

**Vincent P. Clark, PhD**

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**Educational History:**

***Intramural Research Fellow, 1993-1997***

Laboratory of Brain and Cognition, National Institute of Mental Health, NIH.  
10 Center Dr., MSC 1366, Bldg. 10, Room 4C104, Bethesda, MD 20892-1366  
Major Field of Study: Neuroimaging; Mentors: Dr. Leslie Ungerleider and Dr. James Haxby

***Ph.D. in Neuroscience, 1987-1993***

Graduate Program in Neuroscience, University of California, San Diego  
9500 Gilman Drive, La Jolla CA 92093-0634  
Major Field of Study: Cognitive Neuroscience; Dissertation Advisor: Dr. Steven A. Hillyard  
Dissertation Title: *Localization and Identification of Functional Regions within the Human Visual System*

***B.S. in Psychobiology with Honors in Psychology, 1982-1987***

Department of Psychology, University of California, Los Angeles  
1285 Franz Hall, Box 951563, Los Angeles, CA 90095-1563  
Mentors: Dr. Jackson Beatty and Dr. Eric Halgren

**Employment History**

**Principal Positions:**

***Professor, 2013-Present***

Department of Psychology, University of New Mexico, MSC03-2220, 1 University of New Mexico, Albuquerque, NM 87131-1161

***Associate Professor, 2002-2013***

Department of Psychology, University of New Mexico, MSC03-2220, 1 University of New Mexico, Albuquerque, NM 87131-1161

***Assistant Professor, 1997-2002***

Department of Psychiatry, University of Connecticut Health Center, MC 1410, 263 Farmington Avenue  
Farmington, CT 06030-1410

**Employment History - Concurrent Appointments and Consultantships:**

***Professor, 2012-2016; Adjunct Professor, 2016-Present***

Translational Neuroscience, The Mind Research Network, 1101 Yale Blvd. NE, Albuquerque, New Mexico 87106

***Director, 2011-Present***

Psychology Clinical Neuroscience Center, Dept. Psychology, University of New Mexico, 1 University of New Mexico, MSC03-2220, Albuquerque, NM 87131-1161

***Professor, Secondary Appointment, 2013-Present***

Department of Neuroscience, University of New Mexico, MSC08-4740, 1 University of New Mexico, Albuquerque, NM 87131

***Previous:***

***Associate Professor, 2009-2012***

Translational Neuroscience, The Mind Research Network, 1101 Yale Blvd. NE, Albuquerque, New Mexico 87106

***Area Head, 2006-2011***

Doctoral Program in Cognition, Brain and Behavior, Department of Psychology, University of New Mexico, MSC03-2220, 1 University of New Mexico, Albuquerque, NM 87131-1161

***Scientific Director, 2006-2009***

The MIND Institute and Research Network, 1101 Yale Blvd. NE, Albuquerque, New Mexico 87106

***Director of Neuroscience, 2004-2006***

The MIND Institute and Research Network, 1101 Yale Blvd. NE, Albuquerque, New Mexico 87106

***Staff Scientist, 2002-2004***

The MIND Institute and Research Network, 1101 Yale Blvd. NE, Albuquerque, New Mexico 87106

***Associate Professor, Secondary Appointment, 2003-2013***

Department of Neuroscience, University of New Mexico, MSC08-4740, 1 University of New Mexico, Albuquerque, NM 87131

***Faculty Member, 1998-2002***

Program in Biomedical Engineering, Room 217, A.B. Bronwell Building, 260 Glenbrook Road, Unit 2247, University of Connecticut, Storrs, CT 06269-2247

***Visiting Scientist and Lecturer, 1996-1997***

Department of Psychology, O'Boyle Hall Room 314, The Catholic University of America, Washington DC 20064

**Professional Recognition, Honors, etc.:**

***High Research Ranking Award, 2017***

Award given to faculty with highest research rankings in the Department of Psychology, UNM

***Inducted into TransTech 200, 2016 & 2017***

Annual list of companies and innovators who are driving technology for mental and emotional wellbeing forward.  
<http://transtech200.com/>

***Education Chair (Elected by peers), 2007-2010***

Organization for Human Brain Mapping

***Post-Doctoral Training Fellowship (Competitive), 1993***

McDonnell-Pew Center for Cognitive Neuroscience, UCSD

***Fellowship (Competitive), 1991***

Dartmouth Summer Institute in Cognitive Neuroscience

***Pre-Doctoral Training Fellowships (Competitive), 1990-1993***

McDonnell-Pew Center for Cognitive Neuroscience, UCSD

***Honors in Psychology, 1987***

Department of Psychology, University of California, Los Angeles

### Short Narrative Description of Research, Teaching and Service Interests

**Research:** I utilize neuroimaging (EEG, MEG, sMRI, fMRI, DTI/DSI and MRS) and neurostimulation (TES/tDCS, TMS, LLLS and TUS) to examine hypotheses regarding the mechanisms of attention, perception and memory in healthy people and how these processes are altered in patients with brain and mental illness. My current research interests include three major areas: 1) The application of neuroimaging for the study and diagnosis of neurological and psychiatric disorders; 2) The development of novel treatment modalities for these disorders; 3) The development of brain stimulation techniques for cognitive enhancement in healthy volunteers. I currently have 90 publications, 80 peer-reviewed, with an *H*-index of 33 (*M* of 1.3) in Web of Science and *H* of 41 (*M* of 1.6) in Google Scholar, with an *i10* of 58, and *H* of 35 since 2013. I have helped to acquire over \$90 million in funding, acquiring and/or managing approximately \$11 million of this as PI and an additional \$23 million as Director or Scientific Director. During my training and later as a postdoc and junior faculty member, I have helped to develop a number of new technologies currently used in cognitive neuroscience, including the imaging of cortical laminar architecture *in-vivo* with MRI, and randomized designs for fMRI studies, which were summarized in an invited article for an issue of *NeuroImage* commemorating the 20th anniversary of fMRI (Clark 2012). My addiction and brain stimulation work has been described in print and on TV, including *Nature*, *Science*, *The New York Times*, *The Economist*, *NPR*, *BBC*, *The Atlantic*, *Psychology Today*, *The New Yorker*, *Scientific American*, *Forbes*, *ABC Nightline*, and podcasts such as [Smart Drug Smarts](#) and other media outlets in the US and internationally. Our recent paper focused on closed-loop tACS during sleep (Ketz et al. 2018) received an Altmetric attention score of 473, ranking in top 1%. My research focusing on the use of novel methods to treat brain and mental illness led to my TEDx talk (<https://www.youtube.com/watch?v=iNWBveV7RBI>), and an invited hour-long lecture that has received over 66K views to date (<https://www.youtube.com/watch?v=dUMUIXNeBRQ>).

**Teaching and Mentoring:** I supervise and maintain an active research laboratory for training, and I have organized a variety of courses at the graduate and undergraduate level, and have also organized a number of professional meetings and courses for the broader scientific community. Five of my former students have completed their PhDs and another four have completed their Masters. I currently support 25 staff and trainees in my laboratory, and have mentored minority students from the McNair Achievement Program who have gone on to graduate school. I teach several courses including Brain and Behavior, Intro to Functional Neuroimaging, Advanced Functional Neuroimaging, Clinical Neuroimaging, CBB Seminar, and both EEG Laboratory and Introduction to the PCNC Laboratory. My lab courses are designed to train students to use the facilities offered by our Psychology Clinical Neuroscience Center, for which I am founding Director. I have chaired a number of scientific meetings here in Albuquerque, including a workshop entitled *Imaging Neuroinflammation and Neuropathic Pain* with 30 presenters from 7 countries, leading to a special issue of the *Journal of NeuroImmune Pharmacology* (Vol. 8, Issue 3, 2013) that I co-edited. I was also elected Education Chair by my peers for the Organization for Human Brain Mapping, where I helped to organize 20 courses for approximately 1500 attendees for meetings in Melbourne, San Francisco and Barcelona, and directed two courses: *Multimodal Imaging* in 2010 in Barcelona, and *Brain Stimulation* in 2014 in Hamburg.

**Service:** My service interests have focused on facilitating cognitive neuroscience research and education nationally and internationally, with the goals of developing new methods for reducing the impact of brain and mental illness and of improving cognitive functions in healthy people. My focus has also been on developing and promoting neuroimaging research infrastructure here at UNM for faculty and students, which barely existed when I arrived. I was recruited to UNM in 2002 to help build and organize the Mind Research Network ([www.mrn.org](http://www.mrn.org)). While Director of Neuroscience, and then as Scientific Director, I helped to purchase, organize and manage its research infrastructure, including an HD-EEG suite, a 1 million SNP Illumina genome system, 2 MEGs and 3 MRIs with numerous upgrades, including the first mobile MRI capable of functional imaging, and extensive data processing resources. I mentored 12 junior scientists and hired 3 senior scientists, and extramural funding increased from less than \$500,000 (and \$7 million in debt) to more than \$20 million, with over 300 employees and volunteers. I also served as Area Head for the UNM Graduate Program in Cognition, Brain and Behavior, and as Chair of the Junior Promotion and Tenure Committee for College of Arts and Sciences. In addition, I have served as Handling Editor for *NeuroImage*, and currently serve on the Editorial Boards of *Human Brain Mapping* and *Brain Stimulation*. I am currently the founding Director of the newly created Psychology Clinical Neuroscience Center ([pcnc.unm.edu](http://pcnc.unm.edu)), a 10,000 s.f. facility with 4 HD-EEG labs, 3 neurostimulation labs including TMS, TES, LLLS and TUS, data processing, meeting rooms, testing rooms and lab space supporting 11 PIs and over 130 staff and trainees. Finally, I am founding Chair of the *Brain Stimulation and Imaging Meeting* (BrainSTIM, [brainstim-meeting.org](http://brainstim-meeting.org)), which has met previously in Honolulu, Geneva, Vancouver and Singapore, with Rome planned for 2019. This will also be the inaugural meeting of the International Organization for Neuromodulation (ION) which I am founding to help facilitate research and training in techniques to increase rigor and reproducibility in neurostimulation research, and ultimately to assist in the development of new and better treatments for brain and mental illness.

## Scholarly Achievements

### Refereed Articles:

(Corresponding authorship indicated by “\*”)

1. \*Hunter, MA, Lieberman, G, Coffman, BA, Trumbo, MC, Armenta, ML, Robinson, CSH, Bezdek, MA, O’Sickey, AJ, Jones, AP, Romero, V, Elkin-Frankston, S, Gaurino, S, Eusebi, L, Schumacher, EH, Witkiewitz, K, **Clark, VP.** (2018) Mindfulness-based training with transcranial direct current stimulation modulates neuronal resource allocation in working memory: A randomized pilot study with a nonequivalent control group. *Heliyon*, 4(7):e00685. <https://doi.org/10.1016/j.heliyon.2018.e00685>
2. Ketz N, Jones AP, Bryant NB, **Clark VP**, Pilly PK. (2018). Closed-loop slow-wave tACS improves sleep dependent long-term memory generalization by modulating endogenous oscillations. *Journal of Neuroscience*, 38(33):7314-7326.
3. Patel AN, Howard MD, Roach SM, Jones AP, Bryant NB, Robinson CSH, **Clark VP**, Pilly PK. Mental state assessment and validation using personalized physiological biometrics. (2018). *Frontiers in Human Neuroscience*, 12:221. <https://doi.org/10.3389/fnhum.2018.00221>
4. van Erp, TGM, ..., **Clark, VP**, ....., et al. (2018). Cortical brain abnormalities in 4474 individuals with schizophrenia and 5098 controls via the ENIGMA consortium. *Biological Psychiatry*, in press.
5. Kong, X, ..., **Clark, VP**, ....., et al. (2018). Mapping cortical brain asymmetry in 17,141 healthy individuals worldwide via the ENIGMA consortium. *PNAS*, 115(22):E5154-E5163. <https://doi.org/10.1073/pnas.1718418115>.
6. Thoma, RJ, Haghani-Tehrani, P, Turner, J, Bigelow, R, **Clark, VP**, Yeo, RA, Calhoun, V, Stephen, J (2018). Neuropsychological analysis of auditory verbal hallucinations. *Schizophrenia Research*, 192:459-460. pii: S0920-9964(17)30184-6. doi: 10.1016/j.schres.2017.03.044
7. Bikson M, Brunoni AR, Charvet LE, Clark VP, Cohen LG, Deng ZD, Dmochowski J, Edwards DJ, Frohlich F, Kappenman ES, Lim KO, Loo C, Mantovani A, McMullen DP, Parra LC, Pearson M, Richardson JD, Rumsey JM, Sehatpour P, Sommers D, Unal G, Wassermann EM, Woods AJ, Lisanby SH. (2018). Rigor and reproducibility in research with transcranial electrical stimulation: An NIMH-sponsored workshop. *Brain Stimulation*, 11(3): 465–480. DOI: <https://doi.org/10.1016/j.brs.2017.12.008>
8. Robinson, C, Armenta, M, Combs, A, Lamphere, M, Garza, G, Neary, J, Wolfe, J, Molina, E, Semey, D, McKee, C, Gallegos, S, Jones, A, Trumbo, M, Al-Azzawi, H, Hunter, M, Lieberman, G, Coffman, B, Aboseria, M, Bikson, M, **Clark, VP**, Witkiewitz, K (2017). Modulating affective experience and emotional intelligence with loving kindness meditation and transcranial direct current stimulation: A pilot study. *Social Neuroscience*, in press.
9. Aine, CJ, Bockholt, HJ, Bustillo, JR, Cañive, JM, Caprihan, A, Gasparovic, C, Hanlon, FM, Houck, JM, Jung, RE, Lauriello, J, Liu, J, Mayer, AR, Perrone-Bizzozero, NI, Posse, S, Stephen, JM, Turner, JA, **Clark, VP**, Calhoun, VD. (2017). Multimodal neuroimaging in schizophrenia: Description and dissemination. *Neuroinformatics*, 15(4):343–364. doi:10.1007/s12021-017-9338-9
10. Godwin, CA, Hunter, MA, Bezdek, MA, Lieberman, G, Elkin-Frankston, S, Romero, VL, Witkiewitz, K, **Clark, VP**, Schumacher, EH. (2017). Functional connectivity within and between intrinsic networks correlates with trait mind wandering. *Neuropsychologia*, 103:140-153. doi:10.1016/j.neuropsychologia.2017.07.006
11. Lin, D, Chen, J, Ehrlich, S, Bustillo, JR, Perrone-Bizzozero, N, Walton, E **Clark, VP**, Wang, YP, Sui, J, Du, Y, Ho, BC, Schulz, CS, Calhoun, VD, Liu, J. (2018). Cross-tissue exploration of genetic and epigenetic effects on brain gray matter in schizophrenia. *Schizophrenia Bulletin*, 44(2):443-452. doi: <https://doi.org/10.1093/schbul/sbx068>
12. Giordano, J, Bikson, M, Kappenman, ES, **Clark, VP**, Coslett, HB, Hamblin, MR, Hamilton, R, Jankord, R, Kozumbo, WJ, McKinley, RA, Nitsche, MA, Reilly, JP, Richardson, J, Wurzman, R, Calabrese, E (2017). Mechanisms and effects of transcranial direct current stimulation. *Dose-Response*, January-March:1-22, 15(1):1559325816685467.
13. Thoma, RJ, Meier, A, Houck, J, **Clark, VP**, Lewine, JD, Turner, J, Calhoun, VD Stephen, J. (2017). Diminished auditory sensory gating during active auditory verbal hallucinations. *Schizophrenia Research*, 188: 125–131. <http://dx.doi.org/10.1016/j.schres.2017.01.023>
14. Trumbo, M, Matzen, LE, Coffman, BA, Hunter, MA, Jones, AP, Robinson, R, **Clark, VP.** (2016). Enhanced working memory performance via transcranial direct current stimulation: The possibility of near and far transfer. *Neuropsychologia*, 93(Pt A):85-96. doi: 10.1016/j.neuropsychologia.2016.10.011.
15. Leng, S, Weissfeld, JL, Picchi, MA, Styn, MA, Claus, ED, **Clark, VP**, Wu, G, Thomas, CL, Gilliland, FD, Yuan, J, Siegfried, JM, Belinsky, SA. (2016). A prospective and retrospective analysis of smoking behavior changes in

