WAKE FOREST UNIVERSITY SCHOOL OF MEDICINE
CURRICULUM VITAE

NAME: SATORU HAYASAKA, Ph.D.

CURRENT ACADEMIC TITLE: Assistant Professor

ADDRESS:

Office: Division of Public Health Sciences, Department of Biostatistical Sciences
Division of Radiologic Sciences, Department of Radiology
Wake Forest University School of Medicine
Medical Center Blvd.
Winston-Salem, NC 27157 USA
Telephone: (336) 716-8504
Fax: (336) 716-0798

EDUCATION:

Concordia University, Montréal, Canada   1998
Bachelor of Science in Honours Statistics with Great Distinction

The University of Michigan, Ann Arbor, MI   2000
Master of Science in Biostatistics & Public Health Genetics

The University of Michigan, Ann Arbor, MI   2003
Doctor of Philosophy in Biostatistics
Advisor: Thomas E. Nichols, PhD.
Dissertation: Validating and Improving Cluster Size Inference in Brain Image
Analysis

POSTDOCTORAL TRAINING:

Post-Doctoral Fellowship   2005
University of California San Francisco, San Francisco, CA
Magnetic Resonance Unit, Department of Radiology
Principal Investigator: Michael W. Weiner, M.D.

ACADEMIC APPOINTMENTS:

Graduate Student Instructor   1998
The University of Michigan, Ann Arbor, MI
Department of Biostatistics

Graduate Student Research Assistant   1999-2003
The University of Michigan, Ann Arbor, MI
Department of Biostatistics

Post-Doctoral Fellow   2003-2005
University of California San Francisco and San Francisco
Veterans Administration Medical Center, San Francisco, CA
Magnetic Resonance Unit, Department of Radiology

Assistant Professor   2005-present
Wake Forest University School of Medicine, Winston-Salem, NC
Departments of Biostatistical Sciences and Radiology

Member   2009-present
Wake Forest University School of Medicine, Winston-Salem, NC
Neuroscience Graduate Program Faculty

Affiliate Faculty   2009-present
Wake Forest University School of Medicine, Winston-Salem, NC
Department of Biomedical Engineering

PROFESSIONAL APPOINTMENTS AND ACTIVITIES:

National:

Ad hoc Mail Reviewer
    NIH ZRG1 SBIB-V (58) Study Section   2009
Review Panel Member
    NSF Collaborative Research in Computationa Neuroscience (CRCNS)   2011

Editorial Work:

Ad-hoc Reviewer

    Academic Radiology
    Cerebral Cortex
    Clinical Anatomy
    Human Brain Mapping
    IEEE Journal of Selected Topics in Signal Processing
    IEEE Transactions on Medical Imaging
    Journal of the American Statistical Association
    NeuroImage
    PLoS ONE

Abstract Reviewer

    12th Organization for Human Brain Mapping Conference   2006

    13th Organization for Human Brain Mapping Conference   2007

    16th Organization for Human Brain Mapping Conference   2010

    17th Organization for Human Brain Mapping Conference   2011

INSTITUTIONAL SERVICE:

Committee Membership

Institutional Review Board (Board 4)	2009-present
Center for Biomolecular Imaging Oversight Committee	2010-present

Departmental Committees

Executive Committee, Clinical and Population Translational Science Graduate Program	2010-present

Reviewer

Translational Science Institute Summer Research Program	2009-2011
Medical Student Research Program	2009-2010

Miscellaneous

Seminar Series Organizer, Advanced Neuroscience Imaging Research (ANSIR) Laboratory Seminar Series	2006-2008
Poster Judging Committee, Medical Student Research Day	2009-2010

PROFESSIONAL MEMBERSHIPS AND SERVICE:

Memberships:

American Statistical Association (ASA)	2000-present
International Society for Magnetic Resonance in Medicine (ISMRM)	2003-2010
Organization for Human Brain Mapping (OHBM)	2002-present

Session Chair / Organizer:

Co-organizer Symposium "The Brain as a Small-World Network: from Micro- to Macro-Scale," Organization for Human Brain Mapping Conference, San Francisco, USA	2009

HONORS AND AWARDS:

Dean's List, Faculty of Arts and Science, Concordia University	1995-1998
Science College Scholarship, Concordia University	1997
Science College Prize, Concordia University	1998
Award for Outstanding Performance in Ph.D. Qualifying Examination (Highest score in the qualifying exam)	2000
Trainee Travel Award, 8th Organization for Human Brain Mapping Conference, Sendai, Japan	2002

