

Keiland W. Cooper

Graduate Scholar
Department of Neurobiology and Behavior
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EDUCATION

University of California, Irvine

Ph.D., Neuroscience

Advisor: Dr. Norbert Fortin

In progress

Indiana University, Bloomington

B.S., Cognitive Science, *with Honors*

Computation specialization

Certificate in Neuroscience; Minor in Psychology

Advisors: Dr. Ehren Newman, Dr. Mike Jones

May 4th 2019

TEST

- [4] COVID-19 and the chemical senses: supporting players take center stage.
Cooper, K. W., Brann, D.H., Farruggia, M.C., Bhutani, S., Pellegrino, R., Tsukahara, T., Weinreb, C., Joseph, P.V., Larson, E.D., Parma, V. and Albers, M.W.,
2020 *Neuron* 107(2), 219-233
- [3] More than smell- COVID-19 is associated with severe impairment of smell, taste, and chemesthesis.
Parma, V., Ohla, K., Veldhuizen, M. G., Niv, M. Y., Kelly, C. E., Bakke, A. J., Cooper K. W. ..., Hayes, J. E.
2020. *Chemical Senses*, 45(7), 609-622.
- [2] Coronaviruses and the chemical senses: past, present, and future.
Pellegrino, R., Cooper, K. W., Di Pizio, A., Joseph, P. V., Bhutani, S., Parma, V.
2020 *Chemical senses*, 45(6), 415-422.
- [1] Cooper, K. W., Brann, D.H., Farruggia, M.C., Bhutani, S., Pellegrino, R., Tsukahara, T., Weinreb, C., Joseph, P.V., Larson, E.D., Parma, V. and Albers, M.W., 2020. COVID-19 and the chemical senses: supporting players take center stage. *Neuron*. 107(2), 219-233

THESIS

- [1] Cooper K. W. (2019) Cholinergic modulation may explain hippocampal encoding and retrieval mode switching. Indiana University, Bloomington Undergraduate Thesis.

PREPRINTS

- [2] Lomonaco V., Pellegrini L., Cossu A., Carta A., Graffieti G., ... Cooper K. W., ... Bacciu D., Maltoni D. (2021) Avalanche: an End-to-End Library for Continual Learning arXiv preprint 2104.00405 <http://arxiv.org/abs/2104.00405>
- [3] Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Cooper, K. W., Baldi, P., Fortin,

N. J. (2020). Hippocampal ensembles represent sequential relationships among discrete nonspatial events. (Under review)

REFEREED PUBLICATIONS

- [4] Gerkin, R. C., Ohla, K., Veldhuizen, M. G., Joseph, P. V., Kelly, C. E., Bakke, A. J., ... Cooper, K. W. ..., Baguma, M. (2020). Recent smell loss is the best predictor of COVID-19 among individuals with recent respiratory symptoms. *Chemical senses*, 46.
- [5] Pierron, D., Pereda-Loth, V., Mantel, M., Moranges, M., Bignon, E., Alva, O., Cooper, K. W., ... Dinnella, C. (2020). Smell and taste changes are early indicators of the COVID-19 pandemic and political decision effectiveness. *Nature Communications*, 11(1), 1-8.
• #4 of Top 2020 *Nature Communications* papers
- [6] Cooper, K. W., Brann, D.H., Farruggia, M.C., Bhutani, S., Pellegrino, R., Tsukahara, T., Weinreb, C., Joseph, P.V., Larson, E.D., Parma, V. and Albers, M.W., 2020. COVID-19 and the chemical senses: supporting players take center stage. *Neuron*. 107(2), 219-233
- [7] Parma, V., Ohla, K., Veldhuizen, M. G., Niv, M. Y., Kelly, C. E., Bakke, A. J., Cooper K. W. ..., Hayes, J. E. (2020). More than smell- COVID-19 is associated with severe impairment of smell, taste, and chemesthesis. *Chemical Senses*, 45(7), 609-622.
- [8] Pellegrino, R., Cooper, K. W., Di Pizio, A., Joseph, P. V., Bhutani, S., Parma, V. (2020). Coronaviruses and the chemical senses: past, present, and future. *Chemical senses*, 45(6), 415-422.
- [9] Hernandez-Perez, J. J., Cooper, K. W., Newman, E. L. (2020). Medial entorhinal cortex activates in a traveling wave in the rat. *eLife*, 9
- [10] Cooper, K. W. (2018). Can the Machine Understand: An Evidence Based Approach to the Chinese Room. *IU Journal of Undergraduate Research*, 4(1), 82-85

