi, K. Tanaka. **In-Plane Signal Leakage (L-factor) Maps from TGRAPPA**, *26th Scientific Meeting and Exhibition of the ISMRM*, Paris, France, June 16-21, 2018.
52. R.A. Waggoner. **MR Physics Demands of High-Resolution fMRI**, *The 6th International Congress on Magnetic Resonance Imaging*, Seoul, South Korea, March 29-31, 2018. (Invited Talk)

51. R.A. Waggoner. **Recent efforts for improved fMRI at high temporal and spatial resolution at RIKEN-BSI**, *NIRS/QST Mini-International Symposium for Magnetic Resonance Quantum Imaging*, National Institute of Radiological Sciences, QST, Chiba-Shi, May 1, 2017. (Invited Talk)
50. R.A. Waggoner **An Overview of High-Resolution fMRI Studies at RIKEN-BSI From V1 to the Temporal Lobe**, *The 40th Annual Meeting of the Japan Neuroscience Society*, Makuhari Messe, Japan, July 20-23, 2017.
49. R. Allen Waggoner, K. Ueno, J. Pfeuffer, K. Tanaka, and K. Cheng. **High-Resolution fMRI of the Visual System at 3T Using Zoomed Excitation Via Tx-SENSE**, *25th Scientific Meeting and Exhibition of the ISMRM*, Honolulu, HI, April 22-27, 2017.
48. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Impact of Multi-band EPI on Serial Autocorrelations**, *1st Annual Meeting of the ISMRM Japanese Chapter*, Osaka, Japan, February 23-24, 2017.
47. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Serial Autocorrelations and Multi-band fMRI**, *44th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Omiya, Japan, September 9-11, 2016.
46. R.A. Waggoner **Event-Related fMRI of the Visual System Using Multi-band EPI**, *The 39th Annual Meeting of the Japan Neuroscience Society*, Yokohama, Japan, July 20-22, 2016.
45. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Enhancement of Event-Related fMRI Studies of the Human Visual System Using Multi-band EPI**, *24th Scientific Meeting and Exhibition of the ISMRM*, Singapore, May 7-13, 2016.
44. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Enhancing Event-Related fMRI Studies with Multiband EPI**, *43rd Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Tokyo, Japan, September 10-12, 2015.
43. R.A. Waggoner, Topi Tanskanen, K. Tanaka, and K. Cheng, **Event-Related fMRI Studies in Human Visual Cortex Using Multi-band EPI**, *The 38th Annual Meeting of the Japan Neuroscience Society*, Kobe, Japan, July 28-31, 2015.
42. R.A. Waggoner, Topi Tanskanen, K. Tanaka, and K. Cheng, **Evaluation of Multi-band EPI for Event-Related fMRI Studies**, *ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications*, Pacific Grove, CA, July 19-22, 2015.
41. R. Allen Waggoner, **Parallel Transmission Possibilities and Challenges**, *Okazaki pTx Workshop*, National Institute of Physiological Sciences, Okazaki, Japan, July 6, 2015. (Invited Talk)
40. R. Allen Waggoner, Z. Zuo, Y. Zhuo, T. Tanskanen, K. Ueno, K. Tanaka, and K. Cheng. **Interactions between Physiological Noise Correction and GRAPPA Reconstruction in EPI Data**, *23rd Scientific Meeting and Exhibition of the ISMRM*, Toronto, Canada, May 30-June 5, 2015.
39. R. Allen Waggoner, S. Gupta, K. Tanaka, and K. Cheng. **Assessment of T₂* Blurring in SIR Accelerated EPI**, *40th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Kyoto, Japan, September 6-8, 2012.
38. R. Allen Waggoner, **An Overview of High Resolution fMRI Studies in the Laboratory for Cognitive Brain Mapping**, Institute of Biophysics of Chinese Academy of Sciences, Beijing China, June 15, 2012. (Invited Talk)
37. R. Allen Waggoner, **An Overview of fMRI Studies in the Laboratory for Cognitive Brain Mapping**, Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon South Korea, November 29, 2011. (Invited Talk)

36. R.A. Waggoner, K. Tanaka, and K. Cheng, **Impact of Increasing Field Strength on the Diffusion Weighted fMRI Response**, *ISMRM Workshop on Ultra-High Field Systems & Applications: 7T & Beyond: Progress, Pitfalls & Potential*, Lake Louise, Alberta, Canada, February 20-23, 2011.
35. R.A. Waggoner, K. Tanaka, and K. Cheng, **Investigating the Origins of the DfMRI Signal Using 4 Tesla**, *18th Scientific Meeting and Exhibition of the ISMRM*, Stockholm, Sweden, May 1-7, 2010.
34. R.A. Waggoner, K. Tanaka, K. Cheng, **Exploring the Origins of the DfMRI Signal at 4 Tesla**. *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA. USA, June 18-23 2009.
33. R.A. Waggoner, T. Oda, R. Kinugasa, K. Ueno, K. Cheng, H. Yokota, and R. Himeno, **DTI Based Muscle Fiber Tractography in Humans at 4 Tesla Using Stimulated-Echos**, *17th Scientific Meeting and Exhibition of the ISMRM*, Honolulu, HI, April 18-24, 2009.