Trainee Travel Award, 9th Organization for Human Brain Mapping Conference,   2003
New York City, USA

Trainee Travel Award, 10th Organization for Human Brain Mapping Conference,   2004
Budapest, Hungary

Honorable Mention, Poster Award (Neuroimaging)   2005
International Society for Magnetic Resonance in Medicine Conference,
Miami Beach, FL, USA

Wake Forest University Translational Scholar Award   2007

Early-Career Investigator Basic Sciences Research Award   2011
Wake Forest University School of Medicine

GRANTS:

Current Grants:

NINDS
R21 NS059793   09/20/2008 - 08/31/2011
$159,985
Title: Development of a Power Calculation Tool for Neuroimaging Studies
Principal Investigator: **Satoru Hayasaka**
15% effort
Role: PI

NINDS
R01 NS070917   05/01/2010 - 04/30/2014
$238,893
Title: Connecting Brain Networks Across Subjects and Across Modalities
Principal Investigator: **Satoru Hayasaka**
40% effort
Role: PI

NIAAA
R01 AA015568   09/30/2006 - 08/31/2011
$230,215
Early Stress & Alcoholism: Functional Analyses in Brain
Principal Investigator: David Friedman
5% effort
Role: Biostatistician

NINDS
R01 NS058700   04/01/2008 - 03/31/2013
$401,913
Title: Genetic Epidemiology of Cerebrovascular Disease and Cognition in Diabetes
Principal Investigator: Donald Bowden
16.5% effort
Role: Co Investigator

NINDS
R01 NS039426-09S1   09/30/2009 - 09/29/2011
$126,496
Title: Supraspinal Processing of Sensory Aspects of Pain (ARRA Supplement)
Principal Investigator: Robert Coghill
10% effort (ends 9/29/2010)
Role: Co Investigator

WFU Translational Science Institute   10/01/2010 - 03/31/2011
$68,000
Title: Examination of Wake Forest University Faculty Collaboration Network
Principal Investigator: Paul Laurienti
10% effort
Role: Co-Investigator

Pending Grants:

None

Past Grants:

NIBIB
R01 EB004673   08/01/2004 - 05/31/2009
Total Grant Amount: $1,630,799
Title: Integrated Tool for Biological Parametric Mapping
Principal Investigator: Joseph Maldjian
Role: Co Investigator

NIBIB
R01 EB003880   04/18/2005 - 01/31/2009
Total Grant Amount: $1,201,749
Title: Effect of Caffeine on Functional and Perfusion MRI
Principal Investigator: Paul Laurienti
Role: Co Investigator

NIH
R01 MH069326   04/01/2006-12/31/2008
Total Grant Amount: $28,613
Title: Nonparametric Inference for Neuroimaging Data
Sub-contract PI: **Satoru Hayasaka**
Role: Sub-contract PI

Wake Forest University Translational Scholar Award   09/01/2007 - 08/31/2010
Total Grant Amount: $226,811
Title: Integrating Genomics and Brain Imaging: Mapping Genetic Links Associated with Normal and Abnormal Brain Structure and Function
Principal Investigator: **Satoru Hayasaka**
Role: PI

BIBLIOGRAPHY:

Journal Articles:

1. Perrone E, Theoharis C, Mucci N, **Hayasaka S**, Taylor J, Cooney K, Rubin M. Tissue microarray assessment of prostate cancer tumor proliferation in African - American and white men. Journal of the National Cancer Institute, 92: 937-939 (2000).

2. Hollenbeck B, Bassily N, Wei J, Montie J, **Hayasaka S**, Taylor J, Rubin M. Whole mounted radical prostatectomy specimens do not increase detection of adverse pathological features. Journal of Urology, 164:1583-1586 (2000).

3. Cooper C, McLean L, Walsh M, Taylor J, **Hayasaka S**, Bhitia J, Pienta K. Preferential Adhesion of Prostate Cancer Cells to Bone is Mediated by Binding to Bone Marrow Endothelial Cells as Compared to Extracellular Matrix Components In Vitro. Clinical Cancer Research, 6: 4839-4847 (2000).

