

James F. Cavanagh, PhD

Curriculum Vitae

Google Scholar Stats (03/21/18): Citations 3047 H=24 M=2

Biographical

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Education & Training

2013 - present	University of New Mexico	Assistant Professor
2010 - 2013	Brown University	Post-Doc
2010	University of Amsterdam	Visiting Scholar
2005 - 2010	University of Arizona	Ph.D. Psychology
2002 - 2004	San Francisco State University	M.A. Psychology
1996 - 2000	Western Michigan University	B.A. Sociology

Research Interests

Oscillations: The brain processes information with oscillations of neuronal populations. I use EEG to measure these oscillations, particularly when the *frontal cortex processes error or conflict information in order to adapt behavior.*

Computations: Oscillations gate the timing, location, and intensity of neuronal calculations. I aim to integrate abstract and neural network modeling with EEG to understand the *computational functions of fronto-striatal systems during adaptive behavior.*

& Implications: These perspectives combine into a powerful approach for understanding brain function, and may reveal the manner of compromised fronto-striatal functioning in neurological and psychiatric disorders, especially *Traumatic Brain Injury, Parkinson's disease, OCD & basic aspects of stress and emotion.*

Under Review

Broadway, J.M., Rieger, R.E., Wilson, K.W., Gill, D., Quinn, D., Mayer, A.W. & **Cavanagh, J.F.** Frontal lobe predictors of delayed memory deficits among acute and chronic mild traumatic brain injury patients

Cavanagh, J.F. Wilson, K., Reiger, R., Gill, D., Broadway, J.M., Story Remer, J.H., Fratzke, V., Mayer, A.R. & Quinn, D.K. Frontal EEG novelty responses predict symptomatic distress and recovery in sub-acute mild traumatic brain injury.

Cavanagh, J.F. Electrophysiology as a theoretical and methodological hub in the neural sciences.

Janowich, J.R. & **Cavanagh, J.F.** Temporal information and trait impulsivity guide prefrontal preparatory activity.

Brown, D.R., Pirio Richardson, S. & **Cavanagh, J.F.** An EEG feature of reward processing is sensitive to Parkinson's disease duration.

Cavanagh, J.F., Bismark, A.W., Frank, M.J. & Allen, J.J.B. Multiple dissociations between co-morbid depression and anxiety on reward and punishment processing: Evidence from computationally-informed EEG

Janowich, J.R. & **Cavanagh, J.F.** Immediate vs. delayed control demands elicit distinct mechanisms for instantiating proactive control.

Cavanagh, J.F., Coffman, B. & Dillon, D.G. Memento malum: Negative prediction errors boost episodic encoding via theta band synchrony.

Marquardt, K. **Cavanagh, J.F.** & Brigman, J.L. Prenatal alcohol exposure disrupts corticostriatal coordination required for behavioral flexibility

Janowich, J.R. & **Cavanagh, J.F.** Delay Knowledge and Trial Set Count Modulate Use of Proactive vs. Reactive Control: A Meta-Analytic Review

Publications

*equal effort

Singh, A. Pirio Richardson, S. Narayanan, N, **Cavanagh, J.F.** Frontal midline theta is diminished during cognitive control in Parkinson's disease.

Ryman, S., **Cavanagh, J.F.**, Wertz, C.J., Shaff, N.A., Dodd, A.B., Stevens, B., Ling, J. Yeo, R.A. & Mayer, A.R. Impaired Midline Theta Power and Connectivity During Proactive Cognitive Control in Schizophrenia

Albrecht, M.A., Waltz, J., **Cavanagh, J.F.**, Frank, M.J. & Gold, J.M. Spatial response conflict using a modified Simon task is enhanced in schizophrenia but reveals no differences in reward/punishment biases

Brown, D.R. & **Cavanagh, J.F.** (2018) Rewarding images do not invoke the reward positivity: they inflate it. *International Journal of Psychophysiology*,

Bridwell, D.A., **Cavanagh, J.F.**, Collins, A.G.E., Nunez, M.D., Srinivasan, R., Stober, S. & Calhoun, V.D. (2018) Moving beyond ERP components: A selective review of approaches to integrate EEG and behavior. *Frontiers in Human Neuroscience*, 12, 106.