32. R.A. Waggoner, M. Costagli, K. Tanaka, and K. Cheng, **Inherent Smoothing in Accelerated Parallel Imaging Reconstruction Techniques**, *15th Scientific Meeting and Exhibition of the ISMRM*, Berlin, Germany, May 19-25, 2007.
31. R.A. Waggoner, M. Costagli, K. Tanaka, and K. Cheng, **Spatial Smoothing Resulting from Accelerated Parallel Imaging Reconstruction**, *ISMRM Workshop on Advances in High Field MR*, Pacific Grove, CA. USA, March 25-28, 2007.
30. R.A. Waggoner, M. Costagli, Y. Matsuda, K. Ueno, K. Tanaka, K. Cheng, **SENSE or TSENSE, Which Makes Sense for fMRI?** *34th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Tsukuba, Ibaraki, Japan, September 14-16, 2006.
29. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **SENSE or TSENSE for fMRI, Which is Better?** *12th Annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy, June 11-15 2006.
28. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **Which is the Optimum Reconstruction Technique for Partially Parallel Imaging fMRI?** *48th NMR² Meeting*, Albuquerque, NM. May 13-14, 2006.
27. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **Physiological Noise Correction with Increasing Acceleration in SENSE-EPI**, *14th Scientific Meeting and Exhibition of the ISMRM*, Seattle, WA May 6-12, 2006.
26. R.A. Waggoner and M. Costagli, **SENSE or TSENSE, Which is Best for fMRI?** National Institute for Physiological Studies' 4th Annual fMRI Workshop, Okazaki, Japan, November 24-25, 2005.
25. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **Physiological Noise Correction with Increasing R in SENSE-EPI**, *5th Bi-Annual Minnesota Workshop On High Field MR Imaging And Spectroscopy And MR Imaging Of Brain Function*, University of Minnesota, October 13-16, 2005.
24. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **Physiological Noise in SENSE-EPI**, *8th International Conference on Magnetic Resonance Microscopy*, Utsunomiya, Japan, August 22-26, 2005.
23. R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **The Significance of Physiological Noise with increasing R in SENSE-EPI**, *11th Annual Meeting of the Organization for Human Brain Mapping*, Toronto, Canada, June 13-16 2005.

22. R.A. Waggoner, Y. Kobayashi, G. Matsumura, N. Shiraishi, K. Tanaka, K. Cheng, **T1 in Postmortem Brains at 4T**, *11th Scientific Meeting and Exhibition of the ISMRM*, Toronto, Canada July 10-16, 2003.
21. R. Allen Waggoner, **An Introduction to the Use of MRI to Study Brain Function**, Waseda University Department of Electrical, Electronics and Computer Engineering, January 30th, 2003. (Invited Talk)
20. R.A. Waggoner, K. Cheng,, and K. Tanaka, **A Comparison of the Temporal Characteristics of the BOLD Responses in V1, MT and the Primary Motor Cortex (M1) to a Variety of Stimuli**, National Institute for Physiological Studies' 1st Annual fMRI Workshop, Okazaki, Japan, November, 28-29 2002.
19. R. Allen Waggoner, **An Introduction to MRI**, American School in Japan, May 9, 2001. (Invited Talk)
18. R.A. Waggoner, K. Cheng, and K. Tanaka, **What do similarities and differences of the BOLD response in different cortical areas tell us? A comparison study of V1, MT and M1**, Japan Science and Technology Corporation Symposium, "Trends in Neuroscience at the Millennium", Tokyo, Japan, January 22-24, 2001.
17. R.A. Waggoner, K. Cheng, and K. Tanaka, **A Comparison of the BOLD Response in V1, MT, and M1**, *28th Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Kyoto, Japan, October 2-4, 2000.
16. R.A. Waggoner, K. Cheng, and K. Tanaka, **A Comparison of the BOLD Response in V1, MT, and M1**, *6th Annual Meeting of the Organization for Human Brain Mapping*, San Antonio, TX, June 12-16 2000.
15. R.A. Waggoner, K. Cheng, and K. Tanaka, **Stimulus-Dependence and Independence of the BOLD Response in Human V1 and MT**, *Eighth Scientific Meeting and Exhibition of the ISMRM*, Denver CO, April 1-7, 2000
14. R.A. Waggoner, **Functional Magnetic Resonance Imaging of the Human Visual Cortex at 4 Tesla**, RIKEN Symposium "Nuclear Magnetic Resonance – Crosstalk between Research and Technology", Wako-shi Japan, December 10, 1999. (Invited Talk)
13. R.A. Waggoner, M. Nakagawa, J. Glass, M. Reece and E. Fukushima, **Particle Compaction as Observed by MRI**, *4th International Conference on Magnetic Resonance Microscopy and Macroscopy*, Albuquerque, NM, September 21-25, 1997
12. R.A. Waggoner, M. Nakagawa, and E. Fukushima, **Magnetic Resonance Imaging and Particle Mechanics**, *Avalanche and Particle Mechanics Meeting*, Golden CO. May 13-14, 1996. (Invited Talk)
11. R.A. Waggoner and E. Fukushima, **k-Space and q-Space Velocity Imaging in Porous Media**, *37th ENC*, Asilomar, March 17-22, 1996.