4. Trask PC, Paterson AG, Wang CL, **Hayasaka S**, Milliron KJ, Blumberg LR, Gonzalez R, Murray S, Merajver SD. Cancer-Specific Worry Interference in Women Attending a Breast and Ovarian Cancer Risk Evaluation Program: Impact on Emotional Distress and Health Functioning. Psycho-Oncology, 10(5): 349-60 (2001).

5. Trask PC, Paterson AG, **Hayasaka S**, Dunn RL, Riba M, Johnson T. Psychosocial Characteristics of Individuals with Non-Stage IV Melanoma. Journal of Clinical Oncology, 19(11): 2844-2850 (2001).

6. Zhou M, **Hayasaka S**, Taylor JM, Shah R, Proverbs-Singh T, Manley S, Rubin MA. Lack of association of prostate carcinoma nuclear grading with prostate specific antigen recurrence after radical prostatectomy. Journal of Urology, 166(6):2193-7 (2001).

7. Cooper CR, Bhatia JK, Muenchen HJ, McLean L, **Hayasaka S**, Taylor JMG, Poncza PJ, and Pienta KJ. The Regulation of Prostate Cancer Cell Adhesion to Human Bone Marrow Endothelial Cell Monolayers by Androgen Dihydrotestosterone and Cytokines. Clinical and Experimental Metastasis, 19: 25-33 (2002).

8. Beer DG, Kardia SL, Huang CC, Giordano TJ, Levin AM, Misek DE, Lin L, Chen G, Gharib TG, Thomas DG, Lizyness ML, Kuick R, **Hayasaka S**, Taylor JM, Iannettoni MD, Orringer MB, Hanash S. Gene-expression profiles predict survival of patients with lung adenocarcinoma. Nature Medicine, 8(8):816-24 (2002).

9. Nichols TE, **Hayasaka S**. Controlling the Familywise Error Rate in Functional Neuroimaging: A Comparative Review. Statistical Methods in Medical Research, 12: 419-446 (2003).

10. Urba SG, Orringer MB, Ianettoni M, Hayman JA, **Hayasaka S**. Concurrent Cisplatin, Paclitaxel, and Radiotherapy as Preoperative Treatment for Patients with Locoregional Esophageal Carcinoma. Cancer, 98: 2177-2183 (2003).

11. **Hayasaka S**, Nichols TE. Validating Cluster Size Inference: Random Field and Permutation Methods. NeuroImage, 20: 2343-2356 (2003).

12. **Hayasaka S**, Phan KL, Liberzon I, Worsley KJ, and Nichols TE. Non-Stationary Cluster Size Inference with Random Field and Permutation Methods. NeuroImage, 22: 676-687 (2004).

13. **Hayasaka S**, and Nichols TE. Combining Voxel Intensity and Cluster Extent with Permutation Test Framework. NeuroImage, 23: 54-63 (2004).

14. Ergen FB, Hussain HK, Caoili EM, Korobkin M, Carlos RC, Weadock WJ, Johnson TD, Shah R, **Hayasaka S**, Francis IR. MRI for preoperative staging of renal cell carcinoma using the 1997 TNM classification: comparison with surgical and pathologic staging. American Journal of Roentgenology, 182: 217-225 (2004).

15. **Hayasaka S,** Du AT, Duarte A, Kornak J, Jahng GH, Weiner MW, and Schuff N. A Non-Parametric Approach for Co-Analysis of Multi-Modal Brain Imaging Data: Application to Alzheimer's Disease. NeuroImage, 30: 768-779 (2006).

16. Du AT, Jahng G-H, **Hayasaka S**, Kramer JH, Rosen HJ, Gorno-Tempini ML, Rankin KP, Miller BL, Weiner MW, and Schuff N. Hypoperfusion in Frontotemporal Dementia and Alzheimer's Disease by Arterial Spin Labeling MRI. Neurology, 67(7): 1215-20 (2006).

17. Duarte A, **Hayasaka S**, Du A, Schuff N, Jahng GH, Kramer J, Miller B, Weiner M. Volumetric Correlates of Memory and Executive Function in Normal Elderly, Mild Cognitive Impairment and Alzheimer's Disease. Neuroscience Letters, 406: 60-65 (2006).

18. Casanova R, Ryali S, Baer A, Laurienti PJ, Burdette JH, **Hayasaka S**, Flowers L, Wood FB, Maldjian JA. Biological Parametric Mapping: A Statistical Toolbox for Multi-Modality Brain Image Analysis. NeuroImage, 34: 137-143 (2006).

