

<p>CTSI’s Research Initiative for Special Populations (CRISP) Pilot Program National Institutes of Health UL1TR001857 <i>Memory Success and Failure in the Older Brain</i> Role: PI Value: \$25,000</p>	<p>2020 – 2021</p>
<p>CMU-Pitt BRIDGE Center Developmental Fund Seed Grant <i>Investigating the neural basis of monitoring and inhibitory control in language production</i> Role: Co-PI – contributing to design and overseeing all analyses [PI: Nozari, CMU] Value: \$24,960</p>	<p>2020 - 2021</p>
<p>National Institutes of Health R01 <i>Investigating the Role of the Cerebellum in Reading</i> Role: Co-I – supporting design, data analysis [PI: Fiez] Value: \$3,456,618</p>	<p>2019 - 2024</p>
<p>CMU-Pitt BRIDGE Center Developmental Fund Seed Grant <i>A Role for Schema and Reward in Establishing Relational Memory Associations</i> Role: PI Value: \$23,200</p>	<p>2019 - 2020</p>
<p>National Science Foundation NCS award <i>Neurobehavioral Integration of Visual and Semantic Number Knowledge and its Role for Individual Variation in the Math Ability of Children and Adults</i> Role: Co-PI [with Libertus, Fiez] – composing grant, overseeing analyses, supervising key graduate students, presenting results Value: \$963,164</p>	<p>2017 - 2020</p>
<p>LRDC Internal Award Program <i>Integrating fMRI and EEG to Examine Learning and Memory Consolidation</i> Role: Co-PI [with Tokowicz] – composing grant, supervising key graduate student Value: \$49,515</p>	<p>2017 - 2019</p>
<p>University Research Council Central Research Development Fund <i>Individual Differences in the Memory Systems Employed in Learning and Retrieval</i> Role: PI Value: \$15,042</p>	<p>2016 - 2019</p>
<p>National Institutes of Health Postdoctoral National Research Service Award (maximum score on first submission)</p>	<p>2014 - 2015</p>
<p>National Institutes of Health R21 <i>Spontaneous Code Switching</i> Role: key personnel (20%) – grant writing, planning analyses, overseeing studies [PI: Thompson-Schill] Value: \$440,000</p>	<p>2014</p>
<p>American Psychological Foundation F.J. McGuigan Dissertation Award</p>	<p>2012</p>

A Systematic Investigation of Hippocampus-Independent Learning

Role: PI

Value: \$1,950

Howard Hughes Medical Institute International Student Research Fellowship 2011 - 2013

Benjamin Franklin Fellowship, University of Pennsylvania 2008 - 2011

HONORS AND AWARDS

- NIH Early Career Reviewer Program (Cognition and Perception Study Section) 2020
- Rising Star Award, Association for Psychological Science 2019
- Faculty Honoree, 40th Annual Honors Convocation, University of Pittsburgh 2016
- Krieg Cortical Scholar, Cajal Club (awarded at SfN Annual Meeting) - for *conducting exemplary research on the structure and/or connections of the cerebral cortex* 2015
- Elected Fellow, Psychonomic Society 2013
- Anne Anastasi General Psychology Graduate Student Research Recognition Award, APA 2013
- Concepts, Actions and Objects Workshop Abstract Award (Rovereto, Italy) 2013
- Routledge Cognitive Neuropsychology Student Travel Prize 2013
- Research Student Travel Prize, University of Pennsylvania 2013
- Research Travel Subvention, University of Pennsylvania 2013
- Ruth Roemer Award for *outstanding contributions to the UPenn psychology community* 2011

MANUSCRIPTS UNDER REVIEW (* = student or trainee)

Ren, X.* and **Coutanche, M.N.** (submitted). Sleep reduces the semantic coherence of memory recall: An application of latent semantic analysis to investigate memory reconstruction.

Liu, R.*, Tremel, J., Fiez, J., Durisko, C., Schunn, C., **Coutanche, M.N.**, and Libertus, M. (submitted). The integration of symbolic and non-symbolic number representations in the human brain.

Koch, G.E.*, Akpan, E.*, and **Coutanche, M.N.** (submitted). Image memorability is predicted at different stages of a convolutional neural network.

Bruett, H.*, Calloway, R.C*., Tokowicz, N., and **Coutanche, M.N.** (submitted). Neural pattern similarity across concept exemplars predicts memory after a long delay.

Coutanche, M.N., Koch, G.E.*, and Paulus, J.P.* (submitted). Influences on memory for naturalistic visual episodes: Sleep, familiarity, and traits differentially affect forms of recall.

Hallion, L.S., Wright, A.G.C., **Coutanche, M.N.**, Joormann, J., and Kusmierski, S.N. (submitted). A Five Factor Model of Perseverative Thought.

PUBLICATIONS (* = student or trainee)

Koch, G.E.*, Paulus, J.P.*, and **Coutanche, M.N.** (In press). Neural patterns are more similar across individuals during successful memory encoding than during failed memory encoding. *Cerebral Cortex*.

Popov, V.*, Zhang, Q.*, Koch, G.E.*, Calloway, R.C.*, and **Coutanche, M.N.** (2019). Semantic knowledge influences whether novel episodic associations are represented symmetrically or asymmetrically. *Memory & Cognition*, 47(8), 1567–1581.

