

**ROSEMARY A. COWELL**  
rosie.cowell@colorado.edu

**EDUCATION**

2002 - 2006 PhD, Experimental Psychology, University of Oxford, UK  
1998 - 2001 BA (Hons) Natural Sciences, University of Cambridge, UK

**ACADEMIC POSITIONS**

Jan 2023 - Associate Professor, Institute of Cognitive Science, University of Colorado Boulder  
2020 - 2022 Associate Professor, Psychological and Brain Sciences, UMass Amherst  
2013 - 2020 Assistant Professor, Psychological and Brain Sciences, UMass Amherst  
2009 - 2013 Research Scientist, Department of Psychology, UCSD  
2007 - 2009 Research Councils UK Academic Fellow, School of Computing, University of Kent, UK.  
2008 Visiting Scholar, Computer Science and Engineering Department, UCSD  
2006 - 2007 Post-doctoral Fellow, LEAD-CNRS, Université de Bourgogne, Dijon, France  
2002 Research Assistant, Experimental Psychology, University of Cambridge, UK

**GRANTS AND FUNDING**

List includes external funding agencies only.

- 1) National Institutes of Health (Brain Initiative)  
1RF1MH114277-01 (equivalent to R01)  
Title: Using fMRI to Measure the Neural-level Signals Underlying Population-level Responses  
Role: Contact PI  
Co-PI: David Huber, UMass  
Co-Is: Earl Miller, MIT; John Serences, UCSD  
Total Costs: \$2,366,079  
Date: 07/20/2017 - 05/30/2022
- 2) National Science Foundation CAREER Award  
NSF 1554871  
Title: Testing a unified theory of perception and memory in the medial temporal lobe  
Role: PI  
Total Costs: \$599,618  
Date: 01/01/2016 -12/31/2021
- 3) NSF Research Experience for Undergraduates Supplement  
NSF 1554871 (REU Supplement to CAREER Award)  
Role: PI  
Total Costs: \$7,970  
Date: 06/11/2017 - 12/31/2021
- 4) US Airforce  
FA8651-18-P-0058  
Title: Application of Hierarchical Memory Models to Automatic Target Recognition Modeling and Simulation  
Role: Academic Co-PI (UMass Subcontract to Novateur Research Solutions, LLC)  
UMass Total Costs: \$45,000  
Date: 08/15/2018 - 05/10-2019
- 5) NIMH R01-MH092345 (2010-2015)  
Title: Adaptive allocation of attention during perception, working memory, and decision making.  
Role: Co-I

PI: John Serences, UCSD  
 Total Direct Costs: \$1,250,000  
 Date: 2010–2015

### AWARDS, HONORS AND FELLOWSHIPS

- NSF CAREER Award, January 2016.
- Election to the Memory Disorders Research Society, May 2014.
- Cermak Travel Award, Memory Disorders Research Society, 2013.
- Perception/Action Modeling Prize of the *Cognitive Science Society*, for first-authored paper: "Virtual Brain Reading: A connectionist approach to understanding fMRI", July 2009.
- Travel award from *Brain, A Journal of Neurology*, July 2009.
- Travel award from the British Academy, July 2009.
- Research Councils UK Academic Fellowship, October 2007 – September 2009.
- Newton Abraham Studentship in Biomedical Sciences, *Oxford University*, 2002-2005.

### PUBLICATIONS

*Italic author name* indicates trainee under my supervision.

#### Peer-Reviewed Journal Articles

- *McCarter, A.C.*, Huber, D.E. and **Cowell, R.A.** (under review). No Evidence of a Visual Testing Effect for Novel, Meaningless Objects. *Pre-print: <https://psyarxiv.com/ybvzp/>*
- *Savalia, T.*, **Cowell, R.A.** and Huber, D.E. (in revision). "Leap before you look": Conditions that promote procedural visuomotor adaptation without explicit, knowledge-based learning.
- *Sanders, D.M.W.* and **Cowell, R.A.** (2023). The locus of recognition memory signals in human cortex depends on the complexity of the memory representations. *Cerebral Cortex*, 33:17, 9835–9849. <https://doi.org/10.1093/cercor/bhad248>
- *Leger, K.R.*, **Cowell, R.A.** & Gutchess, A. (2023) Do cultural differences emerge at different levels of representational hierarchy? *Memory & Cognition*. <https://doi.org/10.3758/s13421-023-01459-7>
- *Sadil, P.S.*, **Cowell, R.A.** and Huber, D.E. (2023). The Push-Pull of Serial Dependence Effects: Every Response is both an Attraction to the Prior Response and a Repulsion from the Prior Stimulus. *Psychonomic Bulletin & Review*. <https://doi.org/10.3758/s13423-023-02320-3>
- *Nikiforova, M.*, **Cowell, R.A.** and Huber, D.E. (2023). Gestalt formation promotes awareness of suppressed visual stimuli during binocular rivalry. *Visual Cognition*, 31:1, 18-42, DOI: 10.1080/13506285.2023.2192991.
- *Sadil, P.*, **Cowell, R.A.** & Huber, D.E. (2022) A modeling framework for determining modulation of neural-level tuning from non-invasive human fMRI data. *Commun Biol* 5, 1244 (2022). <https://doi.org/10.1038/s42003-022-04000-9>
- *Sanders, D.M.W.*, **Cowell, R.A.**, *Castillo, J.*, and Starns, J. (2022) Boosting confidence without boosting performance: item strength creates the illusion of source accuracy, *Memory*, 30:9, 1172-1191, DOI: 10.1080/09658211.2022.2098338 *OSF project: <https://osf.io/g3dyf/>*
- *Jiang, Z.*, *Sanders, D.M.W.*, **Cowell, R.A.** (2022). Visual and Semantic Similarity Norms for a Photographic Image Stimulus Set Containing Recognizable Objects, Animals and Scenes. *Behavior Research Methods*. <https://doi.org/10.3758/s13428-021-01732-0>
- **Cowell, R.A.** and Huber, D.E. (2020). Mechanisms of Memory: An Intermediate Level of Analysis and Organization. *Current Opinion in Behavioral Sciences*, 32: 65:71.
- **Cowell, R.A.**, Barense, M.D. and *Sadil, P.S.* (2019). A Roadmap for Understanding Memory: Decomposing Cognitive Processes into Operations and Representations. *eNeuro*, 12 June 2019, *ENEURO.0122-19.2019*. doi: <https://doi.org/10.1523/ENEURO.0122-19.2019>
- *Sadil, P.S.*, Potter, K., Huber, D.E. and **Cowell, R.A.** (2019). Connecting the dots without top-down knowledge: Evidence for rapidly-learned low-level associations that are independent of object identity. *Journal of Experimental Psychology: General*, 148(6): 1058-1070.
- *Sadil, P.S.*, **Cowell, R.A.** and Huber, D.E. (2019). A hierarchical Bayesian state trace analysis for assessing monotonicity while factoring out subject, item, and trial level dependencies. *Journal of Mathematical Psychology*, 90: 118-131.