10. R. A. Waggoner and E. Fukushima, **Velocity Imaging in Porous Media**, *Third International Meeting, Recent Advances in MR Applications to Porous Media*, Louvain-la-Neuve, Belgium, September 3-6, 1995.
9. R.A. Waggoner and E. Fukushima, **MRI of Flow in Porous Media**, *Magnetic Resonance Gordon Research Conference*, Wolfeboro, NH, June, 25-30, 1995.
8. R.A. Waggoner and E. Fukushima, **Studies of flow and Porous Media via Magnetic Resonance**, *36th ENC*, Boston, MA, March, 26-30, 1995.
7. R.A. Waggoner, **Magnetic Resonance Imaging of Flows**, Albuquerque Society for Applied Spectroscopy Meeting, Albuquerque, NM, November 16, 1994. (Invited Talk)

6. R.A. Waggoner, P.D. Majors, E. Fukushima, **¹H and ¹⁹F NMRI Studies of Immiscible Fluid Displacements in Porous Media**, *35th ENC*, Asilomar, April 10-15, 1994.
5. R. Allen Waggoner, **Diffusion Studies in Polymer Solutions by NMR**, Chemistry Department, New Mexico Tech., Socorro, NM, December 1, 1993. (Invited Talk)
4. R.A. Waggoner and F.D. Blum, **Modeling of the Drying of Coatings**, Spring 1991 *American Chemical Society Meeting*, Atlanta, GA, April 14-19, 1991.
3. R.A. Waggoner and F.D. Blum, **Solvent Self-Diffusion and Free Volume in Concentrated Polymer Solutions**, FACSS XVI, Chicago, IL, Oct. 1-6, 1989.
2. R.A. Waggoner and F.D. Blum, **Self-Diffusion Coefficients in Polystyrene Solutions**, *Midwest Regional American Chemical Society Meeting*, St. Louis, MO, Nov. 1-3, 1989.
1. R.A. Waggoner and F.D. Blum, **Role of Diffusion in the Drying of Coatings**, *Midwest Regional American Chemical Meeting*, Iowa City, IA, Nov. 16-18, 1988.

Abstracts

105. R.A. Waggoner, T. Feiweier, K. Tanaka. **High b-Value DTI on a Clinical Scanner via Stimulated-Echo EPI**, *48th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Virtual, September 11- October 4, 2020, **O-059**.
104. S. Gupta, K. Tanaka, R.A. Waggoner. **Comparison of MR-Thermometry and thermal simulations in living human tissue**, *48th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, Virtual, September 11- October 4, 2020, **O-024**.
103. R.A. Waggoner, T. Feiweier, K. Tanaka. **The Use of Stimulated-Echo EPI to Obtain High b-Value DTI Data at Short TEs on a Clinical Scanner**, *Proceeding of the 28th Scientific Meeting and Exhibition of the ISMRM, August 2020*, **4333**.
102. S. Gupta, K. Tanaka, R.A. Waggoner. **Validation of RF induced temperature increase in phantom and in living human tissue: a comparison study**, *Proceeding of the 28th Scientific Meeting and Exhibition of the ISMRM, August 2020*, **1122**.
101. S. Gupta, K. Tanaka, R.A. Waggoner. **Temperature increase in a phantom and living human tissue: comparison of numerical simulations, MR thermometry, and optical thermocouples**, *Proceedings of the 4rd Annual Meeting of the ISMRM Japanese Chapter, NIRS/QST Chiba*, December 2019, **P-26**.
100. T. Tanskanen, R.A. Waggoner, K. Ueno, K. Cheng, and K. Tanaka. **Columnar scale representation of faces in the human inferotemporal cortex**, *IBRO 2019*, Daegu, Korea, September 21-25, 2019
99. N. Li, K. Cheng, R.A. Waggoner, and K. Tanaka. **Lateral orbitofrontal cortex is associated with human cognitive dynamics in the congruency sequence effect**, *IBRO 2019*, Daegu, Korea, September 21-25, 2019
98. S. Gupta, K. Tanaka, and R.A. Waggoner. **Validation of RF-induced temperature increase in living human tissue**, *ISMSM Workshop on MR Safety: Ensuring Safety from First Principles to Best Practices*, Utrecht, The Netherlands, September 20-22, 2019
97. R.A. Waggoner, S. Gupta, and K. Tanaka. **Chemical-Shift Selective Imaging Using Slice-Selective Gradient Reversal in the Presence of Incomplete Spectral Separation**, *47th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine*, September, 2019. *Japanese Journal of Magnetic Resonance in Medicine Supplement Vol.39*, **O1-009**.

96. K. Haruhana, C. Suzuki, R.A. Waggoner, K. Tanaka, and K. Ueno. **Evaluation of Head Motion Suppression Using a Bite-Bar System for Human MRI Scans**, *3rd Japanese Meeting for Human Brain Imaging*, Tamagawa University, Machida, Japan, September 6-7, 2019, **P56**.
95. G. Liu, A. Shah, T. Ueguchi, R.A. Waggoner, S. Gupta, K. Tanaka. **EPI based MR thermometry and real-time monitoring for parallel RF transmission at 7T**, *Proceedings, 27th ISMRM*, Montreal, Canada 3943 (2019).