– Pre-registered (<https://osf.io/rdsW5>); materials, data & code online at <https://osf.io/72amw>

Coutanche, M.N. (2019). Addressing misconceptions of Fast Mapping in adults. Invited commentary. *Cognitive Neuroscience*, 10(4), 226–228.

Carlos, B.J.*, Hirshorn, E.A., Durisko, C., Fiez, J.A., and **Coutanche, M.N.** (2019). Word inversion sensitivity as a marker of visual word form area lateralization: An application of a novel multivariate measure of laterality. *NeuroImage*, 191, 493-502.

Coutanche, M.N., Solomon, S.H.*, and Thompson-Schill, S.L. (In press). Conceptual Combination. In D. Poeppel, G.R. Mangun and M.S. Gazzaniga (Eds.), *The Cognitive Neurosciences*, 6th edition. Boston, MA: MIT Press.

Coutanche, M.N. and Hallion, L.S. (In press). Machine learning for clinical psychology and clinical neuroscience. In A.G.C. Wright and M.N. Hallquist (Eds.), *The Cambridge Handbook of Research Methods in Clinical Psychology*. Cambridge, UK: Cambridge University Press.

Martin, L., Durisko, C., Moore, M.W., **Coutanche, M.N.**, Chen, D., and Fiez, J.A. (2019). The VWFA is the home of orthographic learning when house images are used as letters. *eNeuro*, 6(1), ENEURO.0425-17.2019.

Coutanche, M.N. and Thompson-Schill, S.L. (2019). Neural activity in human visual cortex is transformed by learning real world size. *NeuroImage*, 186, 570-576.

Coutanche, M.N. and Paulus, J.P.* (2018). An empirical analysis of popular press claims regarding linguistic change in President Donald J. Trump. *Frontiers in Psychology*, 9.

Bruett, H.*, Fang, X.*, Kamaraj, D.C.*, Haley, E.*, and **Coutanche, M.N.** (2018). Expertise moderates incidentally learned associations between words and images. *Frontiers in Psychology*, 9.

Zhang, Q.*, Popov, V.*, Koch, G.E.*, Calloway, R.C.*, and **Coutanche, M.N.** (2018). Fast memory integration facilitated by schema consistency. In C. Kalish, M. Rau, J. Zhu, & T.T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society* (pp. 2777–2782). <https://doi.org/10.1101/253393>

Coutanche, M.N. and Koch, G.E.* (2018). Creatures great and small: Real-world size of animals predicts visual cortex representations beyond taxonomic category. *NeuroImage*, 183, 627-634.

Anzellotti, S.† and **Coutanche, M.N.**† (2018). Beyond Functional Connectivity: Investigating networks of multivariate representations. *Trends in Cognitive Sciences*, 22(3), 258–269. [† equal contributions]

Coutanche, M.N. and Koch, G.E.* (2017). Variation across individuals and items determine learning outcomes from fast mapping. *Neuropsychologia*, 106, 187–193.

Coutanche, M.N., Solomon, S.H.*, and Thompson-Schill, S.L. (2016). A meta-analysis of fMRI decoding: Quantifying influences on human visual population codes. *Neuropsychologia*, 82, 134–141.

Coutanche, M.N. and Thompson-Schill, S.L. (2015). Rapid consolidation of new knowledge in adulthood via fast mapping. *Trends in Cognitive Sciences*, 19(9), 486–488.

Coutanche, M.N. and Thompson-Schill, S.L. (2015). Creating concepts from converging features in human cortex. *Cerebral Cortex*, 25(9), 2584–2593.

Coutanche, M.N. and Thompson-Schill, S.L. (2014). Fast mapping rapidly integrates information into existing memory networks. *Journal of Experimental Psychology: General*, 143(6), 2296–2303.

Coutanche, M.N. and Thompson-Schill, S.L. (2014). Using informational connectivity to measure the synchronous emergence of fMRI multi-voxel information across time. *Journal of Visualized Experiments* (89), e51226.

Coutanche, M.N. (2013). Distinguishing multi-voxel patterns and mean activation: Why, how, and what does it tell us? *Cognitive, Affective and Behavioral Neuroscience (CABN)*, 13(3), 667–673.

Coutanche, M.N. Gianessi, C.A.*, Chanales, A.J.H.*, Willison, K.W.*, and Thompson-Schill, S.L. (2013). The role of sleep in forming a memory representation of a two-dimensional space. *Hippocampus*, 23(12), 1189–1197.

Coutanche, M.N. and Thompson-Schill, S.L. (2013). Informational Connectivity: Identifying synchronized discriminability of multi-voxel patterns across the brain. *Frontiers in Human Neuroscience*, 7:15, 1–14.

Coutanche, M.N. and Thompson-Schill, S.L. (2012). The advantage of brief fMRI acquisition runs for multi-voxel pattern detection across runs. *NeuroImage*, 61(4), 1113–1119.

Coutanche, M.N. and Thompson-Schill, S.L. (2012). Reversal without remapping: What we can (and cannot) conclude about learned associations from training-induced behavior changes. *Perspectives on Psychological Science*, 7(2), 118–134.