- Wilson, D.M., Potter, K., and **Cowell, R.A.** (2018). Recognition Memory Shielded from Semantic but not Perceptual Interference in Normal Aging. *Neuropsychologia*, 119: 448-463.
- Ross, D.A., Sadil, P.S., Wilson, D.M. and **Cowell, R.A.** (2018) Hippocampal Engagement during Recall depends on Memory Content. *Cerebral Cortex*, 28(8): 2685-2698.
- Newsome, R.N., Trelle, A.N., Hong, B., Smith, V.M., Jacob, A., Ryan, J.D., Rosenbaum, R.S., **Cowell, R.A.**, & Barense, M.D. (2018). Dissociable contributions of thalamic nuclei to recognition memory: Novel evidence from a case of medial dorsal thalamic damage. *Learning and Memory*, 25(1): 31-44.
- **Cowell, R.A.**, Leger, K. and Serences, J.T. (2017). Feature-Coding Transitions to Conjunction Coding with Progression through Visual Cortex. *Journal of Neurophysiology*, 118(6): 3194-3214.
- Sadil, P.S. and **Cowell, R.A.** (2017) A Computational Model of Mnemonic and Perceptual Deficits in Medial Temporal Lobe Amnesia. *Journal of Cognitive Neuroscience*, 29(6): 1075-1088.
- Martin, C.B., **Cowell, R.A.**, Gribble, P.L., Wright, J., Köhler, S. (2016). Distributed category-specific recognition memory signals in human perirhinal cortex. *Hippocampus*, 26: 423-436.
- Ikeda, M.Z., Jeon, S.D., **Cowell, R.A.**, Ramage-Healey, L. (2015). Norepinephrine Modulates Coding of Complex Vocalizations in the Songbird Auditory Cortex Independent of Local Neuroestrogen Synthesis. *Journal of Neuroscience*, 35(25): 9356-68.
- Yeung, L-K., Ryan, J.D., **Cowell, R.A.**, Barense, M.D. (2013). Recognition Memory Impairments Caused by False Recognition of Novel Objects. *Journal of Experimental Psychology: General*, 142(4): 1384-97.
- **Cowell, R.A.** & Cottrell, G.W. (2013). What evidence supports special processing for faces? A cautionary tale for fMRI interpretation. *Journal of Cognitive Neuroscience*, 25(11):1777-93.
- **Cowell, R.A.** (2012). Computational Models of Perirhinal Cortex Function. *Hippocampus*, 22: 1952-1964.
- **Cowell, R.A.**, Bussey, T.J. & Saksida, L.M. (2012). Empiricists are from Venus, Modelers are from Mars: Reconciling Experimental and Computational Approaches in Cognitive Neuroscience. *Neuroscience and Biobehavioral Reviews*, 36(10): 2371-9.
- Forwood, S.E., **Cowell, R.A.**, Bussey, T.J., and Saksida, L.M. (2012). Multiple Cognitive Abilities from a Single Cortical Algorithm. *Journal of Cognitive Neuroscience*, 24(9): 1807-25.
- **Cowell, R.A.** & French, R.M. (2011). Noise and the emergence of rules in category learning: A connectionist model. *IEEE Transactions on Autonomous Mental Development*, 3 (3): 194-206.
- van Dantzig, S., **Cowell, R.A.**, Zeelenberg, R., Pecher, D. (2011). A sharp image or a sharp knife: Norms for the modality-exclusivity of 774 concept-property items. *Behavior Research Methods*, 43 (1): 145-154.
- McTighe, S.M., **Cowell, R.A.**, Winters, B.D., Bussey, T.J. & Saksida, L.M. (2010) Paradoxical false memory for objects after brain damage. *Science*, 330: 1408-1410.
- **Cowell, R.A.**, Bussey, T.J. & Saksida, L.M. (2010). Components of recognition memory: dissociable cognitive processes or just differences in representational complexity? *Hippocampus*, 20 (11): 1245-1262.
- Huber, D.E. & **Cowell, R.A.** (2010). Theory-driven modeling or model-driven theorizing? A comment on McClelland et al./Griffiths et al. *Trends in Cognitive Sciences*, 14 (8): 343-344.
- **Cowell, R.A.**, Bussey, T.J. & Saksida, L.M. (2010). Functional dissociations within the ventral object processing pathway: cognitive modules or a hierarchical continuum? *Journal of Cognitive Neuroscience*, 22 (11): 2460-2479.
- Bartko, S.J., **Cowell, R.A.**, Winters, B.D., Saksida, L.M. and Bussey, T.J. (2010). Increased susceptibility to interference in a rat model of object amnesia: impairment in both storage and retrieval. *Neuropsychologia*, 48 (10): 2987-2997.
- Bartko, S.J., Winters, B.D., **Cowell, R.A.**, Saksida, L.M. and Bussey, T.J. (2007a). Perceptual functions of perirhinal cortex in rats: zero-delay object recognition and simultaneous oddity discriminations. *Journal of Neuroscience*, 27 (10): 2548-2559.
- Bartko, S.J., Winters, B.D., **Cowell, R.A.**, Saksida, L.M. and Bussey, T.J. (2007b). Perirhinal cortex resolves feature ambiguity in configural object recognition and perceptual oddity tasks. *Learning & Memory*, 14: 821-832.

