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Helen Wills Neuroscience Institute, University of California at Berkeley
Radiotracer Development & Imaging Technology Dept,
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ACADEMIC HISTORY

- 1995 – 1996 University of California, Davis
Integrated Studies Invitational Honors Program
- 1997 – 1999 Wesleyan University, Middletown, CT
B.A., Psychology (Honors)
- 1999 – 2004 Ph.D., M.A., Dept of Psychology
University of California, Berkeley
Supervisor: Mark D'Esposito, M.D.

EMPLOYMENT

- 01/2005 – 06/2009 Postdoctoral Fellow
Cognitive and neural function in aging
Helen Wills Neuroscience Institute, Univ of CA, Berkeley
Lawrence Berkeley National Laboratory
Supervisor: William J. Jagust, M.D.
- 07/2009 – Research scientist
Neurodegeneration in aging and Alzheimer's disease
Helen Wills Neuroscience Institute, Univ of CA, Berkeley
Radiotracer Development & Imaging Technology Department,
Lawrence Berkeley National Laboratory

PUBLICATIONS and PRESENTATIONS

Peer-reviewed publications

M Sardesai, C Figge, M Bodner, M Crosby, J Hansen, JA Quillfeldt, **SM Landau**, A Ostling, S Vuong, GL Shaw (2001). Reliable short-term memory in the trion model: toward a cortical language and grammar. *Biological Cybernetics*, 84, 173-182.

JG Seamon, SE Schlegel, PM Hiester, **SM Landau**, BF Blumenthal (2002). Misremembering pictured objects: people of all ages demonstrate the boundary extension illusion. *American Journal of Psychology*, 115, 151-167.

ES Parker, **SM Landau**, SC Whipple, BL Schwartz (2004). Aging, Recall and Recognition: A Study on the Sensitivity of the University of Southern California Repeatable Episodic Memory Test (USC-REMT). *Journal of Clinical and Experimental Neuropsychology*, 26, 428-440.

SM Landau, EH Schumacher, H Garavan, TJ Druzgal, M D'Esposito (2004). A functional MRI study of the influence of practice on component processes of working memory. *NeuroImage*, 22, 211-221.

SM Landau and M D'Esposito (2006). Sequence learning in pianists and non-pianists: An fMRI study of motor expertise. *Cognitive, Affective, and Behavioral Neuroscience*, 6, 246-259.

SM Landau, H Garavan, EH Schumacher, M D'Esposito (2007). Regional specificity and practice: Dynamic changes in object and spatial working memory. *Brain Research*, 1180,78-89.

MN Braskie, CE Wilcox, **SM Landau**, JP O'Neil, SL Baker, CM Madison, JT Kluth, WJ Jagust (2008). Relationship of Striatal dopamine synthesis capacity to age and cognition. *Journal of Neuroscience*, 28, 14320-14328.

SM Landau, R Lal, JP O'Neil, S Baker, WJ Jagust (2009). Striatal dopamine and working memory maintenance. *Cerebral Cortex*, 19, 445-454.

WJ Jagust, **SM Landau**, LM Shaw, JQ Trojanowski, RA Koeppe, EM Reiman, NL Foster, RC Petersen, MW Weiner, JC Price, CA Mathis, and the Alzheimer's Disease Neuroimaging Initiative (2009). Relationships between biomarkers in aging and dementia. *Neurology*, 73,1193-9.

WJ Jagust, D Bandy, K Chen, NL Foster, **SM Landau**, C Mathis C, J Price, EM Reiman, D Skovronsky, R Koeppe, and the Alzheimer's Disease Neuroimaging Initiative (2010). The Alzheimer's Disease Neuroimaging Initiative positron emission tomography core. *Alzheimer's and Dementia*, 6, 221-229.

SM Landau, D Harvey, C Madison, EM Reiman, NL Foster, GE Alexander, RC Peterson, LM Shaw, JQ Trojanowski, MW Weiner, WJ Jagust, and the Alzheimer's Disease Neuroimaging Initiative (2010). Comparing predictors of conversion and decline in mild cognitive impairment. *Neurology*, 75, 230-238.