94. C. Suzuki, R.A. Waggoner, K. Haruhana, K. Tanaka, K. Ueno. **Improving k-space physiological noise correction with motion correction in fMRI studies**, *Proceedings, 27th ISMRM*, Montreal, Canada 3947 (2019).
93. R.A. Waggoner, K. Ueno, K. Matsumoto, K. Tanaka. **The Benefits of Multi-Shot EPI**, International Symposium of Brain/MINDS ISBM2019, Tokyo, Japan, January 29, 2019, **PO-55**.
92. S. Gupta, K. Tanaka, R.A. Waggoner. **RF-induced temperature increase in human tissue: Comparison of MR Thermometry and Simulations**, International Symposium of Brain/MINDS ISBM2019, Tokyo, Japan, January 29, 2019, **PO-52**.
91. K. Matsumoto, K. Iijima, Y. Yomogida, K. Matsumori, Y. Suda, T. Uka, R.A. Waggoner, K. Ueno, K. Tanaka. **Neuroimaging, Bayesian modeling, and neurophysiological approaches toward understanding the neural circuitry that should be targeted in marmoset models of psychiatric/neurological diseases**, International Symposium of Brain/MINDS ISBM2019, Tokyo, Japan, January 29, 2019, **PO-48**.
90. R.A. Waggoner, K. Ueno, K. Tanaka. **In-Plane Signal Leakage in GRAPPA Reconstructions**, Proceedings of the 3rd Annual Meeting of the ISMRM Japanese Chapter, Nagoya, December 2018, **O-1**.
89. K. Haruhana, C. Suzuki, R. A. Waggoner, K. Tanaka, **K. Ueno. Head Motion Suppression Using The Bite-bar System for Human MRI scans**, Proceedings of the 3rd Annual Meeting of the ISMRM Japanese Chapter, Nagoya, December 2018, **P-1-6**.
88. C. Suzuki, R. A. Waggoner, K. Haruhana, K. Tanaka, K. Ueno. **Motion correction for improving k-space physiological noise correction in fMRI studies**, Proceedings of the 3rd Annual Meeting of the ISMRM Japanese Chapter, Nagoya, December 2018, **P-1-7**.
87. S. Gupta, K. Tanaka, R.A. Waggoner. **Calibration of Proton Resonance Frequency Shift Coefficient in a Phantom for 4-T MRI**, *Proceedings of the 3rd Annual Meeting of the ISMRM Japanese Chapter*, Nagoya, December 2018, **P-8-1**.
86. R. A. Waggoner, K. Ueno, K. Tanaka. **Direct Measurement of In-Plane Signal Leakage Using TGRAPPA**, 46th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2018. *Japanese Journal of Magnetic Resonance in Medicine Supplement Vol.38*, **O1-106**.
85. C. Suzuki, K. Haruhana, R. A. Waggoner, K. Tanaka, K. Ueno. **Motion effect on physiological noise correction in fMRI studies**, 46th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2018. *Japanese Journal of Magnetic Resonance in Medicine Supplement Vol.38*, **O1-105**.
84. S. Gupta, K. Cheng, K. Tanaka, and R. A. Waggoner. **Phantom for MR-Thermometry**, 46th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2018. *Japanese Journal of Magnetic Resonance in Medicine Supplement Vol.38*, **O1-105**.
83. R. A. Waggoner, K. Ueno, H. Kuribayashi, K. Tanaka. **In-Plane Signal Leakage (L-factor) Maps from TGRAPPA**, Proceedings, 26h ISMRM, Paris, France, **3511** (2018).

82. R.A. Waggoner. **MR Physics Demands of High-Resolution fMRI**, The 6th International Congress on Magnetic Resonance Imaging, Seoul, South Korea, March 29-31, 2018.
81. S. Gupta, K. Tanaka, R.A. Waggoner. **Simulations of various numerical leg models to ensure safety during parallel transmission MRI**, Proceedings of the 2nd Annual Meeting of the ISMRM Japanese Chapter, Wako-shi, Japan, February 2018, **S3-3**.
80. T. Tanskanen, T.C-H. Kao, R.A. Waggoner, K. Haruhana, K. Ueno, K. Cheng, K. Tanaka. **Category selectivity in the human face-selective cortex assessed with columnar resolution fMRI**, Proceedings of the 2nd Annual Meeting of the ISMRM Japanese Chapter, Wako-shi, Japan, February 2018, **P17**.
79. C. Suzuki, R.A. Waggoner, K. Haruhana, K. Tanaka, K. Ueno. **Evaluation of motion effects on physiological noise correction in fMRI studies**, Proceedings of the 2nd Annual Meeting of the ISMRM Japanese Chapter, Wako-shi, Japan, February 2018, **P15**.
78. S. Gupta, K. Cheng, K. Tanaka, and R. A. Waggoner. **RF-induced temperature increase in a phantom: Comparison of numerical simulations, MR thermometry and temperature sensor measurements**, 45th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2017. *Japanese Journal of Magnetic Resonance in Medicine Supplement 36*, **O1-82**.
