Jared D. Stokes, PhD candidate **UC Davis Psychology**

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SUMMARY

Doctoral candidate in psychology studying human memory, specifically, characterizing neural representations of individual memories associated with real-life behavior

- Experience developing virtual reality memory and navigation tasks
- Experience collecting, preprocessing and analyzing behavior and task-oriented neuroimaging datasets
- Experience using machine learning and virtual reality to classify brain activity
- Excellent communication, teamwork and writing skills developed through management, research, and teaching experience in an academic setting

RESEARCH & TECHNICAL EXPERIENCE

University of California, Davis 2011-present
Graduate Student under Dr. Arne Ekstrom, Human Spatial Cognition Lab, Center for Neuroscience

Selected projects:

- Using artificial neural networks to investigate real-world navigation and explain brain-activity patterns
- Investigating spatial navigation and learning using immersive VR and an omnidirectional treadmill
- Understanding the influence of prior knowledge and novelty during learning learning of spatial environments within the hippocampus
- Investigating representations for virtual environments with the medial temporal lobe

Duke University, Durham, NC 2006-2011
Research specialist/Lab manager under Dr. Roberta Cabeza, Center for Cognitive Neuroscience

Tufts University, Medford, MA 2006
Research assistant, NeuroCognition of Language Lab, Department of Psychology

TECHNICAL SKILLS

Data analysis: generalized linear and mixed models; dimensionality reduction; deep neural networks; support vector machines
Programming languages: MATLAB, Python, R, Javascript, C#, Bash
Statistical packages: SPSS, SAS
General: Git, Unity, Blender, AWS, TensorFlow, Adobe Photoshop, Adobe Illustrator, Microsoft Word, Excel, and PowerPoint
Operating systems: Windows, Mac, and Linux operating systems

EDUCATION

Ph.D., Psychology, University of California, (Degree expected Fall 2018)
Dissertation: Representations of virtual environments in the human hippocampus

- Award recipient, Dissertation Fellowship, UC Davis, Winter 2017
- Award recipient, Dukes Travel Award, UC Davis, Fall 2016

B.Sc., University of North Carolina, Chapel Hill, NC, (2000-2005)
Major: Biology (Chemistry minor)

- Rehabilitation Unit Volunteer, Long-term rehab clinic; John Umstead Hospital, 2004
- Field Research Assistant, Dr. K.A.I. Nekaris, Sri Lanka, 2004

- Student Project, La Suerte Biological Field Station, Costa Rica, 2003
- Research Assistant, Clemmons Lab, UNC Department of Medicine, 2001-2003

LEADERSHIP EXPERIENCE

Teaching Assistant, Department of Psychology, UC Davis 2011-present
Cognitive Neuroscience, Cognitive Psychology, Development of memory, Neurobiology of Learning and Memory, Research Methods, Human Perception, Human Learning and Memory, Introduction to Psychology

Mentorship, Department of Psychology, UC Davis 2011-present
Undergraduate senior research project mentor for three UC Davis undergraduate students

PUBLICATIONS

Stokes, J.D., Kyle, C., Huffman, D., Ekstrom, A.D. (under review) Integration of novel shape templates during human spatial navigation leads to prototype extraction, non-Euclidean environments.

Starrett, M.J., **Stokes, J.D.**, Ekstrom, A.D. (under review). Learning-Dependent Evolution of Spatial Representations in Large-Scale Virtual Environments.

Monge, Z.A., Wing, E. A., **Stokes J.**, Cabeza, R. (2017). Search and Recovery of Autobiographical and Laboratory Memories: Shared and Distinct Neural Components. Neuropsychologia.

Bouffard, N., **Stokes, J.**, Kramer, H., Ekstrom, A. (2017). Temporal encoding strategies result in boosts to final free recall performance comparable to spatial ones. Memory & Cognition.

Kyle, C.T., **Stokes, J.D.**, Bennett, J., Meltzer, J., Permenter, M.R., Vogt, J.A., Ekstrom, A., Barnes, C.A. (2017) Cytoarchitectonically-driven MRI atlas of nonhuman primate hippocampus: preservation of subfield volumes in aging. Hippocampus.

Lieberman, J.S., Kyle, C. T., Schedlbauer, A., **Stokes, J.D.**, Ekstrom, A. D. (2017). A tale of two temporal coding strategies: Common and dissociable brain regions involved in recency vs. associative temporal order retrieval strategies. Journal of Cognitive Neuroscience.

Kyle, C. T., **Stokes, J.D.**, Lieberman, J. S., Hassan, A. S., Ekstrom, A. D. (2015). Successful retrieval of competing spatial environments in humans involves hippocampal pattern separation mechanisms. eLife, 4.

Stokes, J.D., Kyle, C., Ekstrom, A. D. (2015). Complementary Roles of Human Hippocampal Subfields in Differentiation and Integration of Spatial Context. Journal of Cognitive Neuroscience, 27(3), 546-559.

Dolcos, F., Iordan, A. D., Kragel, J., **Stokes, J.D.**, Campbell, R., McCarthy, G., Cabeza, R. (2013). Neural correlates of opposing effects of emotional distraction on working memory and episodic memory: an event-related FMRI investigation. Frontiers in Psychology, 4, 293.