Kylliäinen, A., Wallace, S., **Coutanche, M.N.**, Leppänen, J.M., Cusack, J., Bailey, A.J., and Hietanen, J. (2012). Affective-motivational brain responses to direct gaze in children with autism spectrum disorder. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 53(7), 790-797.

Coutanche, M.N., Thompson-Schill, S.L., and Schultz, R.T. (2011). Multi-voxel pattern analysis of fMRI data predicts clinical symptom severity. *NeuroImage*, 57(1), 113–123.

Casey, J.P., Magalhaes, T., Conroy, J.M., Regan, R., Shah, N., Anney, R., Shields, D.C., et al. (2012). A novel approach of homozygous haplotype sharing identifies candidate genes in autism spectrum disorder. *Human Genetics*, 131(4), 565–579.

CONFERENCE PRESENTATIONS (* = student or trainee)

Koch, G.E.*, Durisko, C., Liu, R.*, Libertus, M.E., Fiez, J.A., and **Coutanche, M.N.** (submitted). Neural representations of number across semantic, phonological, visual, and manual formats. Poster submitted to the BRAIN Initiative Investigators Meeting, Bethesda, MD.

Coutanche, M.N. (accepted). Recalling the when, where and what of naturalistic episodes. Talk to be given at the Context and Episodic Memory Symposium, Philadelphia, PA.

Coutanche, M.N. (May, 2020). Roles of perceptual and conceptual hierarchies in the formation of memories. Symposium presentation at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

Akpan, E.*, Buckser, R.*, and **Coutanche, M.N.** (May, 2020). Identifying networks with common changes in representational similarity over time using jackknife resampling. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

Koch, G.E.*, Akpan, E.*, and **Coutanche, M.N.** (May, 2020). Image memorability is predicted by activity across stages of convolutional neural networks and the human ventral stream. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

Ren, X.*, and **Coutanche, M.N.** (May, 2020). Information can be extracted from ventral stream multi-voxel patterns across spatial scales using the wavelet transform. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

Colvin, M.*, Koch, G.*, Dresang, H.*, Warren, T., Dickey, M.W., and **Coutanche, M.N.** (March 2020). fMRI evidence for the existence and function of animacy predictions. Poster presented at the Annual CUNY Human Sentence Processing Conference, Amherst, MA.

Coutanche, M.N. (March, 2020). Applications of Informational Connectivity. Presentation at the Organization of Human Brain Mapping Equinox Twitter Conference. <https://ohbmx.org/>

Hallion, L.S., Wright, A.G.C., **Coutanche, M.N.**, Kusmierski, S.N., and Caulfield, M.K. (November 2019). Toward a dimensional taxonomy of perseverative thought. Spotlight Research Presentation at the Annual Meeting of the Association of Behavioral and Cognitive Therapies, Atlanta, GA.

Bruett, H.*, Calloway, R.C.*, Tokowicz, N., and **Coutanche, M.N.** (November 2019). Neural reactivation after a month-long delay for word-concept associations. Poster presented at the Annual Meeting of the Psychonomic Society, Montréal, Canada.

Coutanche, M.N., and Paulus, J.P.* (November 2019). A role for schema in establishing relational memory associations in the human brain. Talk at the Annual Meeting of the Psychonomic Society, Montréal, Canada.

Akpan, E.*, Koch, G.E.*, and **Coutanche, M.N.** (November 2019). A novel method that integrates open MRI resources to track the gray matter footprints of cognitive functions. Poster presented at the CMU Open Science Symposium 2019, Pittsburgh, PA.

Akpan, E.*, Koch, G.E.*, and **Coutanche, M.N.** (October 2019). Distributed gray matter footprints predict cognitive abilities: Successful prediction of memory recall in older adults. Poster presented at the University of Pittsburgh Computational Medicine Conference, Pittsburgh, PA.

Paulus, J.P.*, and **Coutanche, M.N.** (October 2019). A role for schema in establishing rapid relational memory associations in the human brain. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.

Koch, G.E.*, Liu, R., Libertus, M.E., Fiez, J., and **Coutanche, M.N.** (October 2019). Neural representations of number across semantic, phonological, visual, and manual formats. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.

Akpan, E.*, Koch, G.E.*, and **Coutanche, M.N.** (October 2019). Tracking gray matter footprints of neurally distributed cognitive functions. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.

Popov, V.*, Zhang, Q.*, Koch, G.E.*, Calloway, R.C.*, and **Coutanche, M.N.** (July 2019). The effect of semantic relatedness on associative asymmetry in memory. Paper presented at the Annual Meeting of the Cognitive Science Society, Montreal, Canada.

Liu, R., Koch, G.E.*, **Coutanche, M.N.**, Fiez, J., and Libertus, M. (June 2019). Representing numerical information across different formats in the adult brain. Poster presented at the Annual Meeting of the Mathematical Cognition and Learning Society. Ottawa, Canada.

Colvin, M.*, Dresang, H.*, Koch, G.*, Warren, T., Dickey, M.W., and **Coutanche, M.N.** (June 2019). fMRI evidence for the existence and function of animacy predictions. Talk at Psycholinguistics in Iceland - Parsing and Prediction meeting, Reykjavík, Iceland.