MN Braskie, **SM Landau**, CE Wilcox, SD Taylor, JP O'Neil, SL Baker, CM Madison, WJ Jagust (2011). Correlations of striatal dopamine synthesis with default network deactivations during working memory in younger adults. *Human Brain Mapping*, 32, 947-961.

SM Landau, D Harvey, C Madison, NL Foster, EM Reiman, R Koeppe, MW Weiner, WJ Jagust, and the Alzheimer's Disease Neuroimaging Initiative (2011). Cognitive, functional, and metabolic decline in Alzheimer's disease and MCI. *Neurobiology of Aging*,32,1207-1218.

K Chen, N Ayutyanont, JB Langbaum, AS Fleisher, C Reschke, W Lee, X Liu, D Bandy, GE Alexander, PM Thompson, L Shaw, JQ Trojanowski, CR Jack, **SM**

Landau, NL Foster, DJ Harvey, MW Weiner, RA Koeppe, WJ Jagust, EM Reiman; Alzheimer's Disease Neuroimaging Initiative (2011). Characterizing Alzheimer's disease using a hypometabolic convergence index. *NeuroImage*, 56, 52-60.

EC Klosterman, MN Braskie, **SM Landau**, JP O'Neil, WJ Jagust (2012). Dopamine synthesis capacity is related to front-striatal functional connectivity and task accuracy in older adults. *Neurobiology of Aging*, 33, 623.e15-623.e324.

SM Landau, SM Marks, EC Mormino, GD Rabinovici, H Oh, JP O'Neil, RS Wilson, WJ Jagust (2012). Lifetime cognitive engagement is associated with low beta-amyloid deposition. *Archives of Neurology*, 69, 623-629.

A Caroli, A Prestia, K Chen, N Ayutyanont, **SM Landau**, CM Madison, C Haense, K Herholz, F Nobili, EM Reiman, WJ Jagust, GB Frisoni, EADC-PET Consortium, NEST-DD, and the Alzheimer's Disease Neuroimaging Initiative (2012). Summary metrics to assess Alzheimer's disease-related hypometabolic pattern with FDGPET: Head-to-head comparison. *J Nucl Medicine*, 53, 592-600.

SM Landau, MA Mintun, AD Joshi, RA Koeppe, RC Petersen, PS Aisen, MW Weiner, and WJ Jagust (2012). Amyloid deposition, hypometabolism, and longitudinal cognitive decline. *Annals of Neurology*, 72, 578-586.

WJ Jagust & **SM Landau** (2012). Apolipoprotein E, not Fibrillar Beta-amyloid, Reduces Cerebral Glucose Metabolism in Normal Aging. *J Neuroscience*, 32, 18227-18223.

SM Landau, C Breault, AD Joshi, M Pontecorvo, CA Mathis, WJ Jagust, and MA Mintun (2013). Amyloid imaging with Pittsburgh compound B and florbetapir: Comparing radiotracers and quantification methods. *J Nucl Medicine*, 54, 70-77.

M Wirth, H Oh, EC Mormino, C Markley, **SM Landau**, WJ Jagust (2013). The effect of amyloid β on cognitive decline is modulated by neural integrity in cognitively normal elderly. *Alzheimer's & Dementia* (online March 7 2013).

M Wirth, C Madison, G Rabinovici, H Oh, **SM Landau**, and WJ Jagust (2013). Alzheimer's disease neurodegenerative biomarkers are associated with decreased cognitive function but not beta-amyloid in cognitively normal older individuals. *J Neuroscience*, 33, 5553-5563.

SM Landau, M Lu, AD Joshi, M Pontecorvo, MA Mintun, JQ Trojanowski, LM Shaw, WJ Jagust (2013). Comparing PET imaging and CSF measurements of A β . *Annals of Neurology*, 10.1002/ana.23908.

KR Murphy, **SM Landau**, KR Choudhury, CA Hostage, KS Shpanskaya, HI Sair, JR Petrella, TZ Wong, PM Doraiswamy (2013). Mapping the effects of ApoE4, age and cognitive status on 18F-florbetapir PET measured regional cortical patterns of beta-amyloid density and growth. *NeuroImage*, 78, 474-480.

