

# Curriculum Vitae

## Michael A. Pitts, Ph.D.

Psychology Department  
Reed College  
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## EDUCATION & PROFESSIONAL POSITIONS:

### **Associate Professor** (2015-present)

Psychology Department  
Reed College

### **Assistant Professor** (2011-2015)

Psychology Department  
Reed College

### **Postdoctoral Researcher** (2007-2011)

Neurosciences Department & Institute for Neural Computation  
University of California San Diego

### **Ph.D., Psychology** (2007)

Perceptual and Brain Sciences Program  
Colorado State University

### **M.S., Psychology** (2004)

Behavioral Neurosciences Program  
Colorado State University

### **B.A., Psychology** (2001)

Brain and Behavior Program  
University of New Hampshire

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## PUBLICATIONS (Reed students in bold):

Pitts, M., **Lutsyshyna, L.**, & Hillyard, S. (in press). The relationship between attention and consciousness: An expanded taxonomy and implications for “no report” paradigms. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*.

**Grauly, C., Papaioannou, O., Bauer, P.,** Pitts, M., & Canseco-Gonzalez, E. (2018). Hearing shapes: Event-related potentials reveal the time course of auditory-visual sensory substitution. *Journal of Cognitive Neuroscience*, 30:4, 498-513.

**Baumgartner, H., Grauly, C.,** Hillyard, S., & Pitts, M. (2018). Does spatial attention modulate the earliest component of the visual evoked potential? *Cognitive Neuroscience*, 9:1-2, 4-19.

**Baumgartner, H., Grauly, C.,** Hillyard, S., & Pitts, M. (2018). Does spatial attention modulate the C1 component? The jury continues to deliberate. *Cognitive Neuroscience*, 9:1-2, 34-37.

Pitts, M. & Hillyard, S. (2018). Still wanted: A reproducible demonstration of a genuine C1 attention effect. *Cognitive Neuroscience*, 9:1-2, 68-70.

**Schelonka, K., Grauly, C.,** Canseco-Gonzalez, E., & Pitts, M. (2017). ERP signatures of conscious and unconscious word and letter perception in an inattentive blindness paradigm. *Consciousness & Cognition*, 54, 56-71.