Akpan, E.*, Sauter, J.*, and **Coutanche, M.N.** (May 2019). A multi-dimensional surface-based method for determining brain lateralization. Poster presented at the Ninth International Workshop on the Statistical Analysis of Neuronal Data (SAND), Pittsburgh, PA

Coutanche, M.N., Koch, G.E.* , and Paulus, J.P.* (May 2019). Using neural representations during encoding to predict subsequent retrieval of dynamic events. Poster presented at the Context and Episodic Memory Symposium, Philadelphia, PA.

Coutanche, M.N., Koch, G.E.* , and Paulus, J.P.* (May 2019). A common neural signature for encoding success and failure for dynamic episodes. Poster presented at the Concepts, Actions, and Objects Symposium, Rovereto, Italy.

Libertus, M.E., **Coutanche, M.N.**, Fiez, J., Koch, G.E.*, and Liu, R*. (April, 2019). Neural integration of visual and semantic number knowledge in 4th graders and adults. Poster presented at the BRAIN Initiative Investigators Meeting, Bethesda, MD.

Koch, G.E.*, Paulus, J.P.*, and **Coutanche, M.N.** (March, 2019). How neural representations during encoding predict recall success and failure for dynamic episodes. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.

Koch, G.E.*, Paulus, J.P.*, and **Coutanche, M.N.** (March, 2019). How neural representations during encoding predict recall success and failure for dynamic episodes. Poster presented at the 19th Annual University of Pittsburgh Kenneth P. Dietrich School of Arts and Sciences Grad Expo, Pittsburgh, PA.

Paulus, J.P.*, Koch, G.E.*, and **Coutanche, M.N.** (November 2018). A role of sleep in the consolidation of dynamic episodes. Poster presented at the Annual Meeting of the Psychonomic Society, New Orleans, LA.

Bruett, H.*, Fang, X. *, Kamaraj, D.C. *, Haley, E. *, and **Coutanche, M.N.** (November 2018). Expertise moderates incidentally learned associations between words and images. Poster presented at the Annual Meeting of the Psychonomic Society, New Orleans, LA.

Koch, G.E.*, Paulus, J.P.*, and **Coutanche, M.N.** (November 2018). A role of sleep in the consolidation of dynamic episodes. Poster presented at the University of Pittsburgh Center for Sleep and Circadian Science Research Day, Pittsburgh, PA.

Koch, G.E.*, Paulus, J.P.*, and **Coutanche, M.N.** (October 2018). Investigating how neural representations during encoding predict later memory retrieval. Poster presented at the University of Pittsburgh Brain Day, Pittsburgh, PA.

Hirshorn, E.A., Carlos, B.J.*, Durisko, C., Perfetti C., Fiez, J.A., and **Coutanche, M.N.** (August 2018). Word inversion sensitivity as a marker of word identification style and visual word form area lateralization. Poster presented at the Annual Meeting of the Society for the Neurobiology of Language, Quebec City, Canada.

Coutanche, M.N. (June 2018). Word learning and semantic memory: Individual differences in semantic memory predict temporal pole volume and degree of lexical integration. Symposium talk at the International Workshop on Advanced Learning Sciences, Pittsburgh, PA.

Paulus, J.P.*, Koch, G.E.*, and **Coutanche, M.N.** (June 2018). The role of sleep in consolidation of dynamic episodes. Poster presented at the International Workshop on Advanced Learning Sciences, Pittsburgh, PA.

Koch, G.E.*, and **Coutanche, M.N.** (June 2018). Neural correlates for trait memory differences. Poster presented at the International Workshop on Advanced Learning Sciences, Pittsburgh, PA.

Coutanche, M.N. (May 2018). Using existing knowledge to promote the integration of new memories. Talk at the 2018 Context and Episodic Memory Symposium, Philadelphia, PA.

Coutanche, M.N. (April 2018). Incorporating new knowledge into existing perceptual and conceptual dimensions through interacting regions of the human brain. Talk at the International Conference on Learning and Memory, Huntington Beach, CA.

Coutanche, M.N., Fiez, J.A., and Libertus, M. (April 2018). Neurobehavioral integration of visual and semantic number knowledge and its role for individual variation in math ability. Poster presented at the BRAIN Initiative Investigators Meeting, Bethesda, MD.

Bruett, H.* and **Coutanche, M.N.** (March 2018). The role of inter-region information synchrony in processing visual stimuli. Data blitz and poster presented at the Cognitive Neuroscience Society Annual Meeting, Boston, MA.

Koch, G.E.* and **Coutanche, M.N.** (March 2018). Perceptual and conceptual dimensions impacting animate items in the human ventral stream. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Boston, MA.

Coutanche, M.N. (November 2017). Incorporating new knowledge into perceptual and conceptual dimensions through interacting regions of the human brain. Talk at the Annual Meeting of the Psychonomic Society, Vancouver, Canada.

Bruett, H.* and **Coutanche, M.N.** (November 2017). The role of inter-region information synchrony in processing visual stimuli. Poster presented at the Annual Meeting of the Psychonomic Society, Vancouver, Canada.

Carlos, B.J.* , Hirshorn, E.A., Durisko, C., Fiez, J.A., and **Coutanche, M.N.** (November 2017). Multivariate laterality as a novel measure of laterality and marker for word inversion sensitivity in the visual word form area. Poster presented at the Annual Meeting of the Psychonomic Society, Vancouver, Canada.