19. Zagoria RJ, Traver MA, Werle DM, Perini M**, Hayasaka S**, Clark PE. Oncologic Efficacy of CT-Guided Percutaneous Radiofrequency Ablation of Renal Cell Carcinomas. American Journal of Roentgenology, 189: 429-436 (2007).

20. **Hayasaka S**, Peiffer AM, Hugenschmidt CE, Laurienti PJ. Power and sample size calculation for neuroimaging studies by noncentral random field theory. NeuroImage, 37: 721-730 (2007).

21. Hairston WD, Hodges DA, Casanova R, **Hayasaka S**, Kraft RA, Maldjian JA, and Burdette JH. Closing the Mind's Eye: Deactivation of Visual Cortex Related to Auditory Task Difficulty. NeuroReprt, 19(2); 151-154 (2008).

22. Peiffer AM, Hugenschmidt CE, Maldjian JA, Casanova R, Srikanth R, **Hayasaka S**, Burdette JH, Kraft RA, Laurienti PJ. Aging and the Interaction of Sensory Cortical Function and Structure. Human Brain Mapping, 30: 228-240 (2009).

23. Addicott MA, Yang LL, Peiffer AM, Burnett LR, Burdette JH, Chen MY, **Hayasaka S**, Kraft RA, Maldjian JA, Laurienti PJ. The effect of daily caffeine use on cerebral blood flow: How much caffeine can we tolerate? Human Brain Mapping, 30(10): 3102-3114 (2009).

24. Hugenschmidt CE, Peiffer AM, McCoy T, **Hayasaka S**, Laurienti PJ. Preservation of crossmodal selective attention in healthy aging. Experimental Brain Research, 198(2-3): 273-285 (2009).

25. **Hayasaka S**, Laurienti PJ. Comparison of characteristics between region-and voxel-based network analyses in resting-state fMRI data, NeuroImage, 50(2):499-508 (2010).

26. Mozolic JL, **Hayasaka S** and Laurienti PJ. A cognitive training intervention increases resting cerebral blood flow in healthy older adults. Frontiers in Human Neuroscience, 4: 16 (2010).

27. Hugenschmidt CE, **Hayasaka S**, Peiffer AM**,** Laurienti PJ. Applying capacity analyses to psychophysical evaluation of multisensory interactions. Information Fusion, 11(1): 12-20 (2010).

28. Zhang Y, Du A-T, **Hayasaka S**, Jahng G-H, Hlavin J, Zhan W, Weiner MW, Schuff N. Patterns of Age-Related Water Diffusion Changes in Human Brain by Concordance and Discordance Analysis. Neurobiology of Aging, 31(11): 1991-2001 (2010).

29. Burdette JH, Laurienti PJ, Espeland MA, Morgan A, Telesford Q, Vechlekar CD, **Hayasaka S**, Jennings JM, Katula JA, Kraft RA, Rejeski WJ. Using network science to evaluate exercise-associated brain changes in older adults. Frontiers in Aging Neuroscience, 2:23 (2010).

30. Wilson TW, Fleischer A, Archer D**, Hayasaka S**, Sawaki L. Oscillatory MEG Motor Activity Reflects Therapy-Related Plasticity in Stroke Patients. Neurorehabilitation and Neural Repair, Epub ahead of print (2010).

31. Joyce KE, Laurienti PJ, Burdette JH, **Hayasaka S**. A new measure of centrality for brain networks. PLoS ONE, 5(8):e12200 (2010).

32. Telesford QK, Morgan AR, **Hayasaka S**, Simpson SL, Barret W, Kraft RA, Mozolic JL, Laurienti PJ. Reproducibility of graph metrics in fMRI networks. Front. Neuroinform, 4:117 (2010).

Boook Review:

1. Hayasaka S. Book Review on: Olaf Sporns. Networks of the Brain. MIT Press (2011). ISBN: 978-0-262-01469-4. Neural Networks, in press (2011).