Broadway, J.M, Frank, M.J. & **Cavanagh, J.F.** (2018) Effects of dopamine D2 agonist on working memory capacity and EEG: An individual differences investigation. *Cognitive, Affective, and Behavioral Neuroscience*, 18(3), 509-520.

Cavanagh, J.F., Kumar, P., Mueller, A.A., Pirio Richardson, S. & Mueen, A. (2018). Diminished EEG habituation to novel events effectively classifies Parkinson's patients. *Clinical Neurophysiology*, 129, 409-418.

Cavanagh, J.F., Napolitano, A., Wu, C. & Mueen, A. (2017). The Patient Repository for EEG Data + Computational Tools. *Frontiers in Neuroinformatics*, 11, 67.

Smith, E.E., **Cavanagh, J.F.** & Allen, J.J.B. (2017) Intracranial source activity (eLORETA) related to scalp-level asymmetry scores and depression status. *Psychophysiology* 55(1),

Pinner, J.F.L. & **Cavanagh, J.F.** (2017) Frontal theta accounts for individual differences in the cost of conflict on decision making. *Brain Research*, 1672, 73-80.

Brown, D. R & **Cavanagh, J.F.** (2017) The sound and the fury: Late positive potential is sensitive to sound affect. *Psychophysiology*, 54 (12), 1812-1825.

Cavanagh, J.F., Meyer, A. & Hajcak, G. (2017) Error-specific cognitive control alterations in General Anxiety Disorder. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 2(5), 413-420.

Cavanagh, J.F., Mueller, A.A., Brown, D.A., Janowich, J.R., Story-Remer, J.H., Wegele, A. & Pirio Richardson, S. (2017) Cognitive states influence dopamine-driven aberrant learning in Parkinson's disease. *Cortex*, 90, 115-124.

Chen, K-H., Okerstrom, K.L., Kingyon, J.R., Anderson, S.W., **Cavanagh, J.F.** & Narayanan, N.S. (2016) Startle habituation and midfrontal theta activity in Parkinson's Disease. *Journal of Cognitive Neuroscience*, 28 (12), 1923-1932.

van de Vijver, I., Ridderinkhof, K.R., Harsay, H.A., Reneman, L., **Cavanagh, J.F.** Buitengeweg, J. & Cohen, M.X. (2016) Frontostriatal anatomical connections

predict age- and difficulty-related differences in reinforcement learning. *Neurobiology of Aging*, 46, 1-12.

Albrecht, M.A., Waltz, J., **Cavanagh, J.F.**, Frank, M.J. & Gold, J.M. (2016) Reduction of Pavlovian bias in schizophrenia: Enhanced effects in clozapine-administered patients. *PLoS ONE*, 11(4), <http://dx.doi.org/10.1371/journal.pone.0152781>

Cavanagh, J.F. & Castellanos, J. (2016). Identification of canonical neural events during continuous gameplay of an 8-bit style video game. *NeuroImage*, 133, 1-13.

Parker, K.L., Chen, K-H., Kingyon, J.R., **Cavanagh, J.F.** & Narayanan, N.S. (2015). Medial frontal ~4Hz activity in humans and rodents is attenuated in PD patients and in rodents with cortical dopamine depletion. *Journal of Neurophysiology*, 114, 1310-1320.

Cavanagh, J.F. (2015) Cortical delta activities reflect reward prediction error and related behavioral adjustment, but at different times. *NeuroImage*, 110, 205-216.

Cavanagh, J.F. & Shackman, A.J. (2015) Frontal theta reflects dispositional anxiety and cognitive control: Evidence from meta analyses. *Journal of Physiology – Paris*, 109, 3-15.

Turan, B., Foltz, C., **Cavanagh, J.F.**, Wallace, B.A., Cullen, M., Rosenberg, E.L., Jennings, P., Ekman, P. & Kemeny, M.E. (2015) Anticipatory sensitization to repeated stressors: The role of initial cortisol reactivity and meditation / emotion skills training. *Psychoneuroimmunology*, 52, 229-238.

Frank, M.J., Gagne, C. Nyhus, E., Masters, S.E., Wiecki, T.V., **Cavanagh, J.F.** & Badre, D. (2015) fMRI and EEG correlates of dynamic decision parameters during reinforcement learning. *Journal of Neuroscience*. 35, 484-494.