- Jackson-Nielsen, M.**, Cohen, M., & Pitts, M. (2017). Perception of ensemble statistics requires attention. *Consciousness & Cognition*, 48, 149-160.
- Sandberg, K., Frässle, S., & Pitts, M. (2016). Future directions for identifying the neural correlates of consciousness. *Nature Reviews Neuroscience*, 17, 666.
- Shafto, J.** & Pitts, M. (2015). Neural signatures of conscious face perception in an inattentive blindness paradigm. *The Journal of Neuroscience*, 35(31), 10940-10948.
- Open Science Collaboration (2015). Estimating the reproducibility of psychological science. *Science*. 349, aac4716 (individual contribution: **Lewis, M.** & Pitts, M. <https://osf.io/hsntd/>)
- Yiu, L.**, Pitts, M. & Canseco-Gonzalez, E. (2015). Electrophysiological assessment of the time course of bilingual visual word recognition: Early access to language membership. *Neuropsychologia*, 75, 349-367.
- Snyder, J., Yerkes, B., & Pitts, M. (2015). Testing domain-general theories of perceptual awareness with auditory brain responses. *Trends in Cognitive Sciences*, 19(6), 295-297.
- Pitts, M., Padwal, J., **Fennelly, D.**, Martinez, A., & Hillyard, S. (2014). Gamma band activity and the P3 reflect post-perceptual processes, not visual awareness. *NeuroImage*, 101, 337-350.
- Davidson, G.** & Pitts, M. (2014). Auditory event-related potentials associated with perceptual reversals of bistable pitch motion. *Frontiers in Human Neuroscience*, 8:572, 1-10.
- Pitts, M., **Metzler, S.**, & Hillyard, S. (2014). Isolating neural correlates of conscious perception from neural correlates of reporting one's perception. *Frontiers in Psychology*, 5:1078, 1-16.
- Pitts, M. & Martinez, A. (2014). Contour integration: Sensory, perceptual, and attention-based ERP Components, Chapter 14. In G.R. Mangun (Eds.), *Cognitive Electrophysiology of Attention: Signals of the Mind* (pp.178-189). Elsevier.
- Open Science Collaboration (2014). The Reproducibility Project: A model of large-scale collaboration for empirical research on reproducibility. In V. Stodden, F. Leisch, & R. Peng (Eds.), *Implementing Reproducible Computational Research* (pp. 299-323). New York, NY: Taylor & Francis.
- Pitts, M., Martinez, A., & Hillyard, S. (2012). Visual processing of contour patterns under conditions of inattentive blindness. *Journal of Cognitive Neuroscience*, 24(2), 287-303.
- Feng, W., Martinez, A., Pitts, M., Luo, Y., & Hillyard, S. (2012). Spatial attention modulates early face processing. *Neuropsychologia*, 50(14), 3461-3468.
- Open Science Collaboration (2012). An open, big science effort to estimate the reproducibility of psychological science. *Perspectives in Psychological Science*, 7, 657-660.
- Pitts, M. & Britz, J. (2011). Insights from intermittent binocular rivalry and EEG. *Frontiers in Human Neuroscience*, 5(107), 1-6.
- Britz, J. & Pitts, M. (2011). Perceptual reversals during binocular rivalry: ERP components and their concomitant source differences. *Psychophysiology*, 48, 1489-1498.
- Pitts, M., Martinez, A., Brewer, J., & Hillyard, S. (2011). Early stages of figure-ground segregation during perception of the face-vase. *Journal of Cognitive Neuroscience*, 23:4, 880-895.
- Britz, J., Pitts, M., & Michel, C. (2011). Right parietal brain activity precedes perceptual alternation during binocular rivalry. *Human Brain Mapping*, 32(9), 1432-1442.
- Pitts, M., Martinez, A., & Hillyard, S. (2010). When and where is binocular rivalry resolved in the visual cortex? *Journal of Vision* 10(14):25, 1-11.

- Pitts, M., Martinez, A., Stalmaster, C., Nerger, J., & Hillyard, S. (2009). Neural generators of ERPs linked with Necker cube reversals. *Psychophysiology*, 46, 694-702.
- Pitts, M., Gavin, W., & Nerger, J. (2008). Early top-down influences on bistable perception revealed by event-related potentials. *Brain and Cognition*, 67(1), 11-24.
- Pitts, M., Nerger, J., & Davis, T. (2007). Electrophysiological correlates of perceptual reversals for three different types of multi-stable images. *Journal of Vision*, 7(1):6, 1-14.
- Pitts, M., Troup, L., Volbrecht, V., & Nerger, J. (2005). Chromatic perceptive field sizes change with retinal illuminance. *Journal of Vision*, 5(5), 435-443.
- Troup, L., Pitts, M., Volbrecht, V., & Nerger, J. (2005). The effect of stimulus intensity on the sizes of chromatic perceptive fields. *Journal of the Optical Society of America A.*, 22(10), 2137-2142.
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### **CONFERENCE PRESENTATIONS (Reed students in bold):**