77. K. Haruhana, C. Suzuki, R.A. Waggoner, K. Tanaka, and K. Ueno, **Optimization of Data Acquisition and Processing for the Macaque Brain 3D MPRAGE using a human Whole-Body 3T MRI System**, 45th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2017. *Japanese Journal of Magnetic Resonance in Medicine Supplement 36*, **P3-B2-207**.
76. R.A. Waggoner, **An Overview of High-Resolution fMRI Studies at RIKEN-BSI From V1 to the Temporal Lobe**, *Neuroscience 2017, The 40th Annual Meeting of the Japan Neuroscience Society*, **1S03m-1**.
75. R. A. Waggoner, K. Ueno, J. Pfeuffer, K. Tanaka and K. Cheng, **High-Resolution fMRI of the Visual System at 3T Using Zoomed Excitation Via Tx-SENSE**, *Proceedings, 25th ISMRM*, Honolulu, HI **5227** (2017).
74. S. Gupta, R. A. Waggoner, K. Tanaka and K. Cheng, **Validation of RF-Induced Temperature Increase in a Phantom: Comparison of Numerical Simulations, MR Thermometry and Measurements from Temperature Sensors**, *Proceedings, 25th ISMRM*, Honolulu, HI **2651** (2017).
73. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Impact of Multi-band EPI on Serial Autocorrelations**, *Proceedings of the 1st Annual Meeting of the ISMRM Japanese Chapter*, Osaka, February 2017, **S2-1**.
72. S. Gupta, R. Allen Waggoner, K. Tanaka, and K. Cheng. **Comparison of Temperature Increase in Phantom, Calculated by Numerical Simulations, Measured by the MR Thermometry and by Temperature Sensors**, *Proceedings of the 1st Annual Meeting of the ISMRM Japanese Chapter*, Osaka, February 2017, **P28**.
71. S. Gupta, R. Allen Waggoner, K. Tanaka, and K. Cheng. **Size and Position of Load Affects the Mutual Coupling Between the Elements of Array Coil**, *Proceedings of the 1st Annual Meeting of the ISMRM Japanese Chapter*, Osaka, February 2017, **P29**.
70. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Serial Autocorrelations and Multi-band fMRI**, 44th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2016. *Japanese Journal of Magnetic Resonance in Medicine Supplement 36*, **O-2-005**.

69. S. Gupta, R. Allen Waggoner, K. Tanaka, and K. Cheng. **Effect of load size and load position on coupling between the elements of an array coil**, 44th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2016. *Japanese Journal of Magnetic Resonance in Medicine Supplement 36*, **O-1-050**.
68. R.A. Waggoner, **Event-Related fMRI of the Visual System Using Multi-Band EPI**, Neuroscience 2016, The 39th Annual Meeting of the Japan Neuroscience Society, **S3-E-2-2**.
67. C.H. Kao, T. Tanskanen, K. Ueno, R.A. Waggoner, K. Tanaka, and K. Cheng, **Columnar organization of face orientation processing in human occipital face area**, Neuroscience 2016, The 39th Annual Meeting of the Japan Neuroscience Society, **P3-099**.
66. T. Tanskanen, C.H. Kao, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Columnar scale representation of faces in the human inferotemporal cortex**, Neuroscience 2016, The 39th Annual Meeting of the Japan Neuroscience Society, **P2-116**.
65. R. A. Waggoner, T. Tanskanen, K. Tanaka and K. Cheng, **Enhancement of Event-Related fMRI Studies of the Human Visual System Using Multi-band EPI**, Proceedings, 24th ISMRM, Singapore, **1745** (2016).
64. R. Allen Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng. **Enhancing Event-Related fMRI Studies with Multiband EPI**, 43th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2015. *Japanese Journal of Magnetic Resonance in Medicine Supplement 35*, **O-1-026E**.
63. S. Gupta, R. Allen Waggoner, K. Tanaka, and K. Cheng. **Influence of coil coupling on SAR estimates via several simulation strategies**, 43th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2015. *Japanese Journal of Magnetic Resonance in Medicine Supplement 35*, **O-1-092E**.
62. R.A. Waggoner, T. Tanskanen, K. Tanaka, and K. Cheng, **Event-Related fMRI Studies in Human Visual Cortex Using Multi-band EPI**, Neuroscience 2015, The 38th Annual Meeting of the Japan Neuroscience Society, **1008-3-4**.
61. T. Tanskanen, C.H. Kao, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Category selectivity in human inferotemporal cortex assessed with columnar resolution fMRI**, Neuroscience 2015, The 38th Annual Meeting of the Japan Neuroscience Society, **1P223**.
60. C.H. Kao, T. Tanskanen, K. Ueno, R.A. Waggoner, K. Tanaka, and K. Cheng, **Characterizing the organization of orientation-tuned face processing in human occipital face area with high spatial resolution fMRI**, Neuroscience 2015, The 38th Annual Meeting of the Japan Neuroscience Society, **2P184**.
59. R. A. Waggoner, T. Tanskanen, K. Tanaka and K. Cheng, **Evaluation of Multi-band EPI for Event-Related fMRI Studies**, *Proceedings, ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications*, Pacific Grove CA, (2015).
