

William Matchin, Ph.D

Curriculum Vitae

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Current appointment

Assistant Professor	Department of Communication Sciences & Disorders Arnold School of Public Health University of South Carolina
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Education

Ph.D Cognitive Neuroscience	Dept. of Cognitive Sciences University of California, Irvine	2009-2014
B.A. Psychology Minor in Linguistics	University of California, Irvine <i>Magna Cum Laude</i> <i>Phi Beta Kappa</i>	2005-2009

Research Interests

Syntax, sentence processing, psycholinguistics, neurolinguistics, fMRI, MEG, EEG, aphasia, sign language

I work to bridge the gaps between linguistics, neuroscience, and aphasia, particularly with respect to syntax.

Dissertation

Title:	<i>Investigations of the syntax-brain relationship</i>
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Supervisors:	Prof. Gregory Hickok (Chair) Prof. Jon Sprouse (Co-Chair)
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Past Appointments

Postdoctoral Associate	Linguistics Department University of California, San Diego Prof. Rachel Mayberry Prof. Eric Halgren	2016-2018
Postdoctoral Fellow	Dept. of Linguistics University of Maryland, College Park Prof. Ellen Lau	2014-2016
Graduate Student Researcher	Dept. of Cognitive Sciences University of California, Irvine Prof. Gregory Hickok	2009-2014
Research Assistant	Dept. of Cognitive Sciences University of California, Irvine Prof. Gregory Hickok	2007-2014

Grant funding

UofSC Magellan Scholar's Award (\$3,000)	Mentee: Emily Wood	Spring 2019
UofSC Magellan Apprentice Award (\$1000)	Mentee: Hannah Grim	Winter 2020
UofSC Magellan Mini-grant (\$500)	Mentee: Hannah Grim	Winter 2020

Journal Articles

19. **Matchin, W.** & Wood, E. (in preparation). Syntactic working memory: an fMRI study.
18. **Matchin, W.**, Basilakos, A., Stark, B. C., Den Ouden, D., Fridriksson, J., & Hickok, G. (in press). Agrammatism and paragrammatism: a cortical double dissociation. *Neurobiology of Language*.
17. **Matchin, W.**, Villwock, A., Roth, A., Ilkbasaran, D., Hatrak, M., Halgren, E., & Mayberry, M. (in review). The cortical organization of syntactic processing in American Sign Language.
16. **Matchin, W.** & Hickok, G. (2019). The cortical organization of syntax. *Cerebral Cortex*.
15. **Matchin, W.**, Liao, C., Gaston, P., & Lau, E.F. (2019). Same words, different structures: an fMRI investigation of argument relations and the angular gyrus. *Neuropsychologia*.
14. **Matchin, W.**, Brodbeck, C., Hammerly, C., & Lau, E.F. (2018). The temporal dynamics of structure and content in sentence processing: Evidence from fMRI-constrained MEG. *Human Brain Mapping*, 1-16.
13. Hickok, G., Rogalsky, R., **Matchin, W.**, Basilakos, A., Cai, J., Pillay, S., Ferrill, M., Love, T., Binder, J., Fridriksson, J. (2018). Neural Networks Supporting Audiovisual Integration for Speech: A Large-Scale Lesion Study. *Cortex*, 103, 360-371.
12. Okada, K.*, **Matchin, W.***, & Hickok, G. (2018). Phonological repetition-suppression in the left inferior frontal gyrus. *Journal of Cognitive Neuroscience*, 1-9. *This is a joint first-author publication.
11. **Matchin, W.** (2017). A neuronal retuning hypothesis of sentence-specificity in Broca's area. *Psychonomic Bulletin & Review*, 1-13.
10. **Matchin, W.**, Hammerly, C., & Lau, E.F. (2017). The role of the IFG and pSTS in syntactic prediction: Evidence from a parametric study of hierarchical structure in fMRI. *Cortex*, 88, 106-123.
9. Okada, K., **Matchin, W.**, & Hickok, G. (2017). Neural evidence for predictive coding in auditory cortex during speech production. *Psychonomic Bulletin & Review*, 1-8.
8. **Matchin, W.** & Hickok, G. (2016). 'Syntactic perturbation' during production activates the right IFG, but not Broca's area or the ATL. *Frontiers in Psychology*. 7:241.
7. Venezia, J. H., Fillmore, P., **Matchin, W.**, Isenberg, A. L., Hickok, G., & Fridriksson, J. (2016). Perception drives production across sensory modalities: A network for sensorimotor integration of visual speech. *NeuroImage*, 126, 196-207.
6. Venezia, J., Thurman, S., **Matchin, W.**, George, S., Hickok, G. (2015). Timing in audiovisual speech perception: A mini review and new psychophysical data. *Attention, Perception, & Psychophysics*, 77(8).
5. **Matchin, W.**, Sprouse, J., & Hickok, G. (2014). A structural distance effect for backward anaphora in Broca's area: an fMRI study. *Brain and Language*, 138, 1-11.
4. **Matchin, W.**, Groulx, K., & Hickok, G. (2014). Audiovisual speech integration does not rely on the motor system: evidence from articulatory suppression, the McGurk effect and fMRI. *Journal of Cognitive Neuroscience*, 26(3), 606-620.
3. Okada, K., Venezia, J. H., **Matchin, W.**, Saberi, K., & Hickok, G. (2013). An fMRI study of audiovisual speech perception reveals multisensory interactions in auditory cortex. *PLOS ONE*, 8(6), e68959.
2. Okada, K., Rong, F., Venezia, J., **Matchin, W.**, Hsieh, I.H., Saberi, K., et al. (2010).