- ever smokers with high risk for lung cancer from New Mexico and Pennsylvania. *European Journal of Epidemiology*, 7(2) 95-104.
16. Thoma, RJ, Chaze, C, Lewine, JD, Calhoun, VD, **Clark, VP**, Bustillo, J, Houck, J, Ford, JM, Bigelow, R, Wilhelmi, C, Stephen, J, Turner, JA (2016). Functional MRI evaluation of multiple neural networks underlying auditory verbal hallucinations in schizophrenia spectrum disorders. *Frontiers in Psychiatry*, 7, 39. Doi:10.3389/fpsy.2016.00039.
  17. Kim C, Kroger JK, Calhoun VD, **Clark VP**. (2015). The role of the frontopolar cortex in manipulation of integrated information in working memory. *Neuroscience Letters*, 595:25-29. pii: S0304-3940(15)00237-2. doi: 10.1016/j.neulet.2015.03.044.
  18. \*Hunter, MA, Coffman, BA, Gasparovic, C, Calhoun, VD, Trumbo, MC, **Clark, VP**. (2015). Baseline effects of transcranial direct current stimulation on glutamatergic neurotransmission and large-scale network connectivity. *Brain Research*, 1594:92-107. pii: S0006-8993(14)01339-0. doi: 10.1016/j.brainres.2014.09.066.
  19. Plis, SM, Sui, J, Lane, T, Roy, S, **Clark, VP**, Potluru, VK, Huster, RJ, Michael, A, Sponheim, SR, Weisend, MP, Calhoun, VD. (2014). High-order interactions observed in multi-task intrinsic networks are dominant indicators of aberrant brain function in schizophrenia. *NeuroImage*, 102(1):35-48. pii:S1053-8119(13)00797-0. doi:10.1016/j.neuroimage.2013.07.041.
  20. \***Clark, VP**. (2014) The ethical, moral and pragmatic rationale for brain augmentation. *Frontiers in Systems Neuroscience*. 8, 130. doi: 10.3389/fnsys.2014.00130.
  21. Thompson, PM ... **Clark, VP**. ... [and 287 other authors] ... Alzheimer's Disease Neuroimaging Initiative, EPIGEN Consortium, IMAGEN Consortium, Saguenay Youth Study (SYS) Group (2014). The ENIGMA Consortium: large-scale collaborative analyses of neuroimaging and genetic data. *Brain Imaging and Behavior*, 8(2):153-182. doi:10.1007/s11682-013-9269-5.
  22. \***Clark, VP**, Beatty, G, Anderson, RE, Kodituwakku, P, Phillips, J, Lane, TDR, Kiehl, KA, Calhoun, VD. (2014). Reduced fMRI activity predicts relapse in patients recovering from stimulant dependence. *Human Brain Mapping*, 35(2), 414-428. doi:10.1002/hbm.22184.
  23. \*Coffman, BA, **Clark, VP**, Parasuraman R. (2014). Battery powered thought: A review of methods for cognitive enhancement using transcranial direct current stimulation. *NeuroImage*, 85(3):895–908. doi:pii: S1053-8119(13)00855-0. 10.1016/j.neuroimage.2013.07.083.
  24. Steele, VR, Fink, BC, Maurer, JMM, Arabshirani, MR, Wilber, CH, Jaffe AJ, Sidz, A, Pearlson, GD, Calhoun, VD, **Clark, VP**, Kiehl, KA. (2014). Brain potentials measured during a go/nogo task predict completion of substance abuse treatment. *Biological Psychiatry*, 76(1):75-83. pii:S0006-3223(13)00903-7. doi:10.1016/j.biopsych.2013.09.030.
  25. \*Hunter, MA, Coffman, BA, Trumbo, MC, **Clark, VP**. (2013). Tracking the neuroplastic changes associated with transcranial direct current stimulation: A push for multimodal imaging. *Frontiers in Human Neuroscience*, 7:495. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3753560/>
  26. Gollub, RL, Shoemaker, JM, King, MD, White, T, Ehrlich, S, Sponheim, SR, **Clark, VP**, Turner, JA, Mueller, BA, Magnotta, V, O'Leary, D, Ho, BC, Brauns, S, Manoach, DS, Seidman, L, Bustillo, JR, Lauriello, J, Bockholt, J, Lim, KO, Rosen, BR, Schulz, SC, Calhoun, VD, Andreasen, NC. (2013). The MCIC collection: A shared repository of multi-modal, multi-site brain image data from a clinical investigation of schizophrenia. *Neuroinformatics*, 11(3):367-388. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3727653/>
  27. Cooper, MS, **Clark, VP**. (2013). Neuroinflammation, neuroautoimmunity, and the co-morbidities of complex regional pain syndrome. *Journal of NeuroImmune Pharmacology*, 8(3):452-469. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3661922>
  28. \*Coffman, BA, Trumbo, MC, **Clark, VP**. (2012). Enhancement of object detection with transcranial direct current stimulation is associated with increased attention. *BMC Neuroscience*, 13:108. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3494452>
  29. Sui, J, He, H, Pearlson, GD, Adali, T, Kiehl, KA, Yu, Q, **Clark, VP**, Castro, E, White, T, Mueller, BA, Ho BC, Andreasen, NC, Calhoun, VD. (2012). Three-way (N-way) fusion of brain imaging data based on mCCA+jICA and its application to discriminating schizophrenia. *NeuroImage*, 66C:119-132. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3897558>
  30. He, H, Sui, J, Yu, Q, Turner, JA, Ho, BC, Sponheim, SR, Manoach, DS, **Clark, VP**, Calhoun, VD. (2012). Altered small-world brain networks in schizophrenia patients during working memory performance. *PLoS ONE*, 7(6):e38195. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3368895>

31. \*Coffman, BA, Trumbo, MC, Flores, RA, Garcia, CM, van der Merwe, AJ, Wassermann, EM, Weisend, MP, **Clark, VP**. (2012). Impact of tDCS on performance and learning of target detection: Interaction with stimulus characteristics and experimental design. *Neuropsychologia*, 50(7):1594-1602.
32. Sims, AB, **Clark, VP**, Cooper, MS. (2012). Suppression of movement disorders by jaw realignment. *Pain Medicine*, 13(5):731-732.
33. Falcone, B, Coffman, BA, **Clark, VP**, Parasuraman, R. (2012). Transcranial direct current stimulation augments perceptual sensitivity and 24-hour retention in a complex threat detection task. *PLoS ONE*, 7(4): e34993.
34. \***Clark, VP**. (2012). A history of randomized task designs in fMRI. *NeuroImage*, 62(2): 1190–1194.
35. Cullen, KR, Wallace, S, Magnotta, VA, Bockholt, J, Erlich, S, Gollub, RL, Manoach, D, Ho, BC, **Clark, VP**, Lauriello, J, Bustillo, JR, Schulz, SC, Andreasen, NC, Calhoun, VD, Lim, KO, White, T. (2012). Cigarette smoking and white matter microstructure in schizophrenia. *Psychiatry Research: Neuroimaging*, 201(2):152-158.
36. \***Clark, VP**, Coffman, BA, Mayer, AR, Weisend, MP, Lane, TDR, Calhoun, VD, Raybourn, EM, Garcia, CM, Wassermann, EM. (2012). TDCS guided using fMRI significantly accelerates learning to identify concealed objects. *NeuroImage*, 59(1):117-128.
37. \***Clark, VP**, Coffman, BA, Trumbo, MC, Gasparovic, C. (2011). Transcranial direct current stimulation (tDCS) produces localized and specific alterations in neurochemistry: A 1H magnetic resonance spectroscopy study. *Neuroscience Letters*, 500(1): 67-71.
38. Stone, DB, Urrea, LJ, Aine, CJ, Bustillo, JR, **Clark, VP**, Stephen, JM. (2011). Unisensory processing and multisensory integration in schizophrenia: A high-density electrical mapping study. *Neuropsychologia*, 50(7): 1594-1602.
39. Bullard, LM, Browning, ES, **Clark, VP**, Coffman, BA, Garcia, CM, Jung, RE, van der Merwe, AJ, Paulson, KM, Vakhtin, AA, Wootton, CL, Weisend, MP. (2011). Transcranial direct current stimulation's effect on novice versus experienced learning. *Experimental Brain Research*, 213(1):9-14.
40. Plis, S, Weisend, MP, Damaraju, E, Eichele, T, Mayer, A, **Clark, VP**, Lane, TDR, Calhoun, VD. (2011). Effective connectivity analysis of fMRI and MEG data collected under identical paradigms. *Computers in Biology and Medicine*, 41(12): 1156–1165.
41. Allen, EA, Erhardt, EB, Damaraju, E, Gruner, W, Segall, JM, Silva, RF, Havlicek, M, Rachakonda, S, Fries, J, Kalyanam, R, Michael, AM, Caprihan, A, Turner, JA, Eichele, T, Adelsheim, S, Bryan, A, Bustillo, J, **Clark, VP**, Feldstein Ewing, S, Filbey, F, Ford, C, Hutchison, K, Jung, RE, Kiehl, KA, Koditwakkhu, P, Komesu, Y, Mayer, AR, Pearlson, G, Phillips, J, Sadek, J, Stevens, M, Teuscher, U, Thoma, RJ., Calhoun, V.D. (2011). A baseline for the multivariate comparison of resting state networks. *Frontiers in Systems Neuroscience*, 5:2.
42. Abbott, C, Juárez, M, White, T, Gollub, RL, Pearlson, GD, Bustillo, J, Lauriello, J, Ho, BC, Bockholt, H J, **Clark, VP**, Magnotta, V, Calhoun, VD. (2011). Antipsychotic dose and diminished neural modulation: A multi-site fMRI study. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 35(2):473-482.
43. White, T, Magnotta, VA, Bockholt, HJ, Williams, S, Gollub, RL, Mueller, BA, Ho, BC, Jung, R, **Clark, VP**, Lauriello, J, Bustillo, JR, Schulz, SC, Andreasen, NC, Calhoun, VD, Lim KO. (2011). Global white matter abnormalities in schizophrenia: a multisite diffusion tensor imaging study. *Schizophrenia Bulletin*, 37(1):222-232.
44. Kim, DI, Sui, J, Rachakonda, S, White, T, Manoach, D S, **Clark, V P**, Ho, B C, Schulz, S C and Calhoun, VD. (2010). Identification of imaging biomarkers in schizophrenia: A coefficient-constrained independent component analysis of the Mind multi-site schizophrenia study. *Journal of Neuroinformatics*, 8(4):213-229.
45. Ehrlich, S, Morrow, EE, Roffman, JL, Wallace, SR, Naylor, M, Bockholt, HJ, Lundquist, A, Yendiki, A, Ho, BC, White, T, Manoach, D, **Clark, VP**, Calhoun, VD, Gollub, RL, Holt, DJ. (2010). The COMT Val108/158Met polymorphism and medial temporal lobe volumetry in patients with schizophrenia and healthy adults. *NeuroImage*, 53(3): 992-1000.
46. Michael, AM, Baum, SA, White, T, Demirci, O, Andreasen, NC, Segall, JM, Jung, RE, Pearlson, G, **Clark, VP**, Gollub, RL, Schulz, SC, Roffman, JL, Lim, KO, Ho, BC, Bockholt, HJ, Calhoun, VD. (2010). Does function follow form?: Methods to fuse structural and functional brain images show decreased linkage in schizophrenia. *NeuroImage*, 49(3):2626-2637.
47. Kim, DI, Manoach, DS, Mathalon, DH, Turner, JA, Mannell, M, Brown, GG, Ford, JM, Gollub, RL, White, T, Wible, C, Belger, A, Bockholt, HJ, **Clark, VP**, Lauriello, J, O'Leary, D, Mueller, BA, Lim, KO, Andreasen, N,

- Potkin, SG, Calhoun, VD. (2009). Dysregulation of working memory and default-mode networks in schizophrenia using independent component analysis, an fBIRN and MCIC study. *Human Brain Mapping*, 30(11):3795-3811.
48. Demirci, O, Stevens, MC, Andreasen, NC, Michael, A, Liu, JY, White, T, Pearlson, GD, **Clark, VP**, Calhoun, VD. (2009). Investigation of relationships between fMRI brain networks in the spectral domain using ICA and Granger causality reveals distinct differences between schizophrenia patients and healthy controls. *NeuroImage*, 46(2):419-431.
  49. Sui, J, Adali, T, Pearlson, GD, **Clark, VP**, Calhoun, VD. (2009). A method for accurate group difference detection by constraining the mixing coefficients in an ICA framework. *Human Brain Mapping*, 30(9): 2953-2970.
  50. \*Burge, J, Lane, T, Link, H, Qiu, S, **Clark, VP**. (2009). Discrete dynamic Bayesian network analysis of fMRI data. *Human Brain Mapping*, 30(1):122-137.
  51. Segall, JM, Turner, JA, van Erp, TGM, White, T, Bockholt, HJ, Gollub, RL, Ho, BC, Magnotta, V, Jung, RE, McCarley, RW, Schulz, SC, Lauriello, J, **Clark, VP**, Voyvodic, JT, Diaz, MT, Calhoun VD. (2009). Voxel-based morphometric multi-site collaborative study on schizophrenia. *Schizophrenia Bulletin*, 35(1):82-95.
  52. Mayer, AR, Franco, A, Hanlon, FM, Thoma, RJ, **Clark, VP**, Canive, JM. (2008). The neural networks underlying auditory sensory gating. *NeuroImage*, 44(1):182-189.
  53. \*Leyba, L, Mayer, AR, Gollub, RL, Andreasen, NC, **Clark, VP**. (2008). Smoking status as a potential confound in the BOLD response of patients with schizophrenia. *Schizophrenia Research*, 104(1):79-84.
  54. Roffman, JL, Gollub, RL, Calhoun, VD, Wassink, TH, Weiss, AP, Ho, BC, White, T, **Clark, VP**, Fries, J, Andreasen, NC, Goff, DC, Manoach, DS. (2008). MTHFR 677C→T genotype disrupts prefrontal function in schizophrenia through an interaction with COMT 158Val→Met. *PNAS*, 105(45):17573-17578.
  55. Demirci, O, **Clark, VP**, Calhoun, VD. (2008). A projection pursuit application to detect schizophrenia using fMRI data. *NeuroImage*, 39(4):1774-1782.
  56. Demirci, O, **Clark, VP**, Magnotta, VA, Andreasen, NC, Lauriello, J, Kiehl, KA, Pearlson, GD, Calhoun, VD. (2008). A review of challenges in the use of fMRI for disease classification / characterization and a projection pursuit application from multi-site fMRI schizophrenia study. *Brain Imaging and Behavior*, 2(3):207-226.
  57. Whalen, D, Benson, R, Richardson, M, Swainson, B, **Clark, VP**, Lai, S, Mencl, W, Fulbright, R, Constable, RT, Liberman, A. (2006). Differentiation of speech and non-speech processing within primary auditory cortex. *Journal of the Acoustical Society of America*, 119(1):575-581.
  58. Stevens, MC, **Clark, VP**, Prestwood, KM. (2005). Low-dose estradiol alters brain activity. *Psychiatry Research: Neuroimaging*, 139(3):199-217.
  59. \***Clark, VP**. (2002). Orthogonal polynomial regression for the detection of response variability in event-related fMRI. *NeuroImage*, 17:344-363.
  60. \***Clark, VP**, Lai, S, Deckel, AW. (2002). Altered functional MRI responses in Huntington's disease. *Neuroreport*, 13(5):703-706.
  61. \***Clark, VP**, Fannon, S, Lai, S, Benson, R. (2001). Paradigm-dependent modulation of event-related fMRI activity evoked by the oddball task. *Human Brain Mapping*, 14(2): 116-127.
  62. Benson, RR, Whalen, D H, Richardson, M, Swainson, B, **Clark, VP**, Lai, S, Liberman, AM. (2001). Parametrically dissociating speech and non-speech perception in the brain using fMRI. *Brain and Language*, 78:364-396.
  63. \***Clark, V.P.**, Fannon, S., Lai, S., Benson, R., Bauer, L. (2000). Responses to rare visual target and distractor stimuli using event-related fMRI. *Journal of Neurophysiology*, 83(5): 3133-3139.
  64. Deckel, AW, Weiner, R, Sziget, D, **Clark, V**, and Vento, J. (2000). Altered patterns of regional cerebral blood flow in patients with Huntington's disease: A SPECT study during rest and cognitive or motor activation. *Journal of Nuclear Medicine*, 41: 773-780.
  65. Haxby, JV, Ungerleider, LG, **Clark, VP**, Schouten, JL, Hoffman, EA, Martin, A. (1999). The effect of face inversion on activity in human neural systems for face and object perception. *Neuron*, 22: 189-199.
  66. \***Clark, VP**, Maisog, JMa, Haxby, JV. (1998). An fMRI study of face perception and memory using random stimulus sequences. *Journal of Neurophysiology*, 79: 3257-3265.

67. Bavelier, D, Corina, D, Jezzard, P, **Clark, V**, Karni, A, Lalwani, A, Rauschecker, JP, Braun, A, Turner, R, Neville, HJ. (1998). Hemispheric specialization for English and ASL: Left invariance - right variability. *Neuroreport*, 9:1537-1542.
68. Neville, HJ, Bavelier, D, Corina, D, Rauschecker, J, Karni, A, Lalwani, A, Braun, A, **Clark, VP**, Jezzard, P, Turner, R. (1998). Cerebral organization for language in deaf and hearing subjects: Biological constraints and effects of experience. *Proceedings of the National Academy of Sciences of the United States of America*, 95(3): 922-929.
69. **\*Clark, VP**, Parasuraman, R, Keil, K, Kulansky, R, Fannon, S, Maisog, JMa, Ungerleider, L, Haxby, JV. (1997). Selective attention to face identity and color studied with fMRI. *Human Brain Mapping*, 5(4): 293-297.
70. Petit, L, **Clark, VP**, Ingeholm, J, Haxby, JV. (1997). Dissociation of saccade-related and pursuit-related activation in human frontal eye fields as revealed by fMRI. *Journal of Neurophysiology*, 77: 3386-3390.
71. Bavelier, D, Corina, D, Jezzard, P, Padmanabhan, S, **Clark, VP**, Karni, A, Prinster, A, Braun, A, Lalwani, A, Rauschecker, J, Turner, R, Neville, H. (1997). Sentence reading: A functional MRI study at 4 Tesla. *Journal of Cognitive Neuroscience*, 9: 664-686.
72. **\*Clark, VP**, Keil, K, Maisog, JMa, Courtney, SM, Ungerleider, LG, Haxby, JV. (1996). Functional magnetic resonance imaging of human visual cortex during face matching: A comparison with positron emission tomography. *NeuroImage*, 4(1): 1-15.
73. **Clark, VP**, Hillyard, SA. (1996). Spatial selective attention affects early extrastriate but not striate components of the visual evoked potential. *Journal of Cognitive Neuroscience*, 8(5): 387-402.
74. **Clark, VP**, Fan, S, Hillyard, SA. (1995). Identification of early visual evoked potential generators by retinotopic and topographic analyses. *Human Brain Mapping*, 2: 170-187.
75. Gomez, CMG, **Clark, VP**, Fan, S, Luck, SJ, Hillyard, SA. (1994). Sources of attention-sensitive visual evoked potentials. *Journal of Brain Topography*, 7(1):41-51.
76. Luck, SJ, Hillyard, SA, Mouloua, M, Woldorff, MG, **Clark, VP**, Hawkins, HL. (1994). Effects of spatial cueing on luminance detectability: Psychophysical and electrophysiological evidence. *Journal of Experimental Psychology, Human Perception and Performance*, 20(4): 887-904.
77. Mangun, GR, Luck, SJ, Plager, R, Loftus, W, Hillyard, SA, Handy, T, **Clark, VP**, Gazzaniga, MS. (1994). Monitoring the visual world: Hemispheric asymmetries and subcortical processes in attention. *Journal of Cognitive Neuroscience*, 6(3): 267-275.
78. **\*Clark, VP**, Courchesne, E, Grafe, M. (1992). *In-vivo* myeloarchitectonic analysis of human striate and extrastriate cortex using magnetic resonance imaging. *Cerebral Cortex*, 2: 417-424.

#### Editorials:

1. **\*Clark VP**, Parasuraman R. (2014). Neuroenhancement: Enhancing brain and mind in health and in disease. *NeuroImage*, 85(3):889–894. doi:pii: S1053-8119(13)00938-5. 10.1016/j.neuroimage.2013.08.071.
2. Chang, L, Cooper, MS, **Clark, VP**. (2013). Imaging biomarkers and the role of neuroinflammation in neuropathic pain. *Journal of NeuroImmune Pharmacology*, 8(3):448-451.