Coutanche, M.N. and Koch, G.E.* (October 2017). Neural correlates for trait memory differences. Poster presented at the University of Pittsburgh Brain Day Meeting, Pittsburgh, PA.

Carlos, B.J.* and **Coutanche, M.N.** (June 2017). Testing a new method for assessing lateralization using multi-voxel pattern analysis. Poster presented at the Eighth International Workshop on the Statistical Analysis of Neuronal Data (SAND), Pittsburgh, PA.

Bruett, H.* and **Coutanche, M.N.** (June 2017). Informational connectivity as a method for measuring synchrony in the processing of visual information. Poster presented at the Eighth International Workshop on the Statistical Analysis of Neuronal Data (SAND), Pittsburgh, PA.

Coutanche, M.N. and Koch, G.E.* (May 2017). The interaction of conceptual dimensions for animate items in the human ventral stream. Poster presented at the Workshop on Concepts, Actions and Objects: Functional and Neural Perspectives, Rovereto, Italy.

Coutanche, M.N. and Koch, G.E.* (March 2017). Neural correlates for trait memory differences. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.

Coutanche, M.N. and Thompson-Schill, S.L. (November 2016). The influence of recent semantic learning on human visual cortex. Poster presented at the Society for Neuroscience Annual Meeting, San Diego, CA.

Coutanche, M.N. and Koch, G.E.* (November 2016). The neural basis for trait memory differences. Poster presented at the University of Pittsburgh Brain Day 2016, Pittsburgh, PA.

Coutanche, M.N. and Thompson-Schill, S.L. (November 2016). The influence of recent semantic learning on human visual cortex. Poster presented at the University of Pittsburgh Brain Day 2016, Pittsburgh, PA.

Coutanche, M.N. and Chun, M.M. (July 2016). Exploring the nature of fast mapped knowledge through divided attention. Symposium presentation at the International Conference on Memory, Budapest, Hungary.

Herholz, P., Schuster, V., **Coutanche, M.N.**, & Jansen, A. (June, 2016). fMRI as a new fertility monitor? Influences of sex hormones on brain organization revealed by MVPA. Poster presented at the Annual Meeting of the Organization for Human Brain Mapping, Geneva, Switzerland.

Coutanche, M.N. (May 2016). The rapid consolidation of new knowledge into cortical networks through fast mapping. Talk at the Context and Episodic Memory Symposium, Philadelphia, PA.

Ruscio, A.M., Hallion, L.S., **Coutanche, M.N.**, Wu, H., Thompson-Schill, S.L., & Rauch, S.L. (April 2016). Neural substrates of worry and rumination in generalized anxiety disorder and major depressive disorder. Talk presented at the Anxiety and Depression Association of America Annual Meeting, Philadelphia, PA.

Tamez, E.R., Trueswell, J.C., **Coutanche, M.N.**, and Thompson-Schill, S.L. (October 2015). fMRI activity during a spontaneous dialogue task. Poster presented at the Society for the Neurobiology of Language Annual Meeting, Chicago, IL.

Parma, V. †, **Coutanche, M.N.** † [† equal contributions], Seubert, J., Fondberg, R., Hackl, L., Åhs, F., and Lundström, J.N. (April 2015). Anxiety-dependent modulation of olfactory fear conditioning: A multidimensional approach. Talk presented at the Association for Chemoreception Sciences Annual Meeting, FL.

Coutanche, M.N. and Thompson-Schill, S.L. (November 2014). Fast mapping rapidly integrates information into existing memory networks. Symposium speaker (“Memory, Sleep and Dreams”), Psychonomic Society Annual Meeting, Long Beach, CA.

Parma, V. †, **Coutanche, M.N.** † [† equal contributions], Seubert, J., Fondberg, R., Hackl, L., Åhs, F., and Lundström, J.N. (November 2014). Multidimensional approach to the study of olfactory fear conditioning in individuals with low and high trait anxiety vulnerability. Poster presented at the Clinical Chemosensation Annual Meeting, Dresden, Germany.

Coutanche, M.N., Solomon, S.H. *, and Thompson-Schill, S.L. (May 2014). A meta-analysis of multi-voxel patterns in the ventral stream. Poster presented at the Vision Sciences Society Annual Meeting, St. Pete Beach, FL.

Coutanche, M.N. and Thompson-Schill, S.L. (May 2014). Fast mapping rapidly integrates information into existing memory networks. Talk presented at the Context and Episodic Memory Symposium, Philadelphia, PA.

Coutanche, M.N. and Thompson-Schill, S.L. (April 2014). Fast mapping rapidly integrates information into existing memory networks. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Boston, MA.

Coutanche, M.N. and Thompson-Schill, S.L. (May 2013). Converging on a convergence zone: concurrent feature decoding predicts identity decoding for anticipated objects. Talk presented at the Workshop on Concepts, Actions, and Objects: Functional and Neural Perspectives, Rovereto, Italy.

Coutanche, M.N. and Thompson-Schill, S.L. (May 2013). Functional activity patterns encoding the identity of anticipated objects are marked by converging shape and color decoding in early visual areas during preparatory visual attention. Talk presented at the Vision Sciences Society, Naples, FL.