Abstracts:

1. **Hayasaka S** and Nichols TE. A Resel-Based Cluster Size Permutation Test for Non-stationary Images. Organization for Human Brain Mapping Conference, Sendai, Japan. June 2002 (Poster)

2. **Hayasaka S** and Nichols TE. A Cluster Size Permutation Test for Non-Stationary Brain Images. Joint Statistical Meeting, New York City, USA. August 2002 (Oral Presentation)

3. Nichols TE and **Hayasaka S**. Comparison of Parametric and Nonparametric Thresholding Methods for Small Group Analyses. Organization for Human Brain Mapping Conference, New York City, USA. June 2003 (Poster)

4. **Hayasaka S** and Nichols TE. Validating Cluster Size Inference: Random Field and Permutation Methods. Organization for Human Brain Mapping Conference, New York City, USA. June 2003 (Poster)

5. **Hayasaka S** and Nichols TE. Validation of the Random Field Theory-based Cluster Size Test in Single-subject fMRI Analyses. International Society for Magnetic Resonance in Medicine Meeting, Toronto, Canada. July 2003 (Oral Presentation)

6. **Hayasaka S** and Nichols TE. Brain Image Analysis using the Joint Distribution of Intensity and Spatial Extent. Joint Statistical Meeting, San Francisco, USA. August 2003 (Oral Presentation)

7. **Hayasaka S** and Nichols TE. Combining Voxel Intensity and Cluster Extent with a Permutation Test Framework. 2004 IEEE International Symposium on Biomedical Imaging, Arlington VA, USA. April 2004 (Poster)

8. **Hayasaka S** and Nichols TE. Combining Voxel Intensity and Cluster Extent with a Permutation Test Framework. International Society for Magnetic Resonance in Medicine Meeting, Kyoto, Japan. May 2004 (Oral Presentation)

9. **Hayasaka S** and Nichols TE. Combining Voxel Intensity and Cluster Extent with a Permutation Test Framework. Organization for Human Brain Mapping Conference, Budapest, Hungary. June 2004 (Poster)

10. **Hayasaka S**, Schuff N, Kornak J, Studholme C, Cardenas, Du AT, Duarte A, Jahng GH, and Weiner M. Identifying Regional Patterns of Concordance and Dissociation between Gray Matter Loss and Hypoperfusion among Alzheimer's Disease Patients. International Society for Magnetic Resonance in Medicine Meeting, Miami Beach, FL, USA. May 2005 (Poster)

11. **Hayasaka S**, Schuff N, Kornak J, and Weiner M. Correcting Partial Volume Effect in Perfusion MRI with Arterial Spin Labeling. Organization for Human Brain Mapping Conference, Toronto, ON, Canada. June 2005 (Poster)

12. **Hayasaka S**, Schuff N, Kornak J, Du AT, Duarte A, Jahng GH, and Weiner M. Identifying Regional Patterns of Concordance and Dissociation between Gray Matter Loss and Hypoperfusion among Alzheimer's Disease Patients. Organization for Human Brain Mapping Conference, Toronto, ON, Canada. June 2005 (Poster)

13. Zhang H, Ding J, **Hayasaka S**, and Nichols TE. Combining Average Voxel Suprathreshold Intensity and Cluster Extent with Permutation Test Framework. Organization for Human Brain Mapping Conference, Florence, Italy. June 2006 (Poster)

14. **Hayasaka S** and Nichols TE. A Comparison of Permutation Test Methods for Correlation Analysis with Nuisance Covariates. Organization for Human Brain Mapping Conference, Florence, Italy. June 2006 (Poster)

15. **Hayasaka S**, Hugenschmidt C, Nichols TE, and Laurienti PJ. VBM Analysis of DTI Data with Non-Parametric Scale Space Search. Organization for Human Brain Mapping Conference, Florence, Italy. June 2006 (Poster)

16. Casanova R, Ryali S, Baer A, Laurienti PJ, **Hayasaka S**, Burdette JH, Wood F, and Maldjian JA. The Biological Parametric Mapping Toolbox. Organization for Human Brain Mapping Conference, Florence, Italy. June 2006 (Oral Presentation & Poster)

17. **Hayasaka S**, Peiffer A, Hugenschmidt C, Laurienti PJ. Power Calculation for fMRI Data Analysis with Non-central Random Field Theory. International Society for Magnetic Resonance for Medicine Meeting, Berlin, Germany. May 2007 (Poster)

18. **Hayasaka S**, Peiffer A, Hugenschmidt C, Laurienti PJ. Power and Sample Size Maps for Neuroimaging Studies by Non-central Random Field Theory. Organization for Human Brain Mapping Conference, Chicago, IL, USA. June 2007 (Oral Presentation & Poster)