58. S. Gupta, R. A. Waggoner, K. Tanaka and K. Cheng, **Variations in Peak Local SAR due to Coupling – Comparison Between Various pTx Array Simulation Methods**, *Proceedings, 23rd ISMRM*, Toronto Canada, (2015).
57. R. A. Waggoner, Z. Zuo, Y. Zhuo, T. Tanskanen, K. Ueno, K. Tanaka and K. Cheng, **Interactions between Physiological Noise Correction and GRAPPA Reconstruction in EPI Data**, *Proceedings, 23rd ISMRM*, Toronto Canada, (2015).

56. C. Suzuki, K. Ueno, R. Allen Waggoner, and K. Cheng, **The optimization of physiological noise correction method for fMRI study**, P-42nd Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2014. *Japanese Journal of Magnetic Resonance in Medicine Supplement 34*, **2-172**.
55. C.H. Kao, T. Tanskanen, K. Ueno, R.A. Waggoner, K. Tanaka, and K. Cheng, **Representation of viewpoints at different spatial scales in human occipital face area**, Neuroscience 2014, The 37th Annual Meeting of the Japan Neuroscience Society, **O1-G-3-4**.
54. T. Tanskanen, C.H. Kao, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Probing face selectivity in human inferotemporal cortex with high-resolution fMRI**, Neuroscience 2014, The 37th Annual Meeting of the Japan Neuroscience Society, **O1-G-3-3**.
53. T. Tanskanen, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Mapping the human face and object responsive cortical areas with optimized fMRI that minimizes occipitotemporal signal loss**, Neuroscience 2012, The 35th Annual Meeting of the Japan Neuroscience Society, **O4-F-60-2**.
52. R. Allen Waggoner, S. Gupta, K. Tanaka, and K. Cheng. **Assessment of T2* Blurring in SIR Accelerated EPI**, 40th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2012. *Japanese Journal of Magnetic Resonance in Medicine Supplement 32*, **O-2-196**.
51. C. Suzuki, K. Ueno, R. Allen Waggoner, and K. Cheng, **マルチショットfMRIにおける心拍タイミング信号に基づく心拍ノイズ補正手法の検討**, 40th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2012. *Japanese Journal of Magnetic Resonance in Medicine Supplement 32*, **O-1-85**.
50. T. Tanskanen, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Imaging human face and object responsive visual areas with spin-echo and gradient-echo fMRI**, HBM 2012.
49. C. Suzuki, K. Ueno, R. A. Waggoner, and K. Cheng, **Cardiac Artifacts Around the Brainstem in fMRI Studies**, *Proceedings, 20th ISMRM*, Melbourne Australia, (2012).
48. M. Costagli, P. Sun, K. Ueno, X. Wan, J. Gardner, R. A. Waggoner, K. Tanaka, and K. Cheng, **Columnar organization for motion directions in human MT complex revealed by high-resolution fMRI**, HBM 2011.
47. R.A. Waggoner, K. Tanaka, and K. Cheng, **Investigating the Origins of the DfMRI Signal Using 4 Tesla**, *Proceedings, 18th ISMRM*, Stockholm, Sweden, 1120(2010).
46. T. Tanskanen, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Improved Coverage of Functional MRI in the Study of Human Temporo-Occipital Visual Areas**, The 56th National Institute for Basic Biology Conference: Neocortical Organization, Okazaki, Japan, **P04**, 2010.
45. T. Tanskanen, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **Optimized fMRI of human temporo-occipital cortex by accelerated multi-shot spin-echo EPI**, The 39th Annual Meeting of the Society for Neuroscience, Chicago, IL, October 2009. **P262.16**.
44. R.A. Waggoner, K. Tanaka, and K. Cheng, **Exploring the Origins of the DfMRI Signal at 4 Tesla**, HBM 2009.
43. R.A. Waggoner, T. Oda, R. Kinugasa, K. Ueno, K. Cheng, H. Yokota, and R. Himeno, **DTI Based Muscle Fiber Tractography in Humans at 4 Tesla Using Stimulated-Echos**, *Proceedings, 17th ISMRM*, Honolulu, HI, **681**(2009).

42. Y. Matsuda, K. Ueno, R.A. Waggoner, D. Erickson, Y. Shimura, K. Tanaka, K. Cheng and R. Mazuka, **Processing of infant-directed speech in parents: An fMRI Study**, The 30th Annual Meeting of the Japan Neuroscience Society, Yokohama, Japan, September 2007. *Neuroscience Research Supplement* 58, **S45**, 2007.
41. Y. Matsuda, K. Ueno, R.A. Waggoner, D. Erickson, Y. Shimura, K. Tanaka, K. Cheng and R. Mazuka, **Processing of infant-directed speech in adults**, HBM 2007.
40. R.A. Waggoner, M. Costagli, K. Tanaka, and K. Cheng, **Inherent Smoothing in Accelerated Parallel Imaging Reconstruction Techniques**, *Proceedings, 15th ISMRM*, Berlin, **3344**(2007).
39. M. Costagli, R.A. Waggoner, K. Ueno, K. Tanaka, and K. Cheng, **3D rigid body motion correction in k-space**, *Proceedings, 15th ISMRM*, Berlin, **3432**(2007).