- Abreu, A., French, R. M., **Cowell, R. A.** & de Schonen, S. (2007). Local-Global visual deficits in Williams Syndrome: Stimulus presence contributes to diminished performance on image-reproduction. *Psychologica Belgica*, 46(4): 269-281.
- **Cowell, R.A.**, Bussey, T.J. & Saksida, L.M. (2006). Why does brain damage impair memory? A connectionist model of object recognition memory in perirhinal cortex. *Journal of Neuroscience*, 26 (47): 12186-12197.
- Winters, B.D., Forwood, S.E., **Cowell, R.A.**, Saksida, L.M. & Bussey T.J. (2004). Double dissociation between the effects of peri-postrhinal and hippocampal lesions on tests of object recognition and spatial memory: heterogeneity of function within the temporal lobe. *Journal of Neuroscience* 2004; 24: 5901-8.
- Di Ciano, P., Cardinal, R.N., **Cowell, R.A.**, Little, S.J. & Everitt, B.J. (2001). Differential involvement of NMDA, AMPA/kainate, and dopamine receptors in the nucleus accumbens core in the acquisition and performance of pavlovian approach behavior. *Journal of Neuroscience*, 21: 9471-7.

### Peer-Reviewed Conference Proceedings

- *Blauch, N.M.* and **Cowell, R.A.** (2018). Task demands and stimulus normalization in face perception: an fMRI study. *Cognitive Computational Neuroscience*, Philadelphia, PA.
- *Sadil, P.S.* and **Cowell, R.A.** (2016). A Computational Model of Perceptual Deficits in Medial Temporal Lobe Amnesia. *Proceedings of the 38th Annual Meeting of the Cognitive Science Society, 2016.*
- **Cowell, R.A.**, Huber, D.E., and Cottrell, G.W. (2009). Virtual Brain Reading: A connectionist approach to understanding fMRI. *Proceedings of the 31st Annual Meeting of the Cognitive Science Society, 2009. Winner of the Perception/Action Modeling Prize, 2009.*
- **Cowell, R.A.** and French, R.M. (2007). An unsupervised dual-network connectionist model of rule emergence in category learning. *Proceedings of the European Conference of the Cognitive Science Society, 2007.*

### Book Chapters

- **Cowell, R.A.**, Bussey, T.J. and Saksida, L.M. (2016). Computational and Functional Specialization of Memory. In Murphy, R. and Honey, R. (Eds.), *The Wiley Handbook on the Cognitive Neuroscience of Learning*, Wiley-Blackwell, Hoboken, NJ.
- **Cowell, R.A.**, Bussey, T.J. and Saksida, L.M. (2011). Using Computational Modelling to Understand Cognition in the Ventral Visual-Perirhinal Pathway. In, Alonso, E. & Mondragón, E. (Eds.), *Computational Neuroscience for Advancing Artificial Intelligence: Models, Methods and Applications* (pp. 15-45). Hershey, PA: IGI Global Publishing.

### INVITED TALKS

- Institute of Cognitive Science, CU Boulder, February 2024.
- School of Psychology Colloquium, University of Bristol, UK, January 2023.
- Saksida-Bussey Group, Western University, Ontario, Canada, June 2022.
- CU Boulder, Psychology and Neuroscience Department, December 2021.
- MRC Cognition and Brain Sciences Unit, University of Cambridge, UK, May 2020 (online).
- Symposium *What can be inferred about neural population codes from psychophysical and neuroimaging data?* Vision Sciences Society Meeting, May 2019.
- Psychology Department Colloquium, Brandeis University, April 2019.
- Computational Neuroscience Initiative Seminar, University of Pennsylvania, February 2019.
- Guest Lecture, "Week of Memory and Forgetting", Neuroscience/Fine Arts Collaboration, University of Massachusetts Amherst, October 2018.
- Symposium *Motivated Memory and Event Cognition*, American Psychological Association Meeting, San Francisco, CA, August 2018.
- Massachusetts General Hospital-University of Massachusetts Amherst Neuroscience Research Meeting, MGH, Boston MA, February 2018.
- Department of Psychology, University of Toronto, November 2016.
- Neuroscience Program, University of Western Ontario, November 2016.
- Cognition and Brain Sciences Unit, Cambridge, UK. July 2015.

- Department of Psychology, University of Cambridge, UK. June 2015.
- Memory Disorders Research Society, Cermak Award Lecture, Toronto, Canada. October 2013.
- Department of Psychological and Brain Sciences, Dartmouth College, NH. April 2014.
- Department of Psychology, University of Massachusetts, Amherst. February 2013.
- Department of Psychology, University of California, Riverside. November 2012.
- Department of Cognitive Science, University of California San Diego. October 2012.
- Department of Psychology, University of Kent, UK. October 2012.
- Southern California Learning and Memory Symposium, UCSD, California. May 2012.
- Department of Psychology, University of Bristol, UK. March 2012.
- Fifth International Conference on Memory Research (ICOM5), Perception & Memory Symposium, University of York, UK. July 2011.
- Medical Research Council Cognition and Brain Sciences Unit (MRC-CBU), Cambridge, UK. July 2011.
- Cognitive Science Colloquium, University of Arizona. September 2010.
- "Looking Back at Mount Ararat" Memory Workshop, Yerevan, Armenia. April 2010.
- Department of Psychology, University of Kent, UK. June 2009.
- Department of Psychology, University of California, San Diego. April 2009.
- Department of Psychology, University of California, San Diego. November 2008.
- Birkbeck College, London, UK, February 2008.
- Centre for Cognitive Neuroscience and Cognitive Systems, University of Kent, UK, February 2008.
- Laboratory Seminar, LEAD-CNRS, Université de Bourgogne, France. November 2006.
- Behavioural Neuroscience Seminar Series, University of Cambridge. November 2005.
- Medical Research Council Cognition and Brain Unit (MRC-CBU), Cambridge, UK. July 2004.

