

**WAKE FOREST UNIVERSITY SCHOOL OF MEDICINE
CURRICULUM VITAE**

NAME: SATORU HAYASAKA, Ph.D.

CURRENT ACADEMIC TITLE: Associate 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
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EDUCATION:

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| Concordia University, Montréal, Canada Bachelor of Science in Honours Statistics with Great Distinction | 1998 |
| The University of Michigan, Ann Arbor, MI Master of Science in Biostatistics & Public Health Genetics | 2000 |
| The University of Michigan, Ann Arbor, MI Doctor of Philosophy in Biostatistics Advisor: Thomas E. Nichols, PhD. Dissertation: Validating and Improving Cluster Size Inference in Brain Image Analysis | 2003 |

POSTDOCTORAL TRAINING:

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

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| Graduate Student Instructor The University of Michigan, Ann Arbor, MI Department of Biostatistics | 1998 |
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| Graduate Student Research Assistant The University of Michigan, Ann Arbor, MI Department of Biostatistics | 1999-2003 |
| Post-Doctoral Fellow University of California San Francisco and San Francisco Veterans Administration Medical Center, San Francisco, CA Magnetic Resonance Unit, Department of Radiology | 2003-2005 |
| Assistant Professor Wake Forest University School of Medicine, Winston-Salem, NC Departments of Biostatistical Sciences and Radiology | 2005-2011 |
| Member Wake Forest University School of Medicine, Winston-Salem, NC Neuroscience Graduate Program Faculty | 2009-present |
| Affiliate Faculty Wake Forest University School of Medicine, Winston-Salem, NC Department of Biomedical Engineering | 2009-present |
| Associate Professor Wake Forest University School of Medicine, Winston-Salem, NC Departments of Biostatistical Sciences and Radiology | 2011-present |

PROFESSIONAL APPOINTMENTS AND ACTIVITIES:

National:

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

Editorial Work:

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| Ad-hoc Reviewer <i>Academic Radiology</i> <i>Cerebral Cortex</i> <i>Clinical Anatomy</i> <i>Cognitive Neurodynamics</i> <i>Human Brain Mapping</i> <i>IEEE Journal of Selected Topics in Signal Processing</i> <i>IEEE Transactions on Medical Imaging</i> <i>Journal of the American Statistical Association</i> <i>NeuroImage</i> <i>PLoS ONE</i> | |
| Abstract Reviewer 12 th Organization for Human Brain Mapping Conference | 2006 |

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| 13 th Organization for Human Brain Mapping Conference | 2007 |
| 16 th Organization for Human Brain Mapping Conference | 2010 |
| 17 th Organization for Human Brain Mapping Conference | 2011 |

INSTITUTIONAL SERVICE:

Committee Membership

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

Departmental Committees

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

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

Miscellaneous

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| 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:

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| 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:

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| 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 |
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HONORS AND AWARDS:

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| Dean’s List , Faculty of Arts and Science, Concordia University | 1995-1998 |
| Science College Scholarship , Concordia University | 1997 |
| Science College Prize , Concordia University | 1998 |

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| Award for Outstanding Performance in Ph.D. Qualifying Examination (Highest score in the qualifying exam), Department of Biostatistics, the University of Michigan | 2000 |
| Trainee Travel Award , 8 th Organization for Human Brain Mapping Conference, Sendai, Japan | 2002 |
| Trainee Travel Award , 9 th Organization for Human Brain Mapping Conference, New York City, USA | 2003 |
| Trainee Travel Award , 10 th Organization for Human Brain Mapping Conference, Budapest, Hungary | 2004 |
| Honorable Mention , Poster Award (Neuroimaging) International Society for Magnetic Resonance in Medicine Conference, Miami Beach, FL, USA | 2005 |
| Wake Forest University Translational Scholar Award | 2007 |
| Early-Career Investigator Basic Sciences Research Award Wake Forest University School of Medicine | 2011 |

GRANTS:

Current Grants:

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| NINDS R21 NS059793 \$159,985 Title: Development of a Power Calculation Tool for Neuroimaging Studies Principal Investigator: Satoru Hayasaka 10% effort Role: PI | 09/20/2008 - 08/31/2012 |
| NINDS R01 NS070917 \$238,893 Title: Connecting Brain Networks Across Subjects and Across Modalities Principal Investigator: Satoru Hayasaka 55% effort Role: PI | 05/01/2010 - 04/30/2014 |
| NINDS R01 NS058700 \$401,913 Title: Genetic Epidemiology of Cerebrovascular Disease and Cognition in Diabetes Principal Investigator: Donald Bowden 16.5% effort Role: Co Investigator | 04/01/2008 - 03/31/2013 |