#### Articles Appearing in Edited Volumes:

1. **\*Clark, VP**, Coffman, BA, Trumbo, MCS, Wegele, AR. (2013). An evolutionary perspective on attentional processes. pp. 207–215. In: G.R. Mangun (Ed.) *Cognitive Electrophysiology of Attention*. Elsevier. <https://books.google.com/books?id=WcBuAAAAQBAJ&pg=PA207&lpg=PA207>
2. Oyen, D, Niculescu-Mizil, A, Ostroff, R, Stewart, A, **Clark, VP**. (2013). Controlling the precision-recall tradeoff in differential dependency network analysis. *arXiv:1307.2611*.
3. Clark, RE, **Clark, VP**. (2010). From neo-behaviorism to neuroscience: Perspectives on the origins and future contributions of cognitive load research. In: *Cognitive Load: Theory & Applications*. J.L. Plass, R. Moreno and R. Brünken (Eds.) Cambridge University Press, Cambridge, England, 203-228. <https://books.google.com/books?id=RcMLAQAQBAJ&pg=PA203&lpg=PA203>
4. **\*Clark, VP**. (2006). Attention. In: Encyclopedia of Human Development. N.J. Salkind, Neil J. (Ed.). Sage Publications. Thousand Oaks, CA, pp. 133-136.
5. **\*Clark, VP**. (2006). Structural and Functional Brain Imaging. In: *Encyclopedia of Human Development*. N.J. Salkind, Neil J. (Ed.). Sage Publications. Thousand Oaks, CA, pp. 1232-1235.



6. \***Clark, VP.** (2006). Huntington's Chorea. In: *Encyclopedia of Human Development*. N.J. Salkind, Neil J. (Ed.). Sage Publications. Thousand Oaks, CA, pp. 660-661.
7. Burge, J, **Clark, VP**, Lane, T, Link, H, Qiu S. (2004). *Bayesian classification of fMRI data: Evidence for altered neural networks in dementia*. Technical Report TR-CS-2004-28, University of New Mexico, Albuquerque, NM.
8. Haxby, JV, Courtney, SC, **Clark, VP.** (1998). Functional magnetic resonance imaging and the study of attention. In: *The Attentive Brain*. R. Parasuraman (Ed.). MIT Press, Cambridge, pp. 123-142.
9. Haxby, JV, **Clark, VP**, Courtney, SC. (1997). Distributed hierarchical neural systems for visual memory in human cortex. In: *Connections, Cognition, and Alzheimer's Disease*. B. Hyman, C. Duyckaerts, Y. Christen (Eds.). Springer, Berlin, pp. 167-180.
10. Hillyard, SA, Anllo-Vento, L, **Clark, VP**, Heinze, H, Luck, SJ, and Mangun, GR. (1996). Neuroimaging approaches to the study of visual attention: A Tutorial. In: *Converging Operations in the Study of Visual Selective Attention*. M. Coles, A. Kramer and G. Logan (Eds.). American Psychological Association, pp. 107-138.

### Works in Progress:

#### Submitted for publication:

1. Elizabeth A. McCallion, Samuel Robinson, **Vincent P. Clark**, Katie Witkiewitz. Efficacy of a transcranial direct current stimulation (tDCS) enhanced mindfulness-based stress reduction protocol for chronic pain Management: a single-blind randomized sham controlled trial. Submitted 7/2017. In revision.
2. Robert J Thoma, Jon M Houck, Breannan Howell, Vince Calhoun, Jeffery D Lewine, **Vincent P Clark**, Michael Hunter, Jose M Canive, Rose C Bigelow, Julia M Stephen. Auditory verbal hallucinations and MEG-assessed auditory sensory gating in schizophrenia. Submitted 12/2017.
3. Trumbo, M., Jones, A., **Clark, V.P.** The testing effect: A century of systematic study and neglect. In revision.
4. Jones AP, Choe J, Bryant NB, Robinson CSH, Ketz NA, Skorheim SW, Combs A, Lamphere ML, Robert B, Gill HA Heinrich MD, Howard MD, **Clark VP**, Pilly PK. Closed-loop tACS delivered during slow-wave sleep enhances consolidation of generalized information. In revision.
5. \*Charles S. H. Robinson, Natalie P. Bryant, Joshua W. Maxwell, Aaron P. Jones, Bradley Robert, Melanie Lamphere, Angela Combs, Hussein Al Azzawi, Benjamin C. Gibson, Joseph L. Sanguinetti, Nicholas A. Ketz, Praveen K. Pilly, **Vincent P. Clark**. The benefits of closed-loop transcranial alternating current stimulation on subjective sleep quality: A pilot study Submitted 8/23/2018.
6. Itamar Lerner, Nicholas A Ketz, Aaron P Jones, Natalie B Bryant, Bradley Robert, Steven W Skorheim, Arno Hartholt, Albert Rizzo, Mark A Gluck, **Vincent P Clark**, and Praveen Pilly. Transcranial current stimulation in humans during sleep facilitates insight into temporal rules through beta modulation. In revision.

#### In preparation:

1. \*Pilly PK, Skorheim SW, Jones AP, Bryant NB, Robert B, Roach SM, Ketz N, Howard MD, Patel AN, Choe J, Hartholt, A, Lerner I, Rizzo S, Hubbard RJ, **Clark VP**. Strengthening individual episodic memories in virtual reality using transcranial current stimulation in sleep.
2. \*Skorheim SW, Howard MD, Patel AN, Jones, AP, Bryant, NB, **Clark VP**, Pilly PK. A personalized cognitive model of memory and skill consolidation.
3. Roach SM, Belal S, Zoumpoulaki A, Jones AP, Bryant NB, Robert B, Hartholt A, Lerner I, Rizzo S, **Clark VP**, Pilly PK. Decoding and behaviorally validating memory consolidation during sleep from EEG after exposure to immersive virtual reality task.
4. \*Hubbard RJ, Ketz NA, Jones AP, Bryant NB, Robert B, Hartholt A, Rizzo S, **Clark VP**, Pilly PK. Closed-loop STAMP neurostimulation during slow-wave sleep boosts memory consolidation and spindle-band activity.
5. Choe J, Ketz NA, Jones AP, Bryant NB, Skorheim SW, Robinson CSH, Patel AN, **Clark VP**, Pilly PK. Effects of Spatiotemporal amplitude modulated patterns (STAMPs) of neurostimulation in task-based threat detection and spatial memory paradigms.
6. Mohammad-Rezazadeh I, Hubbard R, Jones AP, Bryant NB, Robert B, Hartholt A, Rizzo S, **Clark VP**, Pilly PK. Alteration of functional connectivity induced by STAMPs in sleep that underlie overnight declarative memory changes.

**Invited Presentations:**

- 1) Panel: Advances, Issues, and Controversies in tES; 2) Imaging Neuromodulation; 3) Neurotechnology for Mindfulness; 4) Neuromodulation and Decision Making in Cognition and in Addictions. 2018 NYC Neuromodulation Conference and NANS Summer Series. New York, NY, August 2018.
- Combining Neuroimaging with Neurostimulation: New Frontiers in Cognitive Neuroscience. Hong Kong University, June 2018.
- Maximizing Yourself as a Faculty Candidate. 11th Annual NIH Career Symposium, National Institutes of Health, Bethesda, MD, planned May 18, 2018.
- Neural Control of Movement (NCM) Annual Meeting, Sante Fe, NM, planned May 1-4, 2018.
- TDCS Combined with Neuroimaging to Improve Human Learning and Memory. Using Noninvasive Brain Stimulation to Modulate Learning in Humans Symposium, The International Conference on Learning and Memory, UC Irvine, planned April, 2018.
- Combining Neuroimaging with Neurostimulation. UCSB, March, 2018.
- Neuroimaging Combined with Neurostimulation for Clinical and Cognitive Research. Arizona State University, March 2018.
- Neuromodulation Combined with Neuroimaging to Study and Augment Human Cognition. Oxford University, UK, January, 2018.
- Brain Imaging Integrated with Neurostimulation: New Frontiers in Cognitive Neuroscience. Alpine Brain Imaging Meeting, Champéry, Switzerland, January 2018.
- State of the Science of Neuromodulation in Addiction - Transcranial Direct Current Stimulation (tDCS). NIDA Neuromodulatory Devices to Treat Substance Use: State of the Science and Future Directions Meeting, Rockville, MD, November, 2017.
- Combining Brain Stimulation and Imaging. NIMH Multimodal Brain Stimulation Speaker Series, Bethesda, MD, September, 2017. <http://ytchannelembed.info/watch/Hz6w3CUkhHU#.WgPE14ZrwmJ>
- Combining Brain Stimulation and Imaging. Georgetown University, Washington, DC, September, 2017.
- Neuroimaging Combined with Neurostimulation: New Methods for Verifying and Utilizing the Causal Connections Between Brain and Behavior. School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, June, 2017.
- Non-Invasive Brain Stimulation Devices to Change Thought and Behavior. Non-Invasive Brain Stimulation Plenary Lecture. The Science of Consciousness Conference, La Jolla, CA, June, 2017. <http://ytchannelembed.info/watch/tE5m4lxA6H8#.WgPFtZrwmI>
- Neuroimaging Combined with Neurostimulation: New Methods for Verifying and Utilizing the Causal Connections Between Brain and Behavior. Buehler-Martin Keynote Address, Institute for Research in Statistics and its Applications (IRSA), University of Minnesota. Minneapolis, MN, May, 2017.
- Brain Mapping and Neurostimulation. 14th Annual World Congress of Society for Brain Mapping and Therapeutics. Los Angeles, April 2017.
- Combining Neurostimulation and Neuroimaging for Enhancing Cognition. Stevens Neuroimaging and Informatics Institute, USC, April, 2017.
- Combining Neurostimulation and Neuroimaging for Enhancing Cognition and Developing Novel Treatments for Brain and Mental Illness. Cognitive Neuroscience Colloquium Lecture, UC Berkeley, April, 2017.
- Learning from our Successes and Failures in tDCS Trials on Human Performance. NYC Neuromodulation 2017. New York, NY, January 2017.
- fMRI Guided tDCS. NYC Neuromodulation 2017. New York, NY, January 2017.
- Efficacy of Transcranial Stimulation. 32nd Meeting of the Committee on Science, Technology, and Law, National Academies of Science, Engineering and Medicine. Washington DC, October 2016.
- Combining Neuroimaging with Neurostimulation. Transcranial current stimulation (TCS): Mechanisms, technology and therapeutic applications. NIMH, NIH, Bethesda, MD, Sept. 29-30, 2016.
- Neuroimaging Combined with Neurostimulation for Cognitive Research and Clinical Treatment. Symposium on Neuromodulation. Society for Psychophysiological Research, Minneapolis, MN, Sept. 21-25, 2016.
- Brain Stimulation for Cognitive Enhancement. Neuroscience Seminar, UNM, August, 2016.
- Neuroimaging Combined with Neurostimulation. Department of Psychiatry, University of British Columbia, July 2016.
- Claus, ED, Klimaj, SD, Clark VP. Combining brain stimulation and motivational bias retraining to influence implicit biases and drinking: null results from a preliminary trial. Alcoholism-Clinical and Experimental Research 40, S1: 189A. Conference: 39th Annual Scientific Meeting of the Research-Society-on-Alcoholism (RSA). New Orleans, June, 2016.

27. Neurostimulation Based Treatments for Brain and Mental Illness. Grand Rounds, Department of Psychiatry and Behavioral Sciences, University of New Mexico, Albuquerque, NM, May 2016.
28. Neuroenhancement: Promise, Perils, and Proof. Keynote lecture for Society for Behavioral and Cognitive Neurology Workshop, American Neuropsychiatric Association, San Diego, CA, March 2016.
29. Electrical Brain Stimulation to Enhance Learning and Memory. Winter Conference on Neural Plasticity, Maui, HI, Feb. 2016.
30. Neuroimaging Combined with Neurostimulation for Cognitive and Clinical Research. Hughes Research Laboratory, Malibu, CA, Sept. 2015.
31. Combining Neuroimaging and Neurostimulation for Clinical and Cognitive Research. Principal Investigator Meeting, Mind Research Network, July 2015.
32. Neurostimulation Combined with Neuroimaging for Cognitive and Clinical Research. Brain Mapping Center Seminar Series, UCLA Brain Mapping Center, Los Angeles, CA. April 2015.
33. Neuroimaging Combined with Neurostimulation for Cognitive and Clinical Research. Texas Tech, Lubbock, TX, Jan. 2015.
34. The Next Stages of Neuroenhancement: From Optimism to Enthusiasm. Invited speaker, NYC Neuromodulation 2015 Conference, New York, NY, Jan. 2015. [https://www.youtube.com/watch?v=35u1\\_FrED30](https://www.youtube.com/watch?v=35u1_FrED30)
35. Neuroimaging Combined with Neuroenhancement for Cognitive and Clinical Research. Medical University of South Carolina, Sep. 2014.
36. Neuroenhancement: Some Novel Methods to Alter Brain and Behavior. School of Psychology, Bangor University, Wales, UK, June 2014.
37. TDCS for Cognitive Enhancement and Treatment of Brain and Mental Illness. University of Hawaii, Honolulu, HI, June 2014.
38. Combined Brain Stimulation and Imaging Studies to Develop Novel Treatments for Brain and Mental Illness. National University of Singapore, Department of Psychology, April 2014.
39. Increased Threat Detection and Learning With Low-Level Transcranial Direct Current Stimulation (tDCS). Invited speaker, Adaptive Responses in Biology and Medicine. University of Massachusetts Amherst, April 22 - 23, 2014. <https://www.youtube.com/watch?v=ncgk2p4LI3I>
40. Diagnosis and Treatment of Neuroinflammation and Chronic Pain - Or - How Being a Father Can Change Your Life. Student Interest Group in Neurology (SIGN), University of New Mexico Medical School, Jan 2014.
41. "Current and Future Applications of tDCS" and "Using Transcranial Direct Current Stimulation (tDCS) for Enhancement." Special invited guest speaker, Southwest University, Chongqing, China, Dec. 2013.
42. The Future of Neuroenhancement: Reasons To Be Optimistic. Invited speaker, NYC Neuromodulation 2013 Conference, New York, NY, Nov. 2013.
43. TDCS for Cognitive Enhancement. Invited speaker, Summit on Transcranial Direct Current Stimulation (tDCS), UC Davis Center for Mind & Brain, Davis, CA, Oct. 2013. <http://www.youtube.com/watch?v=dUMUIXNeBRQ> - over 60,000 views.
44. Why Should We Care about Brain Stimulation? Chair's introduction to "Brain Stimulation" symposium. One of four non-concurrent symposiums selected by committee for the Organization for Human Brain Mapping meeting, Seattle, WA, June 2013.
45. Simpler Medicine: What Psychology Can Offer Modern Health Care. Keynote Address, Department of Psychology Convocation, UNM, May 2013.
46. From the Review Committee's Perspective - What You Should Know. Junior Tenure and Promotion Chair's presentation to junior Arts and Sciences College faculty, UNM, March 2013.
47. Oral Orthotics For the Treatment of Spasmodic Torticollis. Invited Presentation, National Spasmodic Torticollis Association Meeting, New Orleans, LA, 2012.
48. New Solutions for Some Old Problems: Brain Stimulation and Oral Orthotics for the Treatment of Pain and Motor Illness. PAL Talk, Dept. Psychology, UNM, 2012.
49. Starting a Small Revolution in Medicine. TEDxABQ, Albuquerque, NM, 2012. <http://www.youtube.com/watch?v=iNWBveV7RBI>
50. Using tDCS to Alter Visual Perception and Learning. Spaulding Rehabilitation Hospital, Harvard Medical School, Boston, MA, 2012.
51. Neuroimaging, Neuroinflammation, and Neural Information Processing. Imaging Neuroinflammation and Neuropathic Pain. Meeting of the Reflex Sympathetic Dystrophy Syndrome Association, Albuquerque, NM, 2011. [http://www.youtube.com/watch?v=8kB\\_cbPhfIU](http://www.youtube.com/watch?v=8kB_cbPhfIU)
52. Prediction of Relapse to Stimulant Use with fMRI. University of Hawaii, Honolulu, HI, 2011.

53. Artificial Attention using Brain Stimulation. Cognitive Electrophysiology: Signals of the Mind, a Tribute to Steven A. Hillyard. San Francisco, CA, 2011.
54. Increased Learning and Performance using Brain Stimulation and Neuroimaging. Student-Invited Lecture. Tulane University, New Orleans, LA, 2011.
55. Acceleration of Learning to Identify Concealed Threats using Brain Stimulation Targeted with Neuroimaging. Los Alamos National Laboratory, Los Alamos, NM, 2011.
56. Clark, V.P., Coffman, B.A., Garcia, C., Weisend, M. P., Lane, T.D.R., Mayer, A., Raybourn, E.M., Calhoun, V.D., Wassermann, E.M. Transcranial direct current stimulation (TDCS) targeted using brain imaging accelerates learning. Oral Presentation, Brain Stimulation session. Organization for Human Brain Mapping, Barcelona, Spain, 2010.
57. Improving Learning and Performance Using Electrical Brain Stimulation. PAL Talk, Dept. Psychology, UNM, 2010.
58. Learning to Recognize Concealed and Disguised Objects: A Combined Multimodal Imaging and Brain Stimulation Study. Center for Brain and Mind, UC Davis, Davis, CA, 2010.
59. Improving Learning and Performance Using Electrical Brain Stimulation Targeted with Multimodal Neuroimaging. National Institute of Mental Health, NIH, Bethesda, MD, 2010.
60. Enhancing Cognition and Learning using Brain Stimulation. Center of Excellence in Neuroergonomics, Technology, and Cognition (CENTEC), Washington, DC, 2010.
61. Bioprediction in Stimulant Addiction. Conference on Bioprediction. Co-Sponsored by the MacArthur Foundation and the Oxford Centre for Neuroethics. Washington, DC, 2010.
62. Using Brain Imaging to Guide Brain Stimulation. Human Factors and Applied Cognition Program, Department of Psychology, George Mason University. Fairfax, VA, 2010.
63. Brain Stimulation Targeted with Neuroimaging Accelerates Perceptual Learning. Universitätsklinik für Neurologie, Universitätsklinikum Magdeburg, Magdeburg, Germany, 2010.
64. Better Learning through Brain Stimulation. Erasmus University Rotterdam, 2010.
65. Transcranial Direct Current Stimulation Targeted with Brain Imaging Greatly Accelerates Visual Learning. Abteilung Klinische Neurophysiologie, Universitätsmedizin Göttingen – Georg-August-Universität, Göttingen, Germany, 2010.
66. \*Clark, V.P., Coffman, B.A., Garcia, C., Weisend, M. P., van der Merwe, A., Browning, E.S., Lane, T., Kelly, K., Mayer, A., Raybourn, E.M., Calhoun, V.D., Bikson, M., Wassermann, E.M., Phillips, J.P. Transcranial direct current stimulation (TDCS) targeted with brain imaging greatly accelerates visual learning. Oral Presentation, Neuronal Dynamics of Object and Category Perception Session #306, Society for Neuroscience, Chicago, IL, 2009.
67. \*Clark, V.P., Beatty, G.K., Anderson, R., Koditwakk, P., Phillips, J., Kiehl, K.A., Calhoun, V.D. Cingulate and insula activity predict relapse in recovering stimulant addicts. Abstract #1818, Oral Presentation, Psychiatric Disorders Session, Organization for Human Brain Mapping, San Francisco, CA, 2009.
68. Ethical Issues in Neurotechnology: Where Are We Headed? University of New Mexico Spring Research Ethics Symposium, Fostering Integrity in Research. UNM, 2009.
69. Stimulating Brain Science: The Future of Neurotechnology. Decade of the Mind Symposium, Neuroethics: Legal, and Social Issues. Potomac Institute, 2009.
70. \*Clark, V.P., Beatty, G.K., Anderson, R., Koditwakk, P., Phillips, J., Kiehl, K.A., Calhoun, V.D. fMRI activity in cingulate and insular cortex predicts relapse in recovering stimulant addicts. Oral presentation, Society for Neuroscience, Washington, DC, 2008.
71. The MIND Institute and National Defense. National Defense University, 2008.
72. Clark, V.P., Manoach, D., Gollub, R., Ho, B.C., Lim, K.O., Burge, J., Lane, T., Andreasen, N. C. A Multi-Site fMRI Study of Schizophrenia: Effects of Illness Type and Duration on Brain Function and Connectivity. International Congress on Schizophrenia Research, Colorado Springs, CO, 2007.
73. Brain Imaging at the MIND Institute. Neuroscience Day, Department of Neuroscience, UNM, 2007.
74. Brain Networks in Learning and Mental Illness. Neural Computation: Measure, Analysis & Modeling of Cellular and Network Dynamics, LANL, Santa Fe, 2007.
75. Brain Imaging Predicts Recovery from Drug Addiction. Institute of Neuroradiology, University of Zurich, Switzerland, 2006.
76. Effects of Stress on Learning and Performance. DARPA Accelerated Learning Workshop, Washington DC, 2006.
77. Attention Anticipates Abstinence in Addiction. Conference on Attention, Awareness and Action, Mind and Brain Center, UC Davis, 2006.
78. Addictions Research at the MIND Imaging Center. CASAA, UNM, 2005.