#### CONFERENCE TALKS

\* Talks delivered by current or former trainees.

- Cowell, R.A., Sanders, D., M.W. (2023). The locus of recognition memory signals in human cortex depends on the complexity of the memory representations, *Annual Meeting of the Memory Disorders Research Society*, Los Angeles, CA, September 2023.
- \*McCarter, A., Huber, D.E. and Cowell, R.A. (2023). No evidence for a testing effect for novel, meaningless objects. *Vision Sciences Society*, St. Pete's Beach, FL, May 2023.
- \*Nikiforova, M., Cowell, R.A. and Huber, D.E. (2023). Gestalt formation promotes awareness of suppressed visual stimuli during binocular rivalry. *Vision Sciences Society*, St. Pete's Beach, FL, May 2023.
- Cowell, R.A., Gove, J., Sanders, D.M.W., Jiang, Z. and Huber, D.E. (2023) Age-related Impairments in Memory Recall Depend on What You are Remembering. *The Recollection, Familiarity, and Novelty Detection conference*, Liege, Belgium, March 2023.
- Cowell, R.A. (2022). Are humans any good at visual recall? *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2022.
- \*Sanders, D. M. W., & Cowell, R. A. (2020). Manipulating representational demands of a memory discrimination task engages early brain regions. *Context and Episodic Memory Symposium*, Philadelphia, PA, August 2020 (online).
- Cowell, R.A., Sadil, P., & Huber, D.E. (2019) Bayesian modelling of fMRI data to infer modulation of neural tuning functions in visual cortex. *Vision Sciences Society*, St. Pete's Beach, FL, May 2019.
- Cowell, R.A., Barense, M.D. & Sadil, P.S. (2019) A roadmap for understanding memory: Decomposing processes into operations and representations. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2019.
- Blumenthal, A., Martin, C., Cowell, R.A., Köhler, S. (2019). Perirhinal cortex representations that support item-based recognition decisions are shaped by temporal encoding context. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2019.
- Cowell, R.A., Sadil, P., Serences, J.T., & Huber, D.E. (2018) A hierarchical Bayesian model for inferring neural tuning functions from voxel tuning functions. *Society for Neuroscience*, San Diego, CA, November 2018.
- Cowell, R.A., Sadil, P. S., Ross, D.A., Huber, D.E. (2018). Visual Recall: Episodic memory-like retrieval outside of hippocampus. *Society for Neuroscience*, San Diego, CA, November 2018.

- Cowell, R.A. (2018). High-level cognition in low-level brain regions. (Symposium Introduction). *Society for Neuroscience*, San Diego, CA, November 2018.
- Cowell, R.A., Sadil, P.S., Huber, D.E. (2018) Episodic-like memory mechanisms for memories that are not episodic. *Memory Disorders Research Society*, Toronto, Canada, Oct 2018.
- Blumenthal, A., Martin, C., Cowell, R.A., Köhler, S. (2018). Perirhinal cortex representations that support item-based recognition decisions are shaped by temporal encoding context. *Memory Disorders Research Society*, Toronto, Canada, Oct 2018.
- Cowell, R.A. (2018) Episodic-like memory mechanisms for memories that are not episodic. *American Psychological Association Meeting*, San Francisco, CA, August 2018.
- \*Sadil, P., Huber, D.E., Serences, J.T., & Cowell, R.A. (2018) A hierarchical Bayesian model for inferring neural tuning functions from voxel tuning functions. *Vision Sciences Society*, St. Pete's Beach, FL, May 2018.
- \*Sadil, P.S., Huber, D.E., Cowell, R.A. (2018) Visual recollection in the absence of identification: A perceptual filling-in process. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2018.
- \*Sadil, P.S., Huber, D.E., Cowell, R.A. (2017) A Computational Model of Perceptual Deficits in Medial Temporal Lobe Amnesia. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2017.
- \*Wilson, D.M., Potter, K. & Cowell, R.A. (2017) Recognition Memory Shielded from Semantic but not Perceptual Interference in Natural Aging. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2017.
- Cowell, R.A., Wilson, D.M., Potter, K. (2017) Recognition Memory Shielded from Semantic but not Perceptual Interference in Natural Aging. *Memory Disorders Research Society*, Chicago, IL, Sep 2017.
- Cowell, R.A., Sadil, P.S., Potter, K., Huber, D.E. (2017) Who needs a Cartesian Theater? Visual Associative Learning without Awareness under Continuous Flash Suppression. *50<sup>th</sup> Annual Meeting of the Society for Mathematical Psychology*, Warwick, UK, July 2017.
- Cowell, R.A., Ross, D.A., Sadil, P.S., Wilson, D.M. (2016) Recall without Hippocampal Engagement. *Memory Disorders Research Society*, Princeton, NJ, September 2016.
- Cowell, R.A. and Sadil, P.S. (2016) A Computational Model of Perceptual Deficits in Amnesia, *38<sup>th</sup> Annual Meeting of the Cognitive Science Society*, Philadelphia, PA, August 2016.
- Cowell, R.A. and Sadil, P.S. (2016) A Computational Model of Perceptual Deficits in Amnesia, *Fifteenth Annual Summer Interdisciplinary Conference (ASIC)*, Val de Gardena, Italy, July 2016.
- Cowell, R.A. and Serences, J.T. (2016) Feature-Coding Transitions to Conjunction Coding with Progression through Visual Cortex. *Vision Sciences Society*, St. Pete's Beach, Florida, May 2016.
- \*Ross, D.A., Sadil, P.S., Wilson, D.M. & Cowell, R.A. (2016) Hippocampus is not the unique seat of pattern completion in cued recall. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2016.
- Cowell, R.A. (2015) Discussion: Hippocampus and the assimilation of memories into hierarchical schemas. *Context and Episodic Memory Symposium*, Philadelphia, PA, May 2015.
- Cowell, R.A. (2014) Object Recollection and Episode Familiarity. *Memory Disorders Research Society*, Austin, TX, September 2014.
- Cowell, R.A. (2013) Do amnesics forget because old things look new or because new things look old? *Memory Disorders Research Society*, Toronto, Canada, September 2013.
- Cowell, R.A. (2013) A novel method for fMRI analysis: Inferring neural mechanisms from voxel tuning. *Vision Sciences Society*, Naples, Florida, May 2013.
- Cowell, R.A. (2012) Paradoxical False Recognition: New objects look old in a model of amnesia. *Southern California Learning and Memory Symposium*, UCSD, California, May 2012.
- Cowell, R.A. (2011). Simulating Memory: Do amnesics forget because old things look new, or because new things look old? *Fifth International Conference on Memory Research (ICOM5), Perception & Memory Symposium*, University of York, UK, July 2011.
- Cowell, R.A. (2011). What is the Blood Oxygenation Level Dependent (BOLD) signal? *Tenth Annual Summer Interdisciplinary Conference (ASIC)*, Boi Valley, Pyrenees, Spain, July 2011.
- Cowell, R.A., Bussey, T.J. & Saksida, L.M. (2011). Simulating Memory: Do amnesics forget because old things look new, or because new things look old? *Annual Interdisciplinary Conference*, Jackson, Wyoming, January 2011.