Parker, K.L., Chen, K-H., Kingyon, J., **Cavanagh, J.F.** & Narayanan, N.S. (2015) Prefrontal D1 dopamine signaling is essential for temporal control during interval timing. *Journal of Neuroscience*, 34(50), 16774-16783.

Cavanagh, J.F., Masters, S.E., Bath, K. & Frank, M.J. (2014) Conflict acts as an implicit cost in reinforcement learning. *Nature Communications* 5:5394.

Cavanagh, J.F. & Frank, M.J. (2014) Frontal theta as a mechanism for cognitive control. *Trends in Cognitive Science*, 18(8), 414-421.

Cavanagh, J.F., Sanguinetti, J.L., Allen, J.J.B., Sherman, S.J. & Frank, M.J. (2014). The subthalamic nucleus contributes to post-error slowing. *Journal of Cognitive Neuroscience*, 26(100), 2637-2644.

Cavanagh, J.F., Wiecki, T.V., Kochar, A., & Frank, M.J. (2014) Eye tracking and pupillometry reflect dissociable indices of latent cognitive processes. *Journal of Experimental Psychology: General*, 143(4), 1476-1488.

Collins, A.G.E., **Cavanagh, J.F.**, & Frank, M.J. (2014) Human EEG uncovers latent, generalizable rule structure during learning. *Journal of Neuroscience*, 34(13), 4677-4685.

Narayanan, N.S.*, **Cavanagh, J.F.***, Frank, M.J. & Laubach, M. (2013) A common low frequency oscillatory mechanism for adaptive control in rats and humans. *Nature Neuroscience*, 16(12), 1888-1895.

Cavanagh, J.F. (2013) The Where and When of “What-If”. *Neuron*, 79(6), 1040-1041. [Invited Commentary]

Cavanagh, J.F., Eisenberg, I., Guitart-Masip, M., Huys, Q. & Frank, M.J. (2013) Frontal theta overrides Pavlovian learning biases. *Journal of Neuroscience*, 33(19), 8541-8548.

Cavanagh, J.F. & Frank M.J. (2013) Stop! Stay tuned for more information. *Experimental Neurology*. [Invited Commentary]

Cavanagh, J.F., Figueroa, C.M., Cohen, M.X & Frank, M.J. (2012) Frontal theta reflects uncertainty and unexpectedness in exploration and exploitation. *Cerebral Cortex*, 11, 2575-2586

Cavanagh, J.F., Neville, D., Cohen, M.X, van de Vijver, I., Harsay, H., Watson, P., Buitengeweg, J., & Ridderinkhof, K.R. (2012). Individual differences in risky decision-making among seniors correlates with increased reward sensitivity. *Frontiers in Decision Science*, 6(111), 1-7

Cavanagh, J.F., Zambrano-Vazquez, L., & Allen, J.J.B. (2012) Theta lingua franca: A common mid-frontal substrate for action monitoring processes. *Psychophysiology*, 49(2), 220-238

Kemeny, M.E., Foltz, C.A, **Cavanagh, J.F**, Giese-Davis, J., Jennings, P., Rosenberg, E.L., Gillath, O., Shaver, P., Wallace, A. & Ekman, P. (2012) Contemplative/emotion training enhances emotional behavior. *Emotion*, 12(2), 338-350

Cavanagh, J.F., Bismark, A., Frank, M.J., & Allen, J.J.B. (2011) Larger error signals in depression are associated with better avoidance learning. *Frontiers in Psychology: Cognition*, 2, 331, 1-6.