79. Neuroimaging at the MIND Institute. Colloquia, Department of Computer Science, UNM, 2005.
80. Resources, Ongoing Projects and How to Get Access to The MIND Institute. PAL Talk, Department of Psychology, UNM, 2005.
81. Challenges in Designing and Analyzing Multi-Site fMR Studies: The MIND Clinical Imaging Consortium. 10th International Congress on Schizophrenia Research, Savannah, GA, 2005.
82. Multi-Site Collaborative fMRI Studies of Auditory Target Detection in Schizophrenia, World Psychiatric Association, Florence, Italy, 2004.
83. The MIND Clinical Imaging Consortium – fMRI Studies. The MIND Institute Science Day, Santa Fe, NM, 2004
84. Low dose estrogen, fMRI, and cognitive function. Bench to Bedside: Estrogen as a Case Study Workshop. National Institute on Aging, Bethesda, MD 2004.
85. MIND Matters: An Overview of Developing Research Programs and Tools at the MIND Institute. Department of Neuroscience Seminar, UNM, 2004.
86. Understanding Cognition through Functional Brain Imaging, Second Annual Workshop on Cognitive Systems, Santa Fe, NM, 2004
87. Combining EEG and fMRI in Clinical Populations. University of Oregon, 2004.
88. Applications of Neuroimaging for Clinical Research. MIND Institute, 2004.
89. Neuroimaging: What's it Good For? Department of Cognitive Science, University of California at San Diego, 2003.
90. The Neural Mechanisms of Attention. Department of Psychology, University of New Mexico, Albuquerque, NM, 2002.
91. Predicting Relapse in Recovering Cocaine Addicts. Human Genetics Lecture Series, UConn. Health Center, 2002.
92. Using Brain Imaging to Predict Relapse in Recovering Cocaine Addicts. Department of Psychiatry, Wayne State University, Detroit, MI, 2002.
93. Studies of Attention and Perception using Functional Brain Imaging. Department of Psychology, Tufts University, Medford, MA, 2002.
94. Higher-Order Responses in Event-Related fMRI. Satellite Symposium on Brain Imaging Methods and Analysis Techniques. Seventh Annual Meeting of the Organization for Human Brain Mapping, Brighton, U.K., 2001.
95. fMRI Studies of Multimodal Selective Attention. Yale NMR Research Group fMRI Talk, Yale University School of Medicine, New Haven, CT, 2001.
96. fMRI Studies of Attention and Perception. University of New Mexico, 2001.
97. Applications of Multiple Regression in fMRI: Event-Related fMRI. Satellite Symposium on Brain Imaging Methods and Analysis Techniques, Sixth Annual Meeting of the Organization for Human Brain Mapping, San Antonio, TX, 2000.
98. Event-Related fMRI using P300 ERP Tasks. Yale NMR Research Group fMRI Talk, Yale University School of Medicine, New Haven, CT, 2000.
99. ERP Tasks Examined using Event-Related fMRI. Brainmap Talk, NMR Research Center, Mass General Hospital, Charleston, MA, 2000.
100. ERP Tasks using fMRI: What More Can It Tell Us? Center for the Neural Basis of Cognition, Mellon Institute, CMU, 2000.
101. Event-Related fMRI Designs. Department of Psychology, Dartmouth University, Hannover, NH, 2000.
102. Neuroimaging in Cocaine Dependence and Relapse. National Institute of Drug Abuse, NIH, Bethesda, MD, 1999.
103. Functional MRI Studies of Attention and Vigilance. Chinese University of Hong Kong, Hong Kong, 1999.
104. Event-Related Paradigms in Functional MRI. Haskins Institute. New Haven, CT, 1999.
105. Mapping the Brain with MRI. Department of Psychology, Tufts University, Boston, MA, 1999.
106. NeuroImaging of Attention. Brain and Behavior Research Rounds, IOL, Hartford, CT, 1998.
107. Functional MRI Studies of Attention and Memory. Department of Psychology, University of Connecticut, Storrs, CT, 1998.
108. Functional MRI Studies of Attention and Cognition. Department of Psychiatry, University of Connecticut Health Center, Farmington, CT, 1997.
109. Experimental Design for the Integration of fMRI and EEG data. fMRI Visiting Fellowship Program, MGH NMR Center, Harvard University, 1997.
110. Functional MRI Studies of Visual Attention and Perception. Salk Institute, La Jolla, CA, 1997.

111. \*Clark, V.P., Maisog, J.Ma., Keil, K., Ungerleider, L., and Haxby, J.V. Visual Area Topography as Revealed by fMRI vs. PET. Presented at the Second International Conference on Functional Mapping of the Human Brain. *NeuroImage*, 3(3):S1, Boston, MA, 1996.
112. Comparing PET to FMRI findings in Visual Perception. *Brain Map 1996: Conference on Human Brain Mapping and Modeling*, San Antonio, TX, 1996.
113. Studies of Visual Selective Attention and Object Recognition using Functional MRI. Department of Psychology, University of Pittsburgh, 1996.
114. Studies of Selective Attention using fMRI. Georgetown Institute for Cognitive and Computational Studies, Georgetown University, 1995.
115. Studies of Selective Attention using Evoked Potentials and fMRI. Center for Behavioral Neuroscience, SUNY at Stony Brook, 1995.
116. Mechanisms of Visual Attention studied with fMRI. Center for Neuroscience, University of California, Davis, 1994.
117. Mapping the Human Brain with MRI. Department of Psychology, Stanford University, 1994.
118. Clark, V.P., Courchesne, E., Grafe, M. In-vivo myeloarchitectonic analysis of human occipital and parietal cortex using magnetic resonance imaging. *International Conference on Cognitive Neuroscience*, Jerusalem, Israel, 5:13, 1992.

#### **Contributed (un-refereed) Presentations at Professional Meetings:**

1. Aaron P. Jones, MS, Clark, VP. Closed-Loop tACS Targeting Slow-Wave Oscillations During Sleep Enhances Consolidation of Generalized Information. Poster and Talk presented at the 2018 NYC Neuromodulation Conference & NANS Summer Series.
2. H A Gill N B Bryant N A Mertens A P Jones B Robert V P Clark P K Pilly. Low-Amplitude tDCS does not affect threat detection performance under sleep loss. *Sleep*, 41(suppl\_1):A70–A71, 2018. <https://doi.org/10.1093/sleep/zsy061.178>
3. M L Lamphere C S Robinson N B Bryant A P Jones B Robert J Maxwell J Choe N A Ketz M D Howard V P Clark P K Pilly Effects of slow wave sleep augmentation on subjective sleep quality. *Sleep*, 41(suppl\_1):A129, 2018. <https://doi.org/10.1093/sleep/zsy061.336>
4. Maurer, JM, Claus, ED, Fink, BC, Clark, VP, Calhoun, VD, Kiehl, KA. Aberrant connectivity during response inhibition is related to substance use relapse propensity in incarcerated adult offenders. Society of Biological Psychiatry Conference, 2018.
5. Aaron P. Jones, Jaehoon Choe, Natalie B. Bryant, Charles S. H. Robinson, Steven W. Skorheim, Angela Combs, Melanie L. Lamphere, Bradley Robert, Nicholas A. Ketz, Michael D. Howard, Vincent P. Clark, Praveen K. Pilly. Effects of Closed-Loop tACS Strength During Slow-Wave Sleep on Learning in a Target Detection Task. Organization for Human Brain Mapping, Vancouver, BC, Canada, 2017.
6. Bryant, N. B., Ketz, N., Jones, A., Choe, J., Robinson, C., Combs, A., Lamphere, M., Robert, B., Clark, Pilly, P. K. Closed-Loop TACS During SWS boosts slow-wave and delta power and post-sleep memory for threat detection on novel stimuli. SLEEP 2017, Boston, MA.
7. Aaron P. Jones, Jaehoon Choe, Natalie B. Bryant, Charles S. H. Robinson, Steven W. Skorheim, Angela Combs, Melanie L. Lamphere, Bradley Robert, Nicholas A. Ketz, Michael D. Howard, Vincent P. Clark, Praveen K. Pilly. Effects of Closed-Loop tACS Strength During Slow-Wave Sleep on Learning in a Target Detection Task. Brain Stimulation and Imaging Meeting, Vancouver, BC, Canada, 2017.
8. K. Wilson, J. Wilson, D. Quinn, V.P Clark. Transcranial direct current stimulation (tDCS) over left prefrontal cortex improves visual detection of words. 45<sup>th</sup> Annual Meeting of the International Neuropsychological Society, New Orleans, Feb. 2017.
9. Hammam Yahya, Davin Quinn, Michael Hunter, Kevin Wilson, Rebecca Rieger, Vincent Clark Chronic catatonia successfully treated with transcranial direct current stimulation in a patient with cerebral palsy and bipolar disorder. Academy of Psychosomatic Medicine, Austin, TX Nov. 2016.
10. Jon Houck, Jessica Turner, Jeffrey Lewine, Charlotte Chaze, Vincent P. Clark, Vince Calhoun, Robert Thoma. Functional connectivity during auditory verbal hallucinations in schizophrenia patients. BIOMAG2016, Seoul, South Korea, Oct. 2016.
11. Quinn, DK, Hunter, MH, Yahya, H, Wilson, K, Rieger, R, Clark, VP. Chronic catatonia successfully treated with transcranial direct current stimulation in a patient with cerebral palsy and bipolar disorder. Academy of Psychosomatic Medicine, Austin, TX, Nov. 2016.

12. Aaron P. Jones, Michael C. Trumbo, Brian A. Coffman, Michael A. Hunter, Charles S. Robinson, Angela Combs, Kinsey Steuterman, Vickey Massey, Mohamed Abozeria, Alexander David, Marom Bikson, Vincent P. Clark; Contribution of far field effects of cortical tDCS in the cerebellum to learning in an object detection paradigm. Society for Cognitive Neuroscience Meeting, NY, NY, April 2016, #F161.
13. Christine A. Godwin, Michael A. Hunter, Matthew A. Bezdek, Gregory Lieberman, Katie Witkiewitz, Vincent P. Clark, Eric H. Schumacher. Large-scale resting-state network correlations predict mind-wandering tendencies. Society for Cognitive Neuroscience Meeting, NY, NY, April 2016, #E156.
14. Angela Combs, Aaron P. Jones, Michael C. Trumbo, Michael A. Hunter, Charles S. Robinson, Kinsey Steuterman, Vickey Massey, Brian A. Coffman, Vincent P. Clark. Bilingual advantage in learning to detect hidden objects in a complex visual environment. Society for Cognitive Neuroscience Meeting, NY, NY, April 2016, #E71.
15. Charles Robinson, Mikaela Armenta, Angela Combs, Melanie Lamphere, Gabrielle Garza, James Neary, Janet Wolfe, Aaron Jones, Mike Trumbo, Michael Hunter, Katie Witkiewitz, Vince Clark. Modulating emotional intelligence with transcranial direct current stimulation and meditation training: A pilot study. Society for Cognitive Neuroscience Meeting, NY, NY, April 2016, #C34.
16. Seth Elkin-Frankston, Sean Guarino, Victoria Romero, G Lieberman, MA Hunter, K Witkiewitz, VP Clark, E Schumacher, M Bezdek, N Martin. No evidence of improved intelligence with mindfulness meditation or brain-training games-training combined with tDCS. Society for Cognitive Neuroscience Meeting, NY, NY, April 2016, #B171.
17. Mika Armenta, Samuel Robinson, Vince Clark, Katie Witkiewitz. Modulating Emotion Perception with Meditation and Brain Stimulation. McNair Scholars Research Conference, UNM, October 2015.
18. Gregory Lieberman, Michael A. Hunter, Matthew A. Bezdek, Aaron P. Jones, Michael C. Trumbo, Brian A. Coffman, Elizabeth McCallion, Mika Armenta, Anthony O'Sickey, David Brown, Corey Roos, Sam Robinson, Angela Combs, Nicole Martin, Sean Guarino, Leonard Eusebi, Seth Elkin-Frankston, Victoria Romero, Eric H. Schumacher, Katie Witkiewitz, Vincent P. Clark. A Four Week Regimen of tDCS-Enhanced Brain Training Does Not Alter Cortical Structure. (June, 2015). BrainSTIM, Honolulu, HI.
19. Michael A. Hunter, Gregory Lieberman, Brian Coffman, Aaron P. Jones, Mike Trumbo, Mika Armenta, Sam Robinson, Elizabeth McCallion, Corey Roos, Anthony O'Sickey, David Brown, Tristan Collar, Sean Gaurino, Victoria Romero, Katie Witkiewitz, and Vincent P. Clark. Improved working memory load and ERP signatures resulting from tDCS-enhanced mindfulness training. (June, 2015). Brain Stimulation and Imaging Meeting (BrainSTIM), Honolulu, HI.
20. Gregory Lieberman, Michael A. Hunter, Matthew A. Bezdek, Aaron P. Jones, Michael C. Trumbo, Brian A. Coffman, Elizabeth McCallion, Mika Armenta, Anthony O'Sickey, David Brown, Corey Roos, Sam Robinson, Angela Combs, Nicole Martin, Sean Guarino, Leonard Eusebi, Seth Elkin-Frankston, Victoria Romero, Eric H. Schumacher, Katie Witkiewitz, Vincent P. Clark. A Four Week Regimen of tDCS-Enhanced Brain Training Does Not Alter Cortical Structure. (June, 2015). Organization for Human Brain Mapping meeting, Honolulu, HI.
21. Michael A. Hunter, Gregory Lieberman, Brian Coffman, Aaron P. Jones, Mike Trumbo, Mika Armenta, Sam Robinson, Elizabeth McCallion, Corey Roos, Anthony O'Sickey, David Brown, Tristan Collar, Sean Gaurino, Victoria Romero, Katie Witkiewitz, and Vincent P. Clark. Improved working memory load and ERP signatures resulting from tDCS-enhanced mindfulness training. (June, 2015). Organization for Human Brain Mapping meeting, Honolulu, HI.
22. Witkiewitz, K., Kirouac, M., Frohe, T., Armenta, M.L., McCallion, E.L., Roos, C., O'Sickey, A.J., Brown, D., Hunter, M.A., Coffman, B., Clark, V.P. Mindfulness and Transcranial Direct Current Stimulation as an Intervention for Tobacco Dependence: A Pilot Study. (March, 2015). Collaborative Perspectives on Addiction conference, Baltimore, MD.
23. Jon M. Houck, Jason Long, Jessica Turner, Jeffrey D. Lewine, Charlotte Chaze, Vincent P. Clark, Vince Calhoun, Robert J. Thoma. MEG Analysis of Network Oscillatory Activity During The Transition into Auditory Verbal Hallucinations (AVH-on) and Out of (AVH-off) Transitional Periods. International Congress on Schizophrenia Research. 2015.
24. Kevin Wilson, Vincent P. Clark. Transcranial direct current stimulation (tDCS) improves spelling ability. Poster presented at UNM Neuroscience Day, 2015.
25. Petropoulos, H., Long, J., Chaze, C., Turner, J., Clark, V., Calhoun, V.D. and Thoma, R.J. (2015). 1H-MRS Glutamine and Inositol level predicts the severity of Auditory Verbal Hallucinations. Poster presented at the 2015 UNM BBI Neuroscience Day. (2015). UNMHSC Domenici Hall, Albuquerque, NM.