38. Y. Matsuda, K. Ueno, R.A. Waggoner, D. Erickson, Y. Shimura, K. Tanaka, K. Cheng and R. Mazuka, **Processing of infant-directed prosody and lexicon in adults: An fMRI study**, The 36th Annual Meeting of the Society for Neuroscience, Atlanta, GA, October 2006. *Abstracts Society for Neuroscience*, **P263.15**.
37. R.A. Waggoner, M. Costagli, Y. Matsuda, K. Ueno, K. Tanaka, K. Cheng, **SENSE or TSENSE, Which Makes Sense for fMRI?** 34th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2006. *Japanese Journal of Magnetic Resonance in Medicine Supplement* 26, **178-23PM**.
36. M. Costagli, R.A. Waggoner,, K. Ueno, K. Tanaka, K. Cheng, **3D Rigid Motion Correction in the Fourier Domain for Whole-Brain Coverage EPI Time Series**, 34th Annual Meeting of the Japanese Society for Magnetic Resonance in Medicine, September, 2006. *Japanese Journal of Magnetic Resonance in Medicine Supplement* 26, **177-23PM**.
35. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **SENSE or TSENSE for fMRI, Which is Better?** HBM 2006.
34. M. Costagli, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **3D Motion Correction in the Fourier Domain for fMRI Time Series**, HBM 2006.
33. P. Sun, J.L. Gardner, M. Costagli, K. Ueno, R.A. Waggoner, K. Tanaka, K. Cheng, **Direct demonstration of tuning to stimulus orientation in human V1: a high-resolution fMRI study with a continuous stimulation paradigm and a differential mapping method**, HBM 2006.
32. Y. Tanaka, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **The left parieto-occipital cortex is critically involved in the object completion with degraded image information**, HBM 2006.
31. R.A. Waggoner, M. Costagli, K. Ueno, K. Tanaka, K. Cheng, **Physiological Noise Correction with Increasing Acceleration in SENSE-EPI**, *Proceedings, 14th ISMRM*, 295(2006).
30. R. Horie, C. Hirata, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, J. Tani, **Brain Activity Time-Locked To State Transitions In a Learned Artificial Grammar**, The 35th Annual Meeting of the Society for Neuroscience, Washington D.C., November 2005. *Abstracts Society for Neuroscience*, **P771.22**.
29. R. Horie, C. Hirata, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, J. Tani, **fMRI study of state dependent activity in a learned artificial grammar**, The 28th Annual Meeting of the Japan Neuroscience Society, Yokohama, Japan, July 2005. *Neuroscience Research Supplement* 52, **S210**.

28. R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **The impact of SENSE-EPI on physiological noise correction in an fMRI time series**, The 28th Annual Meeting of the Japan Neuroscience Society, Yokohama, Japan, July 2005. *Neuroscience Research Supplement 52*, S120.
27. K. Ueno, R.A. Waggoner, K. Tanaka, K. Cheng, **Point spread function of BOLD-fMRI signal in human V1 measured at 4 Tesla**, The 28th Annual Meeting of the Japan Neuroscience Society, Yokohama, Japan, July 2005. *Neuroscience Research Supplement 52*, S119.
26. R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **The Significance of Physiological Noise with increasing R in SENSE-EPI**, HBM 2005.
25. K. Ueno, R.A. Waggoner, K. Tanaka, K. Cheng, **Spatial precision of BOLD-fMRI in human V1: point spread function measured at 4T with spatially localized and size-varied stimuli**, HBM 2005.
24. R. Horie, C. Hirata, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, J. Tani, **Functional Mapping of State-dependent Activity in a Learned Artificial Grammar**, HBM 2005.
23. J.L. Gardner, P. Sun, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **Difference in Temporal Dynamics of Positive and Negative BOLD Responses**, *Proceedings, 13th ISMRM*, 25(2005).
22. J. L. Gardner, P. Sun, R. A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **Adaptation to Contrast in Early Human Visual Cortex Reveals Horizontal Shifts of Contrast Response Functions and Differential Responses to Decrements in Contrast Between V1 and V4**, The 34th Annual Meeting of the Society for Neuroscience, San Diego, California, October 2004. Abstracts Society for Neuroscience, P174.17.
21. C. Hirata, R. Horie, R.A. Waggoner, K. Ueno, K. Cheng, K. Tanaka, J. Tani, **Neural Network For Dynamic Sequence Prediction: A High-Field fMRI Study**, The 34th Annual Meeting of the Society for Neuroscience, San Diego, California, October 2004. Abstracts Society for Neuroscience, P774.15.
20. C. Hirata, R. Horie, R.A. Waggoner, K. Ueno, K. Cheng, K. Tanaka, J. Tani, **Neural substrates of learned abstract motor sequence: a high-field fMRI study**, HBM 2004.
19. J. L. Gardner, P. Sun, R.A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **Adaptation causes horizontal shifts of contrast response curves in early human visual cortex: an event related fMRI study**, HBM 2004.
18. P. Sun, K. Ueno, R. Waggoner, K. Tanaka, K. Cheng, **Temporal frequency dominance domains in human primary visual cortex: a high resolution fMRI study**, HBM 2004.