Cavanagh, J.F., Wiecki, T.V., Cohen, M.X, Figueroa, C.M., Samanta, J., Sherman S.J., Frank, M.J. (2011) Subthalamic nucleus stimulation reverses mediofrontal influence over decision threshold. *Nature Neuroscience*, 14(11), 1462-1467

Cohen, M.X, **Cavanagh, J.F.** & Slagter, H.A. (2011) Commentary on Foti et al. *Human Brain Mapping*, 32(12), 2270-2271

Cohen, M.X, **Cavanagh, J.F.** (2011). Single trial regression elucidates the role of prefrontal theta oscillations in response conflict. *Frontiers in Psychology: Perception Science*, 2, 30, 1-12

Cavanagh, J.F., Frank, M.J., & Allen, J.J.B. (2011). Social stress reactivity alters reward and punishment learning. *Social, Cognitive, and Affective Neuroscience*, 6(3), 311-320

Cavanagh, J.F., Gründler, T.O.J., Frank, M.J. & Allen, J.J.B. (2010). Altered cingulate sub-region activation accounts for task related dissociation in ERN amplitude as a function of obsessive – compulsive symptoms. *Neuropsychologia*, 48(7), 2098-2109

Cavanagh, J.F., Frank, M.J., Klein, T.J. & Allen, J.J.B. (2010). Frontal theta links prediction error to behavioral adaptation in reinforcement learning. *NeuroImage*, 49(4), 3198-3209

Gründler, T.O.J.*, **Cavanagh, J.F.***, Figueroa, C.M., Frank, M.J. & Allen, J.J.B. (2009). Task related dissociation in ERN amplitude as a function of obsessive – compulsive symptoms. *Neuropsychologia*, 47(8-9), 1978-1987

Cavanagh, J.F.*, Cohen, M.X.* & Allen, J.J.B. (2009). Prelude to and resolution of an error: EEG phase synchrony reveals cognitive control dynamics during action monitoring. *Journal of Neuroscience*, 29(1), 98-105

Cavanagh, J.F., & Allen, J.J.B. (2009). The Behavioral Activation System. In Sander, D. & Scherer, K.R. *Oxford Companion to Affective Sciences*, Oxford University Press.

Cavanagh, J.F., & Allen, J.J.B. (2009). The Behavioral Inhibition System. In Sander, D. & Scherer, K.R. *Oxford Companion to Affective Sciences*, Oxford University Press.

Cavanagh, J.F., & Allen, J.J.B. (2008). Multiple aspects of the stress response to social evaluative threat: An electrophysiological investigation. *Psychoneuroendocrinology*, 33, 41-53

Cavanagh, J., Geisler, M. (2006). Mood effects on the ERP processing of emotional intensity in faces: A P3 investigation with depressed students. *International Journal of Psychophysiology*, 60, 27-33

Current Funding

NIMH 1UH2/3MH109168-01

Dates: 04/01/2016 – 06/31/2020

PI: Jared Young

“Neurophysiological biomarkers of behavioral dimensions from cross-species paradigms”

Direct Costs: \$1,566,674

Role: Co-Investigator

NIGMS 1P20GM109089-01A1

Dates: 09/15/2015 – 06/30/2020

PI: Bill Shuttleworth

UNM Center for Brain Recovery and Repair

Direct costs: \$11.357 million

Subcomponent direct costs: \$885,499

Role: Project PI

Completed Funding

UNM Office of the Vice President of Research

Dates: 06/01/2016 – 05/30/2017

PI: James Cavanagh

“PRED+CT: A Patient Repository of EEG Data and Computational Tools”

Direct Costs: \$19,444

Role: PI

NIAAA R21AA0023947-01A1

Dates: 10/01/2015 – 09/31/2017

PI: Brandi Fink

Over-Arousal as a Mechanism between Alcohol and Intimate Partner Violence

Direct Costs: \$214,178

Role: Co-Investigator

NIAAA R21AA023346

Dates: 09/01/2015 – 08/31/2017

PI: Pilar Sanjuan

Psychophysiological and Neural Mechanisms of Emotion Dysregulation in Alcohol Disorders Comorbid with PTSD

Direct costs: \$174,259

Role: Co-Investigator

University of Iowa Medical School

Dates: 04/01/2013 – 04/01/2014

PI: Nandakumar S. Narayanan

“Parkinson’s Disease, Cognitive Symptoms, and Medial Prefrontal Processing”

Direct costs: \$20,000

Role: Co-Investigator

NSF 1125788

Dates: 09/01/2011 – 08/31/2015

PI: Michael J. Frank (*co-written by James F. Cavanagh)

“Electrophysiological and Computational Studies of Action Monitoring”