19. Casanova R, **Hayasaka S**, Laurienti PJ, Maldjian JA. Multiple hypotheses testing and family-wise error rate (FWER) control in the context of SPM analyses with voxel-wise covariates: A simulation study. Organization for Human Brain Mapping Conference, Chicago, IL, USA. June 2007 (Poster)

20. Casanova R, **Hayasaka S**, Laurienti PJ, Maldjian JA. A non-parametric approach to SPM analyses with voxel-wise covariates. Organization for Human Brain Mapping Conference, Chicago, IL, USA. June 2007 (Poster)

21. Schuff N, Zhang Y, Zhu XP, Zhan W, Young K, **Hayasaka S**, Weiner MW. Analysis of Multimodal MRI in Neurodegenerative Diseases. Biomedical Engineering Society Annual Fall Meeting, Los Angeles, CA, USA. September 2007 (Oral Presentation)

22. Hugenschmidt CE, Peiffer AM, McCoy TP, **Hayasaka S**, Laurienti PJ. Preservation of modality-specific selective attention in healthy older adults. Society for Neuroscience, San Diego, CA, USA. November 2007 (Poster)

23. Yang LL, Casanova R, Peiffer AM, Addicott MA, Kraft RA, Maldjian JA, Burdette JH, **Hayasaka S**, Burnett LR, Chen MY, Laurienti PJ. Society for Neuroscience, San Diego, CA, USA. November 2007 (Poster)

24. **Hayasaka S**, Laurienti PJ, Maldjian MA. A Framework for Analyzing and Visualizing Multi-Modality Cross-Correlation. Organization for Human Brain Mapping Conference, Melbourne, Australia. June 2008 (Poster)

25. **Hayasaka S.** Power in Whole-Brain Whole-Genome Association Studies. International Imaging Genetics Conference, Irvine, CA, USA. January 2009 (Poster)

26. **Hayasaka S**. Statistical Power in Combined Whole-Brain Whole-Genome Association Studies. Organization for Human Brain Mapping Conference, San Francisco, CA, USA. June 2009 (Poster)

27. **Hayasaka S,** Laurienti PJ. Mesoscopic Structure of the Resting-State Small-World Brain Network. Organization for Human Brain Mapping Conference, San Francisco, CA, USA. June 2009 (Poster)

28. Laurienti PJ, **Hayasaka S**. Network modularity maps reveal sub-components of the default-mode network. Organization for Human Brain Mapping Conference, San Francisco, CA, USA. June 2009 (Poster)

29. Wilson TW, Fleischer A, Archer D**, Hayasaka S**, Sawaki L. Oscillatory MEG Responses Reflect Plasticity in the Motor Cortices of Stroke Patients Following Therapy. Organization for Human Brain Mapping Conference San Francisco, CA, USA. June 2009 (Poster)

30. Laurienti PJ, Hugenschmidt CE, Maldjian JA, Wagner B, **Hayasaka S**. Network Analyses of Multisensory Processing. International Multisensory Research Forum New York City, NY, USA. June-July 2009 (Poster)

31. **Hayasaka S.** Examining the Relationship between Brain Function and Structure on Voxel-by-Voxel-Basis. Asilomar Conference on Signals, Systems, and Computers. Pacific Grove, CA, USA. November 2009 (Oral Presentation)

32. **Hayasaka S.** Hugenschmidt CE, Laurienti PJ. A Network of Genetic Diseases and Brain Areas. International Imaging Genetics Conference, Irvine, CA, USA. January 2010 (Poster)

33. Hugenschmidt CE, **Hayasaka S**, Shankar S, Bowden DW. A voxel-wise variance components analysis of single nucleotide polymorphisms and fractional anisotropy in a family-based study. International Imaging Genetics Conference, Irvine, CA, USA. January 2010 (Poster)

34. Simpson SL, **Hayasaka S**, Laurienti PJ. Exponential Random Graph Modeling for Complex Brain Networks. Organization for Human Brain Mapping Conference, Barcelona, Spain. June 2010 (Poster)

35. Joyce K, Laurienti PJ, Burdette JH, **Hayasaka S**. A New Measure of Centrality for Brain Networks. Organization for Human Brain Mapping Conference, Barcelona, Spain. June 2010 (Poster)