Coutanche, M.N., Gianessi, C.A.*, Chanales, A.J.H.*, Willison, K.W.*, and Thompson-Schill, S.L. (November 2012). Sleep aids the consolidation of spatial relational memories. Poster presented at the Psychonomic Society Annual Meeting, Minneapolis, MN.

Coutanche, M.N. and Thompson-Schill, S.L. (April 2012). The advantage of brief functional magnetic resonance imaging acquisition runs for multi-voxel pattern detection. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Chicago, IL.

Coutanche, M.N. and Thompson-Schill, S.L. (April 2011). Informational Connectivity: A novel fMRI analysis method for identifying brain areas that share distributed encoding principles. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.

Coutanche, M.N., Thompson-Schill, S.L., and Schultz, R.T. (October 2009). An application of multi-voxel pattern analysis to investigating patient groups: Face classification in the autism fusiform face area. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.

Coutanche, M.N., Wallace, S., White, K.B., Foley, S., Bailey, A., and I.M.G.S.A.C. (May 2008). Face and gaze processing in the broader autism phenotype: Independent differences in ASD relatives. Poster presented at the International Meeting for Autism Research, London, UK.

White, K.B., Wallace, S., Parr, J., **Coutanche, M.N.**, Foley, S., Bailey, A., and I.M.G.S.A.C. (May 2008). Social cognition in the broader autism phenotype. Poster presented at the International Meeting for Autism Research, London, UK.

INVITED TALKS

November 2019. Machine learning for psychology: Why, when, and (a bit of) how. Cognitive Psychology Brown Bag, University of Pittsburgh, Pittsburgh, PA.

October 2018. The rapid integration of new words and concepts into the memory system. Duolingo, Pittsburgh, PA.

July 2018. Conceptual Combination. Kavli Summer Institute in Cognitive Neuroscience, Tahoe, CA.

March 2018. Keynote Talk, Psi Chi Induction Ceremony. Department of Psychology, University of Pittsburgh, PA.

March 2018. The integration of learned associations into memory in the human brain. Invited Colloquium speaker. Department of Psychology, West Virginia University, Morgantown, WV.

October, 2017. The shift from perception to meaning in the human brain. Department of Communication Science and Disorders, University of Pittsburgh, Pittsburgh, PA.

November, 2016. Adding meaning to perception: Forming integrated knowledge in human cortex. Carnegie Mellon University Cognitive Psychology Symposium, Pittsburgh, PA.

October 2016. The employment of neural systems in human learning: Determinants and implications for memory. Center for the Neural Basis of Cognition Annual Retreat, Seven Springs, PA.

January 2016. Sleep and memories. Panther Psychology Club, University of Pittsburgh, Pittsburgh, PA.

September 2015. Adding meaning to perception: The impact of learning in distributed activity patterns in human sensory cortex. Cognitive Psychology Brown Bag, University of Pittsburgh, Pittsburgh, PA.

March 2015. The integration of information into memory networks of the brain. Department of Brain and Cognitive Sciences, MIT, Boston, MA.

December 2014. Decoding conceptual and perceptual representations across networks of the human brain. fMRI Brown Bag Symposium Series, Dartmouth College, Hanover, NH.

September 2014. The integration of knowledge into cortical memory networks. Current Works in Cognitive Psychology Series, Yale University, New Haven, CT.

May 2014. Talk discussant at the Context and Episodic Memory Symposium, Philadelphia, PA.

December 2013. Decoding perceptual and conceptual object processing in information networks of the human brain. Duke University, Durham, NC.

May 2013. The role of sleep in forming a memory representation of a two-dimensional space. Cognitive Science Guest Lecture, ETH Zürich, Switzerland.

January 2013. Synchronous decoding of multi-voxel patterns in visual object processing. Center for Cognitive Neuroscience Talk Series, University of Pennsylvania, Philadelphia, PA.

May 2011. Decoding patterns in the active human brain. Art of Research Graduate Symposium, University of Pennsylvania, Philadelphia, PA.

April 2008. The broader autism phenotype. International Molecular Genetics Study of Autism Consortium Annual Conference, Oxford, UK.

CURRENT COLLABORATORS

- Michael Dickey (University of Pittsburgh)
- Julie Fiez (University of Pittsburgh)

- Lauren Hallion (University of Pittsburgh)
- Jutta Joormann (Yale University)
- Melissa Libertus (University of Pittsburgh)
- Valentina Parma (SISSA, International School for Advanced Studies)
- Michael Sayette (University of Pittsburgh)
- Natasha Tokowicz (University of Pittsburgh)
- Tessa Warren (University of Pittsburgh)
- Aidan Wright (University of Pittsburgh)

TEACHING

Instructor of Graduate Courses (S = Spring; F = Fall)

- Cognitive Neuroscience of Learning and Memory (University of Pittsburgh) 2017 S
 Students from Psychology, Bioengineering, Communication Science & Disorders,
 English, Neuroscience, Rehabilitation Science, Machine Learning, Neural Computation

Instructor of Undergraduate Courses

- Introduction to Psychology (University of Pittsburgh) 2017 F, 2018 SF, 2019 F, 2020 S
- Cognition and the Brain (University of Pittsburgh) 2018 S, 2019 S, 2020 S
- Introduction to Cognitive Neuroscience (University of Pittsburgh) 2016 SF
- Memory, pre-freshman program for at-risk students (University of Pennsylvania) 2011 - 2013
- Cognitive Neuroscience (University of Pennsylvania) 2010