Hierarchical organization of human auditory cortex: evidence from acoustic invariance in the response to intelligible speech. *Cerebral Cortex*, 20(10), 2486-2495.

1. Rogalsky, C., **Matchin, W.**, & Hickok, G. (2008). Broca's area, sentence comprehension, and working memory: an fMRI study. *Frontiers in Human Neuroscience*, 2.

Book Chapters

4. **Matchin, W.** (in preparation). Neurolinguistics. In: *The Cambridge Handbook of Minimalism*. Grohmann, K.K., Leivada, E. (Eds.). Cambridge University Press.
3. **Matchin, W.** (in press). Neuroimaging. In: *The Cambridge Handbook of Experimental Syntax*. Goodall, G. (editor). Cambridge University Press.
2. **Matchin, W.** & Rogalsky, C. (in press). Aphasia and syntax. In: *The Oxford Handbook of Experimental Syntax*. Sprouse, J. (editor). Oxford University Press.
1. Venezia, J., **Matchin, W.**, & Hickok, G. (2015). Audiovisual integration. In: *Brain Mapping: An Encyclopedic Reference*. Toga A.W., Poldrack R.A. (Eds.). Amsterdam: Elsevier.

Presentations

48. Stockbridge, M.D., **Matchin, W.**, Walker, A., Adams, L., Breining, B., Fridriksson, J., Hickok, G., Hillis, A.E. (2020). Dissociable deficits in morphosyntactic production in post-stroke aphasia and primary progressive aphasia. Poster to be presented at the Clinical Aphasiology Conference.
47. Wood, E. & **Matchin, W.** (March 2020). Syntactic working memory. Poster to be presented at the 27th annual Cognitive Neuroscience Society, Boston.
46. **Matchin, W.** (June 2020). The cortical organization of syntax and aphasia. Invited talk at the international colloquium "The Representation of Language in Brains and Machines" at the Collège de France, Paris.
45. **Matchin, W.** (March 2020). The cortical organization of syntax. Invited colloquium talk, Dept. of Linguistics, University of Georgia.
44. **Matchin, W.** (March 2020). The cortical organization of syntax. Invited talk to be presented at the 44th Annual Penn Linguistics Conference held at the University of Pennsylvania.
43. **Matchin, W.** December 2019. Paragrammatism and the cortical organization of syntax. Invited colloquium talk, Dept. of Hearing and Speech Sciences, Vanderbilt University.
42. **Matchin, W.**, Basilakos, A., Stark, B.C., den Ouden, D.B., Fridriksson, J., Hickok, G. (2019). Paragrammatism and Agrammatism: a cortical double dissociation revealed by lesion-symptom mapping. Talk presented at the 57th annual meeting of the Academy of Aphasia.
41. **Matchin, W.**, Luke Adams, Whitney Footman, Emily Wood, Julius Fridriksson, Argye Hillis, Gregory Hickok. (2019). The morphosyntactic generation (MorGen) task: quantifying dissociable production deficits in post-stroke aphasia and primary progressive aphasia. Poster presented at the University of South Carolina Dept. of Communication Sciences and Disorders 'Get the Message' conference.
40. Basilakos, A., Stark, B.C., **Matchin, W.**, den Ouden, D.B., Fridriksson, J., Hickok, G. (2019). Rating Paragrammatism in Speakers with Aphasia: Methods and Reliability. Poster presented at the Annual ASHA Convention, Orlando.
39. **Matchin, W.**, Basilakos, A., den Ouden, D.B., Stark, B.C., Fridriksson, J., Hickok, G. (2019). Paragrammatism, agrammatism and the cortical organization of syntax: a lesion-symptom mapping study. Poster presented at the 11th annual meeting of the Society for the Neurobiology of Language.
38. **Matchin, W.**, Basilakos, A., den Ouden, D.B., Stark, B.C., Fridriksson, J., Hickok, G. (2019). Paragrammatism: a lesion-symptom mapping study. Poster presented at the 26th Annual Meeting of the Cognitive Neuroscience Society, San Francisco.