- Pitts, M. & **Baumgartner, H.** (2016). *Does spatial attention modulate afferent activity in primary visual cortex?* Poster presented at the Society for Neuroscience (SfN) Annual Meeting, Nov, San Diego, CA.
- Chesley, O., Graulty, C.,** Canseco-Gonzalez, E., & Pitts, M. (2016). *Synesthetic grapheme-color associations are processed early in time and can guide attention during visual search.* Poster presented at the Society for Neuroscience (SfN) Annual Meeting, Nov, San Diego, CA.
- Scarpetta, M.,** Pitts, M., & Canseco-Gonzalez, E. (2016). *Neural correlates of auditory attention in an exogenous orienting task.* Poster presented at the Society for Neuroscience (SfN) Annual Meeting, Nov, San Diego, CA.
- Pitts, M., **Davidson, G., Bauer, P.** (2016). *Isolating neural signatures of conscious perception with perceptually bistable stimuli.* Talk at the Cognitive Science Association for Interdisciplinary Learning (CSAIL) Annual Meeting, July, Hood River, OR.
- Graulty, C., Chesley, O.,** Canseco-Gonzalez, E., & Pitts, M. (2016). *The timing of synesthetic color processing and its influence on attention during visual search.* Talk at the Cognitive Science Association for Interdisciplinary Learning (CSAIL) Annual Meeting, July, Hood River, OR.
- Scarpetta, M.,** Pitts, M., & Canseco-Gonzalez, E. (2016). *Neural correlates of auditory attention in an exogenous orienting task.* Talk at the Cognitive Science Association for Interdisciplinary Learning (CSAIL) Annual Meeting, July, Hood River, OR.
- Pitts, M., Cohen, M., & **Jackson-Nielsen, M.** (2016). *Inattentional blindness to color ensemble statistics.* Poster presented at the Vision Sciences Society (VSS) Annual Meeting, May, St Pete Beach, FL.
- Pitts, M. (2016). *Inattentional blindness and visual awareness without report.* Invited talk at the Northern California Consciousness (NCC) meeting, March, Mind and Brain Institute, UC Davis, CA.
- Pitts, M. (2015) *Neural signatures of visual word form perception in an inattentional blindness paradigm.* Talk at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, Paris, FR.
- Jackson-Nielsen, M.** & Pitts, M. (2015) *Conscious perception of color and size ensemble statistics requires attention.* Poster presented at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, Paris, FR.
- Graulty, C.,** Pitts, M., & Canseco-Gonzalez, E. (2015) *Color processing in grapheme-color synesthetes: An attentional blink ERP study.* Poster presented at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, Paris, FR.

- Bauer, P.** & Pitts, M. (2015) *Electrophysiological correlates of individual percepts arising from the bistable face-vase figure*. Poster presented at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, Paris, FR.
- Grauly, C., Papaioannou, O., Bauer, P.,** Stephens, M., **Sheiman, J.,** Pitts, M., & Canseco-Gonzalez, E. (2015) *Hearing shapes: ERPs reveal changes in perceptual processing as a result of sensory substitution training*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Macrae, F.** & Pitts, M. (2015) *Does inducing belief in free will alter brain correlates of preconscious motor preparation?: A replication study*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Pitts, M., **Metzler, S.,** & Hillyard, S. (2015) *Isolating neural correlates of conscious perception from neural correlates of reporting one's perception: A 2x2 manipulation of visual awareness and task-relevance*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Schelonka, K.,** Canseco-Gonzalez, E., & Pitts, M. (2015) *Preconscious, conscious, and post-perceptual processing of visual word forms in an inattentional blindness paradigm*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Pitts, M., **Shafto, J.,** & **Schelonka, K.** (2014). *Inattentional blindness for shapes, faces, and words: ERP correlates of attention & awareness*. Talk at the Cognitive Science Association for Interdisciplinary Learning (CSAIL) Annual Meeting, July, Hood River, OR.
- Canseco-Gonzalez, E., **Grauly, C., Papaioannou, O., Bauer, P.,** & Pitts, M. (2014). *Studying the time course of sensory substitution mechanisms*. Talk at the Cognitive Science Association for Interdisciplinary Learning (CSAIL) Annual Meeting, July, Hood River, OR.
- Grauly, C., Papaioannou, O., Bauer, P.,** Pitts, M., & Canseco-Gonzalez, E. (2014). *Electrophysiological dynamics of auditory-visual sensory substitution*. Poster presented at the Vision Sciences Society (VSS) Annual Meeting, May, St Pete Beach, FL. Published in: *Journal of Vision*, vol. 14, no. 10, article 438.
- Pitts, M., Martinez, A., & Hillyard, S. (2014). *Contour integration and its independence from attention, awareness, and task-relevance*. Poster presented at the Vision Sciences Society (VSS) Annual Meeting, May, St Pete Beach, FL. Published in: *Journal of Vision*, vol. 14, no. 10, article 65.
- Shafto, J.** & Pitts, M. (2013). *Visual processing of faces during inattentional blindness*. Poster presented at the Society for Neuroscience (SfN) Annual Meeting, Nov, San Diego, CA.
- Lewis, M.** & Pitts, M. (2013). *On the practice of replicating an electrophysiological study with the Center for Open Science*. Poster presented at the Society for Neuroscience (SfN) Annual Meeting, Nov, San Diego, CA.
- Pitts, M. (2013). *Isolating NCCs that are necessary and sufficient for visual awareness*. Invited symposium talk with Melloni, L., Dehaene, S., & Block, N., at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, San Diego, CA.
- Shafto, J.** & Pitts, M. (2013). *Neural signatures of conscious face perception: The N170 is absent during inattentional blindness*. Talk at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, San Diego, CA.
- Davidson, G.** & Pitts, M. (2013). *Neural signatures of perceptual transitions for a novel bistable auditory stimulus*. Poster presented at the Association for the Scientific Study of Consciousness (ASSC) Annual Meeting, July, San Diego, CA.
- Padwal, J., Pitts, M., **Fennelly, D.,** Martinez, A., & Hillyard, S. (2013). *Contour integration: Stimulus and task-based modulations of ERPs and gamma oscillations*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.