26. Charlotte Chaze, Vincent P. Clark, Jessica Turner, Rose Bigelow, Jason Long, Vince Calhoun, Robert J. Thoma. Treatment of auditory verbal hallucinations in schizophrenia using tDCS. Poster presented at UNM Neuroscience Day, 2015.
27. Charlotte Chaze, Robert J. Thoma, Rose Bigelow, Vincent P. Clark, Juan Bustillo, Vince Calhoun, Jessica Turner. Neural Networks Underlying Auditory Verbal Hallucinations in Schizophrenia. Poster presented at UNM Neuroscience Day, 2015.
28. Michael A. Hunter, Vincent P. Clark, Vincent D. Calhoun, Hao He, Ben Yackley and Terran Lane. Dynamic causal modeling of selective attention predicts relapse in patients recovering from addiction. 43rd Annual Meeting of the International Neuropsychological Society (INS), 2015, Denver, CO.
29. Charlotte Chaze, Vincent P. Clark, Jessica Turner, Michael Hunter, Rose Bigelow, Jason Long, Jeffrey D Lewine, Vince Calhoun, Robert J Thoma. An fMRI investigation of tDCS-induced changes in cortical function during auditory verbal hallucinations. *Schizophrenia Bulletin*, 41(1):S220, #2119147. ICOSR 2015, Colorado Springs, CO.
30. Houck, J., Lewine, J.D., Turner, J., Clark, V., Bustillo, J., Calhoun, V.D., and Thoma, R.J. (2015). Time course of auditory verbal hallucination networks in schizophrenia. *Schizophrenia Bulletin*, 41(1):S79-S80. Poster Presented at the 2015 annual meeting of the International Congress on Schizophrenia Research (ICOSR). Colorado Springs, CO.
31. M.A. Hunter, V.P. Clark, V.D. Calhoun, Y. Chen, J.C. Edgar, M.X. Huang, B. Howell, and J.M. Cañive. Intrinsic network connectivity differentially predicts components of attention in patients with schizophrenia and bipolar disorder. Presented at The 4th Biennial Resting-state / Brain Connectivity Conference, MIT, Cambridge, M.A., 2014.
32. Hunter, M.A. and Clark, V.P. The potential synergistic effects of strategy-based cognitive training & brain stimulation: A review. 2014. 17th Cognitive Remediation Conference, New York, NY.
33. Brian A. Coffman, Michael A. Hunter, Aaron P. Jones, Heather A. Saxon, Krista Kolodjeski, Bryce Lockmiller, Omar Khan, Tristan Collar, Julia M. Stephen, & Vincent P. Clark. Using independent components analysis (ICA) to remove artifacts associated with transcranial direct current stimulation (tDCS) from electroencephalography (EEG) data: A comparison of ICA algorithms. NYC Neuromodulation 2013 Conference, New York, NY. Winner, Best Poster Prize.
34. Mike Trumbo, Brian Coffman, Vincent P. Clark The effect of transcranial direct current stimulation on the attention network task (ANT): Contextualizing prior research. NYC Neuromodulation 2013 Conference, New York, NY.
35. Michael A. Hunter, Brian Coffman, Mike Trumbo, Aaron Jones, Charles Gasparovic, Vincent P. Clark. Modulation of large-scale network connectivity and glutamatergic concentrations by transcranial stimulation: A preliminary multimodal imaging study. NYC Neuromodulation 2013 Conference, New York, NY.
36. Aaron P. Jones, Michael Trumbo, Brian A. Coffman, Michael A. Hunter, Alexander David, Marom Bikson, Vincent P. Clark. Far field effects of cortical tDCS in the cerebellum. NYC Neuromodulation 2013 Conference, New York, NY.
37. V. R. Steele, B. C. Fink, J. M. Maurer, M. R. Arabshirani, A. Sidz, V. D. Calhoun, V. P. Clark, K. A. Kiehl. Event-related potential measures of incorrect responses predict completion of substance abuse treatment. Oral Session #119, Addiction Treatment and Genetics: Translational Studies. Society for Neuroscience, San Diego, CA, 2013. Selected for "Hot Topics" book and the Neuroscience 2013's online press room.
38. Randy Gollub, Jody Shoemaker, Margaret King, Tonya White, Stefan Ehrlich, Scott Sponheim, Vincent Clark, Jessica Turner, Vince Calhoun. Shared repository of multi-modal, multi-site brain image data from a clinical study of schizophrenia. Organization for Human Brain Mapping, Seattle, WA, 2013.
39. Michael Hunter, Vincent Clark, Vince Calhoun, Jose Canive. Relationships between functional network connectivity and measures of attention in schizophrenia. Organization for Human Brain Mapping, Seattle, WA, 2013.
40. Coffman, B. A.; Garcia, C. M.; Weisend, M. P.; Kelly, K.; Flores, R. A.; Clark, V. P. Differences in spectrograms of oscillatory MEG activity between hidden target and nontarget stimuli. Society for Neuroscience, 2012.
41. Sergey Plis, Jing Sui, Terran Lane, Sushmita Roy, Vincent P. Clark, Vamsi K. Potluru, Andrew Michael, Michael Weisend, Vince Calhoun. Capturing high-order interactions in neuroimaging data. Selected for Oral Session Presentation, Modeling and Analysis Methods. Organization for Human Brain Mapping, Beijing, China, 2012.
42. \*V.P. Clark, B. A. Coffman, M. C. Trumbo, C. Gasparovic. Transcranial direct current stimulation (TDCS) produces localized and specific increases in glutamate/glutamine and NAA. #413.1 Society for Neuroscience, 2010.



43. L. Bullard, A. J. Van Der Merwe, E. S. Browning, V. P. Clark, B. A. Coffman, R. A. Flores, C. M. Garcia, E. B. Kimball, K. M. Paulson, D. Puffer, E. M. Raybourn, A. A. Vakhtin, E. M. Wassermann, C. L. Wootton, M. P. Weisend. The effect of TDCS on performance and fatigue during a threat detection task. Society for Neuroscience, 2010.
44. C. L. Wootton, E. S. Browning, V. P. Clark, B. A. Coffman, R. A. Flores, C. M. Garcia, E. B. Kimball, A. J. Van Der Merwe, K. Paulson, L. E. Petree, D. Puffer, E. Raybourn, A. A. Vakhtin, E. Wassermann, M. P. Weisend. Learning effects of anodal transcranial direct current stimulation (TDCS) differ between electrode placements. Society for Neuroscience, 2010.
45. S. M. Plis, E. Damaraju, C. L. Wootton, L. M. Bullard, V. P. Clark, B. A. Coffman, E. B. Kimball, A. J. Van Der Merwe, K. Paulson, A. Vakhtin, D. Puffer, R. Barrow, C. Garcia, M. P. Weisend. Effective connectivity analysis of fMRI and MEG data collected under identical paradigms. Society for Neuroscience, 2010.
46. Stone, D.B., Urrea, L., Aine, C., Clark, V.P., Stephen, J.M. Alterations in auditory processing and multisensory integration in schizophrenic patients revealed using EEG. Center for Biomedical Research Excellence Meeting, NCR, NIH, Washington DC, 2010.
47. Bullard, L. Browning, E., Clark, V.P., Coffman, B., Jung, R., Kimball, E., van der Merwe, A., Wootton, C., Weisend, M. Transcranial direct current stimulation's effect on novice versus experienced learning. Organization for Human Brain Mapping, Barcelona, Spain, 2010.
48. C.M. Garcia, B.A. Coffman, V.P. Clark, M. P. Weisend, R. Barrow, A. van der Merwe, E.S. Browning, D. Puffer, E.M. Rayborn, V.D Calhoun, E.M. Wassermann, J.P. Phillips. Sensation of TDCS as a function of current density and electrode size. 7th International Conference on Biomagnetism, Dubrovnik, Croatia 2010.
49. B.A. Coffman, V.P. Clark, C. Garcia, M. P. Weisend, R. Barrow, A. van der Merwe, E.S. Browning, D. Puffer, E.M. Rayborn, V.D Calhoun, E.M. Wassermann, J.P. Phillips, R. Jung. TDCS accelerated learning of covert threat detection is influenced by current strength and stimuli familiarity vs. novelty. 7th International Conference on Biomagnetism, Dubrovnik, Croatia 2010.
50. Coffman, B.A., Clark, V.P., Garcia, C., Weisend, M. P., Barrow, R., van der Merwe, A., Browning, E.S., Mayer, A.R., Raybourn, E.M., Kelly, K., Puffer, D., Calhoun, V.D., Wassermann, E.M., Phillips, J.P. Changes in brain networks with learning of covert threat cues. Poster Presentation, High Level Visual Perception and Brain Networks Session 380, Society for Neuroscience, 2009
51. Ehrlich, S, Morrow, EE, Wallace, SR, Naylor, MG, Bockholt, HJ, Holt, DJ, Lundquist, AP, Yendiki, A, Roffman, JL, Ho, BC, White, T, Manoach, DS, Clark, VP, Calhoun, VD, Gollub, RL. The COMT Val158Met Polymorphism and Temporal Lobe Volumetry in Patients with Schizophrenia and Healthy Adults. Abstract #539, Oral Presentation, Genetics Session, Organization for Human Brain Mapping, San Francisco, CA, 2009.
52. Juárez, M, White, T, Pearlson, GD, Bustillo, J, Lauriello, J, Ho, BC, Bockholt, HJ, Clark, VP, Gollub, R, Magnotta, V, Machado, G, Calhoun, VD. Functional connectivity differences in first episode and chronic schizophrenia patients during an auditory sensorimotor task revealed by independent component analysis of a large multisite study. Abstract #2322, Organization for Human Brain Mapping, San Francisco, CA, 2009.
53. Michael, AM, Baum, SA, Segall, JM, Bockholt, HJ, Clark, VP, Jung, RE, Gollub, RL, Roffman, JL, Ho, BC, Andreasen, NC, Lim, KO, White, TJ, Schulz, SC, Calhoun, VD. Inter-Voxel Cross-Correlation Reveals Aberrantly Low Structural-Functional Linkage in Schizophrenia in a Multi-Site Study. Abstract #337, Organization for Human Brain Mapping, San Francisco, CA, 2009.
54. White, T, Leyba, L, Ho, BC, Clark, VP, Calhoun, VD, Wallace, S, Bockholt, HJ, Gollub, RL, Andreasen, NC, Schulz, SC, Magnotta, VA, Lim, KO. Cigarette Smoking Disrupts White Matter Integrity in Patients with Schizophrenia. Abstract #1020, Organization for Human Brain Mapping, San Francisco, CA, 2009.
55. Lane T, Plis S, Clark VP, Anderson B, Oyen D. Bayesian Analysis of Neural-Behavioral Interactions in Mental Illness. Collaborative Research in Computational Neuroscience, 2008.
56. \*Clark, V.P., Beatty, G.K., Anderson, R., Kodituwakku, P., Phillips, J., Kiehl, K.A., Calhoun, V.D. FMRI activity in cingulate and insular cortex predicts relapse in recovering stimulant addicts. Slide presentation, Society for Neuroscience, 2008.
57. Scully, M.S. Anderson, B., Lane, T., Bockholt, H.J., Clark, V. P., Calhoun, V., Gollub, R., Ho, B., Lauriello, J., White, T., Jung, R. A dynamic Bayesian network analysis of functional network differences during the auditory oddball task, related to general intelligence. Poster presentation, Society for Neuroscience, 2008.
58. Arfai, N., Wilson, M., Clark, V. P., Wallace, J. A. Accelerating recovery of behavioral & cognitive functions via single intracerebral injection of various neurotrophic factors after somatosensory contusion in adult rats. Poster presentation, Society for Neuroscience, 2008.

59. M. A. Monnig, A. Caprihan, D. Ruhl, P. Lysne, C. Gasparovic, V. Clark, R. A. Yeo, M. Bogenschutz, & R. J. Thoma . Diffusion tensor imaging reveals callosal white matter abnormality in alcohol dependence and recovery. Research Society on Alcoholism, 2008.
60. Chobok Kim, Doerte Spring, James K. Kroger, Vince Calhoun, Vince Clark. Exogenously cued attention switching recruits frontal pole: An fMRI study. Cognitive Neuroscience Society, 2008.
61. James K. Kroger, Doerte Spring, Chobok Kim, Vince Clark, Vince Calhoun. Double dissociations between lateral and medial frontopolar cortex for maintenance and manipulation of integrated information: An fMRI study. Cognitive Neuroscience Society, 2008.
62. J. Lauriello, J. Bustillo. S. C. Schulz, N. Andreasen, R. Gollub, B. C. Ho, V.P. Clark, J. Bockholt, K. O. Lim. Overview of the MIND Imaging Consortium, International Congress on Schizophrenia Research, 2007.
63. \*Beatty, G. K., Anderson, R. E., Kodituwakku, P. W., Fries, J. F., Calhoun, V. D., Clark, V.P. Response time variability and fMRI signal changes during a cognitive interference task in stimulant dependent patients. Society for Neuroscience, San Diego, CA, 2007.
64. Machado, G.R., Clark, V. P., Gollub, R., Lauriello, J., Magnotta, V., White, T., Calhoun, V. D. Probing schizophrenia with a sensorimotor task: large-scale (n=273) independent component analysis of first episode and chronic schizophrenia patients. Society for Neuroscience, San Diego, CA, 2007.
65. M. Benavidez, V. P. Clark, B. Ho, G. Kuperberg, J. Lauriello, K. Lim, V. Calhoun. Functional networks identified in an auditory oddball task of chronic and first episode schizophrenia patients (n=261) collected from the mind clinical imaging consortium. Society for Neuroscience, San Diego, CA, 2007.
66. Anderson, R.E., Clark, V.P., Barnes, G.E. Test of a two-path model of addiction-prone personality traits in a clinical sample. 26th International Congress of Applied Psychology, July 16-21, 2006, Athens, Greece.
67. Lysne, P., Montano, R., Hanlon, F., Bantz, R., Lundy, L., Euler, M., Weisend, M., Clark, V.P., Thoma, R., Hart, B. Intra-run stability of M50 auditory gating in a paired-click paradigm. Biomag 2006, Vancouver, BC, Canada.
68. \*Clark, V.P., Anderson, R.E., England, R., Beatty, G., DiPasquale, T., Posse, S., Kodituwakku, P., Rosen, A., Phillips, J.P., Blanco, R., Hicks, P., Bogenschutz, M. Multimodal imaging of relapse potential in recently abstinent stimulant dependent patients. Organization of Human Brain Mapping, Florence, Italy, 2006.
69. \*Clark, V.P., Anderson, R.E., England, R., Beatty, G., DiPasquale, T., Posse, S., Kodituwakku, P., Rosen, A., Phillips, J.P., Blanco, R., Hicks, P., Bogenschutz, M. A multimodal imaging study of relapse in stimulant dependence. Society for Cognitive Neuroscience, San Francisco, 2006.
70. \*England, R.L., Clark, V.P. The Relationship Between Psychopathic Traits and Emotional Processing using fMRI. International Neuropsychological Society, Boston, MA, 2006.
71. \*Clark, V.P., Friedman, L., Manoach, D., Ho, B.C., Lim, K., Andreasen, N. A collaborative fMRI study of the novelty oddball task in schizophrenia: Effects of illness duration. Society for Neuroscience Abstracts, Washington, DC, 2005.
72. \*Clark, V.P., Friedman, L., Lim, K., Ho, B.C., Andreasen, N. A multi-site collaborative fMRI study of the novelty oddball task in schizophrenia. Organization for Human Brain Mapping, Toronto, CA, 2005.
73. \*Burge, J., Lane, T., Clark, V.P. Dynamic Bayesian network classification of fMRI data reveals altered functional connectivity in dementia. Organization for Human Brain Mapping, Toronto, CA, 2005.
74. Kovacevic, S., Clark, V.P., Okada, Y., Partridge, L.D. and C.J. Aine, C.J. Encoding of Visual Features and Their Conjunctions: An fMRI and MEG Study. Biomag 2004. Boston, MA, 2004.
75. \*Burge, J., Lane, T., Clark, V.P. Dynamic Bayesian network classification of fMRI data reveals enhanced amygdala connectivity in dementia. Society for Neuroscience Abstracts, San Diego, CA, 2004.
76. \*Clark, V.P., Stevens, M.C., Lai, S. Effects of object categorical vs. subordinate level discrimination on fMRI responses in the oddball task. Society for Cognitive Neuroscience, San Francisco, CA, 2002.
77. \*Clark, V.P., Stevens, M.C., Lai, S. Distractor novelty effects on event-related fMRI responses in the oddball task. Society for Neuroscience, 2001.
78. Stevens, M.C., Lai, S., Benson, R., Kaplan, R.K., Clark, V.P. Altered event-related fMRI activity with conduct disorder. 109th Annual Meeting of the American Psychological Association, 2001.
79. \*Clark, V.P., Stevens, M.C. Event-related fMRI responses to the oddball task. Research Society on Alcoholism, 2001. Alcoholism Clinical and Experimental Research, 2001, 25(5 Supplement A): 78A.
80. \*Clark, V.P., Stevens, M., Chua, E., Goff, E., Audie, J., Lai, S., and Benson, R. An fMRI study of multimodal selective attention: Effects of functional relatedness. Cognitive Neuroscience Society Eighth Annual Meeting. Journal of Cognitive Neuroscience Supplement, 2001, p. 110.