37. Mayberry, R., Hatrak, M., Ilkbasaran, D., **Matchin, W.**, Villwock, A., Roth, A., & Halgren, E. (2018). Syntactic development and neurolinguistic processing go hand in hand: Evidence from early vs late L1 acquisition of ASL. Talk presented at the Boston University Conference on Child Language, Boston.
36. Villwock, A., **Matchin, W.**, Roth, A., Ilkbasaran, D., Hatrak, M., Davenport, T., Halgren, E. & Mayberry, M. (2018). The neural basis of syntactic processing in American Sign Language: An fMRI study. Poster presented at the 13th High Desert Linguistics Society Conference.
35. **Matchin, W.** (2018). The temporal dynamics of structure and content: evidence from fMRI-constrained MEG. Invited colloquium talk at the Institute for Mind and Brain, the University of South Carolina, October 23.
34. **Matchin, W.** (2018). Theoretical linguistics within cognitive science: A crisis? Invited talk and chair of roundtable discussion. SinFonJA 11, Kraków, Poland.
33. **Matchin, W.** (2018). The cortical organization of syntax. Invited lecture presented at the Institute of English Studies of the Jagiellonian University in Kraków, Poland, October 12.
32. **Matchin, W.** (2018). The cortical organization of syntax. Invited lecture at the Center for the Study of Aphasia Recovery (C-STAR) at the University of South Carolina, August 30.
31. **Matchin, W.**, Brodbeck, C., Hammerly, C., & Lau, E. (2018). The temporal dynamics of structure and content in the language network. Talk presented at the 31st CUNY sentence processing conference.
30. **Matchin, W.**, Almeida, D., Sprouse, J., & Hickok, G. (2018). Semantic processing triggered by subject island violations (but not phrase structure violations): evidence from fMRI. Poster presented at the 31st CUNY sentence processing conference.
29. **Matchin, W.** (2018). The neurobiology of language: insights both from and for linguistic theory. Talk presented at the UCLA Linguistics Department psycholinguistics seminar.
28. **Matchin, W.**, Almeida, D., Sprouse, J., & Hickok, G. (2018). Semantic processing triggered by subject island violations (but not phrase structure violations): evidence from fMRI. Poster presented at the 92nd Annual Meeting of the Linguistic Society of America.
27. **Matchin, W.**, Almeida, D., Sprouse, J., & Hickok, G. (2017). Semantic processing triggered by subject island violations (but not phrase structure violations): evidence from fMRI. Talk presented at the first California Meeting on Psycholinguistics (CAMP) 2017.
26. **Matchin, W.**, Villwock, A., Roth, A., Ilkbasaran, D., Hatrak, M., Davenport, T., Halgren, E. & Mayberry, M. (2017). The cortical organization of syntactic processing in American Sign Language: Evidence from a parametric manipulation of constituent structure in fMRI and MEG. Poster presented at the 9th annual meeting of the Society for the Neurobiology of Language.
25. **Matchin, W.**, & Hickok, G. (2017). A syntax area in the posterior superior temporal sulcus. Poster presented at the 9th annual meeting of the Society for the Neurobiology of Language.
24. Okada, K., **Matchin, W.**, & Hickok, G. (2017). Phonological Feature Repetition Suppression in the Left Inferior Frontal Gyrus. Poster presented at the 9th annual meeting of the Society for the Neurobiology of Language.
23. Villwock, A., **Matchin, W.**, Roth, A., Ilkbasaran, D., Hatrak, M., Davenport, T., Halgren, E. & Mayberry, M. (2017). The cortical organization of syntactic processing in American Sign Language: Evidence from a parametric manipulation of constituent structure in fMRI and MEG. Poster presented at the 47th annual meeting of the Society for Neuroscience.
22. **Matchin, W.** (2017). The cortical organization of syntactic processing in American Sign Language. Talk presented at the Center for Research on Language, UCSD.
21. **Matchin, W.**, Liao, C., Gaston, P., & Lau, E.F. (2017). An fMRI investigation of argument structure and syntactic selection. Poster presented at the 24th annual meeting of the Cognitive Neuroscience Society.