Direct costs: \$757,012

Role: Co-Investigator

NIH NRSA 5T32MH019118-21

Dates: 07/01/2011 – 06/30/2012

PI: James F. Cavanagh

Direct costs: \$40,556

Role: Fellowship

NIH NRSA F31MH082560-01A2

Dates: 09/15/2008 – 08/17/2010

PI: James F. Cavanagh

“How stress alters neural systems of reinforcement: A model of depressive etiology”

Direct costs: \$61,326

Role: Fellowship

Professional Memberships and Service Activities

- Consulting Editor: *Cognitive, Affective, and Behavioral Neurosciences*
- Consulting Editor: *Brain Research*
- Co-Organizer: *Opinions and Discussions on Cognitive Neuroscience*
Amsterdam 2009
- Member: Cognitive Neuroscience Society (2004-2017)
- Member: Society for Psychophysiological Research (2005-2017)
- Member: Society for Neuroscience (2008-2017)
- Society for Psychophysiological Research: Poster Judge (2015), Early Careers Panelist (2015), Program Committee (2017)

Awards & Recognitions

2018	Early Career Award	Society for Psychophysiological Research
2013	Travel Award	COSYNE conference, Salt Lake City UT
2011	Travel Award	DEFD conference, Boulder CO
2010	Scholarship Award	UA Grad Council for College of Science
2010	Scholarship Award	UA Psychology Dept
2009	Tursky (Top Student Poster) Award	Society for Psychophysiological Research
2008	Travel Award	UA Graduate Student Council
2006	Travel Award	UA Graduate Student Council
2005	Pre-Doctoral Research Grant	UA Social & Behavioral Research Institute
2000	Graduated Cum Laude	Western Michigan University

Conference Talks

Cavanagh, J.F. (2017) Open tools for EEG-based pattern classification of psychiatric and neurological disease. *Presented at the Society for Psychophysiological Research, Vienna, Austria, 10/17*

Cavanagh, J.F., Meyer, A. & Hajcak, G. (2017) Error-specific cognitive control alterations in General Anxiety Disorder. *Presented at the Society for Psychophysiological Research, Vienna, Austria, 10/17.*

Smith, E.E., **Cavanagh, J.F.** & Allen, J.J.B. (2017) Intracranial source activity related to scalp-level asymmetry scores and depression status. *Presented at the Society for Psychophysiological Research, Vienna, Austria, 10/17.*

Cavanagh, J.F., Coffman, B. & Dillon, D.E. (2017) Memento malum: Mistakes boost memory via fronto-hippocampal theta synchrony. *Presented at the Organization for Human Brain Mapping, Vancouver, Canada, 06/17.*

Cavanagh, J.F. (2016). Dissociated Circuit Motifs: Multiple Mechanisms for Control. *Presentation at the Computational and Systems Neuroscience Society (Workshop: "Computations of the Dorsomedial Prefrontal Cortex"), Salt Lake City, UT, 03/16.*

Cavanagh, J.F. (2015). E-Phys is the Basis: A Translational Model of Adaptive Control. *Presentation at Society for Psychophysiological Research, Seattle, WA, 09/15.*

Cavanagh, J.F. (2015). Is There a General Theory for PFC/ACC Function? *Presentation at the 4th Workshop on Computational Properties of Prefrontal Cortex, Washington, DC, 05/15.*

Cavanagh, J.F. (2015). Dynamic Thresholds in Decision Making. *Presentation at the Computational and Systems Neuroscience Society (Workshop: "Random Walk Models Across Decision-Making Domains"), Salt Lake City, UT, 03/15.*

Cavanagh, J.F. (2014). Frontal Theta as a Mechanism for Cognitive Control. *Presentation at the 3rd Workshop on Computational Properties of Prefrontal Cortex, Whistler, BC, Canada, 10/14.*

Cavanagh, J.F. (2014). Frontal Theta as a Mechanism for Affective and Effective Control. *Presentation at the Society for Psychophysiological Research, Atlanta, GA, 09/14.*

Cavanagh, J.F. (2014). Synchrony in the Subthalamic Nucleus: Adaptive and Maladaptive Patterns in Health and Disease. *Presentation at the Computational and Systems Neuroscience Society (Workshop: "Rogue States: Altered Dynamics of Neural Circuit Activity in Brain Disorders"), Salt Lake City, UT, 03/14.*