3-day Workshop Instructor

- Theory and Application of MVPA 2013 (2), 2014

Teaching Assistant Trainer (University of Pennsylvania) 2014

Teaching Assistant

- Cognitive Neuroscience (Instructor: Sharon Thompson-Schill) 2010
- Learning (Instructor: Robert Rescorla) 2009

English-language Teacher (Shenzhen, China) 2004

MENTORING

Graduate Student Advisees

- Griffin Koch (Psychology, University of Pittsburgh) 2017 - present
 - o Recipient of NIH Behavioral Brain Research Training Program (T32GM081760)
 - o Recipient of 2019 Society for Neuroscience Trainee Professional Development Award
- Heather Bruett (Psychology, University of Pittsburgh) 2016 – present
 - o Recipient of LRDC Graduate Student Council Award
- Xueying Ren (Psychology, University of Pittsburgh) 2019 - present
- Rae Buckser (Psychology, University of Pittsburgh) 2020 - present

Advisees in programs that broaden representation in science

- Téah Segura, Learning Research and Development Center Summer Internship 2019
- Brandon Carlos, *Hot Metal Bridge* Post-Bac Fellow 2016 - 2017
- Ariel Rosario, Summer Undergraduate Research Fellow (Yale University) 2015

Summer Undergraduate Research Program in Neural Computation, CNBC

- Jake Sauter (home institution: SUNY Oswego) 2018

Senior Thesis Undergraduate Students

- Carlo Vignali (University of Pittsburgh), Neuroscience Major 2018 - present
- Avi Chanales (University of Pennsylvania), Cognitive Science Major 2011 - 2012
 - o Award: *Alumni Society Prize for Excellence in Research*
 - o Subsequent position: PhD student at New York University
- Carol Gianessi (University of Pennsylvania), Psychology Major 2010 - 2011
 - o Award: *Morris Viteles Award for Excellence in Undergraduate Psychology Research*
 - o Subsequent position: PhD student at Yale University

Graduate Student Milestone Committees (Masters, Qualifying Exams, Dissertation)

- Travis Alvarez (Psychology, University of Pittsburgh)
- Brett Bankson (Psychology, University of Pittsburgh)
- Haley Dresang (Communication Sciences & Disorders, University of Pittsburgh)
- Xiaoping Fang (Psychology, University of Pittsburgh)
- Brian Knox (Accounting and Neuroscience, University of Pittsburgh)
- Ruizhe Liu (Psychology, University of Pittsburgh)
- Lea Martin (Psychology, University of Pittsburgh)
- Gabriela Terrazas (Psychology, University of Pittsburgh)
- Joshua Tremel (Psychology, University of Pittsburgh)
- Ven Popov (Psychology, Carnegie Mellon University)
- Robert Vargas (Psychology, Carnegie Mellon University)
- Ciara Willett (Psychology, University of Pittsburgh)
- Lin Zhou (Psychology, University of Pittsburgh)

Graduate Student and Hot Metal Bridge Mentoring Committees

- Zachary Caddick (Psychology, University of Pittsburgh)
- Douglas Getty (Psychology, University of Pittsburgh)
- Peipei Li (Psychology, University of Pittsburgh) - Chair
- Kole Norberg (Psychology, University of Pittsburgh) - Chair
- Joshua Tremel (Psychology, University of Pittsburgh)
- Joshua Vincent (Psychology, University of Pittsburgh)

Undergraduate Student Honors Thesis Committees

- Eleanna Melcher (Psychology)
- Anisha Venkatesh (Psychology)

SCIENCE OUTREACH

- Published scientific analysis of claims in popular media (Coutanche & Paulus, 2018) 2018
- Talk on word learning and consolidation at Duolingo 2018
- Team Neuroscientist in 3-day XR Brain Jam - applying virtual and augmented reality to problems in neuroscience 2018
- Judge, Linden Elementary School Science Fair 2017
- Featured Scientist, Cerebella Design's 'Celebrating Brains' Initiative 2015 - 2017

<http://cerebelladesign.com/blog/2016/1/5/cd-submit-scientist-spotlight-marc-coutanche-phd>

- Public library talk series, Yale “Science Diplomats” series 2015
- Lecturer, Yale “Pathways to Science” program for high school students 2015
- Howard Hughes Medical Institute ‘Ask a Scientist’ online service 2012

DEPARTMENTAL AND INSTITUTIONAL SERVICE

- LRDC Communications Committee 2019 - present
- Cognitive psychology graduate student recruitment committee 2015, 2016, 2019
- Faculty Ambassador Program (Dietrich School Admitted Students Day) 2019
- Grant reviewer for University of Pittsburgh Competitive Medical Research Fund 2019
- BRain Imaging Data Generation & Education (BRIDGE) Center Safety Committee 2018 - present
- Department of Psychology Teaching Evaluation Project 2018 - present
- Reviewer, LRDC Tim Post Award for Research Excellence 2017, 2018
- Department of Psychology colloquium committee 2016 - 2017
- Provost’s Diversity Institute for Faculty Development (four-workshop series) 2016
- Department of Psychology faculty search committee 2015 - 2016
- Organizer, University of Pennsylvania Psychology graduate student interviews 2012