- Cowell, R.A., Huber, D.E., and Serences, J.T. (2010). Inferring neural tuning functions from the voxel tuning functions of fMRI. *Ninth Annual Summer Interdisciplinary Conference (ASIC)*, Bend, Oregon, July 2010.
- Cowell, R.A., Huber, D.E., and Cottrell, G.W. (2009). Virtual Brain Reading: A connectionist approach to understanding fMRI. *31<sup>st</sup> Annual Meeting of the Cognitive Science Society*, Amsterdam, Netherlands, July 2009.
- Cowell, R.A., Huber, D.E., and Cottrell, G.W. (2009). Virtual Brain Reading: A connectionist approach to understanding fMRI. *Eighth Annual Summer Interdisciplinary Conference (ASIC)*, Val d'Aoste, Italy, July 2009.
- Cowell, R.A., Huber, D.E. & Cottrell, G.W. (2008). Predicting fMRI data from the Fusiform Face Area with a model of visual cognition. *Meeting of the Perceptual Expertise Network*, Chicago, October 2008.
- Cowell, R.A., Bussey, T.J. & Saksida, L.M. (2008). Why does anterior temporal lobe damage make us forget objects? *Meeting of the Perceptual Expertise Network*, Banff, Alberta, May 2008.
- Cowell, R.A., Bussey, T.J. & Saksida, L.M. (2008) The Effect of Brain Lesions in the Ventral Visual Object Processing Pathway. *Seventh Annual Summer Interdisciplinary Conference (ASIC)*, Madonna di Campiglio, Italy, July 2008.
- Cowell, R.A. & French, R.M. (2007). An Unsupervised Connectionist Model of Category Learning: Using Noise to Extract Rules. *Second Meeting of the European Cognitive Science Society*, Athens, Greece, May 2007.
- Cowell, R.A. & French, R.M. (2007). From Associations to Rules in Category Learning: A Connectionist Model. *Tenth Neural Computation & Psychology Workshop*, Dijon, France.
- Cowell, R.A. & French, R.M. (2007). From Associations to Rules in Category Learning: A Connectionist Model. *Associative Learning Symposium XI*, Gregynog, Wales, April 2007.

#### CONFERENCE POSTER PRESENTATIONS

\* Posters presented by current or former trainees. List does not include local (e.g., UMass, CU Boulder) conferences.

- \*Savalia, T., Cohen, A., Cowell, R.A. and Huber, D.E. (2023). Reward changes are more disruptive than stimulus changes to implicit sequence learning of a community structure, *Context and Episodic Memory Symposium*, Philadelphia, May 2023.
- \*Gove, J., Sanders, D.M.W., Jiang, Z. Huber, D.E. and Cowell, R.A. (2022). Age-related Impairments in Memory Recall Depend on What You are Remembering. *Psychonomic Society Annual Meeting*, Boston, MA, November 2022.
- \*de la Rosa, N., Huber, D.E. and Cowell, R.A. (2022). Where do I remember this? Recognition memory for low-level visual stimuli. *Psychonomic Society Annual Meeting*, Boston, MA, November 2022.
- \*Nikiforova, M., Winkielman, P., Huber, D.E., Cowell, R.A. (2022). Uneasy on the Eyes: Unfamiliar Category Boundaries Do Not Restore Beauty in Averageness. *Psychonomic Society Annual Meeting*, Boston, MA, November 2022.
- \*McCarter, A., Huber, D.E. and Cowell, R.A. (2022). No Evidence for a Visual Testing Effect for Novel, Unnameable Objects. *Psychonomic Society Annual Meeting*, Boston, MA, November 2022.
- \*McCarter, A., Huber, D.E. and Cowell, R.A. (2022). No evidence for a visual testing effect. *Context and Episodic Memory Symposium*, Philadelphia, PA.
- \*de la Rosa, N. and Cowell, R.A. (2021). Human visual cortex supports recognition memory for simple visual stimuli. *Annual Meeting of the Society for Neuroscience*, Virtual Conference.
- \*de la Rosa, N. and Cowell, R.A. (2021). Mid-early visual cortex holds functional representations of memory information for simple visual associations. *62<sup>nd</sup> Annual meeting of the Psychonomic Society*, Virtual Conference.
- \*Nikiforova, M., Cowell, R.A. and Huber, D.E. (2021) Becoming aware of something that is not there: Illusory contours facilitate breakthrough from continuous flash suppression. *62<sup>nd</sup> Annual meeting of the Psychonomic Society*, Virtual Conference.
- Savalia, T., Cowell, R.A. and Huber, D.E. (2021). Implicit learning in the absence of explicit learning in a visuomotor adaptation task. *62<sup>nd</sup> Annual meeting of the Psychonomic Society*, Virtual Conference.
- \*Sadil, P. S., Cowell, R. A., & Huber, D. E. (2020). The serial dependence effect is both attraction to the previous response and repulsion from the previous stimulus. *61<sup>st</sup> Annual meeting of the Psychonomic Society*, Virtual Conference.