- Schelonka, K., Grauly, C.,** Canseco-Gonzalez, E., & Pitts, M. (2013). *Event-related potentials elicited by sine-wave speech stimuli before and after speech recognition training*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Yiu, L., Krisnabai-Gitanjali, K.,** Pitts, M., & Canseco-Gonzalez, E. (2013). *An electrophysiological study on the time course of bilingual word recognition*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Lewis, M. & Pitts, M.** (2013). *An open science electrophysiology study of anxiety and error monitoring*. Talk at the Oregon Academy of Sciences (OAS) Annual Meeting, March, Salem, OR.
- Yiu, L., Krisnabai-Gitanjali, K.,** Pitts, M., & Canseco-Gonzalez, E. (2013). *An electrophysiological study on the time course of bilingual word recognition*. Talk at the Oregon Academy of Sciences (OAS) Annual Meeting, March, Salem, OR.
- Pitts, M. Martinez, A., Hillyard, S. (2012). *ERPs and gamma oscillations modulated by visual awareness and task-relevance*. Talk at the Cognitive Science Association for Interdisciplinary Learning (CSAIL) Annual Meeting, July, Hood River, OR.
- Pitts, M. Martinez, A., Hillyard, S. (2011). *Neural correlates of conscious and non-conscious visual processing*. Poster presented at the Psychonomics Society (PS) Annual Meeting, November, Seattle, WA.
- Pitts, M., Martinez, A., Hillyard, S. (2011). *Neural correlates of visual awareness assessed via EEG in an inattention paradigm*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Pitts, M., Martinez, A., Hillyard, S. (2010). *Visual processing of seen and unseen patterns during inattentive blindness*. Talk at the Society for Neuroscience (SfN) Annual Meeting, Nov, San Diego, CA.
- Pitts, M., Martinez, A., Brewer, J., Hillyard, S. (2009). *Early stages of figure-ground segregation: ERP components associated with face-vase perception*. Poster presented at the Vision Science Society (VSS) Annual Meeting, May, Naples, FL.
- Pitts, M., Martinez, A, Hillyard, S. (2008). *Bistable perceptual reversals: ERP components and their neural generators*. Poster presented at the Cognitive Neurosciences Society (CNS) Annual Meeting, April, San Francisco, CA.
- Pitts, M., Nerger, J., Stalmaster, C. (2007). *The role of spatial selective attention in the perception of bistable images*. Poster presented at the Vision Sciences Society (VSS) Annual Meeting, May, Sarasota, FL.
- Pitts, M., Gavin, W., Davalos, D., Nerger, J. (2006). *Top-down influences on bistable perceptions revealed by ERPs*. Poster presented at the Society for Psychophysiological Research (SPR) Annual Meeting, October, Vancouver, BC