Cavanagh, J.F. (2013). Theta as a Common Language for Medial Prefrontal Cortical Operations. *Presentation at Neural Circuits for Adaptive Control of Behavior, Paris, France, 9/13.*

Cavanagh, J.F. (2009). Allostatic Load and the Brain. *Presentation at the Opinions and Discussions on Cognitive Neuroscience: Amsterdam workshop, Amsterdam, Netherlands, 10/09.*

Cavanagh, J.F., Gründler, T.O.J., Frank, M.J. & Allen, J.J.B. (2009). Damned if you do, Damned if you don't: Dissociating Error Monitoring Systems in OCD. *Presentation at the Society for Psychophysiological Research, Berlin, Germany, 10/09.*

Cavanagh, J.F., Frank, M.J. & Allen, J.J.B. (2008). Social Stress Alters Cognitive Control in Vulnerable Individuals: Implications for Reinforcement

Learning. *Presentation at the Action Monitoring and Behavioral Adjustment workshop, Aachen, Germany, 03/08*

Kemeny, M.E., **Cavanagh, J.F.**, & Foltz, C.A. (2008). Cognitive Response Determines Autonomic and Endocrine Response to Social Threat. *Presentation at the Society for Personality and Social Psychology, Albuquerque, NM, 01/08*

Conference Poster Presentations

Cavanagh, J.F., Coffman, B. & Dillon, D.E. (2017) Memento malum: Mistakes boost memory via fronto-hippocampal theta synchrony. *Poster presented at the Organization for Human Brain Mapping, Vancouver, Canada, 06/17.*

Barto, D. & **Cavanagh, J.F.** (2017) Pupillometry and frontal theta reflect decision threshold increase during evidence accumulation. *Poster presented at the meeting of the Cognitive Neuroscience Society, San Francisco, CA, 03/17.*

Brown, D.R. & **Cavanagh, J.F.** (2017) Late positive potential reflects the relationship between emotion intensity and memory recall. *Poster presented at the meeting of the Cognitive Neuroscience Society, San Francisco, CA, 03/17.*

Janowich, J.R. & **Cavanagh, J.F.** (2017) Knowledge of temporal delay instantiates distinct neural pathways for proactive cognitive control. *Poster presented at the meeting of the Cognitive Neuroscience Society, San Francisco, CA, 03/17.*

Broadway, J.B., Rieger, R.E. Wilson, K., & Mayer, A.R., & **Cavanagh, J.F.** (2017) EEG dissociates acute brain injury patients from controls during visuospatial working memory. *Poster to be presented meeting of the Cognitive Neuroscience Society, San Francisco, CA, 03/17.*

Cavanagh, J.F., Broadway, J.B., Wilson, K., Rieger, R.E. & Mayer, A.R. (2017) EEG reveals deficits in cognitive control following brain injury. *Poster presented at the meeting of the Cognitive Neuroscience Society, San Francisco, CA, 03/17.*

Cavanagh, J.F. (2016) Memento malum: Mistakes boost memory via fronto-hippocampal theta synchrony. *Poster presented at the 6th Motivation and Cognitive Control conference, St. Andrews, Scotland, 08/16.*

Albrecht, M.A., Waltz, J., **Cavanagh, J.F.**, Frank, M.J. & Gold, J.M. (2016) Absence of selective deficits in reward learning relative to punishment learning in patients with a high burden of negative symptoms. *Poster presented at the Society for Research on Psychopathology, Baltimore, MD, 09/16.*

Mueller, A.A. & **Cavanagh, J.F.** (2016). Negative affect elicits cognitive control. *Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York, NY, 04/16.*