81. \*Deckel, A.W., Fannon, S., Lai, S., Benson, R., Clark, V.P. Altered fMRI activity during maze testing in Huntington's disease. Cognitive Neuroscience Society Eighth Annual Meeting, Journal of Cognitive Neuroscience Supplement, 2001, p. 21.
82. Lloyd, D., Chua, E. and Clark, V.P. Canonical subject analysis: Seeking the typical and atypical rather than the mean in multi-subject fMRI studies. Cognitive Neuroscience Society Eighth Annual Meeting, Journal of Cognitive Neuroscience Supplement, 2001, p. 109.
83. \*Wakefield, J., Anderson, E., Benson, R., Lai, S., Clark, V.P. An fMRI study of brain response to native and unknown languages. Cognitive Neuroscience Society Eighth Annual Meeting, Journal of Cognitive Neuroscience Supplement, 2001, p. 98.
84. Whalen, D.H., Benson, R., Richardson, M., Clark, V.P., Lai, S. FMRI of speech perception using sinewave speech and acoustically matched nonspeech. Cognitive Neuroscience Society Eighth Annual Meeting, Journal of Cognitive Neuroscience Supplement, 2001, p. 128.
85. \*Clark, V.P., Fannon, S., Lai, S., Benson, R. Studies of the three-stimulus oddball task using event-related fMRI. Presented at the seventh annual meeting of the Cognitive Neuroscience Society in San Francisco, CA, April, 2000.
86. \*Clark, V.P., Deckel, A.W., Fannon, S., Lai, S., Benson, R. Reduced activation during Porteus maze testing in Huntington's Disease: An fMRI study. 29th Annual Meeting of the Society for Neuroscience in Miami Beach, FL. Society for Neuroscience Abstracts. 1999, 25(1-2):831.
87. Lai, S., Glover, G.H., Benson, R., Clark, V.P., Fannon, S., Ramsby, G.R. Improving detection of brain activation by measuring subject- and cortex-specific impulse response. Society of Magnetic Resonance in Medicine, 1999, 3:1699.
88. \*Clark, V.P., Fannon, S., Benson, R., Lai, S., Bauer, L., Ramsby, G. fMRI study of visual target detection. Journal of Cognitive Neuroscience, 1999, 93.
89. Dagli, M.S., Ingeholm, J.E., Clark, V.P., Haxby, J.V. Localization of cardiac induced variability in fMRI signal. Presented at the Third International Conference on Functional Mapping of the Human Brain. NeuroImage, 1997, 5(4): 431.
90. \*Clark, V.P., Maisog, J.Ma., Keil, K., Ungerleider, L., and Haxby, J.V. Visual Area Topography as Revealed by fMRI vs. PET. Presented at the Second International Conference on Functional Mapping of the Human Brain. NeuroImage, 1996, 3(3):S1.
91. Petit, L., Clark, V.P., Ingeholm, J., Courtney, S., Keil, K., Maisog, J., and Haxby, J. Frontal eye fields activation during visually guided saccades and smooth pursuit in healthy humans studied with fMRI. Society for Neuroscience Abstracts, 1996, 22:724.
92. Bavelier, D., Corina, D., Jezzard, P., Clark, V.P., Braun, A., Turner, R., and Neville, H. Cortical organization for language in native deaf and hearing signers. Society for Neuroscience Abstracts, 1996, 22:724.
93. Bavelier, D., Corina, D., Jezzard, P., Clark, V.P., Karni, A., Padmanhaban, S., Rauschecker, J., Turner, R., and Neville, H. Sentence reading: An fMRI study at 4 T., VIIth Conference on Theoretical and Experimental Neuropsychology (TENNET), Brain and Cognition, 1996, 32, 165-167.
94. Corina, D., Bavelier, D., Jezzard, P., Clark, V.P., Padmanhaban, S., Rauschecker, J., Braun, A., Turner, R., and Neville, H. Processing of American sign language and English in native deaf signers: An fMRI study at 4T. Brain and Language, 1996.
95. \*Clark, V.P., Parasuraman, R., Keil, K., Maisog, J.Ma., Courtney, S.A., Ungerleider, L., Haxby, J.V. Cortical fields for face and color perception revealed with fMRI. Society for Neuroscience Abstracts, 1995, 21:18.
96. \*Clark, V.P., Parasuraman, R., Keil, K., Maisog, J.Ma., Karni, A., Ungerleider, L.G., Haxby, J.V. FMRI studies of attention to color and face identity. Human Brain Mapping, 1995, Supplement 1:32.
97. Bavelier, D., Corina, D., Clark, V.P., Jezzard, P., Prinster, A., Karni, A., Lalwani, A., Rauschecker, J., Turner, R., Neville, H. Sentence reading : An fMRI study at 4T. Human Brain Mapping, 1995, Supplement 1:239.
98. \*Clark, V.P., Parasuraman, R., Keil, K., Maisog, J.Ma., Karni, A., Ungerleider, L., Haxby, J.V. Attention to color and face identity studied with fMRI. Cognitive Neuroscience Society, 1995, 2:58.
99. Courtney, S.M., Clark, V.P., Karni, A., Martin, A., Ungerleider, L.G., Haxby, J.V. FMRI studies reveal that attention, working memory, and learning modulate activity in human visual neural systems. Investigative Ophthalmology and Visual Science, 1995, 36(4):S612.
100. Maisog, J.Ma., Clark, V.P., Courtney, S., Haxby, J.V. Estimating the hemodynamic response and effective degrees of freedom in functional MRI time series. Human Brain Mapping, 1995, Supplement 1:147.
101. Beresten, K., Clark, V.P. FMRI studies of face processing using an asymmetrical birdcage coil. Society of Magnetic Resonance, 1995, 3:857.

102. Bavelier, D., Corina, D., Clark, V.P., Dale, A., Jezzard, P., Prinster, A., Karni, A., Lalwani, A., Rauschecker, J., Turner, R., Neville, H. Sentence reading: A 4T fMRI study of cortical regions active during an English reading task. Society for Neuroscience Abstracts, 1994 20: 352.
103. \*Clark, V.P., Keil, K., Lalonde, F., Maisog, J.Ma., Courtney, S.M., Karni, A., Ungerleider, L., and Haxby, J.V. Identification of cortical processing areas for the perception of faces and locations using fMRI. Society for Neuroscience Abstracts, 1994, 20:839.
104. Neville, H., Corina, D., Bavelier, D., Clark, V.P., Dale, A., Jezzard, P., Prinster, A., Karni, A., Lalwani, A., Rauschecker, J., Turner, R. Biological constraints and effects of experience on cortical organization for language: An fMRI study of sentence processing in English and American sign language (ASL) by deaf and hearing subjects. Society for Neuroscience Abstracts, 1994, 20:352.
105. \*Clark, V.P., Silu, F., Herold, N., Rubin, T.C., Hillyard, S.A. Components of the visual evoked potential identified by topographic mapping: Evidence for multiple visual streams in humans. Society for Neuroscience Abstracts, 1993, 19:1604.
106. \*Clark, V.P., Courchesne, E., Hillyard, S.A., Grafe, M. Identification of early visually evoked potential component sources in-vivo using magnetic resonance imaging. Society for Neuroscience Abstracts, 1992, 18:593.
107. \*Clark, V.P., Fan, S., Hillyard, S.A. Localization and identification of visually evoked potential generators. Evoked Potentials International Conference, Eger, Hungary, 1992, 10: P-30.
108. \*Clark, V.P., Fan, S., Hillyard, S.A. Stimulus position effects on the visually evoked potential: Analysis and localization with respect to brain morphology. International Brain Research Organization 3rd World Congress, 1991, 3:400.
109. \*Clark, V.P., Fan, S., Hillyard, S.A. The effects of stimulus position in the visually evoked potential: Analysis and localization with MRI. Society for Neuroscience Abstracts, 1991, 17:656.
110. Gomez, C., Clark, V P., Fan, S., Hillyard, S.A. Localization of the early components of the visual ERP during spatial-selective attention. Society for Neuroscience Abstracts, 1991, 17:656.
111. Berka, C., Clark, V.P., Halgren, E. Event-related slow potentials topographic distribution during primary memory. Society for Neuroscience Abstracts, 1987, 13:848.

### Research Funding:

#### Current:

SAMPRA: Scalable Analysis, Management, and Protection of Research Artifacts (selected for funding)  
 NSF (OAC), \$1,000,000,  
 Vincent P. Clark, Co-PI  
 Submitted 6/4/2018, 1/1/2019 – 12/31/2021

Closed Loop Extracranial Activation through Reinforcement-learning (CLEAR)  
 Air Force Research Laboratory  
 Vincent P. Clark, PI  
 1/1/2018-9/17/2018, \$41,625  
 Role: Principal Investigator

Enhancement of Mindfulness Meditation with Focused Ultrasound  
 Stiller Family Foundation  
 Jay Sanguinetti and Vincent P. Clark, co-PIs  
 10/1/2017-09/30/2018, \$16,567  
 Role: Principal Investigator

Cognitive Tools for Target Recognition  
 ARL, DOD, Contract # W911NF-17-2-g-01  
 Vincent P. Clark, PI  
 12/22/2016-5/30/2018, \$989,136

Role: Principal Investigator

University of New Mexico (UNM) Center for Brain Recovery and Repair, P20GM109089  
NIGMS, NIH  
Bill Shuttleworth, PI  
09/15/2015-06/30/2020, \$12,194,875  
Role: Clinical Core & Mentor

TDCS and Cognitive Retraining to Augment Pharmacotherapy for the Treatment of Nicotine Dependence, R21DA037546  
NIDA, NIH  
Eric Claus, PI  
3/1/15-3/31/19, \$430,000  
NIDA, NIH  
Role: Co-Investigator

TDCS Replication Study  
Arnold Foundation and Center for Open Science  
Emily Kappenman, PI  
04/30/17-12/31/18, \$60,000  
Role: Site PI

**Completed:**

COBRE: Multimodal Imaging of Neuropsychiatric Disorders (MIND), P20GM103472  
NIGMS, NIH  
Vince Calhoun, PI  
07/31/2013-06/30/2018, \$12,367,560  
Role: Mentor

Mindfulness-Based Intervention and Transcranial Direct Current Brain Stimulation to Reduce Heavy Drinking: Efficacy and Mechanisms of Change, R21AA024926  
NIAAA, NIH  
Katie Witkiewitz, PI  
07/15/2016-06/30/2018, \$375,000  
Role: Co-Investigator

Improving Memory Performance by Augmenting Consolidation with Transcranial Stimulation (IMPACTS), 837529  
Vincent P. Clark, PI  
DARPA, DOD  
2/19/2016-3/9/2018, \$1,252,855  
Role: Principal Investigator

Phantom Head for Testing and Standardizing Transcranial Magnetic and Direct Current Stimulation Therapies, SBIR 1622060  
Elizabeth Mirowski, PI  
NSF  
07/01/2016-06/30/2017, \$35,000  
Role: PI

Modifying Alcohol Approach Motivations with tDCS and Cognitive Retraining, R21AA021201  
Eric Claus, PI  
NIAAA, NIH  
01/01/13-12/31/15, \$507,516  
Role: Co-Investigator

Noninvasive Neural Stimulation Technology, R44NS080632  
Timothy A. Wagner, PI, Highland Instruments, Cambridge, MA.  
NINDS, NIH  
2012-2016, \$2,973,728  
Role: Consultant

CC\*IE Networking Infrastructure: Network Expansion to Support Data Intensive Research and Computation at the University of New Mexico,  
Gilbert Gonzales, PI  
NSF  
9/1/2014-8/31/2015, \$498,620  
Role: Co-Investigator

Fast Network Inference Methods for Connectome Analysis, R21MH097201  
Terran Lane, PI  
NIMH, NIH  
09/18/12-07/31/15, \$395,914  
Role: Co-Investigator

Multifaceted Intervention for Robust, ARP-Focused, Customized Learning and Enhancement (MIRACLE), 2014-131270006  
Vincent P. Clark, PI  
01/06/14-3/31/15, \$744,000  
IARPA  
Role: Principal Investigator

Efficacy of Intranasal Insulin in Relieving Symptoms of Tobacco Abstinence Syndrome, R03DA036054  
Ajna Hamidovic, PI  
04/01/14-03/31/15, \$75,500  
NIDA, NIH  
Role: Co-Investigator

The Neurobiology and Developmental Trajectories in Children at Risk for Severe Psychopathology, 40-00812-98-11021  
Tonya White, PI, Erasmus Medical Center, Rotterdam, Netherlands.  
Open Programma Gezondheidsonderzoek ZonMW TOP Grant, Netherlands  
2011-2015, €675,000 (\$945,000)  
Role: Co-Investigator

Mindfulness Based Relapse Prevention and Brain Stimulation as an Intervention for Nicotine Dependence  
Katie Witkiewitz, PI  
01/01/14-01/01/15, \$3000  
Grice Foundation  
Role: Co-Investigator

Transcranial Direct Current Stimulation For Cognitive Enhancement in FASD, F31AA022851.  
Brian Coffman, PI  
12/1/13-11/30/14, \$29,963  
NIAAA, NIH  
Role: Mentor

Effects of transcranial stimulation on functional connectivity and cognitive performance using nonlinear analysis techniques, DGE-0903444  
Michael Hunter, PI  
NSF Graduate Fellowship

06/01/2013-5/31/2016, \$132,000

Role: Mentor

Graduate Research Fellowship Program (GRFP), Effects of Orthotics on Brain Function

Vincent P. Clark, PI

National Spasmodic Torticollis Association

2010-2014, \$23,000

Role: Principal Investigator

Socio-Moral Processing in Psychopathy and Substance Abuse, R01DA026505

Kent Kiehl, PI

NIDA, NIH

2009-2014, \$3,808,796

Role: Co-Investigator

The Cognitive Neuroscience of Female Psychopathy. R01MH085010

Kent Kiehl, PI

NIMH, NIH

2009-2014, \$3,916,112

Role: Co-Investigator

Therapeutic Actions of Oral Orthotics

Vincent P. Clark, PI

Grice Foundation

2012-2013, \$3,000

Role: Principal Investigator

Alcohol Research Training in Neurosciences, T32AA014127

C. Fernando Valenzuela, PI

NIAAA, NIH

2012-2014, \$1,043,896

Role: Mentor for Brian A. Coffman.

Neural Mechanisms of Schizophrenia: Use of Multiple Neuroimaging Tools to Examine Dysfunctions in Neural Integration (COBRE), P20RR021938

Vince Calhoun, PI

NCRR, NIH

2009-2013, \$11,640,511

Role: Mentor

Clinical Neuroscience Core Renovation for Psychology at University of New Mexico, G20RR030839

Jane Smith, PI

NCRR, NIH

2010-2015, \$4,964,723

Role: Center Director

Brain Stimulation to Accelerate Learning of Threat Detection, Phase II.

Vincent P. Clark and Mike Weisend, PIs

DARPA, DOD

2009-2011 \$3,804,403

Role: Principal Investigator

Mind Research Network

John Rasure, PI

DOE

2008-2009, \$11,400,000

Role: Scientific Director

Brain Stimulation to Accelerate Learning of Threat Detection, Phase I, NBCHC070103

Vincent P. Clark, PI

DARPA, DOD

2007-2009, \$1,999,692

Role: Principal Investigator

Mind Research Network.

John Rasure, PI

DOE

2007-2008, \$7,000,000

Role: Scientific Director

Multimodal Imaging of the Sensory Gating Deficit in Chronic Cocaine Abusers, R03DA022435

Andrew Mayer, PI

NIDA, NIH

2007-2008, \$252,953

Role: Co-Investigator

Brain and Behavioral Impairment in Alcohol Dependence and Schizophrenia, K23AA016544

Robert Thoma, PI

NIAAA, NIH

2006-2011, \$556,944

Role: Mentor

The Functional Role of Frontopolar Cortex: Dynamics of Frontopolar Recruitment

James Kroger, PI, New Mexico State University, Las Cruces, NM.

NIGMS, NIH.

2006-2008, \$320,352.

Role: Consultant

fMRI Analysis of the Decision Making Processes of Human Subjects

Vincent P. Clark, PI

Sandia National Laboratories, LDRD Program.

2006, \$63,957

Role: Principal Investigator

The Effects of Angry and Fearful Emotion States on Decision-Making.

Vincent P. Clark, PI

Sandia National Laboratories, LDRD Program

2006, \$85,767

Role: Principal Investigator

Bayesian Analysis of Neural-Behavioral Interactions in Mental Illness, R01MH076282

Terran Lane, PI

CRCNS, NIMH, NIH

2005-2008, \$1,012,500

Role: Co-Investigator

Neural Function in Cocaine Dependence and Relapse. Subproject 8353 in University of 5M01RR000997, New Mexico - General Clinical Research Center

Vincent P. Clark, PI

NCRR, NIH

2005-2007, \$169,305

Role: Principal Investigator



fMRI Imaging of Learning Strategies, Sub-project in Individual Differences in Learning  
SBE 0350360

Vincent P. Clark and Mark McDaniel, co-PI  
NSF

10/1/2003-1/31/2007, \$275,000

Role: Principal Investigator

Interactive Real-time fMRI at High Fields with Automatic Classification of Activation Patterns, R01EB002618

Stefan Posse, PI

NIBIB, NIH

2003-2006, \$1,077,563

Role: Co-Investigator

Neural Function in Cocaine Dependence and Relapse, R01 DA012852

Vincent Clark, PI

NIDA, NIH

2001-2007, \$1,425,000

Role: Principal Investigator

Event-Related Functional MRI of Adult ADHD

Leighton Huey, PI

Donaghue Medical Research Foundation

2002, \$57,949.

Role: Co-Investigator

Functional MRI of Attention and Working Memory in Normal Aging and Alzheimer's Disease

Brett Steinberg, PI

2001, \$100,000

UConn Research Foundation

Role: Co-Investigator

fMRI of Prefrontal Cortex Function in Pathological Gamblers

Vincent P. Clark, PI

National Center for Responsible Gaming

2000-2004, \$172,056

Role: Principal Investigator

fMRI Responses to the Oddball Task and Risk Factors for Alcoholism

Vincent P. Clark, PI

UConn Alcohol Research Center and UConn General Clinical Research Center

1999-2002, \$60,000

Role: Principal Investigator

Neural Mechanisms of Attention

Vincent P. Clark, PI

Research Initiation and Support Enhancement Award

University of Connecticut

1998-1999 \$120,000

## Teaching

### Classroom Teaching:

2018, Fall; Psychology 240, Brain and Behavior  
2018, Summer Session; Psychology 240, Brain and Behavior  
2017, Winter Intersession; Psychology 240, Brain and Behavior  
2017, Fall; Psychology 641, Seminar in Cognition, Brain and Behavior  
2017, Summer, Psychology 240, Brain and Behavior  
2017, Spring, Psychology 240, Brain and Behavior  
2016, Winter Intersession, Psychology 240, Brain and Behavior  
2016, Summer, Psychology 240, Brain and Behavior  
2015, Winter Intersession, Psychology 240, Brain and Behavior  
2015, Summer, Psychology 240, Brain and Behavior  
2015, Spring, Psychology 240, Brain and Behavior  
2014, Winter Intersession, Psychology 240, Brain and Behavior  
2014, Fall, Psychology 240, Brain and Behavior  
2014, Spring, Psychology 240, Brain and Behavior  
2013, Fall; Psychology 450/650L, Introduction to EEG Lab (new prep)  
2013, Spring; Psychology 450/650, Clinical Neuroimaging  
2012, Fall; Psychology 450/650, Introduction to the Clinical Neuroscience Center Laboratory (new prep)  
2012, Fall; Psychology 450/650, EEG and MEG Analysis Laboratory, 1 Lecture  
2011 Fall and 2012 Spring; Sabbatical  
2011, Spring; Psychology 650, Advanced Topics in Neuroimaging  
2011, Spring; CS 491/591 and ECE 595, Cognitive and Computational Neuroscience, 1 Lecture  
2010, Fall; Psychology 641, Seminar in Cognition, Brain and Behavior  
2010, Fall; Psych 391: Junior Honors Seminar, 1 Lecture  
2010, Fall; ECE595: Cognitive Radios and Cognitive Radio Networks, 1 Lecture  
2010, Spring; Psychology 650, Introduction to Functional Neuroimaging (new prep)  
2009, Fall; Psychology 641, Seminar in Cognition, Brain and Behavior  
2008, Fall; Psychology 641, Seminar in Cognition, Brain and Behavior  
2008, Spring; Master's of Science in Clinical/Translational Research (MSCR), Current and Emerging Technology; 1 lecture.  
2007, Fall; Psychology 641, Seminar in Cognition, Brain and Behavior  
2006, Spring; CS595, Learning from Cognitive, Computation, and Neuroscience, 1 Lecture  
2005, Fall; Psychology 240, Brain and Behavior  
Psychology 450/650 Sec 5, Clinical Neuroimaging (new prep)  
2005, Spring; Psychology 240, Brain and Behavior  
2004, Fall; Psychology 450/650 Sec 5, Magnetic Resonance Imaging and Spectroscopy: From Methods to Functional Brain Imaging (new prep)  
2004, Fall; Psychology Research Seminar, 1 Lecture  
2004, Summer; Pre-medical Summer School Lecture Series, UNMHSC Medical School, 1 lecture.  
2004, Spring; Psychology 240, Brain and Behavior (new prep)  
2003, Fall; Psychology 650, Applications of Functional Neuroimaging (new prep)  
2003, Fall; Psychology 505, Research Seminar, 1 Lecture  
2003, Spring; Psychology 450/650, Functional Neuroimaging (new prep)  
2002; Seminar on fMRI and EEG Data Acquisition and Analysis Techniques (new prep)  
2002; Psychiatry Post-Graduate Year III lectures (2 lectures)  
2002; Psychiatry Post-Graduate Year IV lectures (2 lectures)  
2002; Systems Neuroscience (Meds 371; 1 session)  
2001; Seminars on fMRI Data Acquisition and Analysis Techniques (6 sessions)  
2001; Psychiatry Post-Graduate Year I (1 lecture)  
2001; Neuroimaging Immersion (5 hours / week, 1 student)  
2001; Neuroimaging in Mood Disorders (1 lecture)  
2001; Psychiatry Post-Graduate Year II (1 lecture)  
2001; Psychiatry Post-Graduate Year III (2 lectures)