## **GRANTS & FELLOWSHIPS:**

### **Reed College Summer Research Fellowships (2012-present)**

- Isolating the neural correlates of conscious vision via pattern masking and EEG (2018)  
Role: Faculty Supervisor (PI: *Andrew Kyroudis*)
- Distinguishing perceptual experience from its report: A brain recording experiment (2018)  
Role: Faculty Supervisor (PI: *Anton Lutsyshyna*)
- Effect of spatial attention on early visual processing in the primary visual cortex (2015)  
Role: Faculty Supervisor (PI: *Hannah Baumgartner*)
- The role of abstract beliefs and neural oscillations in motor preparation and inhibition. (2014)  
Role: Faculty Supervisor (PI: *Fenner Macrae*)
- Electrophysiological signatures of speech recognition. (2012)  
Role: Faculty Supervisor (PI: *Kathryn Schelonka*)

**Esther Hyatt Wender Fund for Collaborative Research in Psychology**

Grapheme-color synesthesia in visual search tasks (2017)

Role: Faculty Supervisor (PI: Aoife Hough)

Auditory awareness of sine-wave speech (2017)

Role: Faculty Co-supervisor (PI: James Glass)

Can the P300 reveal someone's iPhone passcode? (2015)

Role: Faculty Co-supervisor (PI: Phoebe Bauer)

**Reed College Sabbatical Research Fellowship (2018-2019)**

Isolating neural mechanisms of conscious perception via no-report paradigms

Role: PI (Collaborator: *Steven Hillyard*)

**NIH – K23 Award (2016-2020)**

Neurophysiological mechanisms of cognitive and emotional control in ADHD (K23 MH108656-01A1)

Role: Collaborator (PI: Sarah Karalunas)

**Murdock College Research Program for Life Sciences (2013-2014)**

Electrophysiological dynamics of cross-modal plasticity in the lateral occipital complex due to sensory substitution training

Role: Collaborator (PI: Enriqueta Canseco-Gonzalez)

**Kavli Institute for Brain and Mind - Innovative Research Grant (2010-2011)**

Spatio-temporal neuroimaging of conscious and non-conscious visual processing

Role: PI (Collaborators: *Steven Hillyard & Eric Halgren*)

**Postdoctoral Fellowship (2007-2009)**

Training program in cognitive neuroscience (Grant # 5 T32 MH20002)

Institute for Neural Computation, University of California San Diego

Role: postdoctoral trainee (Sponsor: *Steven Hillyard*; Co-sponsor: *James Brewer*)

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**TEACHING:****Courses Taught at Reed (2011-present)**

- Cognitive Neuroscience (Psy 334)
- Sensation & Perception (Psy 381)
- Neuroscience of Consciousness (Psy 217)
- Attention & Consciousness Research (Psy 417)
- Introduction to Psychology (Psy 121)
- Senior Thesis (Psy 470)

**Teaching Experience Prior to Reed:**

- Physiological Psychology Laboratory (2005-2007)
  - Sensation and Perception Laboratory (2003-2005)
  - Sensation and Perception Guest Lecturer (2006)
  - Introductory Psychology Guest Lecturer (2003)
  - History and Systems of Psychology GTA (2002)
  - Introduction to Psychology GTA (2002)
  - Visual Perception UTA (2000)
  - Logic UTA (1999)
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## **RESEARCH TRAINING:**

### **Electroencephalography & Event-related potentials (EEG/ERP)**

- Post-doctoral research in Steve Hillyard's ERP Lab, UCSD (2007-2011)
- Graduate training, Perceptual & Brain Sciences Program, Colorado State University (2005-2007)
- ERP Boot Camp, workshop hosted by Steve Luck at the SPR Annual Meeting (2006)
- ERP Boot Camp, workshop hosted by Steve Luck at Reed College (2016)

### **Brain Imaging (fMRI) & Magnetoencephalography (MEG)**

- Post-doctoral research in Eric Halgren's Multimodal Imaging Lab, UCSD (2010-2011)
- Post-doctoral training in Jim Brewer's fMRI Lab, UCSD (2007-2009)
- fMRI methods training with Frank Haist, David Dubowitz, & Richard Buxton, UCSD (2007)

### **Psychophysics**

- Graduate training in Jan Nerger's Lab, Colorado State University (2002-2005)
- Undergraduate training in Ken Fuld's Lab, University of New Hampshire (2000-2001)