- Janowich, J.R. & **Cavanagh, J.F.** (2016). Anticipated temporal delay triggers distinct types of proactive control: A double dissociation with EEG. *Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York, NY, 04/16.*
- Ruggiero, R.N., Parker, K., Kim, Y., Emmons, E., Chen, K.H., **Cavanagh, J.F.** & Narayanan, N.S. (2015). Dopamine manipulation disrupts delta/theta activity in medial frontal cortex during cognitive tasks in humans and rodents. *Poster presented at the Society for Neuroscience, Chicago, IL, 10/15.*
- Jang, A.J., **Cavanagh, J.F.**, Frank, M.J. (2015). Manipulation of emotional attribution influences error-related EEG and cognitive control. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Brown, D.R. & **Cavanagh, J.F.** (2015) Late positive potential reflects the relationship between emotion intensity and memory recall. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Pinner, J. & **Cavanagh, J.F.** (2015) Using electroencephalography to assess risky behavior in varying levels of congruency. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Mueller, A.A. & **Cavanagh, J.F.** (2015) Negative affect enhances cognitive control. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Ryman, S.G., Dodd, A.B., Ling, J., Hanlon, F.M., **Cavanagh, J.F.**, Yeo, R.A., Mayer, R.A. (2015) Attention related modulation of the sensory cortices. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Janowich, J. & **Cavanagh, J.F.** (2015). Timing variant of popular cognitive control task elicits distinct neuro-cognitive instantiations of proactive and reactive control: a double dissociation in EEG. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Barto, D. & **Cavanagh, J.F.** (2015) Pupillometry Reflects Decision Threshold Increase During Evidence Accumulation. *Poster presented at the Society for Psychophysiological Research, Seattle, WA, 09/15.*
- Janowich, J. & **Cavanagh, J.F.** (2015). Timing variant of popular cognitive control task elicits distinct neuro-cognitive signatures of task-switching or working memory. *Poster presented at UNMH Neuroscience Day, Albuquerque, NM, 03/15.*
- Marquardt, K., Sigdel, R., **Cavanagh, J.F.**, Caldwell, K. & Brigman, J. (2014). Impaired behavioral flexibility and altered cortical firing in a murine moderate prenatal alcohol exposure model. *Poster presented at the Society for Neuroscience Meeting, Washington, DC, 11/14.*

Cavanagh, J.F., Masters, S.E., Bath, K. & Frank, M.J. (2014) Conflict acts as an implicit cost in reinforcement learning. *Poster presented at the Society for Psychophysiological Research, Atlanta, GA, 09/14.*

Goldstein M.R., Smith E.E., **Cavanagh J.F.**, Bootzin R.R., Allen J.J.B. (2014) Increased frontal source-modeled waking EEG theta activity in individuals with reported sleep disturbance. *Poster presented at the SLEEP conference, Minneapolis, MN, 5/14.*

Shackman, A.J. & **Cavanagh, J.F.** (2014) The role of rostral cingulate cortex in anxiety and the adaptive control of action. *Poster presented at the Society for Affective Science, Washington, DC, 12/13.*

Shackman, A.J. & **Cavanagh, J.F.** (2013) The role of rostral cingulate cortex in anxiety and the adaptive control of action. *Poster presented at the Neural Circuits Underlying Nociception and Pain and their Plasticity, Heidelberg, Germany, 10/13.*

Smith, E., **Cavanagh, J.F.**, & Allen, J.J.B. (2013). Where it's at: Estimating sources of resting-state frontal EEG alpha asymmetry. *Poster presented at the Society for Psychophysiological Research meeting, Florence, IT, 9/13.*

Cavanagh, J.F., Sanguinetti, J., Allen, J.J.B. & Sherman, S.J., & Frank, M.J. (2013). Subthalamic nucleus contributes to post-error slowing. *Poster presented at the Cognitive Rhythms Collaborative meeting, Boston, MA, 06/13.*

Cavanagh, J.F., Wiecki, T.J, Kochar, A., & Frank, M.J. (2013). Eyetracking and pupillometry are dissociable measures of latent decision processes. *Poster presented at the COSYNE meeting, Salt Lake City, UT, 3/13*

Narayanan, N.S., **Cavanagh, J.F.**, Caetano, M.S., Frank, M.J., & Laubach, M. (2013). Common neural correlates of adaptive control in the anterior cingulate cortex of rats and humans. *Poster presented at the COSYNE meeting, Salt Lake City, UT, 3/13*

Collins, A.G.E, **Cavanagh, J.F.** & Frank, M.J. (2012). EEG predictors of structured task-set learning and transfer during reinforcement learning. *Poster presented at the Society for Neuroscience meeting, New Orleans, LA, 10/12.*