PROFESSIONAL SERVICE

- Associate Editor, *APA Handbook of Research Methods in Psychology* 2020 - present
- NIH Early Career Reviewer Program (Cognition and Perception Study Section) 2020
- Editorial Board, *Psychonomic Bulletin & Review* 2020 - present
- Editorial Board, *NeuroImage* 2019 - present
- Symposium Chair, Psychonomic Society Annual Meeting 2019
- Reviewer for submissions to Annual Meeting of the Cognitive Science Society (CogSci) 2019
- Review Committee, Psychonomic Society J. Frank Yates Student Travel Award 2018 - present
- Chair, Talk Session at 6th International Workshop on Advanced Learning Sciences 2018
- Organizing Committee, 6th International Workshop on Advanced Learning Sciences 2018
- Symposium Chair, Psychonomic Society Annual Meeting 2017
- Symposium Co-organizer & Chair, International Conference of Memory, Budapest, Hungary 2016
- Peer-reviewing for journals
 - o *Neuron*
 - o *Nature Neuroscience*
 - o *Journal of Neuroscience*
 - o *Science Advances*
 - o *JEP: General*
 - o *Psychological Review*
 - o *eLife*
 - o *Cerebral Cortex*
 - o *NeuroImage*
 - o *Journal of Cognitive Neuroscience*
 - o *Cortex*
 - o *Neuropsychologia* (“Outstanding Reviewer”)
 - o *Memory and Cognition*
 - o *Human Brain Mapping*
 - o *NeuroImage: Clinical*
 - o *Brain Connectivity*

- *PLOS ONE*
- *PLOS Biology*
- *IEEE Transactions on Medical Imaging*
- *IEEE Journal of Biomedical and Health Informatics*
- *Autism Research*
- *Neuroscience*
- *Nature Scientific Reports*
- *Neurobiology of Learning and Memory*
- *Psychonomic Bulletin & Review*
- *eNeuro*
- *Eye and Vision*
- *Cognitive Neuropsychology*
- *Brain Structure & Function*
- *Learning & Memory*
- *Frontiers in Human Neuroscience*
- *Language, Cognition and Neuroscience*
- *Journal of Experimental Child Psychology*
- *Royal Society Open Science*
- *Journal of Neurophysiology*
- Grant peer-reviewing
 - Fund for Scientific Research (Belgium)
 - Autistica
 - Alzheimer’s Society

OTHER INTELLECTUAL CONTRIBUTIONS

- Author of textbook test-bank practice questions and lecture slides
 - *Psychological Science* 6th ed. (W.W. Norton) 2017
 - *Cognition* 6th ed. (W.W. Norton) 2015
 - *Psychological Science* 5th ed. (W.W. Norton) 2014
 - *Cognitive Neuroscience* 4th ed. (W.W. Norton) 2013

SOFTWARE

- Team Neuroscientist in developing augmented reality application to encouraging eye contact in children with Autism Spectrum Disorder
- Creator, Informational Connectivity MATLAB Toolbox (<http://www.informationalconnectivity.org>)
- Contributor, Princeton Multi-Voxel Pattern Analysis MATLAB Toolkit

MEDIA CONTRIBUTIONS AND COVERAGE

Curley, T. (2020, February 25). Why We Don’t Serve “Cheese and Macaroni”: Investigating Directionality of Relationships Between Words. *The Psychonomic Society Featured Content*. <https://featuredcontent.psychonomic.org/why-we-dont-serve-cheese-and-macaroni-investigating-directionality-of-relationships-between-words/>

Nicholas, P. (2019, October 18). The unraveling of Donald Trump. *The Atlantic*. <https://www.theatlantic.com/politics/archive/2019/10/trump-impeachment-mental-health/600292/>

Templeton, D. (2017, July 11). Using brain patterns may be first step to reading the mind, CMU study shows. *Pittsburgh Post-Gazette*. <http://www.post-gazette.com/news/health/2017/07/11/Computer-program-can-interpet-brain-patterns-Carnegie-Mellon-University-study/stories/201706270128>

Dague, T. (2016, July 6). We go inside the escape-room phenomenon. *Pittsburgh City Paper*. <http://www.pghcitypaper.com/pittsburgh/we-go-inside-the-escape-room-phenomenon/Content?oid=1934005>

Carroll, L. (2016, March 26). How did I get here!? What to do when your brain goes on autopilot. *Today*. <http://www.today.com/health/how-unconscious-memory-trips-us-t66431>

Carroll, L. (2015, December 30). What's your memory style? Why we recall every detail or just the facts. *Today*. <http://www.today.com/health/what-your-memory-style-brain-wiring-may-control-how-we-t62226>

Coutanche, M.N. (2014, September 4). Using Fruits and Veggies to Break Down How We Remember and Identify Objects. *Cognitive Neuroscience Society Blog*. https://www.cogneurosociety.org/decoding_fruit_coutanche/

The Perils of Trying to Unlearn. (2012, May). *Observer*, 25(5). <http://www.psychologicalscience.org/index.php/publications/observer/2012/may-june-12/the-perils-of-trying-to-unlearn-2.html>

PROFESSIONAL AFFILIATIONS

Fellow of the Psychonomic Society
Association for Psychological Science
Cognitive Neuroscience Society
Society for Neuroscience