2001; Psychiatry Medical Students Year III Didactic Series (5 lectures)  
 2000; Seminars on fMRI Data Acquisition and Analysis Techniques (6 lectures)  
 2000; Laboratory Rotation, 1 semester (Meds 496)  
 2000; Psychiatry Medical Students Year III Didactic Series (5 sessions)  
 2000; Systems Neuroscience (Meds 371)  
 1999; Seminars on fMRI Data Acquisition and Analysis Techniques (6 lectures)  
 1999; Director: Neuroscience 375, Current Topics in Human Brain Imaging  
 1999; Laboratory Rotation, 2 semesters (Meds 496)  
 1999; Physiological Digital Imaging (Meds 306), 1 lecture  
 1999; Neuroscience Seminars (Psych 358), UConn Storrs  
 1998; Initiated weekly fMRI Journal Club Seminars  
 1998; Seminar on Alcohol Research, Alcohol Research Center (1 lecture)  
 1998; Neurosciences Journal Club Seminars (2 lectures)  
 1998; Auditory Journal Club Seminar (1 lecture)  
 1998; Seminars on fMRI Data Acquisition and Analysis Techniques (12)  
 1998; Laboratory Rotation, 1 semester (Meds 496)  
 1998; Independent Study Course, 1 semester (Meds 495)  
 1998; Systems Neuroscience, 1 lecture (Meds 371)  
 1998; Research Seminar in Biopsychology, 1 lecture (Psych 356), UConn Storrs  
 1997; Human Brain Mapping, Foundation for Advanced Education in the Sciences, NIH  
 1996; Experimental Design for the Integration of fMRI and EEG data. FMRI Visiting Fellowship Program, MGH NMR Center, Charleston, MA. (1 invited lecture)  
 1996; Biological Basis of Behavior, Psychology 304; Department of Psychology, Catholic University  
 1990; Human Nutrition, Biology 22. Teaching Assistant.

#### **Post-Doctoral Advisement:**

Jay Sanguinetti, PhD, 2016-Present.

Bashar Badran, PhD, 2017-Present.

Natalie Bryant, PhD, 2016-2018.

Gregory Lieberman, PhD, 2013-2015. Currently U.S. Army Research Laboratory postdoctoral research fellow and visiting scholar at the University of Pennsylvania.

Robert E. Anderson, PhD, 2004-2007.

#### **Doctoral Advisement:**

##### **Current:**

Benjamin Gibson, 2017-Present.

Bradley Robert, 2017-Present.

Aaron Jones, M.S., 2013-Present. MS Thesis Title: Contribution of Far Field Effects of Cortical tDCS in the Cerebellum to Learning in an Object Detection Paradigm, 2015. Comprehensive examination 2016: "Memory Consolidation and Recall during Wake and Sleep in Humans: Using Non-Invasive Brain Stimulation to Augment Sleep Architecture and Memory Processes to Improve Cognitive Performance." Dissertation "Effects of Closed-Loop Transcranial Alternating Current Stimulation (CL-tACS) on Sleep-Dependent Memory Consolidation," in progress.

##### **Graduated:**

Michael Trumbo, PhD, Awarded Arts and Sciences Merit-Based Graduate Fellowship, 2009-2012. 2011, MS Thesis Title: Investigating the Effects of TDCS on Attentional Processes. Comprehensive examination 2012. PhD Title: Using Brain Stimulation to Enhance Working Memory: A Charged Topic, July 2016. Currently Research Scientist, Sandia National Laboratories.

Michael Hunter, PhD, 2011-2016. Awarded Ford Foundation Graduate Fellowship, 2012, and National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Fellowship, 2013. MS Thesis Title: Large-scale intrinsic functional connectivity and attention in schizophrenia, 2013. Comprehensive examination 2015. PhD (with distinction) Title: Expanding Your Cognitive Capacity: An Assessment of the Neuroplastic Changes Associated with Mindfulness Training with Transcranial Stimulation, February 2016. Currently Staff Scientist, Quasar USA, San Diego, CA.

- Brian Coffman, PhD; Defended 2014. MS Thesis Title: Investigation of the Context Dependent Learning Effects of TDCS using mock MRI. MS awarded (with distinction). Comprehensive examination 2012 (with distinction). PhD (with distinction) Title: Increasing Your Brain Potential: Transcranial Direct Current Stimulation for Enhancement of Behavior and Event-Related Potentials in Tests Of Attention and Impulsivity. Recipient, 2014 Benjamin Franklin Haught Memorial Research Lecture Award, “Taking Control of Cognitive Control with Brain Stimulation”. Recipient, Best Poster Award, NYC Neuromodulation Conference, 2013. Currently Post-Doctoral Associate in the Clinical Neurophysiology Research Laboratory, Department of Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, PA (mentor: Dean Salisbury).
- Nariman Arfai, PhD; Defended 2010; Dissertation Title: Effect of the Rerouting Rostral Migratory Stream on Recovery of Cognitive Function after Medial Frontal Aspiration in Rat. Currently, Instructor, Dept. Communication Humanities & Soc Sci, CNM.
- Gregory Beatty, MS; Defended MS 2008; MS Thesis Title: Response Time Variability, Functional Magnetic Resonance Imaging Signal Changes, and Event-Related Potential Amplitudes During Cognitive Interference in Stimulant Dependence.
- Leonard Leyba, MD, PhD; Defended PhD in Neurosciences 2007; Dissertation Title: Cigarette Smoking and fMRI.
- Rebecca England-Amariglio, PhD, 2005, MS Thesis Title: How Do Personality Traits Mediate Emotional Processing in an Abstinent Stimulant Addicted Sample? An fMRI Study. Currently, Associate Psychologist, Brigham and Women's Hospital and Assistant Professor of Neurology, Harvard Medical School.
- Joseph Audie, MS in Biomedical Engineering, University of Connecticut, 6/2001, MS Dissertation Chair. Currently Associate Professor of Biochemistry and Computational Biophysics, Sacred Heart University.
- Elaine Goff, MS, 2000, MS Thesis Title: fMRI of Face Attention and Perception.

#### **Other Advisement:**

- Jon Kevin Wilson, MS 2018. Graduate Program in Psychology, Division of Cognitive Neuroimaging. Thesis title: “Using Transcranial Direct Current Stimulation to Enhance Spelling Ability.”
- Charles Samuel Robinson, MS. Graduate Program in Psychology, Cognition Brain and Behavior. Comprehensive examination committee, 2016-2017. Dissertation Committee, 2017-Present (Title: Neural and Behavioral Associations of Drinking and Empathic Processing).
- Elizabeth McCallion, PhD, Graduate Program in Psychology, Clinical, Dissertation Committee 2016-2017 (Title: Mindfulness-Based Stress Reduction and Transcranial Direct Current Stimulation as an Intervention for Chronic Pain Management).
- Jacki Janowich, MS Graduate Program in Psychology, Division of Cognitive Neuroimaging. MS Thesis Committee 2015-2016. (Thesis Title: Distinct Neuro-Cognitive Instantiations of Proactive and Reactive Control: A Double-Dissociation in EEG). Comprehensive Exam Committee 2016 (Title: Investigating timing and oscillatory mechanisms of large-scale network switching). Dissertation Committee 2017-Present (Title: Instantiating Cognitive Control Over Different Time-Scales: To Switch or Remember?)
- John Pinner, MS, Graduate Program in Psychology, Division of Cognitive Neuroimaging. MS Thesis Committee 2014-2015 (Thesis Title: Using Electroencephalography to Assess Risky Behavior in Varying Levels of Conflict).
- Hao He, MS. Graduate Program in Computer Science. Dissertation Committee 2014-2016. (Dissertation Title: Searching Neuroimaging Biomarkers in Mental Disorders with Graph and Multimodal Fusion Analysis of Functional Connectivity).
- Samantha Fede, MS, Graduate Program in Psychology, Division of Cognitive Neuroimaging. MS Thesis Committee 2013-2015. (Thesis Title: Examining the Neural Basis of Moral Decision Making in Incarcerated Adult Males: A Functional Magnetic Resonance Imaging Study). Comprehensive Exam Committee 2015 (Title: Neuroimaging the Moral Brain: A Review of Neuroimaging Literature and a Meta-Analysis of the Specific Results of fMRI Moral Tasks using Multilevel Kernel Density Analysis and Activation Likelihood Estimation). Dissertation Committee 2015-2017.
- Eduardo Castro, PhD, Graduate Program in Computer Engineering. PhD Dissertation Committee 2013. (Dissertation Title: Application of Multiple Kernel Learning on Brain Imaging for Mental Illness Characterization).
- Danielle Rudder, MS. Graduate Program in Psychology, Division of Cognitive Neuroimaging. MS Thesis Committee 2011-2013. (Thesis Title: Transcranial Direct Current Stimulation for the Reduction of Alcohol Craving).
- Zhen Yang, PhD, Graduate Program in Psychology, Division of Behavioral Neuroscience, Comprehensive Examination Committee 2009-2010; PhD Dissertation Committee 2010-2012. (Dissertation Title: A fMRI Study of Auditory Orienting and Inhibition of Return in Pediatric Mild Traumatic Brain Injury.) Currently: Research Scientist, Nathan Kline Institute, NY.

- David Stone, Ph.D., Graduate Program in Psychology, Division of Cognitive Neuroscience, Comprehensive Examination Committee, 2011. PhD Dissertation Committee, 2011-2012. (Dissertation Title: Topological Dynamics of STDP-Driven Networks of Model Neurons).
- Lai Xu, Ph.D., Graduate Program in Electrical and Computer Engineering, PhD Dissertation Committee member, 2010-2011 (Dissertation Title: Independent Component Analysis for Structural Magnetic Resonance Imaging).
- Michelle Juárez, Ph.D., Graduate Program in Electrical and Computer Engineering, MS Thesis Committee 2010-2011, (MS Thesis Title: On The Use of Independent Component Analysis & Functional Network Connectivity Analysis: Evaluation on Two Distinct Large-Scale Psychopathology Studies).
- Per Lysne, Ph.D., MS Thesis Committee, 2008-2009. (MS Thesis Title: An MEG Investigation of the Differential Responsivity of the Human Calcarine Fissure and Fusiform Gyrus to the Emotion of Viewed Faces).
- Jon Houck, Ph.D., Graduate Program in Psychology, M.S. Committee, 2004-2006. (MS Thesis Title: Cerebellar Activation in a Mental Rotation Task). Currently Research Assistant Professor, CASAA.
- Paul Lesnik, PhD, Graduate Program in Psychology, PhD Dissertation Committee Member 2005-2007. (Dissertation Title: A Developmental Event-Related fMRI Study of Inhibition using a Go/No-Go Task.) Currently Adjunct Lecturer III, UNM.
- Masato Nakazawa, Ph.D. Graduate Program in Psychology, MS. Committee Member 2004-2006. Currently Senior Statistician, UCSD School of Medicine
- Katherine Akers, Ph.D. Graduate Program in Psychology, Division of Behavioral Neuroscience. 2003-2005. MS committee. (Currently Biomedical Research/Research Data Specialist, Wayne State University).
- Joel Bish, Ph.D. 2003 Graduate Program in Psychology, Division of Cognitive Neuroscience. Dissertation committee. Currently Associate Professor, Dept. Psychology, Ursinus College.
- Tim Martin, Ph.D. 2003-2005. Graduate Program in Psychology, Division of Cognitive Neuroscience. (Dissertation committee member). Currently Associate Professor, Dept. Psychology, Kennesaw State University.
- Jennifer Jones, M.S. 2004 Graduate Program in Psychology, Division of Behavioral Neuroscience. Comprehensive examination committee.
- Bethany Reeb, PhD. 2003-2005. Graduate Program in Psychology, Division of Behavioral Neuroscience. Comprehensive examination committee. (Currently Assistant Professor, Dept. Psychology, Florida International University).
- Eric M Jackson, Graduate Program in Psychology, Division of Cognitive Neuroscience, 2004-2006 (MS Committee Member, Title: Cerebellar Activation During Encoding for Object and Spatial Working Memory Tasks). Currently Instructor, UNM.
- John Burge, Ph.D., Graduate Program in Computer Science 2004-2007 (Dissertation Committee Member, Dissertation Title: Learning Bayesian Networks From Hierarchically Related Data with a Neuroimaging Application) Currently Software Engineer, Google Corporation).
- Sanja Kovacevic, PhD, Graduate Program in Neuroscience, 2002-2006 (Dissertation Committee Member, Thesis Title: Multimodal Imaging of Visual Feature Integration). Currently Post-doc in Department of Radiology at UC San Diego.
- Michael Stevens, Ph.D., Post-Doc, 2000-2002, Alcohol Research Center Training Grant, Communications Disorders Training Grant, UCHC. Currently Adjunct Professor of Psychiatry, Yale University; Director, Clinical Neuroscience and Development Laboratory at Olin Neuropsychiatry Research Center; Director, Child & Adolescent Research, The Institute of Living.
- Jennie Wakefield, Ph.D., Post-Doc, 1999-2002, Communications Disorders Training Grant, UCHC (Currently Statistician for CSS Dynamac / US EPA)
- Elizabeth Chua, B.S. in Psychology with Honors, Trinity College, 5/2001. (Currently Associate Professor, Department of Psychology at Brooklyn College, City University of New York)
- Erik Anderson, B.S. in Psychology with Honors, Trinity College, 5/2000.
- Sean Fannon, B.S. in Psychology, Catholic University, 5/1997. (Currently Professor of Psychology, Folsom College, CA).

#### **Bachelor's Honors Advisement:**

- Gabe Hicks, 2017-2018. Honors in Psychology Program. Graduated Summa Cum Laude
- Hector Patricio Valverde, 2016-2018. Honors in Psychology Program. Graduated Summa Cum Laude
- Jon Kevin Wilson, 2013-2014. Honors in Psychology conferred 2014. Title: "Using Transcranial Direct Current Stimulation to Enhance Spelling Ability."

#### **Undergraduate Student Mentoring:**

Mikaela Lea Armenta, 2014-2016. Ronald E. McNair Post-Baccalaureate Achievement & Research Opportunity Program.

Ashley Racheal Wegele, 2011-2014. Ronald E. McNair Post-Baccalaureate Achievement & Research Opportunity Program.

Jason Long, B.S., 2008-2011, Ronald E. McNair Post-Baccalaureate Achievement & Research Opportunity Program.

**Curriculum Development or Teaching Administrative Positions:**

Area Head, Graduate Program in Cognition Brain and Behavior; 2006-2011.

**Service**Editorships

- 2013-Present Editorial Board Member, *Brain Stimulation*
- 2012-2014 Clark, V.P., Parasuraman, R., Guest Editors, special issue. "Neuroenhancement: Enhancing brain and mind in health and in disease." *NeuroImage*, 85(3).  
Leaders in the field of brain stimulation and related neuroenhancement techniques contributed to this peer-reviewed special issue of *NeuroImage*.
- 2011-2013 Cooper, M.S., Clark, V.P., Chang, L., Guest Editors, special issue. "Imaging Neuroinflammation and Neuropathic Pain." *Journal of NeuroImmune Pharmacology*, 8(3), 2013.  
Selected speakers from our October 2011 meeting, Imaging Neuroinflammation and Neuropathic Pain, contributed to this peer-reviewed special issue.
- 2010-2014 Handling Editor, *NeuroImage*  
One of 15 handling editors for one of the most highly cited journals specializing in neuroimaging. Identified reviewers and made decisions on over 300 manuscripts.
- 2009 Pietrini, P., Bookheimer, S. and Clark, V.P., Editors. Proceedings, Organization for Human Brain Mapping 15th Annual Meeting (Barcelona). *NeuroImage*, 47(S1).  
Organized and edited program book for OHBM meeting.
- 2002-Present Editorial Board Member, *Human Brain Mapping*

Reviewing for national and international funding organizations

- 2018 Leverhulme Trust, ad-hoc reviewer
- 2017 Swiss National Science Foundation, Biology and Medicine (Division III), ad-hoc reviewer
- 2016 Chair, Special Emphasis Panel ZMH1 ERB-S (04); Review of BRAIN Initiative: Non-Invasive Neuromodulation - New Tools and Techniques for Spatiotemporal Precision (R01 Applications)
- 2014 Brain and Cognitive Science, Cogneuro, National Science Foundation, ad-hoc reviewer
- 2012 Biomedical Research Council (BMRC), Agency for Science, Technology and Research, Singapore, ad-hoc reviewer
- 2011 Medical Research Council, Great Britain, ad-hoc reviewer
- 2011 Netherlands Organization for Scientific Research, ad-hoc reviewer
- 2008 Wise Reviewer, Canadian Foundation for Innovation
- Oct and  
July 2008 International and Cooperative Projects (ICP1) Study Section for Fogarty International Research Collaboration Award in Basic Biomedical Science, NIH.
- June 2007 Special Emphasis Panel ZDA1 KXN-G 05, NIDA, NIH
- Oct 2006 International and Cooperative Projects (ICP1) Study Section for Fogarty International Research Collaboration Award in Basic Biomedical Science, NIH.
- June 2005 RFA 05-006, Study Section ZDA1 MXS-M (31), NIDA, NIH
- June 2004 RPHB-B Special Emphasis Panel Study Section, NIH
- Oct 2000 and  
May 2001 NSD-A Study Section, NINDS, NIH
- 2000-2012 Psychology/Neuroscience Study Section, Canadian Foundation for Innovation

Administrative work with professional societies, elected offices held

- 2012-2015 Scientific Advisory Committee Member, Reflex Sympathetic Dystrophy Syndrome Association
- 2005-2010 and  
2012-2015 Program Committee Member, Organization for Human Brain Mapping
- 2007-2010 Education Chair, Organization for Human Brain Mapping. Elected by peers to help design and organize OHBM Education Day courses in Melbourne, San Francisco and Barcelona.