36. Joyce K, **Hayasaka S**. Mapping Power in Functional Magnetic Resonance Images. Organization for Human Brain Mapping Conference, Barcelona, Spain. June 2010 (Poster)

37. Telesford Q, Morgan AR, **Hayasaka S**, Simpson SL, Barret W, Kraft RA, Laurienti P. Network Reproducibility in the At-Rest fMRI Network. Organization for Human Brain Mapping Conference, Barcelona, Spain. June 2010 (Poster)

38. **Hayasaka S,** Hugenschmidt CE, Laurienti PJ. A Network of Genes, Genetic Disorders, and Brain Areas. Organization for Human Brain Mapping Conference, Barcelona, Spain. June 2010 (Poster)

39. Telesford QT, Joyce KE, **Hayasaka S**, Burdette JH, Laurienti PJ. It's not a small-word after all: Reassessing the ubiquity of small-world networks. Biomedical Engineering Society Annual Meeting, Austin, TX, USA. October 2010 (Poster)

40. Telesford QT, Joyce KE, **Hayasaka S**, Burdette JH, Laurienti PJ. Reassessing the ubiquity of small-world networks. Society for Neuroscience, San Diego, CA, USA. November 2010 (Poster)

Technical Reports:

1. **Hayasaka S**. Parametric Cluster Size Tests: A Comparison between SPM Package and fmristat Package. Working paper. http://www.sph.umich.edu/~nichols/Docs/RFTreview.pdf (2002)

2. **Hayasaka S**. Derivation of the Euler Characteristic Densities of Non-Central T- and F-Random Fields. Technical Bulletin, ANSIR Laboratory, Wake Forest University. http://www.fmri.wfubmc.edu/ (2007)

3. **Hayasaka S**, Laurienti PJ. Degree distributions in mesoscopic and macroscopic functional brain networks. http://arxiv.org/abs/0903.4168 (2009)

4. Laurienti PJ, Hugenschmidt CE, **Hayasaka S**. Modularity maps reveal community structure in the resting human brain. http://precedings.nature.com/documents/3069/version/1 (2009)

5. Simpson SL, **Hayasaka S**, Laurienti PJ. Selecting an exponential random graph model for complex brain networks. arXiv:1007.3230 (2010).

6. Laurienti PJ, Joyce KE, Telesford QK, Burdette JH, **Hayasaka S**. Universal fractal scaling of self-organized networks. Available from Nature Precedings <http://hdl.handle.net/10101/npre.2010.4894.2> (2010)

7. Laurienti PJ, Joyce KE, Telesford QK, Burdette JH, **Hayasaka S**. Universal fractal scaling of self-organized networks, arXiv:1011.1228 (2010).

PRESENTATIONS:

Invited Talks:

1. **Hayasaka S**. Non-stationary Cluster Size Inference with a Permutation Test. Olin Neuropsychiatry Research Center, Institute of Living, Hartford, CT. March 2003

2. **Hayasaka S**. Cluster Size Inference for Non-stationary Brain Images with a Permutation Test. MR Unit, San Francisco VA Medical Center and University of California San Francisco. March 2003

3. **Hayasaka S**. Cluster Size Inference for Non-stationary Brain Images with a Permutation Test. Center for Functional Neuroimaging, University of Pennsylvania. April 2003

4. **Hayasaka S** and Nichols TE. Improving Validity and Power of Cluster Size Inference. University of Michigan Functional MRI Fall Symposium. September 2003

5. **Hayasaka S**. Gray Matter Loss and Hypoperfusion among Alzheimer's Disease Patients: Identifying the Relationship. Department of Psychology, University of California Los Angeles. February 2005.

6. **Hayasaka S**. Gray Matter Loss and Hypoperfusion among Alzheimer's Disease Patients: Identifying the Relationship. MIND Institute, Albuquerque, New Mexico. February 2005.

7. **Hayasaka S**. Combined Intensity-Extent Inference in Brain Image Analysis with a Permutation Test Framework. Department of Mathematics and Statistics, University of New Mexico. February 2005.

8. **Hayasaka S**. Gray Matter Loss and Hypoperfusion in Alzheimer's Disease: Identifying the Relationship. Cognitive Science, University of California Irvine. March 2005.

9. **Hayasaka S**. Changes in Brain Structure and Function in Alzheimer's Disease: Identifying the Relationship. Biostatistics and Radiology, Wake Forest University School of Medicine, Winston-Salem, North Carolina. March 2005.