20. **Matchin, W.** (January 2017). Structure and Content in Real-time: an integrated theory of syntax. Linguistics Dept. Colloquium, UC Irvine.
19. **Matchin, W.** (November 2016). On the relation between syntactic theory and sentence processing, and a theory of island phenomena. Linguistics Dept. Colloquium, UCSD.
18. **Matchin, W.** (2016). On the relation between syntactic theory and sentence processing, and a theory of island phenomena. Talk presented at the Center for Research on Language, UCSD.
17. **Matchin, W.**, Hammerly, C., Lau, E. (2015). A parametric study of hierarchical structure-building in fMRI and MEG. Poster presented at the 7th annual meeting of the Society for the Neurobiology of Language.
16. **Matchin, W.**, Hickok, G. (2014). A novel approach to investigating the neural correlates of syntax: a 'syntactic perturbation' paradigm during sentence production. Poster presented at the 6th annual meeting of the Society for the Neurobiology of Language.
15. Venezia, J., Fillmore, P., **Matchin, W.**, Isenberg, A.L., Hickok, G., Fridriksson, J. (2014). Cortical network for sensorimotor integration of audio-visual speech. Poster presented at the 6th annual meeting of the Society for the Neurobiology of Language.
14. **Matchin, W.** & Hickok, G. (2014). A 'syntactic perturbation' paradigm during sentence production reveals sentence processing networks in the brain. Poster presented at the 21st annual meeting of the Cognitive Neuroscience Society.
13. **Matchin, W.**, Sprouse, J., Hickok, G. (2013). A syntactic distance effect for backwards anaphora in Broca's area: an fMRI study. Poster presented at the 5th annual meeting of the Society for the Neurobiology of Language.
12. Venezia, J., Thurman, S., **Matchin, W.**, George, S., Hickok, G. (2013). Mapping the timecourse of visual interference on auditory speech perception: A novel application of the McGurk effect. Poster presented at the 5th annual meeting of the Society for the Neurobiology of Language.
11. **Matchin, W.** & Hickok, G. (2013). Audiovisual speech integration does not rely on the motor system: evidence from articulatory suppression, the McGurk effect and fMRI. Poster presented at the 20th annual meeting of the Cognitive Neuroscience Society.
10. **Matchin, W.**, Ferrill, M., Rogalsky, C., Love, T., Hickok, G. (2012). Audiovisual speech integration does not rely on the motor system: evidence from intact McGurk fusion in Broca's aphasia. Poster presented at the 4th annual Neurobiology of Language Conference.
9. **Matchin, W.**, Ferrill, M., Rogalsky, C., Love, T., Hickok, G. (2012). Audiovisual speech integration does not rely on the motor system. Talk presented at the 42nd annual meeting of the Society for Neuroscience.
8. **Matchin, W.**, Sprouse, J., & Hickok, G. (2012). Broca's area shows a distance effect for both syntactic movement and backwards anaphora in fMRI. Poster presented at the 25th CUNY Sentence Processing Conference.
7. **Matchin, W.**, Sprouse, J., & Hickok, G. (2012). Broca's area shows a distance effect for both syntactic movement and backwards anaphora in fMRI. Poster presented at the 19th annual meeting of the Cognitive Neuroscience Society.
6. **Matchin, W.** & Hickok, G. (2011). Visual speech and speech production rely on separate cognitive networks: evidence from articulatory suppression, the McGurk effect and fMRI. Talk presented at the 2nd annual Southern California Cognitive Neuroscience Meeting.
5. Okada, K., **Matchin, W.**, Alshara, S., & Hickok, G. (2012). A hierarchy of internal forward models in speech production. Poster presented at the 19th annual meeting of the Cognitive Neuroscience Society.
4. **Matchin, W.** & Hickok, G. (2011). Visual speech and speech production rely on separate cognitive networks: evidence from articulatory suppression, the McGurk effect and fMRI. Poster presented at the 3rd annual Neurobiology of Language Conference.