T Haight, **SM Landau**, O Carmichael, C Schwartz, C DeCarli, WJ Jagust (2013). Dissociable effects of Alzheimer's Disease and white matter hyperintensities on brain metabolism. *JAMA Neurology* (online June 17 2013).

J Nettiksimmons, C DeCarli, **SM Landau**, L Beckett (2014). Biological heterogeneity in ADNI amnesic MCI. *Alzheimer's & Dementia*.

M Wirth, S Villeneuve, CM Haase, CM Madison, H Oh, **SM Landau**, GD Rabinovici, WJ Jagust (2013). Alzheimer's disease biomarkers, neurodegeneration, and cognition in cognitively normal older people. *JAMA Neurology*, 70: 1512-1519.

Non-peer-reviewed publications

SM Landau & M Doraiswamy (2012). The Biology of Alzheimer's Disease (Book Review). *JAMA*, 308, 1925-1926.

Invited presentations

Dynamic Changes in Working Memory Mechanisms: The Influence of Practice and Expertise (Oct 2004). UC Berkeley Cognition, Brain, and Behavior Colloquium Series, Psychology Department, Berkeley, CA.

Individual variability in functional activation: How is optimal performance represented in brain activity? (Mar 2006) Omneuron, Inc., Palo Alto, CA.

The frontal lobe and cognition. UC Berkeley undergraduate course: The Aging Brain (Oct 2005, Oct 2007, Oct 2009, Oct 2011), Berkeley, CA.

Aging and dopamine function: How does dopaminergic variability impact working memory? (Jan 2008). Center for Imaging of Neurodegenerative Diseases, San Francisco VA Medical Center, San Francisco, CA.

Aging and dopamine function (May 2008). Human Cognitive Neurophysiology Laboratory, Martinez VA Medical Center, Martinez, CA.

Optimizing FDG-PET Measurements for Prediction of Decline: Findings from the Alzheimer's Disease Neuroimaging Initiative (June 2008). Aging Clinical Research Center, Palo Alto VA Medical Center, Palo Alto, CA.

Healthy aging and the brain (Nov 2011). Gualala Arts lecture series, Sea Ranch, CA.

Optimizing FDG-PET in Alzheimer's and MCI: Data from the Alzheimer's Disease Neuroimaging Initiative (Jan 2009). Center for Imaging of Neurodegenerative Diseases, San Francisco VA Medical Center, San Francisco, CA.

Alzheimer's Disease Neuroimaging Initiative (ADNI) after 5 Years: How well have PET and MRI fared as predictors of cognitive decline? (Feb 2010) High Country Nuclear Medicine Meeting, Denver, CO.

Early detection of decline: An evaluation of biomarker predictors in the Alzheimer's Disease Neuroimaging Initiative (Jun 2010). Bay Area Alzheimer's Association Symposium, Berkeley, CA.

Lifetime cognitive engagement and amyloid (Nov 2011). UC San Francisco Memory and Aging Center Neuropsychology seminar, San Francisco, CA.

Lifetime cognitive engagement and amyloid (Mar 2012). Lumosity Labs, San Francisco, CA.

Standardization of amyloid PET imaging (Apr 2012). Alzheimer's Disease Neuroimaging Initiative (ADNI) Private Partner Scientific Board meeting, New Orleans, LA.

Amyloid imaging as part of a multimodal evaluation of MCI (Jul 2012). Alzheimer's Association International Conference. Vancouver, B.C.

ADNI MCI Experience (Oct 2012). NIA Alzheimer's Association Guidelines Revisited. Washington, DC.

Detection of Early Alzheimer's Disease (Nov 2012). Preventive Treatment for Alzheimer's disease: Live Webinar hosted by the Wien Center for Alzheimer's Disease and Memory Disorders, Mount Sinai Medical Center, Miami Beach, FL.

Cognitive activity and healthy aging (Dec 2012). AARP Innovation Roundtable: The Science of Brain Health. Washington, D.C.