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

Pending Grants:

NIH/NIDDK
R01 10/1/2011 - 9/30/2015
\$1,060,238
Action for Health in Diabetes Brain Magnetic Resonance Imaging Ancillary Study (Look AHEAD).
Principal Investigator: Mark Espeland
Role: Co-Investigator

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

NIAAA
R01 AA015568 09/30/2006 - 08/31/2011
Total Grant Amount: \$1,663,914
Early Stress & Alcoholism: Functional Analyses in Brain
Principal Investigator: David Friedman
Role: Biostatistician

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

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

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**, Bhatia 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. *NeuroReport*, 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*, 25(2):188-193 (2011).
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).
33. Simpson SL, **Hayasaka S**, Laurienti PJ. Exponential random graph modeling for complex brain networks. *PLoS ONE*, 6(5):e20039 (2011).
34. **Hayasaka S**, Hugenschmidt CE, Laurienti PJ. A Network of Genes, Genetic Disorders, and Brain Areas. *PLoS ONE* 6(6):e20907 (2011).
35. Laurienti PJ, Joyce KE, Telesford QK, Burdette JH, **Hayasaka S**. Universal fractal scaling of self-organized networks. *Physica A*, 390: 3608-3613 (2011).
36. Steen M, **Hayasaka S**, Joyce K, Laurienti P. Assessing the consistency of community structure in complex networks. *Physical Review E*, 84: 016111 (2011).

Book 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 QK, 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 QK, Joyce KE, **Hayasaka S**, Burdette JH, Laurienti PJ. It's not a small-world after all: Reassessing the ubiquity of small-world networks. Biomedical Engineering Society Annual Meeting, Austin, TX, USA. October 2010 (Poster)
40. Telesford QK, 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)
41. **Hayasaka S**, Joyce KE, Telesford QK, Burdette JH, Laurienti PJ. Universal power law scaling of self-organized networks. The International School and Conference on Network Science, Budapest, Hungary. June 2011 (Poster)
42. Joyce KE, Laurienti PJ, **Hayasaka S**. Complexity in an agent-based brain model. NetSci, Budapest, Hungary. June 2011. (Joyce-Presentation)
43. Joyce KE, Laurienti, PJ, **Hayasaka S**. Evolving an agent based model of the brain using genetic algorithms. Organization for Human Brain Mapping, Quebec City, Canada. June 2011. (Poster)
44. Joyce KE, **Hayasaka S**. Development of PowerMap: a software package for power analysis in neuroimaging studies. Organization for Human Brain Mapping, Quebec City, Canada. June 2011. (Poster)
45. Telesford QK, Joyce KE, Burdette JH, Laurienti PJ, **Hayasaka S**. The Ubiquity of Small-World Networks. Organization for Human Brain Mapping, Quebec City, Canada. June 2011. (Poster)
46. Steen M, **Hayasaka S**, Lobanov O, Laurienti PJ, Coghill R. Individual Differences in Brain Networks During Pain Processing: A Method for Assessing Modularity. Organization for Human Brain Mapping, Quebec City, Canada. June 2011. (Poster)
47. Hugenschmidt CE, **Hayasaka S**, Langefeld CD, Friedman BI, Carr JJ, Williamson JD, Bowden DW. Cognitive performance is related to vascular disease and diabetes in a family study of type 2 diabetes. American Diabetes Association Scientific Sessions, San Diego, CA, USA. June 2011. (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)

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. A guest lecturer in Neuroscience Tutorial (NEUR705), Neuroscience Graduate Program, Wake Forest University School of Medicine. 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:

Past Trainees:

1. Jennifer Mozolic 2005- 2009
PhD student, Neuroscience Graduate Program, Wake Forest University
Dr. Hayasaka was a member of the dissertation committee for Ms. Mozolic.

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.
4. Malaak Moussa 2011-present
PhD student, Neuroscience Graduate Program, Wake Forest University
Ms. Moussa is studying the effect of the interaction of non-dependent alcohol use and aging in senior adults. Dr. Hayaska is a member of her dissertation committee.