- \*Savalia, T., & Cowell, R. A. & Huber, D. E. (2020). "Learning to Learn: Modeling the time-course of visuomotor adaptation". Poster, *53<sup>rd</sup> Annual (Virtual) Meeting of the Mathematical Psychology Society*, July 2020.
- \*Sanders, D. M. W., & Cowell, R. A. (2020, May). Shared neural substrates of perception and memory: Testing the assumptions and predictions of the representational-hierarchical account. Poster session at the *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL.
- \*Jiang, A., Sanders, D. M. W., & Cowell, R. A. (2020, May), *Visual and semantic similarity norms for a new object and scene photographic image set*. Poster session at the Vision Sciences Society Annual Meeting, St. Pete Beach, FL.
- \*de la Rosa-Rivera, N., Leger, K., Blauch, N.M. & Cowell, R.A. (2019). Neural Correlates of Recognition Memory in the Human Ventral Visual Stream. Poster, *Society for Neuroscience Annual Meeting*, November 2019.
- \*Sadil, P. S., Cowell, R. A., & Huber, D. E. (2019). A hierarchical Bayesian state trace analysis for assessing monotonicity while factoring out subject, item, and trial level dependencies. *60<sup>th</sup> Annual Meeting of the Society for Mathematical Psychology*, Montreal, Canada.
- \*Nikiforova, M., Cowell, R. A., & Huber, D. E. (2019). Is awareness necessary to process visual configurations? A continuous flash suppression study of Kanizsa squares. *60<sup>th</sup> Annual meeting of the Psychonomic Society*, Montreal, Canada.
- \*Savalia, T., Huber, D. E., & Cowell, R. A. (2019). Learning a Novel Perception-Action Mapping: Error Magnitude, Speed/Accuracy Emphasis, and Reinforcement Learning. *60<sup>th</sup> Annual meeting of the Psychonomic Society*, Montreal, Canada.
- Cowell, R.A., Sadil, P.S., Huber, D.E. (2019) Using population receptive field mapping to address the "vignetting" problem with voxel tuning methodology. *Brain Initiative Investigators Meeting*, Washington DC.
- \*Blauch, N.M. & Cowell, R.A. (2018) Task Demands and Stimulus Normalization in Face Perception: an fMRI Study. *Cognitive Computational Neuroscience Conference*, Philadelphia, PA.
- Cowell, R.A., Sadil, P.S., Potter, K., Huber, D.E. (2018). Visual Recollection: Connecting the dots without top-down knowledge. *Vision Sciences Society Conference*, St. Pete's Beach, FL.
- \*Wilson, D.M., Starns, J.J., & Cowell, R.A. (2018), Item strength affects source memory zROC slopes when source interference is unimproved. *Context and Episodic Memory Symposium*, Philadelphia, PA.
- Huber, D.E., Sadil, P.S., Cowell, R.A. (2018) A hierarchical Bayesian model for inferring neural subpopulation tuning functions from fMRI data. *Brain Initiative Investigators Meeting*, Washington DC.
- \*Wilson, D. M., Potter, K. & Cowell, R. A. (2017). Recognition memory shielded from semantic but not perceptual interference in normal aging. *Society for Neuroscience Annual Meeting*, Washington D.C.
- \*Wilson, D.M., Potter, K., & Cowell, R. A. (2016). A representational hierarchical account: A new theory of false memories. *Psychonomic Society 57<sup>th</sup> Annual Meeting*, Boston, MA.
- \*Ross, D.A., Wilson, D.M., Sadil, P.S. & Cowell, R.A. (2016). Hippocampus is not the unique seat of pattern completion in cued recall. *Psychonomic Society 57<sup>th</sup> Annual Meeting*, Boston, MA.
- \*Sadil, P.S., Potter, K., Huber, D.E., Cowell, R.A. (2016) A Continuous Flash Suppression Study of Implicit Visual Recollection. *Psychonomic Society 57<sup>th</sup> Annual Meeting*, Boston MA.
- \*Wilson, D. M., Ross, D. A., Yeung, L. K., Barense, M. D. & Cowell, R. A. (2016). Perceptual experience and the perirhinal cortex. *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL.
- \*Sadil, P.S., & Cowell, R.A. (2016). A Computational Model of Perceptual Deficits in Medial Temporal Lobe Amnesia. *Context and Episodic Memory Symposium*, Philadelphia, PA.
- Cowell, R.A. & Serences, J.T. (2016). Feature-Coding Transitions to Conjunction Coding with Progression through Visual Cortex. *CoSyNe Conference*, Salt Lake City, UT.
- \*Wilson, D. M., Ross, D. A., Yeung, L. K., Barense, M. D. & Cowell, R. A. (2015). Perceptual experience and the perirhinal cortex: The "Other Handbag" effect. *Psychonomic Society Annual Meeting*, Chicago, IL.
- \*Sadil, P.S., Potter, K., Huber, D.E., Cowell, R.A. (2015). A Continuous Flash Suppression Study of Implicit Visual Recollection, *Context and Episodic Memory Symposium*, Philadelphia, PA.
- Cowell, R.A. & Serences, J.T. (2014). Mapping the emergence of conjunctive representations in visual cortex with fMRI. *Cognitive Neuroscience Society Meeting*, Boston, MA.