3. **Matchin, W.**, Ferril, M., Rogalsky, C., Love, T., & Hickok, G. (2011). Role of the motor system in audio-visual speech integration: evidence from the McGurk effect in Broca's aphasia. Poster presented at the 18th annual meeting of the Cognitive Neuroscience Society.
2. Okada, K., Venezia, J., **Matchin, W.**, Saberi, K., & Hickok, G. (2010). Activity in primary auditory cortex is enhanced by visual speech. Poster presented at the 2nd annual Neurobiology of Language Conference.
1. Okada, K., Venezia, J., **Matchin, W.**, Saberi, K., Serences, J., & Hickok, G. (2009). Early auditory cortical regions discriminate intelligible from unintelligible speech. Poster presented at the 1st Neurobiology of Language Conference.

Reviewer activity

<i>Journals & Books</i>	<i>Conferences & Programs</i>
Brain and Language 2014 – 1 time 2015 – 1 time 2018 – 1 time	Society for the Neurobiology of Language (2018, 2019)
Cognitive Psychology 2014 - 1 time	Chicago Linguistics Society (2019, 2020)
Cerebral Cortex 2019 – 1 time	SinFonJA 11 (2018)
Language, Cognition and Neuroscience 2018 - 1 time	Austrian Academy of Sciences Doctoral Fellowship Program (2018)
Journal of Neurolinguistics 2015 – 1 time	German Academic Exchange Service (DAAD) PRIME Program (2019)
Journal of Cognitive Neuroscience 2017 – 1 time 2018 - 1 time	CUNY Sentence Processing Conference (2020)
Neuropsychologia 2018 – 2 times 2019 – 1 time	
Human Brain Mapping 2017 - 1 time 2018 – 1 time	
Brain Research 2018 – 1 time	
Psychological Science 2018 – 1 time	
Frontiers in Psychology 2015 - 1 time	
Scientific Reports 2018 - 1 time	
Ear and Hearing 2017 – 1 time	
Psychonomic Bulletin & Review 2018 – 2 times	
Brain Structure & Function	

2018 – 1 time	
NeuroImage 2018 – 1 time 2019 – 1 time	
Neuroscience Letters 2019 – 1 time	
Philosophical Transactions of the Royal Society B 2019 – 1 time	
PLoS One 2019 - 1 time	
Wiley-Blackwell Companion to Chomsky (eds. Allott, Lohndal, & Rey) 2019	

Editing activity

PNAS: guest editor

Professional memberships

Cognitive Neuroscience Society	2010-present
Society for the Neurobiology of Language	2011-present
Society for Neuroscience	2012-present
Linguistics Society of America	2017-present