17. J. L. Gardner, P. Sun, R. A. Waggoner, K. Ueno, K. Tanaka, K. Cheng, **Contrast adaptation in human early visual cortex as measured with event related BOLD imaging**, *Proceedings, 12th ISMRM*, 44(2004).
16. P. Sun, K. Ueno, R. Waggoner, K. Tanaka, K. Cheng, **BOLD signal change and its spatial heterogeneity in relation to the reversal frequency of checkerboard stimuli in human primary visual cortex: a high-resolution fMRI study**, *Proceedings, 12th ISMRM*, 1055(2004).
15. P. Sun, K. Ueno, R. Waggoner, K. Tanaka, K. Cheng, **BOLD FMRI Signal Change Does Not Depend on the Frequency of Reversing Checkerboards in Human Primary Visual Cortex (V1)**, The 33rd Annual Meeting of the Society for Neuroscience, New Orleans, Louisiana, November 2003. Abstracts Society for Neuroscience, P69.1.

14. R. A. Waggoner, Y. Kobayashi, G. Matsumura, N. Shiraishi, K. Tanaka, K. Cheng, **T1 in Postmortem Brains at 4T**, *Proceedings, 11th ISMRM*, **2293**(2003).
13. F. Moradi, L.C. Liu, K. Cheng, R.A. Waggoner, K. Tanaka, A.A. Ioannides, **Consistent and Precise Localization of Brain Activity in Human Primary Visual Cortex by MEG and fMRI**, The 31st Annual Meeting of the Society for Neuroscience, San Diego, California, November 2001. Abstracts Society for Neuroscience, **P783.6**.
12. R.A. Waggoner, K. Cheng, and K. Tanaka, **A Comparison of the BOLD Response in V1, MT, and M1**, 28th Meeting of the Japanese Society for Magnetic Resonance in Medicine, Kyoto, Japan, October, 2000. *Japanese Journal of Magnetic Resonance in Medicine Supplement*, **21**.
11. K. Cheng, R.A. Waggoner, and K. Tanaka, **High Resolution fMRI Studies on Human Primary Visual Cortex**, The Joint Meeting of the 23rd Annual Meeting of the Japan Neuroscience Society and the 10th Annual Meeting of the Japan Neural Network Society, Yokohama, Japan, September 2000. *Neuroscience Research Supplement* **38**, **S33**.
10. R.A. Waggoner, K. Cheng, and K. Tanaka, **Stimulus-Dependence and Independence of the BOLD Response in Human V1 and MT**, *Proceedings, 8th ISMRM*, **998**(2000).
9. K. Cheng, R.A. Waggoner, and K. Tanaka, **Mapping Human Ocular Dominance Columns with High-Field (4T) Functional Magnetic Resonance Imaging**, *Proceedings, 8th ISMRM*, **998**(2000).
8. K. Cheng, R.A. Waggoner, and K. Tanaka, **Human Ocular Dominance Columns revealed by high-field (4T) functional Magnetic Resonance Imaging**, The 26th Seiriken International Symposium (COE) on Neural Mechanisms of Visual Perception and Cognition, Okazaki, Japan, March 2000.
7. K. Tanaka, T. Hasegawa, K. Matsumoto, K. Cheng, R.A. Waggoner, **Visual Object Recognition**, The 26th Seiriken International Symposium (COE) on Neural Mechanisms of Visual Perception and Cognition, Okazaki, Japan, March 2000.
6. K. Cheng, R.A. Waggoner, and K. Tanaka, **Mapping Human Ocular Dominance Columns with 4T fMRI**. *Proceedings of Akita Workshop on Energy Metabolism and Neuronal Activation*, 87-94, Akita Japan, 2000.
5. K. Cheng, R.A. Waggoner, and K. Tanaka, **Patterns of Human Ocular Dominance Columns as revealed by high-field (4T) functional Magnetic Resonance Imaging (fMRI)**, The 29th Annual Meeting of the Society for Neuroscience, Miami Beach, Florida, October 1999. Abstracts Society for Neuroscience **25.1422**.
4. K. Cheng, R.A. Waggoner, H. Takeichi, T. Ong, K. Tanaka, **Patterns of Human Ocular Dominance Columns as Revealed by high-field (4T) fMRI**. In *Proceedings of Akita Workshop on Vascular Function and Mapping Model*, 41-44, Akita, Japan, 1999.
3. K. Tanaka, E. Yoshitome, R.A. Waggoner, H. Takeichi, K. Cheng, and T. Ong, **High field fMRI: Present Status and Perspective**, The Joint Meetings of the 21st Annual Meeting of the Japan Neuroscience Society Meeting and the 41st Japanese Society for Neurochemistry, Tokyo, Japan, September 1998. *Neuroscience Research Supplement*, **31**, **S50**.
2. E. Yoshitome, R.A. Waggoner, H. Takeichi, K. Cheng, T. Ong, K. Tanaka, **Half Encode and Double Shot(HEADS) EPI**, *Proceedings, 6th ISMRM*, **1451**(1998).
1. D.O. Kuethe, A. Caprihan, E. Fukushima, R.A. Waggoner, H.M. Gach, and I.J. Lowe, **Imaging Lungs Using Inert Fluorinated Gases**, *Proceedings, 5th ISMRM*, **1066**(1997).