Current administrative work in Department, College, University committees

- 2018 Member, Salary Committee (elected by faculty), UNM Psychology
- 2017-Present Member, RSP Corporate Relations Roundtable
- 2017 Chair, Cognitive Neuroscience Search Committee, UNM Psychology

2006-Present Member, Policy & Planning Committee, UNM Psychology  
 2003-Present Member, Executive Committee for Publications, MIND Clinical Imaging Consortium  
 2002-Present Faculty Member, Concentration in Behavioral Neuroscience, UNM Psychology  
 2002-Present Faculty Member, Concentration in Cognitive Neuroimaging, UNM Psychology

Previous administrative work in Department, College, University committees

2016-2017 Member, MCR-HSC Collaborations Working Group  
 2016 Member, Salary Committee (elected by faculty), UNM Psychology  
 2012-2014 Chair, EU (Online) Money Committee, Psychology, UNM  
 2006-2014 Member, Conflict of Interest Committee-D, UNM  
 2012-2013 Chair, Junior Tenure and Promotion Committee, College of Arts and Sciences, UNM  
 2010-2011 Member, Junior Tenure and Promotion Committee, College of Arts and Sciences, UNM  
 2010-2011 Chair, Computer/Web Committee, UNM Psychology  
 2009-2011 Member, Grant Writing & Mentoring, UNM Psychology  
 2007-2009 Chair, DOE Internal Awards Progress Review, MRN  
 2007 Member, Salary Committee (elected by faculty), UNM Psychology  
 2006-2011 Area Head, Cognition, Brain and Behavior, UNM Psychology,  
 2005 Member, Committee on Distinction, UNM Psychology  
 2003-2005 Member, Science of Learning Center Advisory Committee  
 2005 Member, T-32 Grant Proposal Advisory Committee, UNM  
 2004-2011 Member, Walker Award Committee, UNM Dept. Neuroscience  
 2004-2005 Chair, Cognitive Search Committee, UNM Psychology  
 2002-2010 Member, Awards Committee, UNM Psychology  
 2002-2010 Member, Honors Committee, UNM Psychology  
 2002-2006 Admissions, UNM Psychology  
 2002-2005 Member, Computer Usage Committee, UNM Psychology  
 2002-2005 Member, Domenici Hall Design Committee  
 2002-2004 Member, MEG Purchasing Committee, MIND Imaging Center  
 2002-2004 Member, Lead Physicist Search Committee, Mind Imaging Center  
 2002-2003 Chair, MRI Purchase Committee, Mind Imaging Center  
 2001-2002 Member, Medical Admissions, UCHC.  
 2000-2002 Member, Computer Users Advisory Committee, UCHC  
 1998 Chair, NS-D Neurosciences Chair Search Committee, UCHC  
 1997-2002 Co-Director, Program in Functional NeuroImaging, UCHC

Community service

2015 Lectures (2), How the brain works: Explore Academy High School.  
 2014 Advisor, National Consultative Ethics Committee, Paris, France.  
 2012 Presentations (2) to New Mexico Dystonia Support Group on new techniques for reducing dystonia  
 2010 Judge, Dennis Chavez Elementary School Science Fair  
 2010 Presentation on brain research to APS middle school students  
 2008-Present Advisor, Science & Entertainment Exchange, National Academy of Sciences  
 2005-2009 Lectures on the brain to elementary school children, Sunset Mesa Elementary School.  
 2000 Lectures (2), Drugs and the brain: Mini Med School, UConn Health Center.  
 2000 Bulkeley High School Health Professions Center of Excellence Program



## Other

### Media Coverage

- Morris, A. (2018). Can We All Benefit from Electric Shocks to Our Brains? *Forbes*, July 23. <https://www.forbes.com/sites/andreamorris/2018/07/23/can-we-all-benefit-from-electric-shocks-to-our-brains/#2e814a41614c>
- Yuhas, D. (2018). Students are zapping their brains to get ahead in school — but evidence for the practice is limited, *The Hechinger Report*, Feb 21. <http://hechingerreport.org/students-zapping-brains-get-ahead-school-evidence-practice-limited>
- Sutherland, B. (2017). How to make soldiers' brains better at noticing threats, *The Economist*, July 27. <https://www.economist.com/news/science-and-technology/21725543-target-recognition-warfare-how-make-soldiers-brains-better-noticing>
- Mesirov, T. (2017). Headsets, implants and other ways of improving the brain, NPR, KCRW, April 28. <http://curious.kcrw.com/2017/04/headsets-implants-and-other-ways-of-improving-the-brain>
- Sputnik News Agency (2017). 'TDCS is the cheapest form of brain stimulation that is currently available' - Vincent Clark, April 6<sup>th</sup> (webcast). <https://sputniknews.com/voiceofrussia/interviews/>  
<https://soundcloud.com/radiosputnik/tcds-is-the-cheapest-form-of-brain-stimulation-that-is-currently-available-vincent-clark>
- Landhuis, E. (2017). Do DIY Brain-Booster Devices Work? *Scientific American*, Jan 10. <https://www.scientificamerican.com/article/do-diy-brain-booster-devices-work>
- Underwood, E. (2016). Cadaver study casts doubts on how zapping brain may boost mood, relieve pain. *Science*, April 20, DOI: 10.1126/science.aaf4149. <http://www.sciencemag.org/news/2016/04/cadaver-study-casts-doubts-how-zapping-brain-may-boost-mood-relieve-pain>
- Kohn, D.J. (2016). Can Small Doses of Electricity Make You Smarter? *Bright*, April 1. <https://medium.com/bright/can-small-doses-of-electricity-make-you-smarter-86c9a909f465#.3fg0slip9>
- Lawler, J. (2015). Electroceuticals. *SmartDrugSmarts Podcast*, Nov. 28 (webcast). <http://smartdrugsmarts.com/episode-104-electroceuticals/>
- Larsen, K. (2015). Strøm på hjernen (Power on the brain). *D2*, Aug 6, Sweden. <http://www.dn.no/d2/2015/08/06/2125/Teknologi/strm-p-hjernen>
- Finkel, E. (2015). The buzz around brain stimulation. *Cosmos Magazine*. May 11. <https://cosmosmagazine.com/life-sciences/buzz-around-brain-stimulation>
- Batuman, E. (2015). Electrified. Adventures in Transcranial Direct-Current Stimulation. *The New Yorker*. April 6. <http://www.newyorker.com/magazine/2015/04/06/electrified>
- Katsnelson, A. (2015). Hopeful Currents. *Psychology Today*. Jan/Feb, pp. 38-40. <http://www.psychologytoday.com/articles/archive>
- Karlinsky, N. Soichet, A., Effron L. (2014). DIY Brain-Shock Kits Jump Start Users' Day. *ABC Nightline*. Nov 11 (television). <http://abc.go.com/shows/nightline/listing/2014-11/11-nightline-1111-diy-brainshock-devices-jump-start-users-day>  
<http://abcnews.go.com/Health/diy-brain-shock-kits-jump-start-users-day/story?id=26832073>
- Wolfson, E. (2014). I Want to Be Your Neuroscience Experiment. *Aljazeera America*. Sep 27. <http://america.aljazeera.com/articles/2014/9/27/i-want-to-be-yourneuroscienceexperiment.html>
- Stallmach, L. (2014). Das Gehirn unter Strom setzen (Put the Brain Under Current). *Neue Zürcher Zeitung*. Sep 17. <http://www.nzz.ch/wissenschaft/medizin/das-gehirn-unter-strom-setzen-1.18384671>
- Madrigal, A.C. (2014). Prepare to Be Shocked. Four Predictions About How Brain Stimulation Will Make Us Smarter. *The Atlantic*. Aug 13. <http://www.theatlantic.com/magazine/archive/2014/09/prepare-to-be-shocked/375072/>
- Carr, S. (2014). Making People Smarter Through Brain Stimulation. *UNM Newsroom*, July 15 (article and webcast). <http://news.unm.edu/news/making-people-smarter-through-brain-stimulation> and <https://www.youtube.com/watch?v=CptmRZzfd88>
- Jensen, T. (2014). UNM Researcher: Battery Can Treat Brain Disorders. *KRQE Evening News*, June 27. <http://krqe.com/2014/06/27/unm-researcher-battery-can-treat-brain-disorders/>
- Young E. (2014). Low-Tech Pain Relief. *Mosaic Science*. June 3. <http://mosaicscience.com/extra/low-tech-pain-relief>
- Young, E. (2014). Can You Supercharge Your Brain? *Mosaic Science*. June 3. <http://mosaicscience.com/story/can-you-supercharge-your-brain>

- Young, E. (2014). Brain Stimulation and Me. *Mosaic Science*. June 3. <http://mosaicscience.com/extra/brain-stimulation-and-me>
- Standen, A. (2014). Hacking The Brain With Electricity: Don't Try This At Home. *National Public Radio*. May 19. <http://www.npr.org/blogs/health/2014/05/19/312479753/hacking-the-brain-with-electricity-dont-try-this-at-home>
- Miller, G. (2014). The Unfinished Science Behind the New Wave of Electrical Brain Stimulation. *Wired*. May 5. <http://www.wired.com/2014/05/brain-stimulation-science/>
- Standen, A. (2014). Is Brain Stimulation a Medicine of the Future? *KQED Science*. March 3. <http://blogs.kqed.org/science/audio/is-brain-stimulation-a-medicine-of-the-future/>
- Hurley, D. (2013). Jumper Cables for the Mind. *New York Times*. Nov 1. [http://www.nytimes.com/2013/11/03/magazine/jumper-cables-for-the-mind.html?\\_r=0](http://www.nytimes.com/2013/11/03/magazine/jumper-cables-for-the-mind.html?_r=0)
- Sanides, S. (2013). Besser lernen unter Strom (Learn Better Under Current). *Focus Magazine*, 10, April 3, Germany. <http://www.focus.de/wissen/mensch/tid-30087>
- Hendrix, B. (2012). UNM Professor's Research Focus of TEDxABQ Talk. *UNM Today*. Sep 10. <http://news.unm.edu/2012/09/vince-clark-feature>
- Menchén, J. (2012). Military Use of Neuroscience Should Be Regulated, Report Warns. *United Academics*. Feb 7. <http://www.united-academics.org/magazine/sex-society/military-use-of-neuroscience-should-be-regulated-report-warns>
- Sample, I. (2012). Neuroscience Could Mean Soldiers Controlling Weapons with Minds. *Guardian*, p.3. Feb 6. <http://www.theguardian.com/science/2012/feb/07/neuroscience-soldiers-control-weapons-mind>
- Walker, J. (2011). Interview, *BBC World Service Radio News*.
- Fox, D. (2011). Brain Buzz. April 14. *Nature*, doi:10.1038/472156a. <http://www.nature.com/news/2011/110413/full/472156a.html>
- Jung, S. (2011). DARPA Study Uses Video Game to Research tDCS. *medGadget*. [http://www.medgadget.com/2011/04/darpa\\_study\\_uses\\_video\\_game\\_to\\_research\\_tdc\\_s\\_finds\\_more\\_amps\\_mean\\_more\\_frgs.html](http://www.medgadget.com/2011/04/darpa_study_uses_video_game_to_research_tdc_s_finds_more_amps_mean_more_frgs.html)
- Yirka, B. (2011). DARPA takes new look at electrical brain stimulation to aid in learning. *Medical Xpress*. April 21. <http://medicalxpress.com/news/2011-04-darpa-electrical-brain-aid.html>
- Bromstein, E. (2011). IQ test no-brainer: Boosting your intelligence quotient may be a mind game. *NOW Magazine*. April 21. <http://www.nowtoronto.com/lifestyle/story.cfm?content=180221>
- Connelly, C. (2011). DARPA test finds running electrical currents through scalp improves video game skills. *NEWS.COM.AU* April 20. <http://www.news.com.au/technology/darpa-test-finds-running-electrical-currents-through-scalp-improves-video-game-skills/story-e6frfro0-1226041505464>
- Boyle, R. (2011) Hooking a 9-volt battery to your brain improves your video game skills, researcher finds. *Popular Science*. April 15. <http://www.popsci.com/technology/article/2011-04/direct-current-brain-improves-video-game-skills-researcher-says>
- Andazola, M. (2010). Rewiring neurons' paths may help with stroke recovery. *Albuquerque Journal*, C:1. April 18. <http://www.abqjournal.com/health/192220530847health04-19-10.htm>
- Andazola, M. (2009). Brain structure may hold key to long-term sobriety. *Albuquerque Journal*, C:1. November 30. <http://www.abqjournal.com/health/302152316715health11-30-09.htm>
- Vance, E. (2009). A neuropsychologist talks about the challenges of studying the addicted brain. *Nature*. <http://www.nature.com/news/2009/090625/full/news.2009.600.html>
- Ramo, B. (2009). Healthbeat: The Promise of MRN: Relapse Research for Addiction Treatment. KOAT Channel 7 news. July 20 (television). <http://www.youtube.com/watch?v=nOVFRMjSvHY>
- Jadrnak, J. (2006). Researchers Studying Minds of Psychopaths. *Albuquerque Journal*:C1, C3. November 20. <http://www.abqjournal.com/health/513952health11-20-06.htm>
- Florin, K. (2002). Researchers Probe Minds of Problem Gamblers. *The Day*, A:1. April 8. <http://news.google.com/newspapers?nid=1915&dat=20020407&id=WyEiAAAIAIAJ&sjid=A3QFAAAAIAIAJ&pg=1859,1388271>

### Symposia Chaired and Organized

- Co-Chair (with Dr. Annabel Chen, Nanyang technological University Singapore), *Brain Stimulation and Imaging: BrainSTIM2018*. Singapore, June 15-16, 2018. Presenters: Peter Fox, Hartwig Siebner, Nicole Wenderoth, Hugues Duffau, Michael Nitsche, Sven Bestmann. <http://brainstim-meeting.org>
- Chair and Co-Organizer, *New Mexico Clinical Brain Stimulation and Imaging*, Albuquerque, New Mexico, October 4-6, 2017. Presenters: Adam Woods, Bashar Badran, Bernadette Gillick, Claudia Tesche, Danny Wang, Davin

Quinn, Eric Wassermann, Helena Knotkova, Jay Sanguinetti, Jessica Richardson, John George, Katie Witkiewitz, Michael Nitsche, Min-Fang Kuo, Roy Hamilton and Sarah Pirio Richardson.

Chair and Organizer, *Brain Stimulation and Imaging: BrainSTIM2017*. Vancouver, Canada, June 23-24, 2017.

Presenters: Michael Nitsche, Marom Bikson, Andrea Antal, Charlotte Stagg, Christoph Michel, Lucas Parra, Alex Alexander Opitz, Jay Sanguinetti and John George. <http://brainstim-meeting.org>

Co-Chair (with Dr. Christoph Michel, University of Genenva), *Brain Stimulation and Imaging: BrainSTIM2016*.

Geneva, Switzerland, June 24-25, 2016. Presenters: Sarah Hollingsworth Lisanby, Michael Fox, Peter Tass, Ashesh Mehta, Christoph Herrmann, Don Tucker, Pedro Cavaleiro Miranda and others.

<http://brainstim-meeting.org>

Co-Chair (with Dr. Linda Chang, University of Hawaii), *Brain Stimulation and Imaging: BrainSTIM2015*. Honolulu, HI, June 12-13, 2015. Presenters: Peter Fox, Peter Bandettini, Marom Bikson, Michael Nitsche and others.

<http://brainstim2015.org> <http://youtu.be/Nz5YEJDYCS>

Chair, *Brain Stimulation: Past, Present and Future*. Half-day educational course, Organization for Human Brain Mapping, Hamburg, Germany, June 8, 2014. Presenters: Drs. Michael Nitsche, Alberto Priori, Bruce Lubner, Antonio Strafella, Andrea Antal, Agnes Flöel, Charlotte Stagg, and Lucas Parra.

Chair, *Brain Stimulation*. Non-concurrent symposium, Organization for Human Brain Mapping, Seattle, WA, June 17, 2013. Presenters: Drs. Michael Nitsche, Mark George, Heidi Johansen-Berg and Timothy Wagner.

Co-Organizer and Chair, *Imaging Neuroinflammation and Neuropathic Pain*. Annual meeting, Reflex Sympathetic Dystrophy Syndrome Association, Tamaya Resort, Albuquerque, NM, October 13-15, 2011. Co-chair with Dr. Mark Cooper, University of Washington, and Dr. Erin Milligan, Dept. Neuroscience, UNM. Presenters: James Giordano, Judith Kitzes, Joanna Katzman, Debra Nelson-Hogan, Richard Larson, Corey Ford, Linda Watkins, Mark Cooper, David Borsook, Karen Davis, Do-Hyung Kang, Yong-Chul Kim, Erin Milligan, Jeffrey Norenberg, Ralph James, Terry Lall, Anthony Sims, Nathan Staff, Penny Gowland, Alan Koretsky, Nick Devoogdt, Sandip Biswal, Mike Dailey, Tony Wyss-Coray, Philip Getson, Carl Saab, Joshua Prager, Linda Chang, Mera Barr, Candy McCabe, Norman Harden.

Chair, *Multimodal Neuroimaging: Examples, Benefits and Challenges*. Organization for Human Brain Mapping Educational Session, Barcelona, Spain, June 2010. Presenters: Jon Shah, Rolf Gruetter, Wim Vanduffel, Matti Hamalainen, Tom Eichele, Vince Calhoun, Rainer Goebel.

Chair, Science Offsite Meeting, Mind Research Network, Tamaya Resort, NM, June 2008.

Chair, Science Report, Mind Research Network Board of Trustees Meeting, Domenici Hall, April 2006; October 2006; April 2007; October 2007; April 2008.

Chair, *Cognitive Neuroimaging: Progress and Processes*. University of New Mexico and MIND Institute, April 2003. Presenters: S.A. Hillyard, J.V. Haxby, R. Cabeza, J. Gabrieli, H. Neville, S. Petersen, S. Bookheimer, and R. Buckner.