Shafer, A. T., Matveychuk, D., Penney, T., O'Hare, A. J., **Stokes, J.D.**, Dolcos, F. (2012). Processing of emotional distraction is both automatic and modulated by attention: evidence from an event-related fMRI investigation. Journal of Cognitive Neuroscience, 24(5), 1233?1252.

Hayes, S.M., Buchler, N., **Stokes, J.D.**, Kragel, J., Cabeza, R. (2011). Neural correlates of confidence during item recognition and source memory retrieval: Evidence for both dual-process and strength memory theories. Journal of Cognitive Neuroscience.

Cabeza, R., Mazuz, M., **Stokes, J.D.**, Kragel, J., Woldorff, W, Ciaramelli, E., Olson, I., Moscov-

itch, M. (2011). Overlapping Parietal Activity in Memory and Perception: Evidence for the Attention to Memory (AtoM) Model. Journal of Cognitive Neuroscience, 23, 3209-3217.

Dennis, N., Browndyke, J., **Stokes, J.D.**, Need, A., Burke, J., Welsh-Bohmer, K., Cabeza, R. (2010) Temporal lobe functional activity and connectivity in young adult APOE e4 carriers. Alzheimer's & Dementia.

CONFERENCE PROCEEDINGS

Stokes, J.D., Kyle, C., Huffman, D., Ekstrom, A.D. (2018) Human hippocampal representations of novel, irregular environments. International Conference on Learning & Memory, UC Irvine.

Starrett, M.J., **Stokes, J.D.**, Kreylos, O., Ekstrom, A. D., (2016) Navigation in virtual reality with vestibular and proprioceptive input diminishes orientation-dependent spatial representations. Society for Neuroscience Society Abstracts.

Kyle, C., Bennett, J. L., **Stokes, J.D.**, Permenter, M. R., Vogt, J. A., Ekstrom, A. D., Barnes, C. A. (2016) Histology informed probabilistic hippocampal atlases of young and old rhesus macaques. Society for Neuroscience Society Abstracts.

Borders, A., **Stokes, J.D.**, Kyle, C., Ekstrom, A., Yonelinas, A. (2015) High-resolution hippocampal activation patterns predict memory precision. Society for Neuroscience Society Abstracts.

Stokes, J.D., Kyle, C., Ekstrom, A. (2015) Integration of familiar and novel spatial templates in episodic memory. Society for Neuroscience Society Abstracts.

Bouffard, N., **Stokes, J.D.**, Kyle, C., Lieberman, J., Ekstrom, A. (2015) Temporal encoding strategies produce comparable boosts in free recall performance to spatial encoding strategies. Society for Neuroscience Abstracts.

Lieberman, J., **Stokes, J.D.**, Kyle, C., Ekstrom, A. (2015) A tale of two temporal retrieval strategies: Dynamic expression of temporal sequence retrieval. Society for Neuroscience Abstracts.

Kyle, C., **Stokes, J.D.**, Ekstrom, A. (2014) Properties of spatial contextual representation within the human hippocampus during episodic memory retrieval. Society for Neuroscience Abstracts.

Stokes, J.D., Kyle, C., Ekstrom, A. (2014) Dissociable roles of human hippocampal subfields CA3/DG and CA1 during processing of spatial context. Society for Neuroscience Abstracts.

Stokes, J.D., Kyle, C., Ekstrom, A. (2014) Dissociable codes within the human hippocampal subfields during spatial context processing. Bay Area Memory Meeting Abstracts.

Stokes, J.D., Ekstrom, A. (2012) Representational similarity in CA3/DG tracks changes in spatial context. Cognitive Neuroscience Society Abstracts.

Smuda, D., Kyle, C., **Stokes, J.D.**, Ekstrom, A. (2012) Role of hippocampal subregions in disambiguating elements of temporal vs. spatial context in episodic memory. Cognitive Neuroscience Society Abstracts.

Stokes, J.D., Mazuz, Y., Daselaar, S., Moscovitch, M., Cabeza, R. (2011) Similarities and differences between the neural mechanisms of episodic and autobiographical memory recall. Cognitive Neuroscience Society Abstracts.

Hayes, S., Buchler, N., **Stokes, J.D.**, J, Kragel J., Cabeza, R. (2010) Recollection orientation,

retrieval success, and task difficulty: The role of prefrontal cortex and posterior parietal cortex during source and item memory. Cognitive Neuroscience Society Abstract.

Tomlinson, S., Kragel, J., **Stokes, J.D.**, Dolcos, F., McCarthy, G., Cabeza, R. (2008). Role of individual differences in the response to emotional distraction: An event-related fMRI investigation. Supplement of Journal of Cognitive Neuroscience Abstracts.

Dolcos, F., **Stokes, J.D.**, Kragel, J., Ritchey, M. Tsukiura, T. McCarthy, G., Cabeza, R. (2007). Neural correlates of opposing modulation of emotion on short- vs. long-term memory processes: An event-related fMRI investigation. Society for Neuroscience Abstracts.