Teaching

COMD822: Normal Bases of Speech Production	Professor	Spring 2020
COMD570: Language Development	Professor	Summer 2019
LIGN101: Intro. to the Study of Language	Lecturer	Spring 2018
ESL 4C (intermediate)	Volunteer Instructor	Summer 2015
ESL Basic B (beginner)	Volunteer Instructor	Spring 2015
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Summer 2014
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Spring 2014
Psychology 56L: Acquisition of Language	Teaching Assistant	Winter 2014
Psychology 9A: Psychology Fundamentals	Teaching Assistant	Fall 2013
Linguistics 10: Introduction to Phonology	Lecturer	Summer 2013
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Winter 2013
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Fall 2012
Linguistics 20: Introduction to Syntax	Lecturer	Summer 2012
Linguistics 10: Introduction to Phonology	Lecturer	Summer 2012
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Spring 2012
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Winter 2012
Linguistics 3: Introduction to Linguistics	Teaching Assistant	Fall 2011
Psychology 161: Language and the Brain	Teaching Assistant	Spring 2011
Psychology 9A: Psychology Fundamentals	Teaching Assistant	Winter 2011
Psychology 155: Psychology of Language	Teaching Assistant	Fall 2010
Linguistics 10: Introduction to Phonology	Teaching Assistant	Spring 2010
Psychology 159: Creating Languages	Teaching Assistant	Fall 2009

In addition, I have given several guest lectures in Psychology, Linguistics and Neuroscience at Whittier College, University of Maryland, UC San Diego, and Indiana University Bloomington.

Student Supervision

Lisa Johnson (est. completion, 2021) PhD – Committee Member
 Emily Wood (est. completion, 2020) B.S. – Honors College Undergraduate Thesis Supervisor
 Hannah Grim (est. completion, 2023) B.S. – Magellan grant thesis advisors

Technical skills

Programming	Matlab/PsychToolBox UNIX/LINUX Python
Languages	English (native) American Sign Language (moderate) French (beginner) Persian (beginner)

Scientific blog posts

Talking Brains: Review of W. T. Fitch's *Evolution of Language*
<http://www.talkingbrains.org/2014/01/tecumseh-fitchs-evolution-of-language.html>

Talking Brains: Broca's area doesn't care what you do syntactically
<http://www.talkingbrains.org/2014/10/brocas-area-doesnt-care-what-you-do.html>

Talking Brains: What's the right hemisphere doing?
<http://www.talkingbrains.org/2016/02/whats-right-hemisphere-doing-guest-post.html>

Talking Brains: Abstractness, innateness, and modality-independence of language
<http://www.talkingbrains.org/2017/11/abstractness-innateness-and-modality.html>

Talking Brains: Reply to Jarvis
<http://www.talkingbrains.org/2018/01/reply-to-erich-jarvis-by-william-matchin.html>

Faculty of Language: Brains and syntax: part 1
<http://facultyoflanguage.blogspot.com/2016/09/brains-and-syntax.html>

Faculty of Language: Brains and syntax: part 2
<http://facultyoflanguage.blogspot.com/2016/09/brains-and-syntax-part-2.html>

Faculty of Language: Reflections on SinFonIJA 11: part 1
<http://facultyoflanguage.blogspot.com/2018/11/guest-post-by-william-matchin.html>

Faculty of Language: Reflections on SinFonIJA 11: part 2
<http://facultyoflanguage.blogspot.com/2018/11/guest-post-by-william-matchin-on.html>

Service/volunteer activities

UofSC ASPH Student Awards Committee	2020-
UofSC COMD Master's Program Admissions Committee	2020-
UofSC COMD Frank Scholarship Committee Leader	2019-
Our Revolution South Carolina	2018-
Secretary	2019-

Member & Volunteer	2018-
UofSC Institute for Mind and Brain Annual Conference Organizer	2018-2019
UofSC Faculty Senate	2018-
COMD Senate representative	
UofSC COMD Doctoral Program Committee	2018-
Member	
UofSC COMD Summative Assessment Committee	2018-
Member	
Local school visits to UMD Language Science Center	2015-2016
Presenter	
Washington English Center	Winter-Summer 2015
Volunteer ESL Instructor	
UMD Language Science Center "Winter Storm"	Winter 2015
Special interest group discussion leader:	
"Technology and language"	
Climatepedia: climate change advocacy & education	Spring 2014
Member/Volunteer	
UCI Cognitive Sciences Department	2013-2014
Graduate Liaison	
Irvine Unified School District Annual Science Fair	2013-2014
Volunteer Judge	
Irvine Unified School District "Ask-A-Scientist Night"	2012
Volunteer Panel Member	