- Newsome, R.N., Trelle, A.N., Rowe, G., Cowell, R.A., Barense, M.D. (2013) Minimizing visual interference improves recognition memory performance in amnesia: Implications for the Representational-Hierarchical Model. *Cognitive Neuroscience Society Meeting*, Boston, MA.
- Cowell, R.A., Huber, D. E., & Serences, J. T. (2013). A novel method for fMRI analysis: Inferring neural mechanisms from voxel tuning. *Computational and Systems Neuroscience (COSYNE)*, Salt Lake City, UT.
- Cowell, R.A., Huber, D.E., Cottrell, G.W. & Serences, J.T. (2010). Virtual Multi-Unit Electrophysiology: Inferring neural response profiles from fMRI data. *Vision Sciences Society Conference*, Naples, FL.
- Cowell, R.A., Huber, D.E., & Cottrell, G.W. (2009). Virtual Brain Reading: A connectionist approach to understanding fMRI data. *Vision Sciences Society Conference*, Naples, FL.
- Cowell, R.A., Huber, D.E., and Cottrell, G.W. (2009). Virtual Brain Reading: A connectionist approach to understanding fMRI data. *Computational Systems Neuroscience (COSYNE)*, Salt Lake City, UT.
- McTighe, S.M., Cowell, R.A., Winters, B.D., Bussey, T.J. & Saksida, L.M. (2008) Novel objects appear familiar following perirhinal cortical damage. *Society for Neuroscience*, Washington DC.
- Cowell, R.A. & French, R.M. (2008). The Emergence of Rules in Category Learning. *30th Annual Conference of the Cognitive Science Society*, Washington DC.
- Cowell, R.A. & French, R.M. (2007). A Semi-supervised Connectionist Model of Category Learning: Using Noise to Extract Rules. *Computational Cognitive Neuroscience Conference*, San Diego, CA.
- Cowell, R.A., Bussey, T.J. and Saksida, L.M. (2006). How does brain damage impair memory? A connectionist model of object recognition memory in perirhinal cortex. *Computational Cognitive Neuroscience Conference*, Houston, TX.
- Cowell, R.A., Bartko, S.J., Bussey, T.J. & Saksida, L.M. (2005). A computational model of recognition memory in perirhinal cortex: a critical role for complex conjunctive representations. *European Brain and Behaviour Society Conference*, Dublin.
- Cowell, R.A., Bussey, T.J. & Saksida, L.M. (2004) Are there perceptual and mnemonic modules in the brain? A connectionist model of the effects of lesions in the ventral visual stream. *Federation of European Neurosciences Conference*, Lisbon.
- Cowell, R.A., Bussey, T.J. & Saksida, L.M. (2004) Are there perceptual and mnemonic modules in the brain? A connectionist model of the effects of lesions in the ventral visual stream. *Autumn School in Cognitive Neuroscience*, University of Oxford.

## TEACHING

- **PSYC 5541: Cognitive Neuroscience of Memory and Vision.** Graduate Seminar, CU Boulder.
- **PSYC 4155: Cognitive Neuroscience/Neuropsychology.** Senior undergraduate lab and lecture, CU Boulder.
- **PSYCH/NSB 618: Cognitive and Behavioral Neuroscience.** Graduate Core Course, UMass.
- **PSYCH 891: Cognitive Neuroscience of High-Level Vision and Memory.** Graduate seminar, UMass.
- **PSYCH 315: Cognitive Psychology.** Introductory course, ~250 undergraduates, UMass.
- **PSYCH 391: Cognitive Neuroscience of High-Level Vision and Memory.** Seminar, senior undergraduates, UMass.
- **PSYCH 304: Mind, Brain and Behavior.** Introduction to Cognitive Neuroscience for undergraduates, UMass.
- Ad-hoc and guest lecturing:
  - BioTap Program, UMass Amherst.
  - Undergraduate Honors Research Seminar. UMass Amherst, UCSD.
  - UMass Undergraduate Neuroscience Club.
  - UMass Advancing Diversity in Research and Practice (ADRAP) Seminar.
  - Graduate student mini-school on memory. Yerevan, Armenia, April 2010.

## ADVISING AND MENTORING

### Post-doctoral trainees

- David Ross, Post-doctoral Research Associate, UMass Amherst, Nov 2014 – Oct 2017
- Patrick Sadil, August 2020 – June 2021
- Merika Sanders (nee Wilson), August 2020 – June 2021

**Post-baccalaureate trainees**

- Nick Blauch, Pre-doctoral Research Associate, UMass Amherst, 2017 – 2018
- Mar Nikiforova, Pre-doctoral Research Associate, UMass Amherst, 2018 – 2020

**Graduate Students**

- Merika Wilson, PBS Cognitive Program, University of Massachusetts Amherst, Fall 2014 – Aug 2020
  - Now a postdoctoral fellow at Harvard University
- Patrick Sadil, PBS Cognitive Program, University of Massachusetts Amherst, Fall 2015 – Aug 2020
  - Now a postdoctoral fellow at Johns Hopkins University
- Tejas Savalia, PBS Cognitive Program, University of Massachusetts Amherst, Fall 2018 – Dec 2022
- Natasha de la Rosa Rivera, Neuroscience and Behavior Program, University of Massachusetts Amherst, Fall 2018 – Dec 2022
- Johanny Castillo, PBS Cognitive Program, University of Massachusetts Amherst, Fall 2020 – June 2022
- Anna McCarter, PBS Cognitive Program, University of Massachusetts Amherst, Fall 2021 – Dec 2022
- Jenn Gove, Cognitive Program, Psychology & Neuroscience, CU Boulder, Fall 2023 – present.
- Kate Walsh, Cognitive Program, Psychology & Neuroscience, CU Boulder, Fall 2023 – present.