SELECTED ABSTRACTS + TALKS

- [1] Cooper, K. W., Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Bornstein, A., Baldi, P., Fortin, N. J. (2021). Hippocampal theta oscillations support nonspatial sequence coding in hippocampal neurons. *Society for Neuroscience Global Connectome*
- [2] Cooper K. W. (2020) The neuroscience / AI feedback loop: Catastrophic Forgetting and Sequences. *UCI AGS Symposium*
- [3] Cooper K. W. (2020) Dual processes of hippocampal mode switching. *Neuromatch Conference*
- [4] Cooper K. W. (2020) Cholinergic abolition disrupts encoding and retrieval mode switching. *11th Annual Emerging Scientists Symposium*
- [5] Hernandez J, Cooper K. W., Newman E.L. (2018) Is theta a traveling wave in the medial entorhinal cortex? Program No. 330.10. *Society for Neuroscience*
- [6] Cooper K. W, Dachapally P.R, Jones M.N (2018) Consequences of Catastrophic Forgetting on Semantic Representations Learned by Deep Neural Embedding Models, *Midwest Cognitive Science Conference*
- [7] Cooper K. W. (2017) Bridging the Gap: Natural Computation and Neural Systems. *Indiana University Undergraduate Research Conference*.

AWARDS	Graduate Research Fellow		National Science Foundation	2021
	Pedagogical Fellow		UC Irvine DTEI	2020
	UC Irvine Recruitment Fellowship		UC Irvine	2020
	Graduate Research Fellow, Honorable Mention		National Science Foundation	2021
	Cognitive Science Outstanding Research Award		Indiana University	2021
	Ewing Prize in Philosophy		Indiana University	2021
	Cognitive Science Outstanding Research Award		Indiana University	2021
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TEACHING	Autonomous Robotics	Co-instructor	Indiana University	2019
	Programming in Cognitive Sciences	Co-instructor	Indiana University	2018
	Mind, Memory, and the Brain	Teaching Assistant	UC Irvine	2021
	Neurobiology and Behavior Lab	Teaching Assistant	UC Irvine	2020
	Brain and Behavior	Teaching Assistant	UC Irvine	2020
	Cognitive Psychology	Teaching Assistant	Indiana University	2018
	Introduction to Neuroscience	Teaching Assistant	Indiana University	2017
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SciCOMM + OUTREACH	AskANeuroscientist	Founder; K-12 class Q/A (reached >400 students)		
	Hoosier STARS	Co-founder; K-12 class neuro demos (reached >300 students)		
	CNLM Ambassadors	Co-chair; SoCal Learning and memory outreach		
	UCI End Racism	Working group contributor addressing systemic racism		
	Quora Writer	Answers to neuroscience and AI questions; 800k+ views		
	Peer reviewer	Physiological Reviews; CVPR		
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NETWORKS	Cognitive Science Society	Psi Chi	ContinualAI (co-founder)	
	Society for Neuroscience	Sigma Xi	Carboncopies Foundation	
	Indiana Academy of Science	Sigma Alpha Pi	AI for People	
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REFeree SERVICE	Physiological Reviews			
	CVPR			
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TRAININGS + WORKSHOPS	Estes Cognitive Electrophysiology Workshop		University of Pennsylvania	2021
	NIH Grant Writing Workshop		UC Irvine	2020
	HHMI Productivity Workshop		UC Irvine	2020
	Nonlinear Dynamics: Math and Comp Approaches		Santa Fe Institute	2021
	Cognitive Science Outstanding Research Award		Indiana University	2021
	Ewing Prize in Philosophy		Indiana University	2021
	Cognitive Science Outstanding Research Award		Indiana University	2021

PRESS

- [1] Cooper, K. W., Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Bornstein, A., Baldi, P., Fortin, N. J. (2021). Hippocampal theta oscillations support nonspatial sequence coding in hippocampal neurons. Society for Neuroscience Global Connectome
 - [2] Cooper K. W. (2020) The neuroscience / AI feedback loop: Catastrophic Forgetting and Sequences. UCI AGS Symposium
 - [3] Cooper K. W. (2020) Dual processes of hippocampal mode switching. Neuromatch Conference
 - [4] Cooper K. W. (2020) Cholinergic abolition disrupts encoding and retrieval mode switching. 11th Annual Emerging Scientists Symposium
 - [5] Hernandez J, Cooper K. W., Newman E.L. (2018) Is theta a traveling wave in the medial entorhinal cortex? Program No. 330.10. Society for Neuroscience
 - [6] Cooper K. W, Dachapally P.R, Jones M.N (2018) Consequences of Catastrophic Forgetting on Semantic Representations Learned by Deep Neural Embedding Models, Midwest Cognitive Science Conference
 - [7] Cooper K. W. (2017) Bridging the Gap: Natural Computation and Neural Systems. Indiana University Undergraduate Research Conference.
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ERDÖS N=4

as of 2021:

Paul Erdős → Noga Alon → Nicolò Cesa-Bianchi → Fabio Cuzzolin

as of 2019:

Paul Erdős → Ronald L. Graham → Feng Zhou → Michael J. Kahana → Ehren L. Newman