10. **Hayasaka S.** Examining the Relationship between Brain Function and Structure on Voxel-by-Voxel-Basis. Asilomar Conference on Signals, Systems, and Computers. Pacific Grove, CA November 2009.

11. **Hayasaka S.** A Network of Genetic Diseases and Brain Areas. Center for Computational Biology and Bioinformatics, Indiana University School of Medicine, Indianapolis, IN. May 2010.

Workshops and Symposia:

1. **Hayasaka S** and Nichols TE. Powerful and Valid Cluster Size Inference with Permutation Methods. In *Permutation Testing in Functional Brain Imaging* Workshop at Human Brain Mapping, Budapest, Hungary. June 2004

2. Godwin GW, Wiggins W, **Hayasaka S**, Laurienti PJ, Stapleton J. Overcoming Creative Obstacles in Geographically Fragmented Environments: Lessons from Small World Networks. Wake Forest University Creativity Symposium, Winston-Salem, NC, USA. March 2009

3. **Hayasaka S**, Laurienti PJ. Overview of Small-World Networks and Application in Neuroimaging. In *The Brain as a Small-World Network: From Micro- to Macro-Scale* Symposium at Human Brain Mapping Conference, San Francisco, CA, USA. June 2009

Tutorials / Other Talks:

1. **Hayasaka S**. Neuroanatomy for Dummies. Short course in functional MRI, University of Michigan. August 2002.

2. **Hayasaka S**. Cluster Size Inference in Brain Image Analysis: a Brief Overview. Biomagnetic Imaging Lab, University of California San Francisco. May 2004.

3. **Hayasaka S**. Introduction to Statistical non-Parametric Mapping for Functional Neuroimaging. Center for Molecular and Functional Imaging, University of California San Francisco. October 2004.

4. **Hayasaka S**. An Alternative Ending to a T-Test. Biostatistics Tuesday Seminar Series, Wake Forest University School of Medicine. May 2006.

5. **Hayasaka S**. Power Calculation for Brain Imaging Studies. Biostatistics Tuesday Seminar Series, Wake Forest University School of Medicine. November 2006.

6. **Hayasaka S**. Power and Sample Size Maps for Neuroimaging Studies by Non-Central Random Field Theory. Biostatistics Tuesday Seminar Series, Wake Forest University School of Medicine. November 2007.

7. **Hayasaka S**. Integrating Genomics and Brain Imaging: Mapping Genetic Links Associated with Normal and Abnormal Brain Structure and Function. Presentation to Translational Science Institute Steering Committee, Wake Forest University School of Medicine. November 2007.

8. **Hayasaka S**. Resting-State fMRI Data as a Small-World Network. Biostatistics Tuesday Seminar Series, Wake Forest University School of Medicine. February 2009.

9. **Hayasaka S**. Heavy-Tail Distributions and Functional Brain Networks. Biostatistics Tuesday Seminar Series, Wake Forest University School of Medicine. October 2009.

10. **Hayasaka S**. A Network of Genes, Genetic Disorders, and Brain Areas. The Center for Genomics and Personalized Medicine Research Seminar Series. September 2010.

11. **Hayasaka S**. Effective Poster Presentations. Wake Forest Engineering in Medicine and Biology Society. December 2010.

12. **Hayasaka S**. A Network of Genes, Genetic Disorders, and Brain Areas. The Neuroscience Tutorial. February 2011.

13. **Hayasaka S**. Building a Brain Network from Functional MRI. A guest lecturer in NEU300, Neuroscience Seminars, Wake Forest University Undergraduate Neuroscience Minor. April 2011.

GRADUATE STUDENTS/RESIDENTS/FELLOWS ADVISED:

Current Trainees:

1. Karen Joyce   2009- present
   PhD student, Biomedical Engineering, Wake Forest University
   Ms. Joyce is currently working on the Power Map project (R21) to develop a study planning software tool for neuroimaging studies.

2. Qawi Telesford   2010-present
   PhD student, Biomedical Engineering, Wake Forest University
   Mr. Telesford is currently working on graph theory network analysis on non-human primate brains.

3. Crystal Vechlekar   2010-present
   PhD student, Neuroscience Graduate Program, Wake Forest University
   Ms. Vechlekar is working on a novel approach for the analysis of fMRI data and the effects of aging on the human brain.