**Undergraduate Research Assistants****CU Boulder**

- Isaiah Garcia, 2023 - present
- Tiana Emmert, 2023 - present

**UMass Amherst**

- |  |                                    |
|--|------------------------------------|
| • Mariah Katz, 2014                    | • Sandrine Jabbour 2017-2019       |
| • Emily Gabriels, 2014-15              | • Effy Yao, Fall 2018              |
| • David Cohen, 2014-15                 | • Camrin Clayton, Spring 2019      |
| • Simon Rackenberg-Loisel, 2014-15     | • Gabriel Zangirolani, 2019        |
| • Martha Doxsey, 2015-16               | • Kimberly Beliard, 2018-19        |
| • Hannah Brinkman, 2015-16             | • Audrey Jiang, 2019-2020          |
| • Jay Ellison, 2016                    | • Kayla Riera, 2020-2021           |
| • Kieran Talkiewicz, 2015-16           | • John Larios, 2019-2020           |
| • Stephanie Choi, 2015-16              | • Cecilia Yu, 2019-2020            |
| • Brianna Passi, 2016-17               | • Jenn Gove, 2020-22               |
| • Krystal Leger, 2016-18               | • Ashish Patel, 2021-22            |
| • Andrea Mayoral de la Pascua, 2017-18 | • Maximilian Kozlowski, 2021-22    |
| • Nadine Juweid, 2017-18               | • Aisling Finnegan, 2021-22        |
| • Reagan Katulege, 2017-18             | • Colleen Dunn, 2022               |
| • Aman Jha, 2018                       | • Hannah Laird (volunteer) 2021-22 |
| • Ethan Harris, 2017-18                |                                    |

**Undergraduate Independent Study Projects**

- |                           |                      |
|---------------------------|----------------------|
| • David Cohen, 2015       | • Kim Beliard, 2018  |
| • Kieran Talkiewicz, 2016 | • Audrey Jiang, 2019 |
| • Stephanie Choi, 2017    | • Cecilia Yu, 2019   |
| • Krystal Leger, 2017     | • Audrey Jiang, 2020 |
| • Idil Ozdemir, 2017      | • Jenn Gove, 2021    |
| • Tingshan Liu, 2017      |                      |

**Undergraduate Honors Thesis Students**

- Jenn Gove, 2022 – Advisor and Committee Chair (winner of PBS Outstanding Thesis Award)
- Nicholas Blauch, 2017 – Committee Member, Co-Advisor
- Krystal Leger, 2018 – Advisor and Committee Chair (winner of PBS Outstanding Thesis Award)

**Undergraduate Mentoring, Other**

- Faculty Sponsor for Bachelor's Degree in Individual Concentration (BDIC), Nicholas Blauch, 2017.

**Undergraduate STEM Ambassador Students**

The UMass STEM Ambassadors Program aimed to increase student engagement in STEM subjects. Students are primarily low-income, first generation college students, or underrepresented minorities in STEM fields.

- Zachary Sun, 2016-17
- Liz-Marie Galloway, 2016-17
- Sandrine Jabbour, 2016-17
- Kimberly Beliard, 2017-18
- Camrin Clayton, 2018-19
- Gabriel Zangirolani, 2018-19
- Madison Valois, 2018-19

**PUBLIC OUTREACH / COMMUNITY ENGAGEMENT / PRO BONO**

*UMass Amherst Prison Education Initiative*, Founding member, UMass Amherst  
*Eureka!* Program (for high school girls from local under-served communities), UMass Amherst  
*Five Colleges Learning in Retirement Society*, Lathrop, Northampton, MA  
*UMass Amherst Fine Arts Center*, Amherst, MA  
*Café Scientifique*, University of Kent, UK  
*L'Experimenterium*, University of Burgundy, France  
*Science Week*, University of Cambridge, UK

**PEER REVIEW**

**Grant Reviewing Activity**

- Panelist, NSF Graduate Research Fellowship Program, 2023.
- Panelist, NSF, Division of Behavioral and Cognitive Sciences (BCS), 2021, 2018, 2017, 2016
- Panelist, Brain Canada, 2022.
- Ad hoc grant reviewer: NSF; Royal Society, UK; CU Boulder AB Nexus; CU Boulder Institute of Cognitive Science

**Publication Reviewing Activity**

- Consulting Editor for *Psychonomic Bulletin and Review*, Jan 2020 – present.
- Conference reviewer: Cognitive Science Society Meeting; Cognitive Computational Neuroscience Conference

- Ad hoc reviewer for journals:

*Behavioral Neuroscience*  
*Brain Research*  
*Brain Research Bulletin*  
*Cerebral Cortex*  
*Cognitive Neuroscience*  
*Connection Science*  
*Cortex*  
*Current Aging Science*  
*Current Biology*  
*eLife*  
*Hippocampus*  
*IEEE Trans. Auton. Mental Dev.*  
*Frontiers in Cognitive Science*  
*Frontiers in Perception Science*  
*Frontiers in Psychology*  
*Frontiers in Systems Neuroscience*  
*Journal of Cognitive Neuroscience*  
*JEP: General*  
*Journal of Neuroscience*  
*Learning and Memory*  
*Memory and Cognition*  
*Memory*  
*Nature Human Behaviour*

*Cognition*  
*Cognitive Science Society Meeting*  
*Cognitive Computational Neuroscience Meeting*  
*Nature Communications*  
*Neurobiology of Aging*  
*NeuroImage*  
*Neuron*  
*Neuropsychologia*  
*PLoS One*  
*Proceedings of the National Academy of Sciences (PNAS)*  
*Psychological Reports*  
*Psychonomic Bulletin & Review*  
*Quarterly Journal Exp. Psychology*  
*Visual Cognition*