Measuring Progression in Alzheimer's Disease Using Brain Imaging Tests (Jan 2013). Public Educational Forum, Wien Center for Alzheimer's Disease and Memory Disorders, Mount Sinai Medical Center, Miami Beach, FL.

Amyloid, Glucose Metabolism, and Longitudinal Change (Jan 2014). 12th Mild Cognitive Impairment Symposium, Wien Center for Alzheimer's Disease and Memory Disorders, Mount Sinai Medical Center, Miami Beach, FL.

Conference presentations

SM Landau, S Baker, JL Eberling, FT Sun, M Oliver, WJ Jagust (2005). Dopamine, aging, and working memory. Helen Wills Neuroscience Institute Annual Retreat, Lake Tahoe, CA.

SM Landau, S Baker, S Chen, JL Eberling, R Lal, M Oliver, WJ Jagust (2006). Prefrontal activation during working memory maintenance is related to dopamine levels in healthy older adults. Oral presentation and poster, Human Brain Mapping Annual Meeting, Florence, Italy.

SM Landau, D Harvey, C Madison, NL Foster, EM Reiman, JQ Trojanowski, L Shaw, R Petersen, MW Weiner, WJ Jagust (2009). Comparing predictors of conversion: Data From The Alzheimer's Disease Neuroimaging Initiative. Alzheimer's Association International Conference on Alzheimer's Disease, Vienna, Austria.

SM Landau, D Harvey, NL Foster, EM Reiman, PS Aisen, JQ Trojanowski, L Shaw, CR Jack, RC Petersen, MW Weiner, WJ Jagust (2010). Biomarker predictors of cognitive decline in healthy older participants in the Alzheimer's Disease

Neuroimaging Initiative. Alzheimer's Association International Conference on Alzheimer's Disease, Honolulu, HI.

SM Landau, JC Price, WJ Jagust, CA Mathis (2011). Reliability of longitudinal PIB: How do data processing methods influence detection of change over time? Human Amyloid Imaging, Miami, FL.

SM Landau, M Lu, AD Joshi, M Pontecorvo, MA Mintun, JT Trojanowski, LM Shaw, and WJ Jagust (2013). Agreement and disagreement between PET imaging and CSF measurements of A β Human Amyloid Imaging, Miami Beach, FL.

SM Landau, A Fero, SL Baker, WJ Jagust (2014). Amyloid Change Early in Disease is Related to Increased Glucose Metabolism and Episodic Memory Decline. Human Amyloid Imaging, Miami Beach, FL.

ADDITIONAL RESEARCH TRAINING

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| 06/1998 – 08/1998 | Electrophysiological recording in primates for experiment on high-level vision, Dr. Carol Colby, Center for the Neural Basis of Behavior, University of Pittsburgh, PA. |
| 05/1994 – 09/1999 | Collected normative data for episodic memory test, Dr. Elizabeth Parker, UC Irvine, CA. |
| 07/2001 | Fellow – Dartmouth Summer Institute of Cognitive Neuroscience |
| 11/2006 – 03/2006 | Neuropsychological test administration training, supervised by Drs. Bruce Miller and Joel Kramer, Memory and Aging Center, UC San Francisco, CA. |
| 07/2006 – 12/2006 | Omneuron, Inc., Palo Alto, CA. Real-time fMRI application to treatment of pain and addiction, co-authored successful SBIR contract proposal. |
| 06/2011 | Advanced Psychometrics Workshop, Friday Harbor, WA |

AWARDS AND HONORS

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| 1995 | George W. Pierce Scholarship Award, UC Davis |
| 1998 | Fellow – National Science Foundation Summer Undergraduate Training Program at the Center for the Neural Basis of Behavior, Pittsburgh, PA |
| 1999 | Walkley Prize for original research – Wesleyan University |
| 2001 | Fellow – Dartmouth Summer Institute of Cognitive Neuroscience |
| 2000 – 2003 | National Science Foundation Graduate Research Fellowship Award |
| 2006 | Travel Award, Human Brain Mapping Annual Meeting, Florence, Italy |
| 2006 | Co-authored successfully funded NIH SBIR FastTrack contract proposal on real-time fMRI and addiction at Omneuron, Inc., Menlo Park, CA |