Cavanagh, J.F., Collins, A.G.E., & Frank, M.J. (2012). Welcome to the machine: Pattern classifiers reveal latent cognitive states. *Poster presented at the Society for Psychophysiological Research, New Orleans, LA, 09/12.*

Shackman, A.J. & **Cavanagh, J.F.** (2012). The role of the rostral cingulate cortex in the adaptive control of action. *Poster presented at the Wisconsin Symposium on Emotion, Madison, WI, 04/12.*

Cavanagh, J.F., & Frank, M.J. (2012). Dissociating cortico-basal ganglia systems for inhibiting and slowing behavior: Implications for computational psychiatry.

Poster presented at the Determinants of Executive Function and Dysfunction annual conference, Boulder, CO, 01/12.

Cavanagh, J.F., Cohen, M.X., Wiecki, T.V., Figueroa, C.M., Samanta, J., Sherman S.J., & Frank, M.J. (2011). Subthalamic nucleus stimulation reverses mediofrontal influence over decision threshold. *Poster presented at the Society for Psychophysiological Research, Boston, MA, 09/11.*

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Teaching Experience

Instructor: Psy 641: Seminar: Cognition, Brain & Behavior, *UNM*
 Psy 650: Human Decision Making, *UNM*
 Psy 450: Principles of Psychophysiology, *UNM*
 Psy 650: Functions of Prefrontal Cortex, *UNM*
 Psy 644: Advanced EEG Analysis in Matlab, *UNM*
 Psy 240: Brain and Behavior, *UNM*
 Psy 443: Psychobiology of Emotion, *UNM*
 LAEL-LE94: Psychobiology of Emotion, *RI School of Design*
 Psy 200: Intro to Psychology, *SFSU*
 Psy 371: Intro to Statistics, *SFSU*
 Psy 400: Research Methods, *SFSU*

Lab Instructor: Psy 501b: Psychophysiology Lab, *University of Arizona*
 Psy 297a: Research Methods, *University of Arizona*
 Psy 571: Psychophysiology Lab, *SFSU*
 Psy 400: Research Methods, *SFSU*
 Psy 371: Intro to Statistics, *SFSU*

Ad-Hoc Reviewer

American Journal of Psychiatry	Human Brain Mapping
Behavioural Brain Research	International J. of Psychophysiology
Behavioral Neuroscience	Journal of Cognitive Neuroscience
Biological Psychology	Journal of Child Psychiatry and Psychol.
Biological Psychiatry	JEP: General
Biomedical Signal Processing & Control	JEP: Learning, Memory & Cognition
Brain	JEP: Human Perception & Performance
Brain and Cognition	Journal of Neural Engineering
Brain Imaging and Behavior	Journal of Neuroscience
Brain Research	Journal of Personality
Brain Stimulation	Journal of Physiology (Paris)
Cerebral Cortex	Movement Disorders
Clinical Neurophysiology	Nature Communications
Cog., Aff. & Beh. Neuroscience	Nature Human Behavior
Cognition	Nature Neuroscience
Cognition and Emotion	Neuron
Comp. Methods and Prog. in Biomed.	Neuroscience
Computational Psychiatry	NeuroImage
Cortex	Neuropsychologia
Current Biology	Neuroscience & BioBehavioral Reviews
European Journal of Neuroscience	PNAS
European Neuropsychopharmacology	PLoS Computational Biology
eLife	PLoS One
Frontiers in Cognition	Psychological Review
Frontiers in Decision Neuroscience	Psychological Science
Frontiers in Human Neuroscience	Psychology and Aging

Psychoneuroendocrinology
Psychophysiology
Social, Cognitive & Affective Neurosci.

Social Neuroscience
Trends in Cognitive Science

Army Research Laboratory	(ARL – USA)
Austrian Science Fund	(FWF – Austria)
Health Research Council of New Zealand	(HRD – NZ)
Medical Research Council	(MRC – UK)
National Institute of Health	(NIH - USA)
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National Sciences and Engineering Res. Council	(NSERC - Canada)
Netherlands Org. for Health Research and Devel.	(ZonMw - Netherlands)
Research Foundation – Flanders	(FWO - Belgium)
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Welcome Trust	(UK)